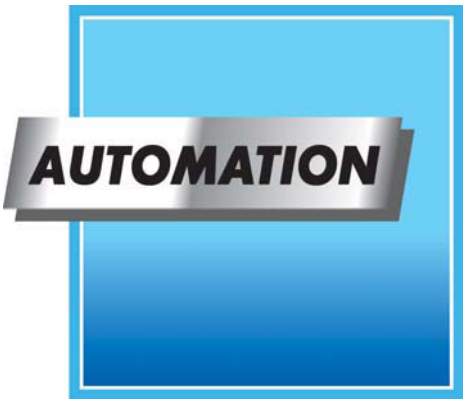
I/O-SYSTEM

Full Line Catalog 2010/2011



3

WAGO®
INNOVATIVE CONNECTIONS

WAGO Registered Trademarks

WAGO®

CAGE CLAMP®

CAGE CLAMP®S

POWER CAGE CLAMP

FIT CLAMP®

PUSH WIRE®

TOPJOB®

TOPJOB®S

X-COM®

X-COM®S

WINSTA®

JUMPFLEX®

TO-PASS®

ProServe®

WAGO Full Line Catalogs

Volume 1, Rail-Mounted Terminal Block Systems

- Rail-Mounted Terminal Blocks
- Modular Connectors (X-COM®-SYSTEM)
- Terminal Strips
- Patchboard Systems
- Shield (Screen) Connecting System
- PUSH WIRE® Connectors for Junction Boxes

Volume 2, Connectors and PCB Terminal Blocks

- PCB Terminal Blocks
- Feedthrough Terminal Blocks
- *MULTI CONNECTION SYSTEM*
- PCB Connectors
- Specialty Connectors

Volume 3, I/O-SYSTEM

- Modular I/O-SYSTEM IP20
- Wireless Technology, *TO-PASS*® Telecontrol Technology
- Industrial Switches, *PERSPECTO*
- Modular I/O-SYSTEM IP67, Block I/O-SYSTEM IP67
- Sensor/Actuator Boxes IP67, Cables and Connectors IP67
- Power Supplies

Volume 4, Interface Modules

- Relay – Optocouplers – Special Functions
- Interface Modules
- Transducers
- Power Supplies
- Overvoltage Protection
- Wireless Technology
- Empty Housings and Mounting Carriers

Volume 5, *WINSTA*® Connector System

- *WINSTA*® MINI Connectors
- *WINSTA*® MIDI Connectors
- *WINSTA*® MAXI Connectors
- *WINSTA*® RD Cable Assemblies
- *WINSTA*® KNX Connectors
- *WINSTA*® IDC Flat Cables

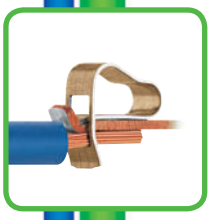
Handling of WAGO Connection Technologies*

CAGE CLAMP®S

Universal connection with "SPECIAL"

Handling:
Open the clamp, insert wire and release the clamp – done! Solid conductors and fine-stranded conductors with ferrules are connected by simply pushing them in – no operating tool needed.

CAGE CLAMP®



Universal connection of solid, stranded and fine-stranded conductors

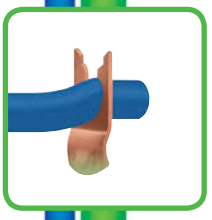
Handling:
Open the clamp, insert wire and release the clamp – done!

POWER CAGE CLAMP®

Universal connection of conductors larger than 6 AWG (16 mm²)

Handling:
- To open the clamp with a standard hex wrench or operating tool, and turn approximately twice counter-clockwise.
- Latch holds clamp open.
- Insert conductor.
- A small counter-clockwise rotation releases the latch.

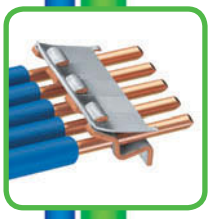
FIT CLAMP®



Insulation displacement connection (IDC)

Handling:
Push unstripped conductor into the IDC contact using an operating tool.

PUSH WIRE®



PUSH WIRE® connection for solid wires and stranded wires (depending on product used)

Handling:
Solid and stranded conductors that are rigid enough are connected by simply pushing them in – no operating tool needed.

* Please follow the product instructions for product-specific handling.

Contents Volume 3

1 2 3 4 5 6 7 8 9 10 11 12

WAGO-IO-SYSTEM

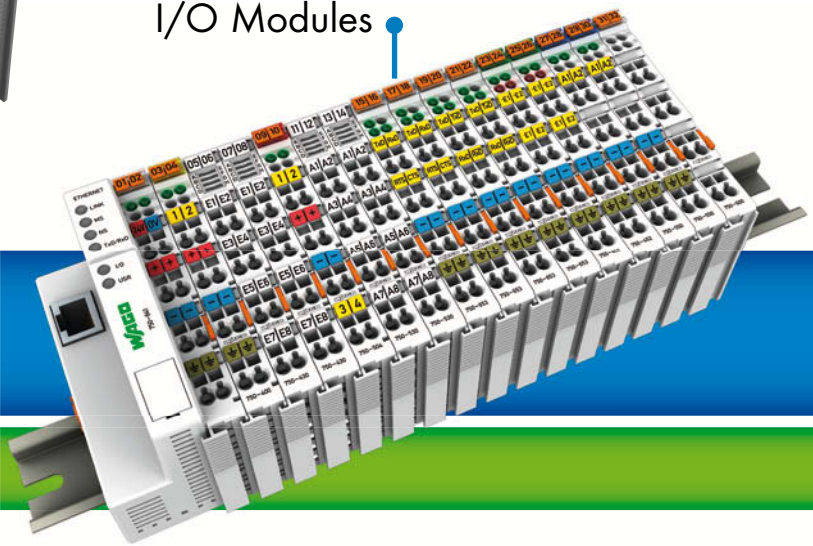
Compact
Industrial PC

Scalable Performance

Fieldbus Couplers

Programmable
Fieldbus Controllers

I/O Modules



PROFINET
PROFIBUS
EtherNet/IP
MODBUS/TCP
DeviceNet
CANopen
SERCOS interface
MODBUS
INTERBUS
CC-Link
CAL
IEC 60870-5
II/O-LIGHTBUS
KNX
BACnet®
LONWORKS

BACnet® is a registered trademark of ASHRAE

MP-BUS TECHNOLOGY BY BELIMO
enocean®
DALI
ASi INTERFACE
Ex

Flexible - Future-Proof

Fieldbus Independent

Industrial Switches

TO-PASS®
Telecontrol Technology

PERSPECTO

Software

Accessories

WAGO-IO-SYSTEM

767 Series
Modular
I/O-SYSTEM
SPEEDWAY

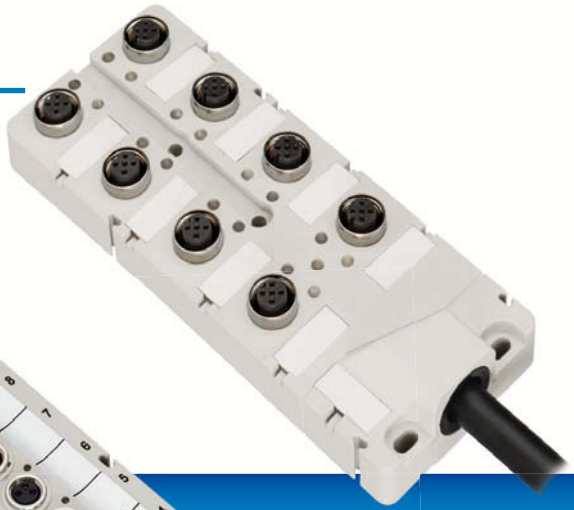
756 Series
Cable and Connectors

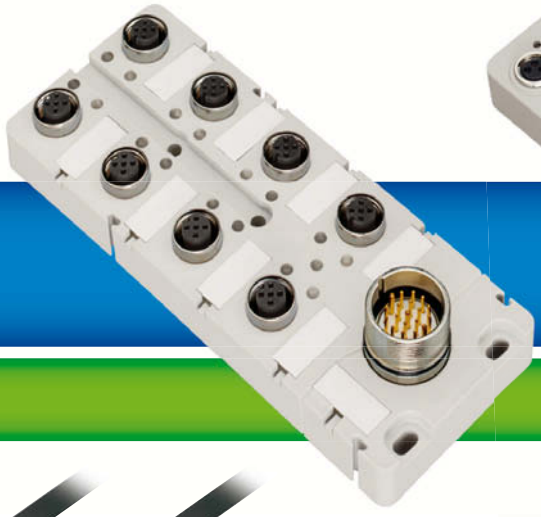
Flexible - Future-Proof

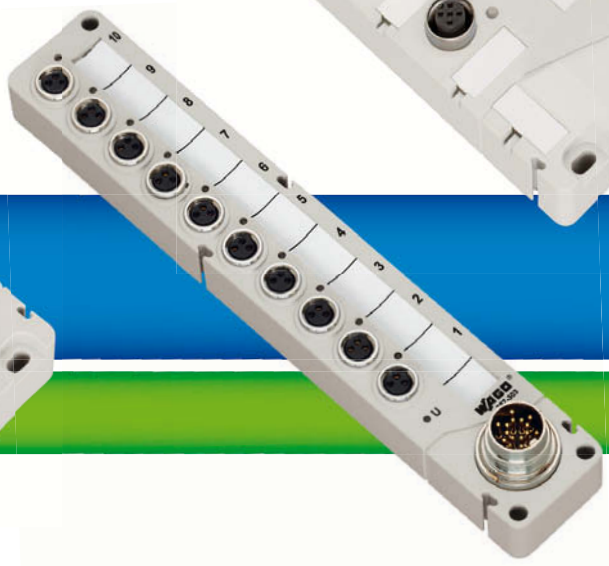
755 Series
Block I/O-SYSTEM

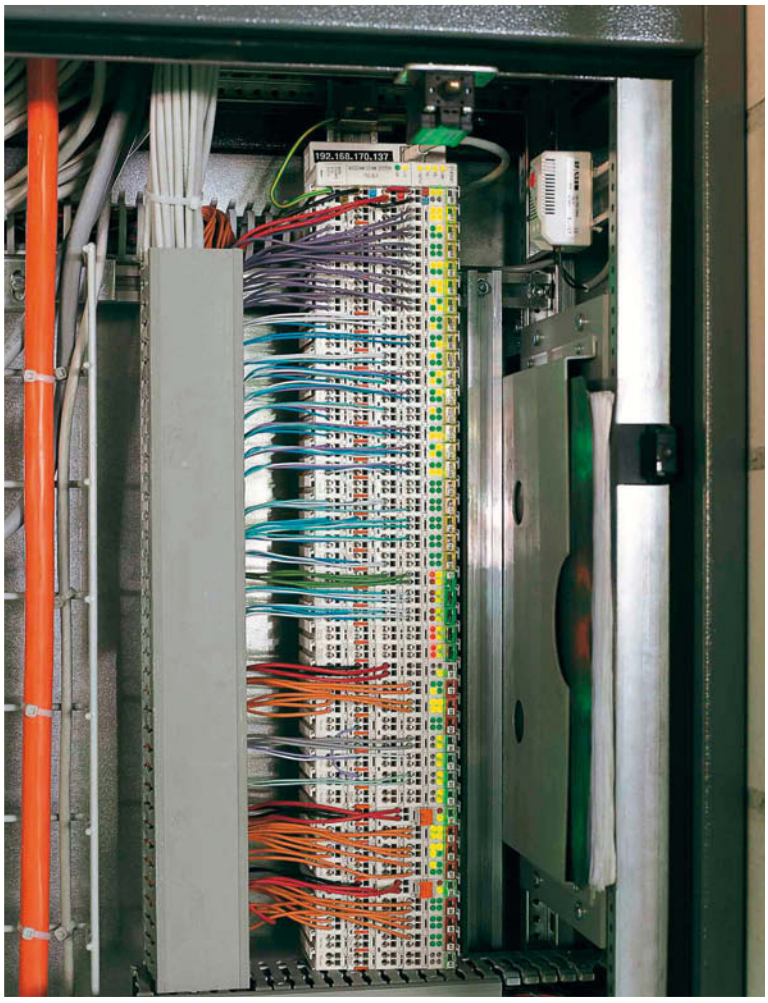
67

757 Series
Sensor/
Actuator Boxes



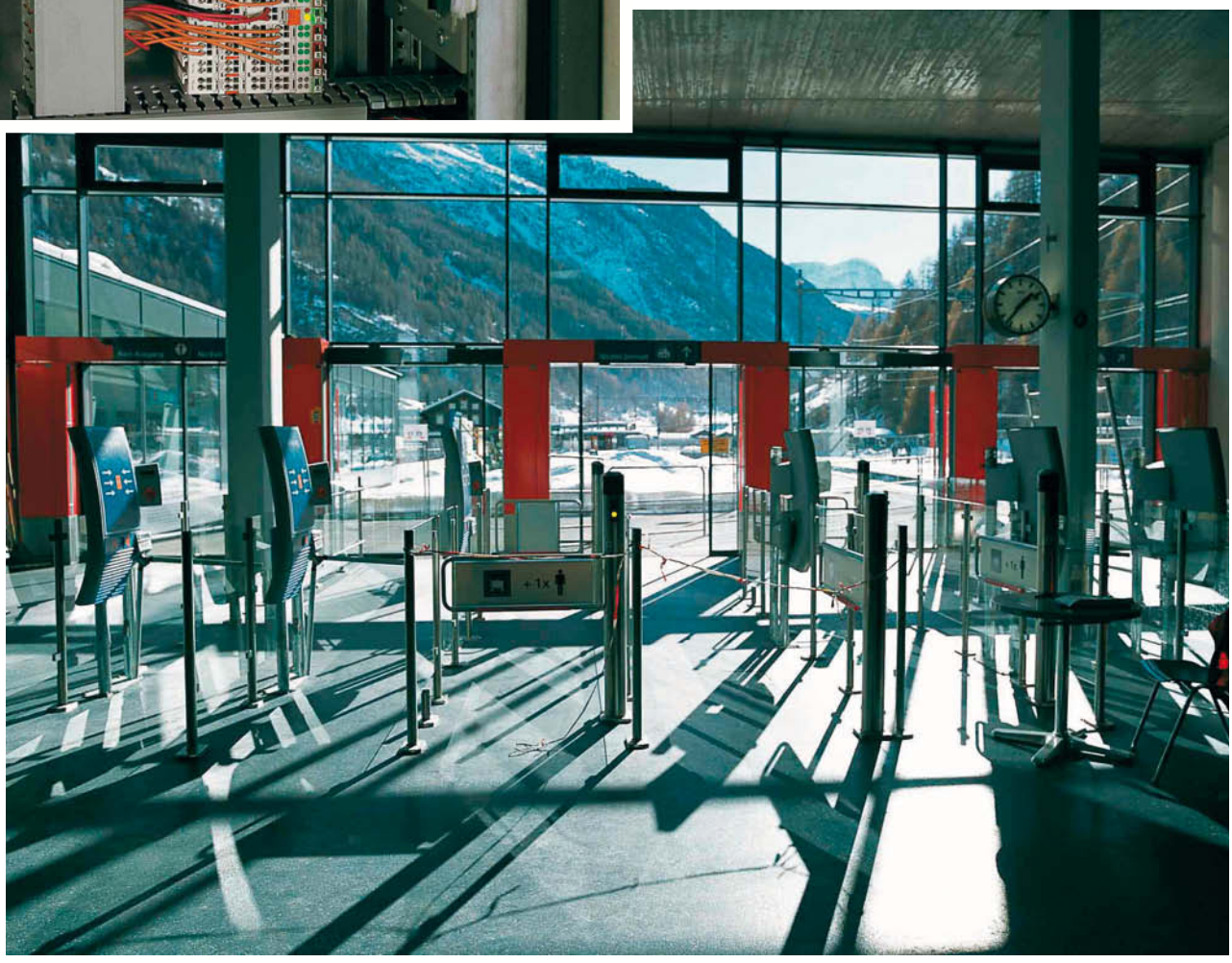


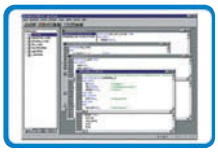




WAGO Application:
Matterhorn Terminal in Täsch, Switzerland

WAGO Products:
WAGO-I/O-SYSTEM with ETHERNET Controllers





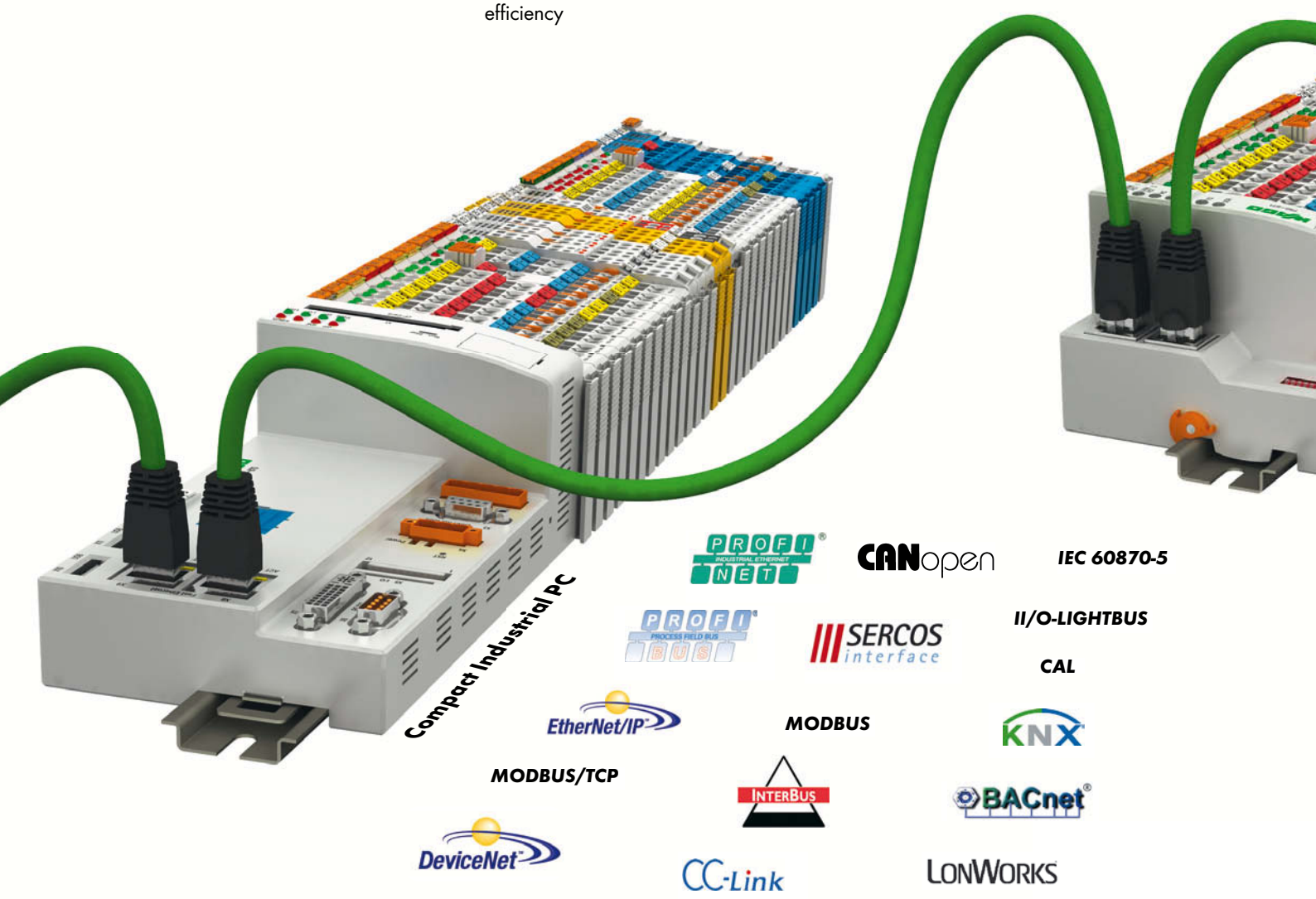
Scalable Industrial Ethernet Solutions

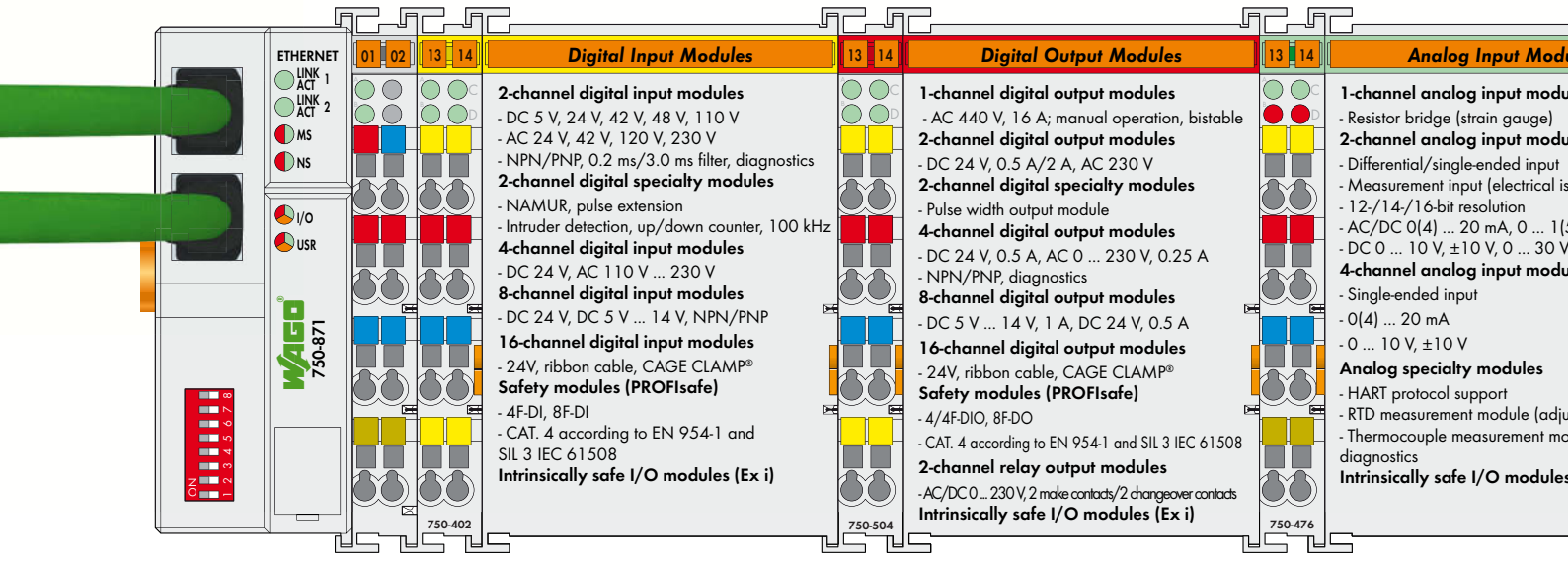
WAGO-I/O-SYSTEM 750, 753 and 758 Series offer future-proof system architecture.

Fine modularity and a fieldbus-independent design are hallmarks of the WAGO-I/O-SYSTEM, which boasts approvals for a diverse range of applications.

- Optimized for process-oriented communication with a scalable performance solution
- High integration density
- Unbeatable price/performance ratio
- The variety of possible applications is almost infinite
- The hardware and system costs, by contrast, have been reduced to a minimum
- For simple use that ensures maximum efficiency

The basic premise of the modular system is reflected in the support of numerous fieldbus systems. Depending on the application, it is possible to choose between fieldbus couplers and controllers for different protocols.





Optimized for Practical Requirements

Finely modular:
- 1, 2, 4, 8 or 16 channels on an I/O module

Fieldbus-independent:
- Fieldbus couplers & fieldbus controllers for the most common fieldbus protocols & industrial ETHERNET standards

A good investment:
- Fieldbus-independent node design allows easy change to new bus standards while keeping the I/O modules

Clear identification:
- With color-coded group marker carriers and WAGO WSB module identification.

Scalable performance:
- With economy & standard couplers as well as programmable controllers on through to the IPC

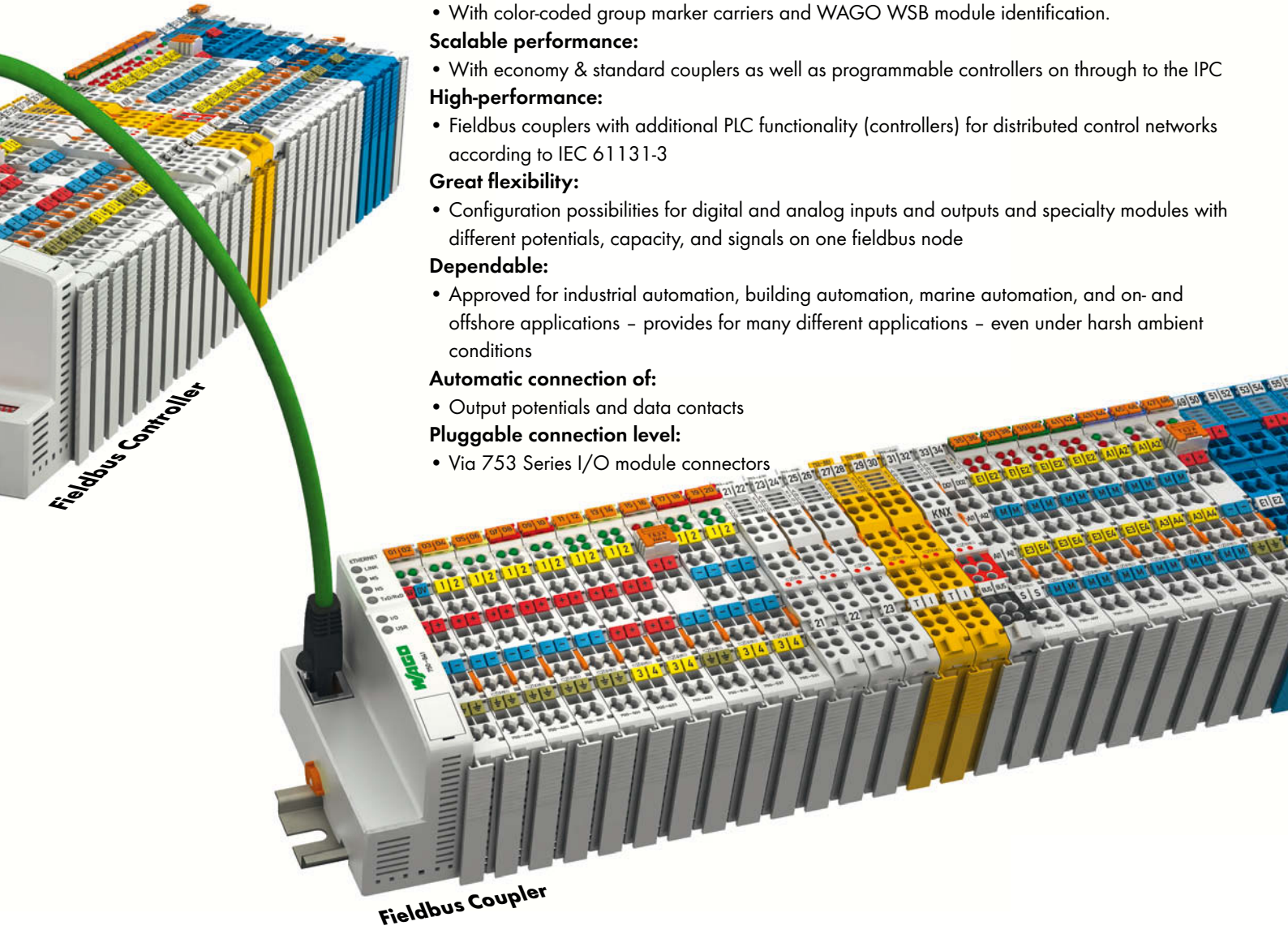
High-performance:
- Fieldbus couplers with additional PLC functionality (controllers) for distributed control networks according to IEC 61131-3

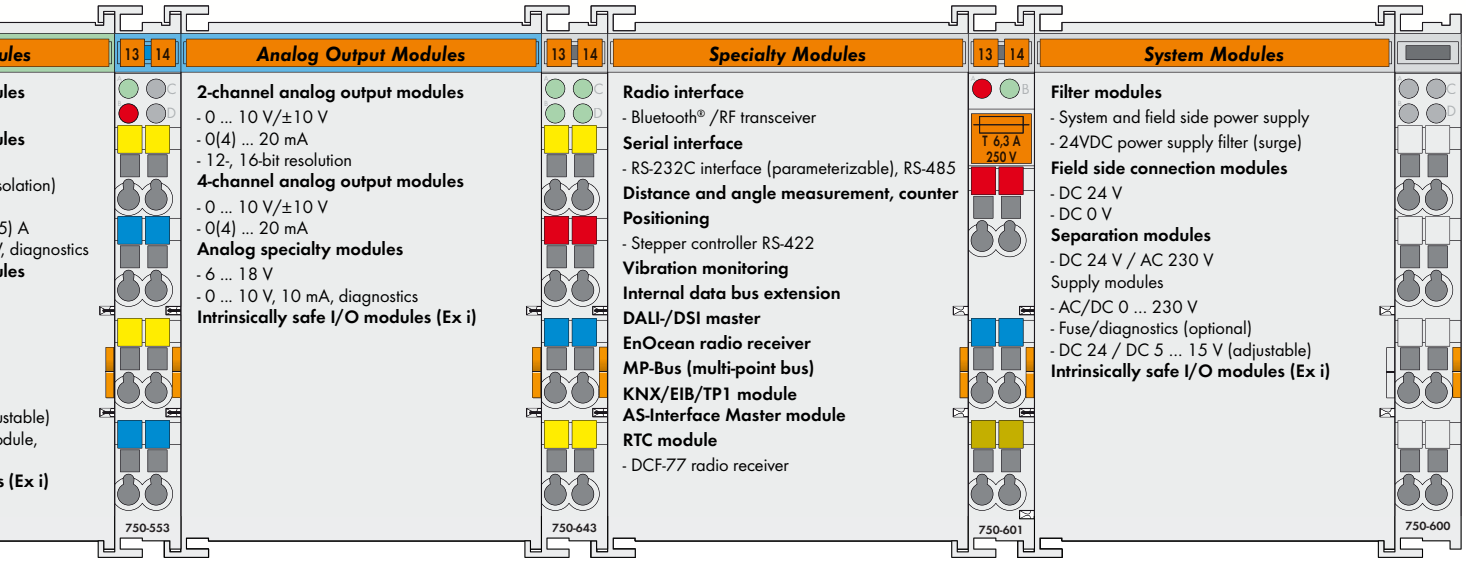
Great flexibility:
- Configuration possibilities for digital and analog inputs and outputs and specialty modules with different potentials, capacity, and signals on one fieldbus node

Dependable:
- Approved for industrial automation, building automation, marine automation, and on- and offshore applications – provides for many different applications – even under harsh ambient conditions

Automatic connection of:
- Output potentials and data contacts

Pluggable connection level:
- Via 753 Series I/O module connectors





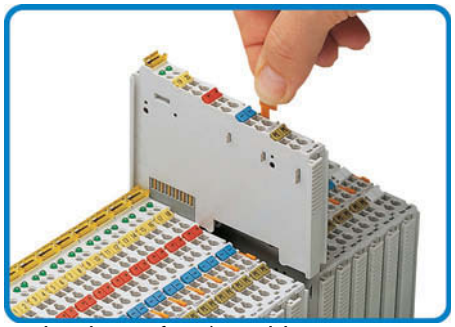
Universal Basic Module

Assembly

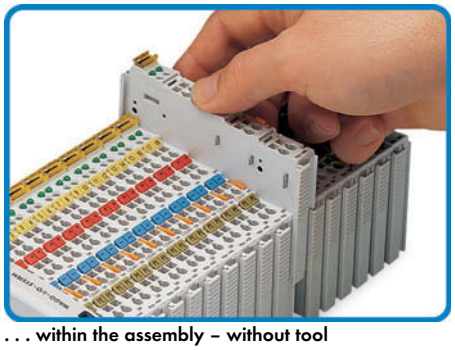
Fine modularity for the assembly on the rail . . .

. . . secure connection with dovetails

Exchange within the assembly

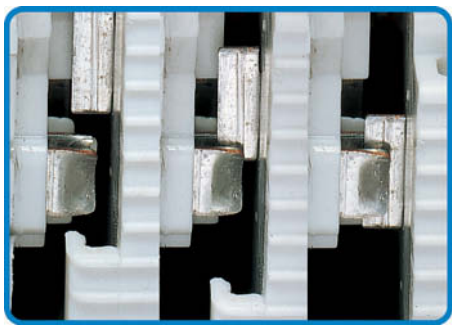


Quick exchange of an I/O module. . .

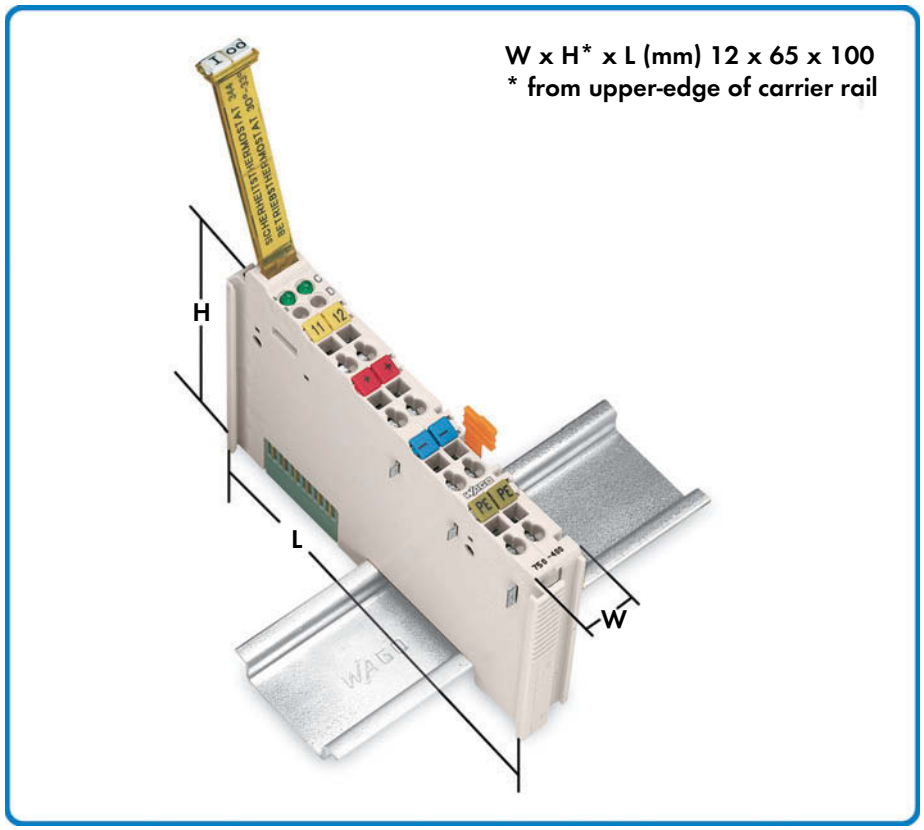


. . . within the assembly – without tool

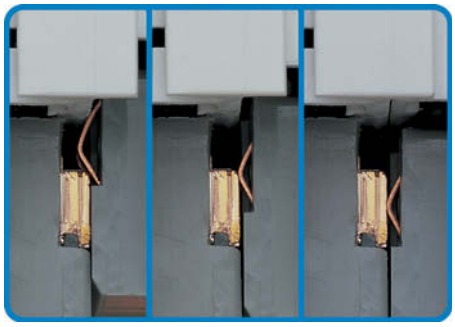
Power jumper contacts on the field side



Safe, automatic connection by tinned, self-cleaning slide contact, ground (earth) contact makes first and breaks last (Series 750 and 753)



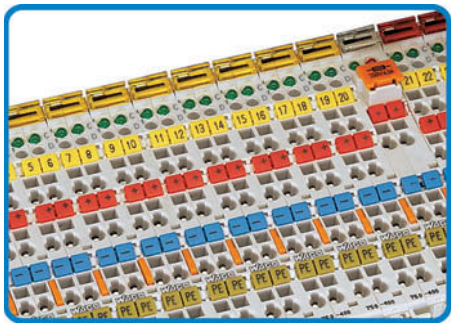
Data contacts



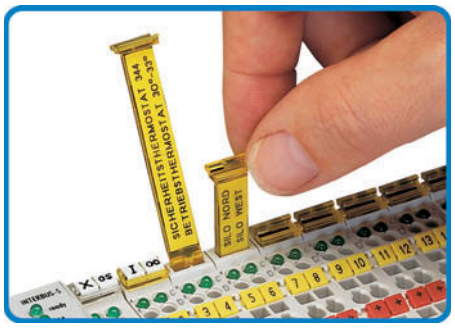
Safe, automatic connection by gold-plated, self-cleaning slide contacts with high contact safety (750 and 753 Series)

Obvious handling by color coding

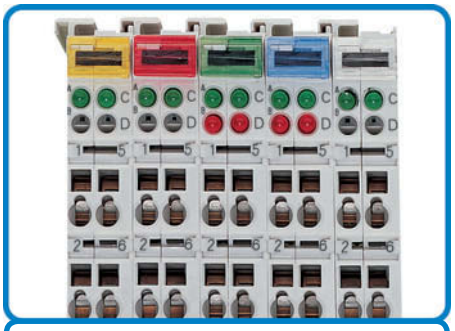
Molded marking of clamping units



Marking of clamping units by colored miniature WSB markers



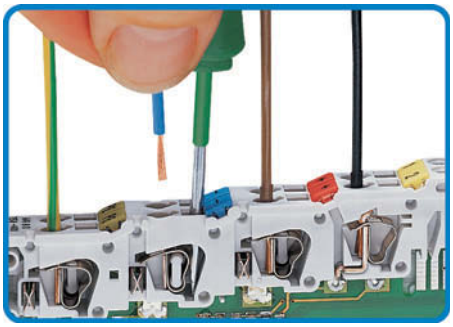
Group marking carrier (can be withdrawn and replaced) with large area for self marking



yellow – digital inputs
red – digital outputs
green – analog inputs
blue – analog outputs
colorless – supply and special function modules

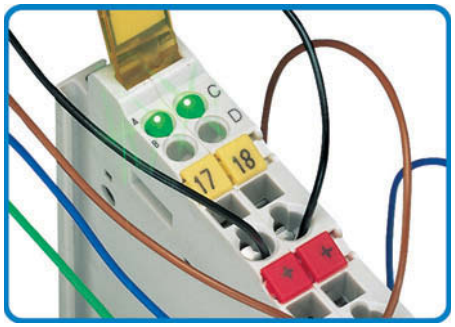
Different functions marked by transparent colored group marker carriers

CAGE CLAMP® connection



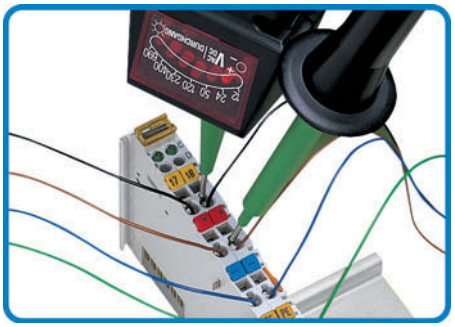
Vibration-proof, fast and maintenance-free wiring of 0.08 mm^2 - 2.5 mm^2 /AWG 28 - 14

Status indication



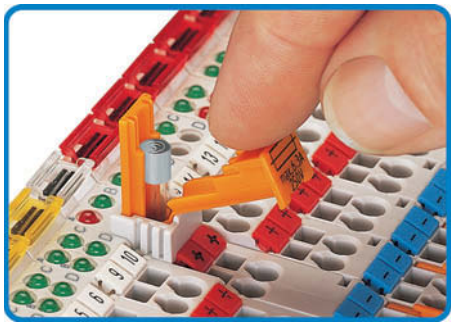
Diagnosis and status indication by LED for safe start-up and system control

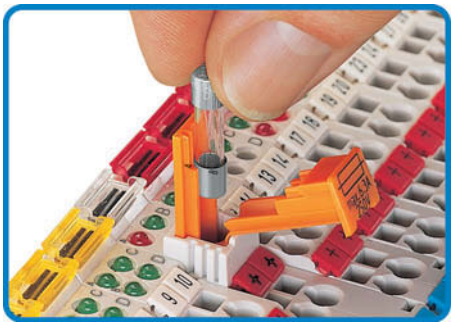
Testing



Signal tracing with wired conductors

Fuse holder

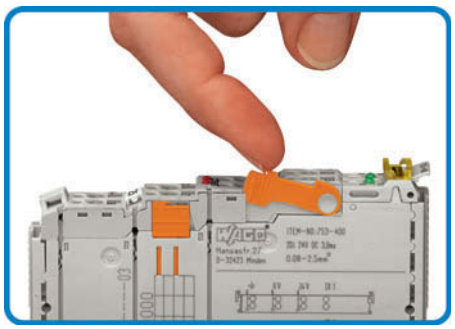




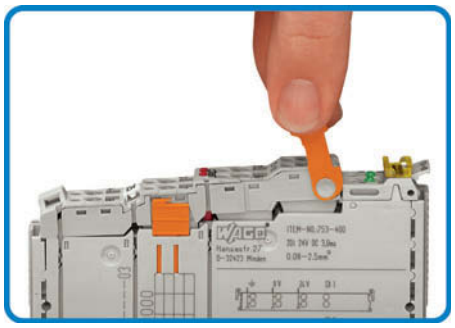
Function at locked position 2: Easy fuse replacement via hinged cover.
Use UL-recognized fuses only!

With Pluggable Connector

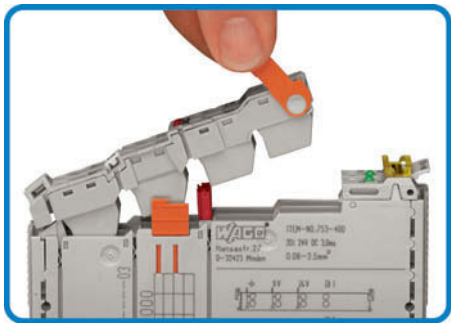
To remove the connector



Locate the orange pull-tab on the connector ...

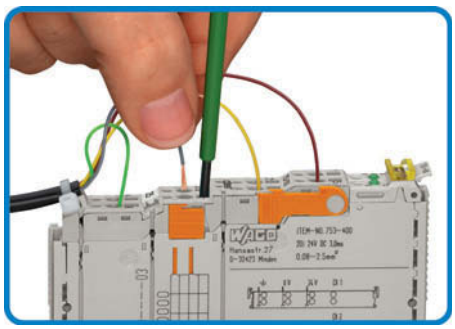


... pull toward the front of the connector ...

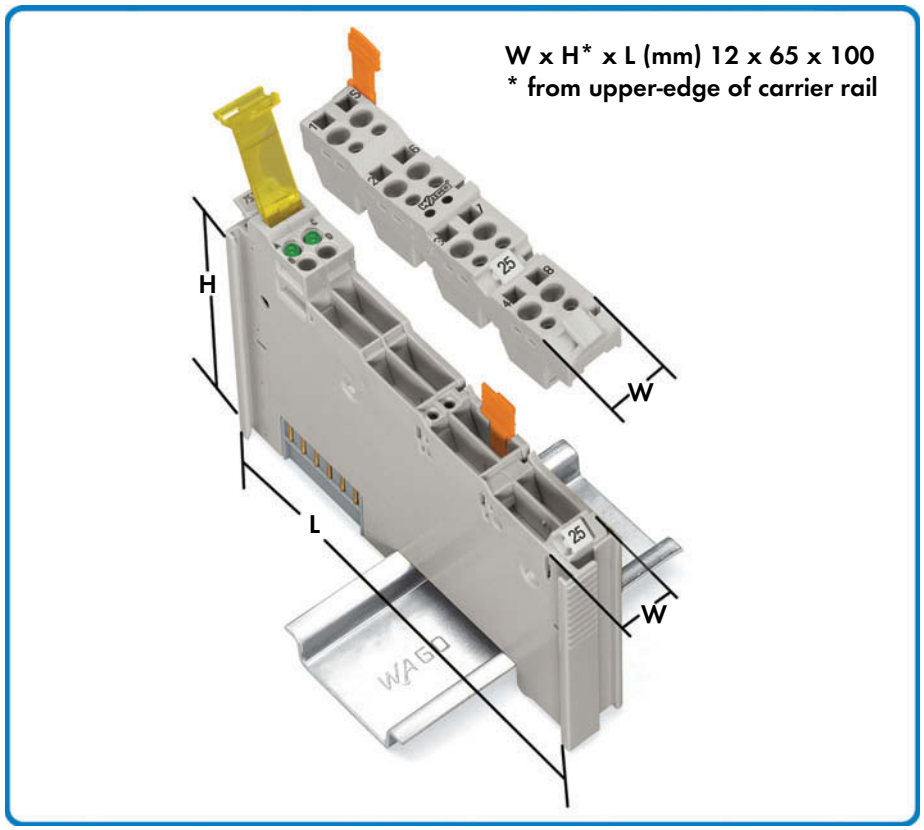


... the connector is automatically disengaged.

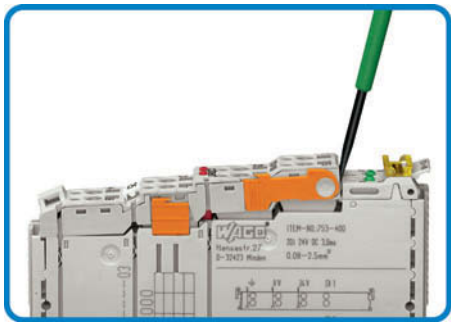
CAGE CLAMP® connection



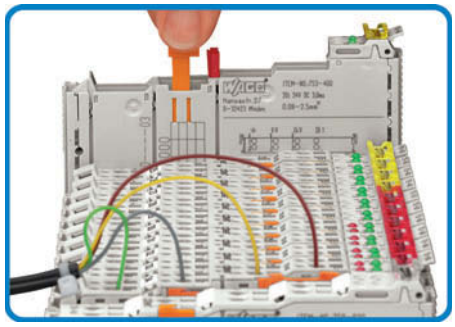
Vibration-proof, fast and maintenance-free wiring of 0.08 mm² - 2.5 mm² / AWG 28 - 14



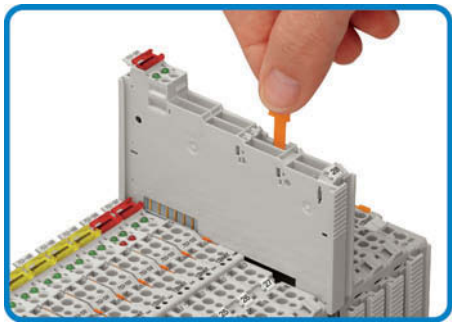
Removal from the assembly



Alternatively, a standard screwdriver can be used to remove the connector from the I/O module.

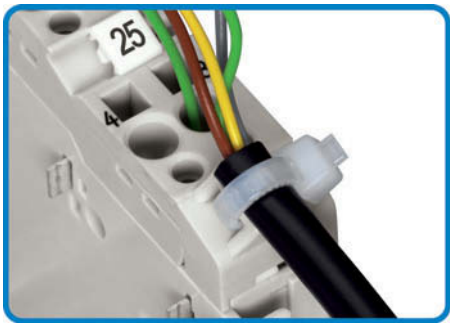


Assembly on the rail ...

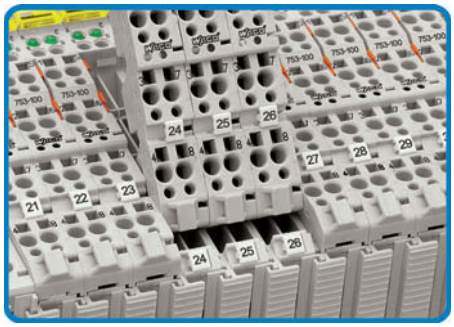


... removal from the assembly - without tool.

Built-in convenient features

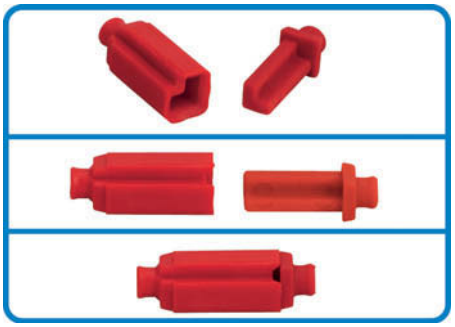


Securing the cable on the connector



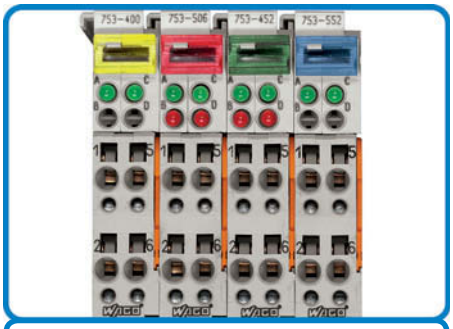
Indication on both the connector and the I/O module is possible via miniature WSB marker tags

Coding



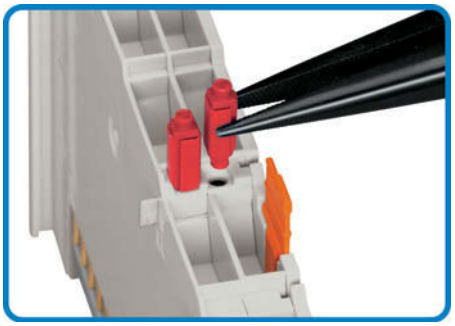
Connecting the coding pieces...

Molded marking of clamping units



yellow	–	digital inputs
red	–	digital outputs
green	–	analog inputs
blue	–	analog outputs
colorless	–	supply and special function modules

Different functions marked by transparent colored group marker carriers



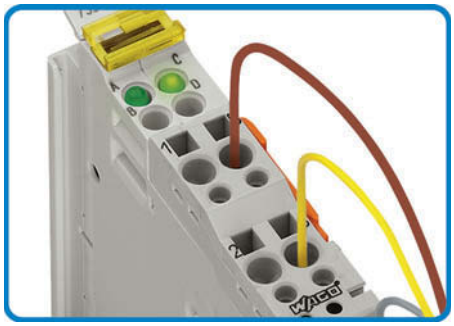
... place the coding piece into the I/O module ... (up to 16 different positions)

... place the connector into the I/O module.

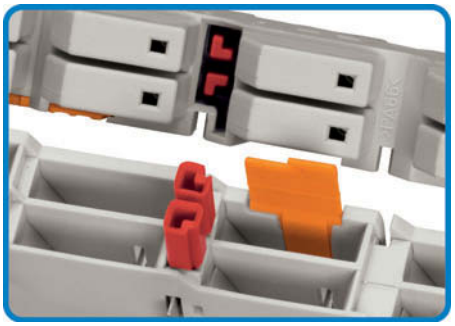
Testing

Signal tracing with wired conductors

Status indication



LED diagnostic and status indication for start-up and system control



Coded connector can only fit in the corresponding coded I/O module

Approvals Overview WAGO-I/O-SYSTEM 750/753

Approvals for versions with item no. suffix /...-... upon request. Current approvals overview also on the Internet at www.wago.com

c UL us	c UL us	E175199, UL 508
ABS	**ABS (American Bureau of Shipping)**	03-HG374860/2-PDA; 05-ES578983-X
BV	**BV (Bureau Veritas)**	13453/B0 BV
DNV	**DNV (Det Norske Veritas)**	A-10191; Cl. B
GL	**GL (Germanischer Lloyd)**	26 624-05; 26 898-05 HH; 59 627-08 HH; 60 241-09 HH; Cat. A, B, C, D (EMC 1)
KR	**KR (Korean Register of Shipping)**	HMB05880-EL004 ff
Lloyd's Register	**LR (Lloyd's Register)**	02/20026 (E2); Env. 1, 2, 3, 4
NKK	**NKK (Nippon Kaiji Kyokai)**	TA06190M
PRS	**Polski Rejestr Statkow**	TE/1720/880590/08
RINA	**RINA (Registro Italiano Navale)**	ELE153207CS 001
Ex	c UL us	E198726, ANSI/ISA 12.12.01
	DEMKO, PTB	08ATEX142851 X; IECEx PTB 07.0064 X
	TÜV (Ex i)	07ATEX554086 X

	Item No.	Item Description	Ex			Ship Approvals								UL	Page
Compact Industrial PCs	**758-870**	I/O-IPC-G2 Linux 2.6												x	48
	758-874	I/O-IPC-C6 Linux 2.6												x	50
	758-875	I/O-IPC-C10 E Linux 2.6									x[1]			x	52
	758-876	I/O-IPC-P14 Linux 2.6												x	54
Fieldbus Controllers	**750-804**	INTERBUS Controller		x	x									x	108
	750-806	DeviceNet Controller		x	x	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x	76
	750-812	MODBUS Controller RS-485 (150 ... 19200 Baud)		x	x	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x	98
	750-814	MODBUS Controller RS-232 (150 ... 19200 Baud)		x	x	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x	98
	750-815	MODBUS Controller RS-485 (1.2 ... 115.2 kBaud)		x	x	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x	98
	750-816	MODBUS Controller RS-232 (1.2 ... 115.2 kBaud)		x	x	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x	98
	750-819	LONWORKS® Controller		x	x									x	126
	750-830	BACnet/IP Controller		x							x[2]			x	122
	750-833	PROFIBUS DP/V1 Controller		x	x	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x	46
	750-837	CANopen Controller		x	x	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x	88
	750-838	CANopen Controller D-Sub		x										x	90
	750-841	ETHERNET Controller 100 MBit/s		x	x	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x	62
	750-842	ETHERNET Controller 10 MBit/s		x	x	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x	68
	750-843	ETHERNET Controller 10 MBit/s												x	70
	750-849	KNX IP Controller									x[2]			x	120
	750-860	Linux Controller		x	x									x	94
	750-871	ETHERNET TCP/IP Controller, 2 Ports		x							x[2]			x	64
	750-872	Telecontrol Controller RJ-45 + D-Sub												x	114
	750-873	ETHERNET TCP/IP RS-232 Controller		x							x[2]			x	66

[1] Notice: see installation note!

[2] Notice: The 750-626 filter module is absolutely necessary!

c UL us	c UL us	E175199, UL 508
	ABS (American Bureau of Shipping)	03-HG374860/2-PDA; 05-ES578983-X
	BV (Bureau Veritas)	13453/B0 BV
	DNV (Det Norske Veritas)	A-10191; Cl. B
	GL (Germanischer Lloyd)	26 624-05; 26 898-05 HH; 59 627-08 HH; Cat. A, B, C, D (EMC 1)
	KR (Korean Register of Shipping)	HMB05880-EL004 ff
	LR (Lloyd's Register)	02/20026 (E2); Env. 1, 2, 3, 4
	NKK (Nippon Kaiji Kyokai)	TA06190M
	Polski Rejestr Statkow	TE/1720/880590/08
	RINA (Registro Italiano Navale)	ELE153207CS 001
Ex	c UL us	E198726, ANSI/ISA 12.12.01
	DEMKO, PTB	08ATEX142851 X; IECEx PTB 07.0064 X
	TÜV (Ex i)	07ATEX554086 X

Fieldbus Couplers

Item No.	Item Description	Ex			Ship Approvals									UL	Page
750-300	II/O-LIGHTBUS			x										x	116
750-303	PROFIBUS DP/FMS 12 MBaud		x	x	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x	38
750-304	INTERBUS 500 kBaud		x	x										x	100
750-305	CAN CAL		x	x										x	112
750-306	DeviceNet		x	x	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x	72
750-307	CANopen		x	x										x	78
750-310	CC-Link		x	x										x	110
750-312	MODBUS RS-485 (150 ... 19200 Baud)		x	x	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x	96
750-314	MODBUS RS-232 (150 ... 19200 Baud)		x	x	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x	96
750-315	MODBUS RS-485 (1.2 ... 115.2 kBaud)		x	x	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x	96
750-316	MODBUS RS-232 (1.2 ... 115.2 kBaud)		x	x	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x	96
750-319	LONWORKS®		x	x										x	124
750-320	II/O-LIGHTBUS (Digital)			x										x	118
750-331	PROFIBUS DP 1.5 MBaud (LWL)													x	44
750-333	PROFIBUS DP/V1 12 MBaud		x	x	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x	40
750-334	INTERBUS 500 kBaud (LWL)			x										x	106
750-337	CANopen MSS		x	x	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x	80
750-338	CANopen D-Sub		x	x										x	82
750-340	PROFINET IO Coupler		x											x	34
750-341	ETHERNET TCP/IP 100 MBit		x	x	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x	56
750-342	ETHERNET TCP/IP 10 MBit		x	x	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x[2)]	x	58
750-343	PROFIBUS DP ECO 12 MBaud		x	x						x[2)]				x	42
750-344	INTERBUS ECO 500 kBaud		x	x										x	102
750-345	INTERBUS ECO 2 MBaud		x	x										x	104
750-346	DeviceNet ECO		x	x										x	74
750-347	CANopen ECO MSS		x	x						x[2)]				x	84
750-348	CANopen ECO		x	x						x[2)]				x	86
750-351	SERCOS III Coupler									x[2)]				x	92
750-352	ETHERNET TCP/IP 100 Mbit/s ECO													x	60

Fieldbus Connectors

Item No.	Item Description	Ex			Ship Approvals									UL	Page
750-960	PROFIBUS Fieldbus connector with D-Sub male connector				x	x	x	x	x	x	x	x	x	x	328
750-961	INTERBUS Fieldbus connector with D-Sub female connector	x	x											x	334
750-962	INTERBUS Fieldbus connector with D-Sub male connector	x	x											x	335
750-963	CANopen Fieldbus connector with D-Sub male and female connectors													x	333
750-970	PROFIBUS Fieldbus connector with D-Sub female connector				x	x	x	x	x	x	x	x	x	x	Internet

[2)] Notice: The 750-626 filter module is absolutely necessary!

c UL us	c UL us	E175199, UL 508
ABS	ABS (American Bureau of Shipping)	03-HG374860/2-PDA; 05-ES578983-X
BV	BV (Bureau Veritas)	13453/B0 BV
DNV	DNV (Det Norske Veritas)	A-10191; Cl. B
GL	GL (Germanischer Lloyd)	26 624-05; 26 898-05 HH; 59 627-08 HH; Cat. A, B, C, D (EMC 1)
KR	KR (Korean Register of Shipping)	HMB05880-EL004 ff
LR	LR (Lloyd's Register)	02/20026 (E2); Env. 1, 2, 3, 4
NKK	NKK (Nippon Kaiji Kyokai)	TA06190M
PRS	Polski Rejestr Statkow	TE/1720/880590/08
RINA	RINA (Registro Italiano Navale)	ELE153207CS 001
Ex	c UL us	E198726, ANSI/ISA 12.12.01
	DEMKO, PTB	08ATEX142851 X; IECEx PTB 07.0064 X
	TÜV (Ex i)	07ATEX554086 X

Digital Input Modules

Item No.	Item Description	Ex			Ship Approvals									UL	Page
750-400	2DI 24V DC, 3.0ms		x	x*	x	x	x	x	x	x	x	x	x	x*	133
750-401	2DI 24V DC, 0.2ms		x	x*	x	x	x	x	x	x	x	x	x	x*	133
750-402	4DI 24V DC, 3.0ms		x	x*	x	x	x	x	x	x	x	x	x	x*	136
750-403	4DI 24V DC, 0.2ms		x	x*	x	x	x	x	x	x	x	x	x	x*	136
750-405	2DI 230V AC		x	x*	x	x	x	x	x	x	x	x	x	x*	156
750-406	2DI 120V AC		x	x*	x	x	x	x	x	x	x	x	x	x*	154
750-408	4DI 24V DC, 3.0ms, low-side switching		x	x*										x*	139
750-409	4DI 24V DC, 0.2ms, low-side switching		x	x*										x*	139
750-410	2DI 24V DC, 3.0ms, proximity switching		x	x*	x	x	x	x	x	x	x	x	x	x*	134
750-411	2DI 24V DC, 0.2ms, proximity switching		x	x*	x	x	x	x	x	x	x	x	x	x*	134
750-412	2DI 48V DC, 3.0ms		x	x*										x*	151
750-414	4DI 5V DC, 0.2ms			x										x	131
750-415	4DI 24V AC/DC 20ms		x	x*	x	x	x	x	x	x	x	x	x	x*	148
750-418	2DI 24V DC, 3.0ms, diagn., acknol.		x	x*	x	x	x	x	x	x	x	x	x	x*	135
750-419	2DI 24V DC, 0.2ms, diagn.			x		x	x	x	x	x	x	x	x	x	on request
750-421	2DI 24V DC, diagn.		x	x*	x	x	x	x	x	x	x	x	x	x*	135
750-422	2DI 24V DC, pulse extension		x	x*										x*	138
750-423	4DI 24V AC/DC, 50ms, power contacts		x	x*	x	x				x	x			x*	149
750-424	2DI 24V DC, intruder detection		x	x*	x	x	x	x	x	x	x	x	x	x*	158
750-425	2DI NAMUR		x	x*						x				x*	157
750-427	2DI 110V DC		x	x*										x*	153
750-428	4DI 42V AC/DC, 20ms		x	x*										x*	150
750-430	8DI 24V DC, 3.0ms		x	x*	x	x	x	x	x	x	x	x	x	x*	140
750-431	8DI 24V DC, 0.2ms		x	x*	x	x	x	x	x	x	x	x	x	x*	140
750-432	4DI 24V DC		x	x*	x	x	x	x	x	x	x	x	x	x*	137
750-433	4DI 24V DC		x	x*	x	x	x	x	x	x	x	x	x	x*	137
750-435	1DI NAMUR Exi	x[3)]	x	x	x	x	x	x	x	x	x	x	x	x	268
750-436	8DI 24V DC, 3.0ms		x	x*	x	x	x	x	x	x	x	x	x	x*	141
750-437	8DI 24V DC, 0.2ms		x	x*	x	x	x	x	x	x	x	x	x	x*	141
750-438	2DI NAMUR Exi	x[3)]	x	x										x	270
750-1400	16DI 24V DC 3.0ms, high-side switch., ribbon cable													x	144
750-1402	16DI 24V DC 3.0ms, low-side switch., ribbon cable													x	146
753-434	8DI 5/12V DC		x											x	132
753-440	4DI 120/230V AC		x											x	155

* UL 508 and ANSI/ISA 12.12.01 approvals is also granted for the 753 Series pluggable I/O modules

[3)] Only use this module in connection with the 24VDC Ex i supply module (note the power supply instructions on page 23!)

c UL us	c UL us	E175199, UL 508
ABS	**ABS (American Bureau of Shipping)**	03-HG374860/2-PDA; 05-ES578983-X
BV	**BV (Bureau Veritas)**	13453/B0 BV
DNV	**DNV (Det Norske Veritas)**	A-10191; Cl. B
GL	**GL (Germanischer Lloyd)**	26 624-05; 26 898-05 HH; 59 627-08 HH; Cat. A, B, C, D (EMC 1)
KR	**KR (Korean Register of Shipping)**	HMB05880-EL004 ff
LR	**LR (Lloyd's Register)**	02/20026 (E2); Env. 1, 2, 3, 4
NKK	**NKK (Nippon Kaiji Kyokai)**	TA06190M
PRS	**Polski Rejestr Statkow**	TE/1720/880590/08
RINA	**RINA (Registro Italiano Navale)**	ELE153207CS 001
Ex	c UL us	E198726, ANSI/ISA 12.12.01
	DEMKO, PTB	08ATEX142851 X; IECEx PTB 07.0064 X
	TÜV (Ex i)	07ATEX554086 X

Digital Output Modules

Item No.	Item Description	Ex			Ship Approvals								UL	Page
750-501	2DO 24V DC, 0.5A		x	x*	x	x	x	x	x	x	x	x	x*	163
750-502	2DO 24V DC, 2.0A		x	x*	x	x	x	x	x	x	x	x	x*	164
750-504	4DO 24V DC, 0.5A		x	x*	x	x	x	x	x	x	x	x	x*	167
750-506	2DO 24V DC, 0.5A, diagn.		x	x*									x*	165
750-508	2DO 24V DC, 2.0A, diagn.		x	x*	x	x		x		x			x*	166
750-509	2DO 230V AC, 0.3A, SSR		x	x*	x	x	x	x	x	x	x	x	x*	181
750-512	2DO 230V AC, 2.0A, rel. 2 NO		x	x*	x	x	x	x	x	x	x	x	x*	185
750-513	2DO 230V AC, 2.0A, rel. 2 NO, pot. free		x	x*	x	x	x	x	x	x	x	x	x*	186
750-514	2DO 125V AC, 0.5A, rel. 2 CO, pot. free				x	x				x			x*	183
750-516	4DO 24V DC, 0.5A, low side switch		x	x*	x	x	x	x	x	x	x	x	x*	169
750-517	2DO 230V AC, 1.0A, rel. 2 CO, pot. free				x	x	x	x	x	x	x	x	x*	184
750-519	4DO 5V DC, 20mA			x									x	161
750-522	2DO 230V AC, 3.0A, 30s, SSR		x	x									x	182
750-523	1DO 230V AC, 16A, rel. 1a, pot. free				x	x				x			x	187
750-524	1DO Semi Powerswitch 400V AC, 10A												x	on request
750-530	8DO 24V DC, 0.5A		x	x*	x	x	x	x	x	x	x	x	x*	171
750-531	4DO 24V DC, 0.5A		x	x*	x	x	x	x	x	x	x	x	x*	168
750-532	4DO 24V DC, 0.5A, diagn.		x	x									x	170
750-535	2DO 24V DC, Ex i	x[3)]	x	x	x	x	x	x	x	x	x	x	x	272
750-536	8DO 24V DC, 0.5A		x	x	x	x	x	x	x	x	x	x	x	172
750-537	8DO 24V DC, 0.5A, diagn.		x	x	x	x	x	x	x	x	x	x	x	173
750-1500	16DO 24V DC 0.5A, high-side switch., ribbon cable												x	176
750-1501	16DO 24V DC 3.0ms, low-side switch., ribbon cable												x	178
750-1502	8DI 8DO 24V DC 0.5A, high-side switch., ribbon cable												x	174
753-534	8DO 5/12V DC		x										x	162
753-540	4DO 120/230V AC		x										x	180

* UL 508 and ANSI/ISA 12.12.01 approvals is also granted for the 753 Series pluggable I/O modules

[3)] Only use this module in connection with the 24VDC Ex i supply module (note the power supply instructions on page 23!)

c UL us	c UL us	E175199, UL 508
ABS	ABS (American Bureau of Shipping)	03-HG374860/2-PDA; 05-ES578983-X
BV	BV (Bureau Veritas)	13453/B0 BV
DNV	DNV (Det Norske Veritas)	A-10191; Cl. B
GL	GL (Germanischer Lloyd)	26 624-05; 26 898-05 HH; 59 627-08 HH; Cat. A, B, C, D (EMC 1)
KR	KR (Korean Register of Shipping)	HMB05880-EL004 ff
LR	LR (Lloyd's Register)	02/20026 (E2); Env. 1, 2, 3, 4
NKK	NKK (Nippon Kaiji Kyokai)	TA06190M
PRS	Polski Rejestr Statkow	TE/1720/880590/08
RINA	RINA (Registro Italiano Navale)	ELE153207CS 001
Ex	c UL us	E198726, ANSI/ISA 12.12.01
	DEMKO, PTB	08ATEX142851 X; IECEx PTB 07.0064 X
	TÜV (Ex i)	07ATEX554086 X

	Item No.	Item Description	Ex			Ship Approvals								UL	Page
Analog Input Modules	**750-452**	2AI 0 – 20mA, differential input		x	x*	x	x	x	x	x	x	x	x	x*	189
	750-453	4AI 0– 20mA, single ended		x	x*	x	x	x	x	x	x	x	x	x*	193
	750-454	2AI 4 – 20mA, differential input		x	x*	x	x	x	x	x	x	x	x	x*	189
	750-455	4AI 4 – 20mA, single ended		x	x*	x	x	x	x	x	x	x	x	x*	193
	750-456	2AI ± 10V DC		x	x*	x	x	x	x	x	x	x	x	x*	203
	750-457	4AI ± 10V DC, single ended		x	x*	x	x	x	x	x	x	x	x	x*	202
	750-459	4AI 0-10V DC, single ended		x	x*	x	x	x	x	x	x	x	x	x*	202
	750-460	4AI Resistance Temperature Device (RTD)												x	207
	750-461	2AI Resistance Temperature Device (RTD)		x	x*	x	x	x	x	x	x	x	x	x*	206
	750-465	2AI 0 – 20mA, single ended		x	x*									x*	190
	750-466	2AI 4 – 20mA, single ended		x	x*									x*	190
	750-467	2AI 0 – 10V DC, single ended		x	x*									x*	199
	750-468	4AI 0 – 10V DC, single ended		x	x	x	x	x	x	x	x	x	x	x	200
	750-469	2AI thermocouple (TC) diagn.		x	x*	x	x	x	x	x	x	x	x	x*	209
	750-470	2AI 0 – 20mA, 16 Bit, single ended, S.C. Protec.		x	x	x	x	x	x	x	x	x	x	x	191
	750-472	2AI 0 – 20mA, 16 Bit, single ended		x	x*	x	x	x	x	x	x	x	x	x*	192
	750-473	2AI 4 – 20mA, 16 Bit, single ended, S.C. Protec.		x	x	x	x	x	x	x	x	x	x	x	191
	750-474	2AI 4 – 20mA, 16 Bit,single ended		x	x*	x	x	x	x	x	x	x	x	x*	192
	750-475	2AI 0– 1A AC/DC, differential input		x	x*									x*	197
	750-476	2AI ±10V DC, 16 Bit, single ended		x	x*	x	x	x	x	x	x	x	x	x*	201
	750-477	2AI 0 – 10V AC/DC, differential input		x	x*									x*	198
	750-478	2AI 0 – 10V DC, 16 Bit, single ended		x	x*	x	x	x	x	x	x	x	x	x*	201
	750-479	2AI ± 10V DC, differential measurement input		x	x*	x	x	x	x	x	x	x	x	x*	204
	750-480	2AI 0 – 20mA, differential measurement input		x	x*									x*	194
	750-481[4]	2AI RTD, Ex i	x[3]	x	x									x	278
	750-482	2AI 4 – 20 mA 12 Bit S.E. HART												x*	196
	750-483	2AI 0 – 30V DC, differential measurement input		x	x*	x	x	x	x	x	x	x	x	x*	205
	750-484	2AI 4 – 20 mA 12 Bit S.E. HART Ex i												x	276
	750-485	2AI 4 – 20mA, Ex i	x[3]	x	x	x	x	x	x	x	x	x	x	x	274
	750-492	2AI 4 – 20mA, differential measurement input		x	x*									x*	195
Analog Output Modules	**750-550**	2AO 0 – 10V DC		x	x*	x	x	x	x	x	x	x	x	x*	216
	750-552	2AO 0 – 20mA		x	x*	x	x	x	x	x	x	x	x	x*	213
	750-553	4AO 0 – 20mA		x	x	x	x	x	x	x	x	x	x	x	215
	750-554	2AO 4 – 20mA		x	x*	x	x	x	x	x	x	x	x	x*	213
	750-555	4AO 4 – 20mA		x	x	x	x	x	x	x	x	x	x	x	215
	750-556	2AO ±10V DC		x	x*	x	x	x	x	x	x	x	x	x*	216
	750-557	4AO ± 10V DC		x	x*	x	x	x	x	x	x	x	x	x*	218
	750-559	4AO 0-10V DC		x	x*	x	x	x	x	x	x	x	x	x*	218
	750-562	2AO 0/±10 V DC 16 Bit												x	217
	750-563	2AO 0/4-20 mA / 6-18 V DC 16 Bit												x	214
	750-585	2AO 0– 20mA, Ex i	x[3]	x	x	x	x	x	x	x	x	x	x	x	282

* cULus UL 508 and cULus ANSI/ISA 12.12.01 approvals is also granted for the 753 Series pluggable I/O modules

[3] Only use this module in connection with the 24VDC Ex i supply module (note the power supply instructions on page 23!)

[4] Version 750-481/003-000

c UL us	c UL us	E175199, UL 508
ABS	ABS (American Bureau of Shipping)	03-HG374860/2-PDA; 05-ES578983-X
	BV (Bureau Veritas)	13453/B0 BV
DNV	DNV (Det Norske Veritas)	A-10191; Cl. B
GL	GL (Germanischer Lloyd)	26 624-05; 26 898-05 HH; 59 627-08 HH; Cat. A, B, C, D (EMC 1)
KR	KR (Korean Register of Shipping)	HMB05880-EL004 ff
	LR (Lloyd's Register)	02/20026 (E2); Env. 1, 2, 3, 4
	NKK (Nippon Kaiji Kyokai)	TA06190M
	Polski Rejestr Statkow	TE/1720/880590/08
	RINA (Registro Italiano Navale)	ELE153207CS 001
Ex	c UL us	E198726, ANSI/ISA 12.12.01
	DEMKO, PTB	08ATEX142851 X; IECEx PTB 07.0064 X
	TÜV (Ex i)	07ATEX554086 X

Specialty Modules

Item No.	Item Description	Ex			Ship Approvals									UL	Page
750-404 7)	Up/down counter, 100kHz		x	x*	x	x	x	x	x	x	x	x	x	x*	221
750-511	2 DO, 24V DC, 0.1A, pulse width		x	x										x	223
750-630	SSI transmitter interface			x										x	224
750-631	Incremental encoder interface, 16 bits			x										x	225
750-635	Digital pulse interface		x	x*										x*	227
750-637	Incremental encoder interface, 32 bits		x	x							x			x	226
750-638	Up/down counter, 500kHz		x	x*										x*	222
750-640	RTC Module		x	x										x	239
750-641	DALI/DSI Master module		x	x							x			x	235
750-642	Radio receiver module		x	x										x	236
750-643	MP-Bus Master module		x											x	238
750-644	Bluetooth®/RF Transceiver													x	237
750-645	2AI/2DO VIB VRMS/SPM Multi													x	245
750-650	Serial interface RS-232 C		x	x*	x	x	x	x	x	x	x	x	x	x*	228
750-651	TTY interface			x	x	x	x	x	x	x	x	x	x	x	230
750-653	Serial interface RS-485		x	x*	x	x	x	x	x	x	x	x	x	x*	229
750-654	Data exchange module				x	x	x	x	x	x	x	x	x	x	231
750-655	AS-Interface Master		x	x		x				x				x	241
750-660	PROFIsafe 8 DI		x	x										x	259
750-665	PROFIsafe 4 FDO 0.5A; 4 FDI 24V DC		x	x										x	260
750-670	Stepper Controller RS-422/24V/20mA		x											x	246
750-671	Stepper Controller 24V/1.5A		x												247
753-646	KNX/EIB/TP1 module									x					234
753-662	8FDI 24V PROFIsafe V2													x	257
753-667	4FDI/4FDO 24V/2A PROFIsafe V2													x	258

System Modules

Item No.	Item Description	Ex			Ship Approvals									UL	Page
750-600	End module		x	x	x	x	x	x	x	x	x	x	x	x	299
750-601	Supply module 24V DC /fuse		x	x	$x^{5)}$	$x^{5)}$	$x^{5)}$	$x^{5)}$	$x^{5)}$	$x^{5)}$	$x^{5)}$	$x^{5)}$	$x^{5)}$	x	288
750-602	Supply module 24V DC		x	x	$x^{5)}$	$x^{5)}$	$x^{5)}$	$x^{5)}$	$x^{5)}$	$x^{5)}$	$x^{5)}$	$x^{5)}$	$x^{5)}$	x	287
750-603	Field side connection module		x	x*						$x^{5)}$				x*	295
750-604	Field side connection module		x	x*						$x^{5)}$				x*	296
750-609	Supply module 230V AC /fuse		x	x	x	x	x	x	x	x	x	x	x	x	288
750-610	Supply module 24V DC /fuse /diagn.		x	x	$x^{5)}$	$x^{5)}$	$x^{5)}$	$x^{5)}$	$x^{5)}$	$x^{5)}$	$x^{5)}$	$x^{5)}$	$x^{5)}$	x	289
750-611	Supply module 230V DC /fuse /diagn.		x	x	x	x	x	x	x	x	x	x	x	x	289
750-612	Supply module 0-230V AC/DC		x	x	$x^{6)}$	$x^{6)}$	$x^{6)}$	$x^{6)}$	$x^{6)}$	$x^{6)}$	$x^{6)}$	$x^{6)}$	$x^{6)}$	x	287
750-613	Internal system supply module 24V DC		x	x	$x^{2)}$	$x^{2)}$	$x^{2)}$	$x^{2)}$	$x^{2)}$	$x^{2)}$	$x^{2)}$	$x^{2)}$	$x^{2)}$	x	291
750-614	Field side connection module, 0 - 230V AC/DC		x	x*	x	x	x	x	x	x	x	x	x	x*	294
750-615	Supply module 120V AC /fuse		x	x										x	288
750-616	Separation module		x	x	x	x	x	x	x	x	x	x	x	x	298
750-621	Separation module with contacts		x	x										x	298
750-622	Binary spacer module with power supply		x	x										x	297
750-623	Supply module 24V/5-15V DC													x	290
750-624	Overvoltage protection, field side power supply		x	x	x	x	x	x	x	x	x	x	x	x	292
750-625	Supply module 24V DC Ex i	x	x	x	x	x	x	x	x	x	x	x	x	x	264
750-626	Filter module, system and field side power supply		x	x	x	x	x	x	x	x	x	x	x	x	293

* cULus UL 508 and Ex cULus ANSI/ISA 12.12.01 approvals is also granted for the 753 Series pluggable I/O modules
2) Notice: The 750-626 filter module is absolutely necessary! 5) Notice: The 750-624 filter module is absolutely necessary!
6) Notice: The 750-626 filter module is absolutely necessary for the supply of 24VDC!
7) Notice: The ship approvals are only valid for the 750-404/020-003 version!

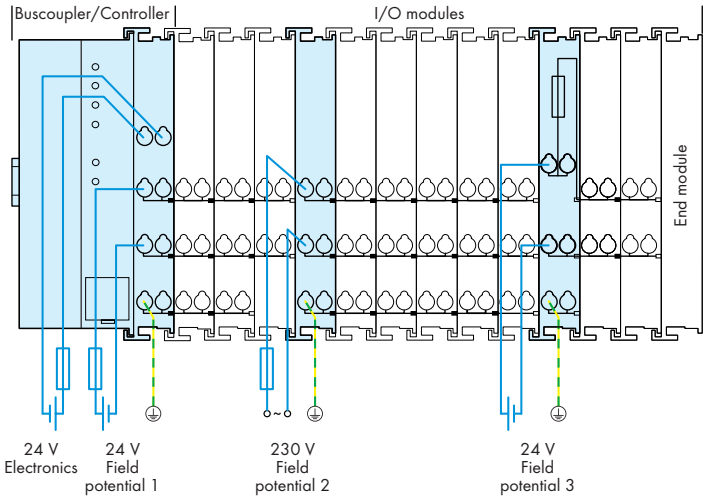
Voltage Supply

The bus coupler/controller has provisions for an electrically isolated supply to the internal electronics and the field side, which enables a separate supply of the sensors and actuators. The supply voltages are made automatically by snapping the individual I/O modules into the assembly. Furthermore, power supply modules with diagnostics allow for supply monitoring, so that an I/O node can be supplied in a flexible and user defined way. The power supply to the electronics is limited to a maximal possible value depending on the coupler/controller used. If the sum of the internal current consumption of all I/O modules exceed this value, an additional supply module, 750-613, has to be used. In the same way, the supply of the field power (via power contacts) must not exceed 10A. However, using different power supply modules allows for a change of voltage and/or power supply. Assembling groups of different voltage potentials (e.g. 24VDC, 230VAC) will also permit the use of Emergency Stops within a system.

Note:

Some I/O modules have no or only individual power contacts so that the transmission of potentials may be interrupted. If field power is necessary for the following I/O modules, a supply module has to be used (see data sheets).

Where unregulated power supplies are used to supply the electronics, a supporting capacitor should be used (200µF per 1 amp. of load current) (see also page 562). A back-up capacitor module is used to smoothe unstable 24VDC power supplies.

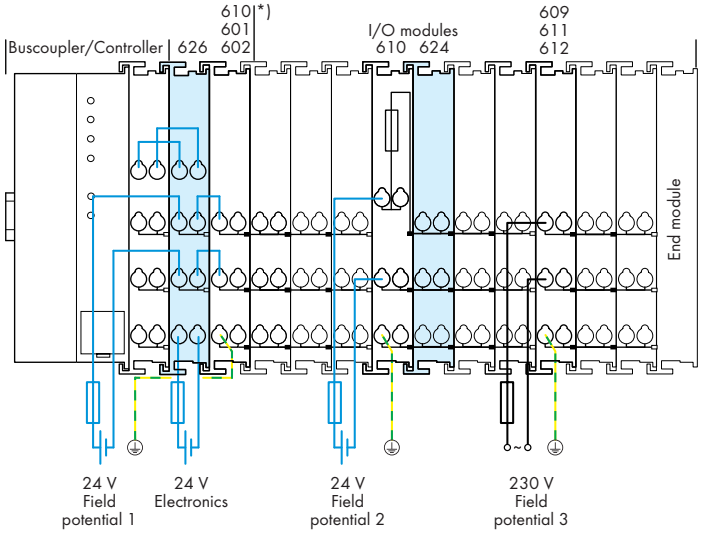


Additional voltage supply regulation for certified implementation in shipping industry or offshore/onshore applications

Some specific bus couplers/controllers and I/O modules of the WAGO-I/O-SYSTEM 750 are certified for the above mentioned application fields. To ensure a proper system operation, the standards of leading certification agencies must be observed.
For this purpose, the following power supply filter modules must be used:

750-624 24VDC field side power supply filter (surge) used to filter the 24VDC fieldside power supply of the corresponding power supply module

750-626 24VDC power supply filter (surge) used to filter the electronics and field side supply for buscoupler, controller and internal bus supply module (750-613)



*) Only required if the ground connection is necessary for the adjacent modules

Additional voltage supply regulation for the operation of intrinsically safe Ex i modules (750-435, -438, -481/003-000, -485, -535, -585)

Fig. I
When operating the intrinsically safe Ex i modules in connection with sensors/actuators operating in hazardous environments of Zones 0 and 1, the supply module 24VDC Ex i (750-625) must be used to supply the I/O modules.

If further 24VDC Ex i supply modules are required, four separation modules (750-616) must be placed between the intrinsically safe sections

Fig. II
The operation of intrinsically safe Ex i modules according to shipbuilding certification standards requires the use of 750-624 or 750-626 Filter Modules! If, due to load conditions, supplying the Ex i segment is no longer possible via the supply module (potential 1), an additional power supply is required. The additional supply module (e.g., 750-610) must be connected together with a 750-624 Filter Module upstream of the 750-625 Ex i Supply Module. Electrical connection between the additional supply module and the Ex i power supply is also provided via wire jumpers between filter module and Ex i supply module (see Fig. II).

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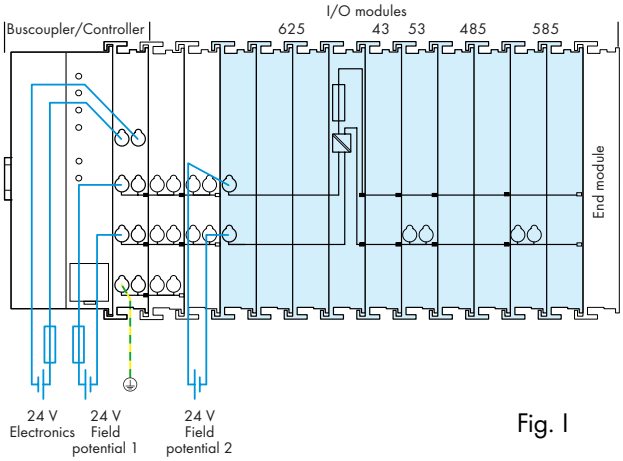


Fig. I

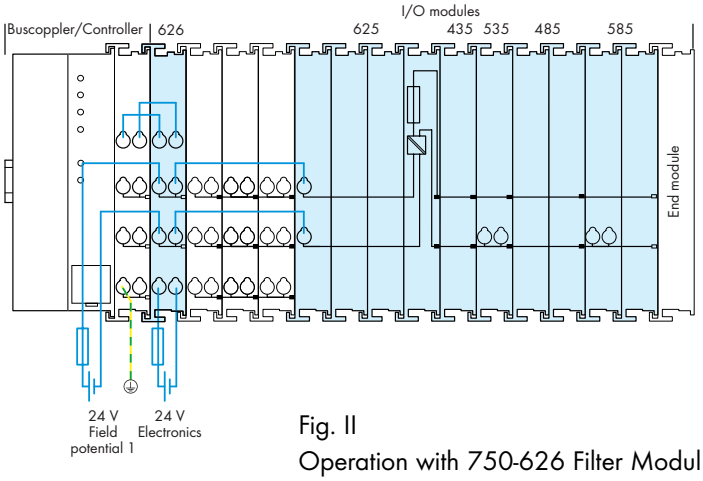


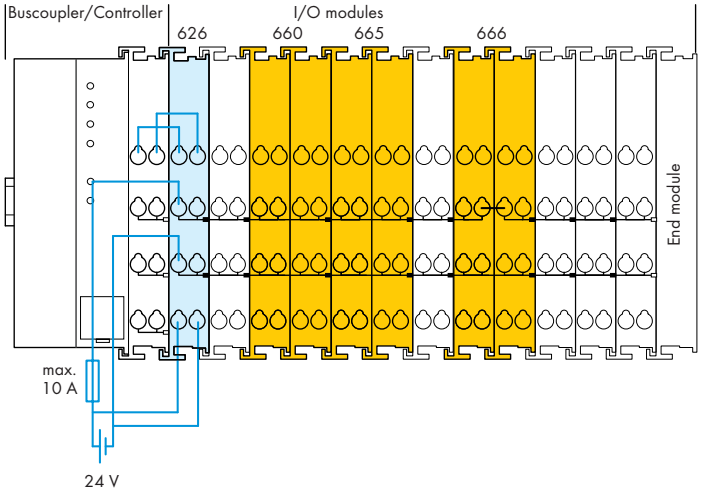
Fig. II
Operation with 750-626 Filter Modul

Power supply concept for the operation of digital safety modules for PROFIsafe

When using PROFIsafe modules, only power supplies with protective extralow voltage (PELV/SELV) shall be used for the 24VDC power supply. This is also valid for the system supply terminations of the coupler/controller. Furthermore, the supply voltage must be performed via a 750-626 Series filter module equipped with surge suppression.

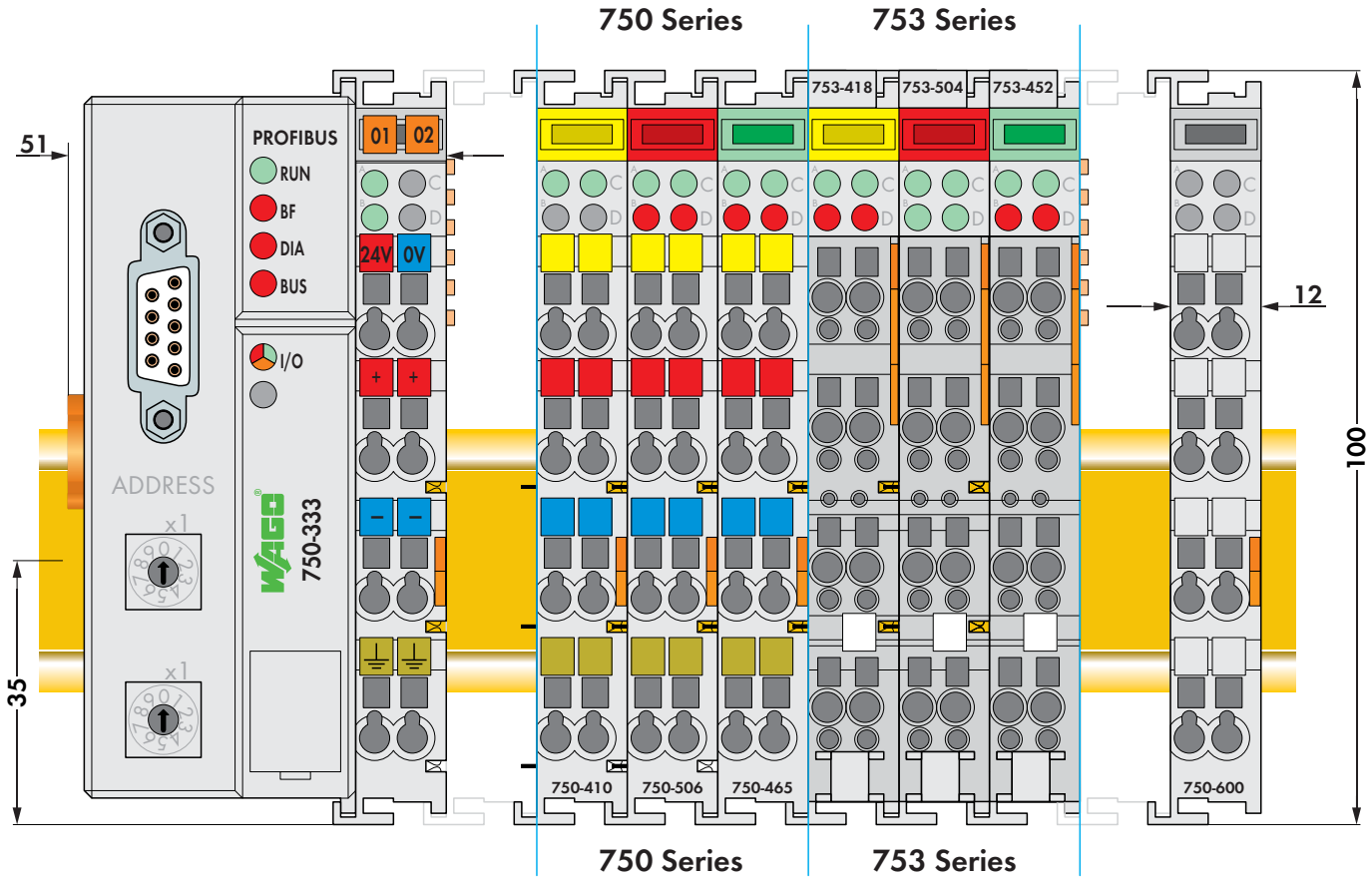
A node containing PROFIsafe components shall only be supplied using a filtered voltage. Make sure that the cable length between the filter module with surge suppression and the node is kept as short as possible.

The PROFIsafe modules 750-660/000-001, 750-665/000-001 and 750-666/000-001 can be supplied via the power jumper contacts from the 24 V DC field supply of the node, if the power required by the I/O modules via the power jumper contacts of the filter module 750-626 is smaller than 10 A. If the power required exceeds 10A, an additional power supply must be provided. This can be realized using the supply modules 750-601 or -610 (with fuse max. 6.3A).



I/O System Module Housings, Technical Data

750 and 753 Series



The electronics of the WAGO buscouplers are integrated in a housing with a width of approximately 51mm.

The electronics of the WAGO I/O System modules are designed into housings ranging from 12mm up to 48mm in width, and are known as 750 and 753 Series. 753 Series modules offer the added convenience of pluggable field wiring. 750 and 753 Series modules can co-exist in the same WAGO-I/O-SYSTEM node, and are 100% compatible. Both series offer internal power jumper contacts rated at 10 amps (up to 3 per module), extending field device power to adjacent modules.

Notice:

Depending on the I/O function, all modules do not have the same number of power jumper contacts. Power jumper contacts of adjacent I/O modules must be compatible (i.e. blade contacts must have corresponding spring contacts). Please review the circuit diagrams of the individual modules. An additional power supply module may be necessary.

Note: A bus end module (750-600) is always required at the end of each node and is placed at the end of each node at the end opposite the buscoupler.

Mechanic	
Material	polycarbonate, polyamide 6.6
Dimensions W x H* x L:	
* from upper-edge of DIN rail	
- Coupler/Controller (Standard)	- 51 mm x 65 mm x 100 mm
- Coupler/Controller (ECO)	- 50 mm x 65 mm x 100 mm
- I/O module, single	- 12 mm x 64 mm x 100 mm
- I/O module, double	- 24 mm x 64 mm x 100 mm
- I/O module, fourfold	- 48 mm x 64 mm x 100 mm
Installation	on DIN 35 rail with interlock
Modular by	double featherkey-dovetail
Mounting position	any position
Marking	Standard markers and 8 x 47 mm markers for group marker carriers

Connection	
Connection type	CAGE CLAMP®
Wire range	0.08 mm² ... 2.5 mm², AWG 28 ... 14
Stripped length	8 ... 9 mm,
	9 ... 10 mm for components with pluggable wiring (753-xxx)

Contacts	
Power jumper contacts	blade/spring contact, self-cleaning
Current Imax	10 A
Voltage drop (I=10 A)	< 1 V/64 modules
Data contacts	slide contact, hard gold plated 1.5 µ, self-cleaning

General Environmental Conditions	
Operating temperature	0 °C ... +55 °C,
for components with extended temperature range (750-xxx/025-xxx)	-20 °C ... +60 °C
Storage temperature	-20 °C ... +85 °C
Relative air humidity	95 % without condensation
Resistance to harmful substances	acc. to IEC 60068-2-42 and IEC 60068-2-43
Maximum pollutant concentration at relative humidity < 75%	SO2 ≤ 25 ppm
	H2S ≤ 10 ppm
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Pollution degree II	acc. to IEC 61131-2
Air and creepage distance	acc. to IEC 60664-1
Degree of protection	IP20
Length of entire node	≤ 831 mm

Without taking protective measures the WAGO-I/O-SYSTEM 750 and 753 must not be used:
– in places with unfavorable conditions, for example with dust, corrosive vapors or gases
– in places with high ionizing radiation

Modular I/O System Overview

Fieldbus Coupler / Prog. Fieldbus Controller / Industrial Compact PC

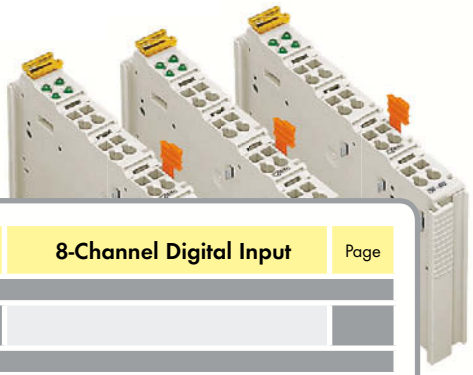
Fieldbus System	Fieldbus Coupler	Page	Prog. Fieldbus Controller	Page	Industrial Compact PC	Page
PROFINET	**750-340** Fieldbus Coupler, 100 Mbits	34				
	750-370 Fieldbus Coupler, 2-Port, 100 Mbits	36				
					PROFIBUS Master	
PROFIBUS	**750-303** DP/FMS Fieldbus Coupler, 12 Mbaud	38	**750-833** Prog. Fieldbus Controller DP /V1	46	**758-870/000-311** I/O-IPC-G2 Linux 2.6	48
	750-333 DP/V1 Fieldbus Coupler, 12 Mbaud	40			**758-870/000-111** I/O-IPC-G2 Linux 2.6 CoDeSys Visu	48
	750-343 DP ECO Fieldbus Coupler, 12 Mbaud	42			**758-874/000-011** I/O-IPC-C6 Linux 2.6	50
	750-331 Fieldbus Coupler with LWL-plug 1.5 Mbaud	44			**758-874/000-111** I/O-IPC-C6 Linux 2.6 CoDeSys Visu	50
					758-875/000-011 I/O-IPC-C10 E Linux 2.6	52
					758-875/000-111 I/O-IPC-C10 E Linux 2.6 CoDeSys Visu	52
					758-876/000-011 I/O-IPC-P14 Linux 2.6	54
					758-876/000-111 I/O-IPC-P14 Linux 2.6 CoDeSys Visu	54
					PROFIBUS Slave	
					758-870/000-314 I/O-IPC-G2 Linux 2.6	48
					758-870/000-114 I/O-IPC-G2 Linux 2.6 CoDeSys Visu	48
EtherNet/IP MODBUS/TCP	**750-341** Fieldbus Coupler, 100 Mbits	56	**750-841** Prog. Fieldbus Controller, 100 Mbits	62		
	750-352/020-000 Fieldbus Coupler, 100 Mbits	60	**750-871** Prog. Fieldbus Controller, 2-port	64		
			750-873 Prog. Fieldbus Controller, RS-232	66		
MODBUS/TCP	**750-342** Fieldbus Coupler, 10 Mbits	58	**750-842** Prog. Fieldbus Controller, 10 Mbits	68	**758-870/000-310** I/O-IPC-G2 Linux 2.6	48
			750-843 Prog. Fieldbus Controller, 10 Mbits	70	**758-870/000-110** I/O-IPC-G2 Linux 2.6 CoDeSys Visu	48
			750-860 Prog. Fieldbus Controller, Linux	94	**758-874/000-010** I/O-IPC-C6 Linux 2.6	50
					758-874/000-110 I/O-IPC-C6 Linux 2.6 CoDeSys Visu	50
					758-875/000-010 I/O-IPC-C10 E Linux 2.6	52
					758-875/000-110 I/O-IPC-C10 E Linux 2.6 CoDeSys Visu	52
					758-876/000-010 I/O-IPC-P14 Linux 2.6	54
					758-876/000-110 I/O-IPC-P14 Linux 2.6 CoDeSys Visu	54
DeviceNet	**750-306** Fieldbus Coupler	72	**750-806** Prog. Fieldbus Controller	76		
	750-346 ECO Fieldbus Coupler	74				
CANopen	**750-307** Fieldbus Coupler	78	**750-837** Prog. Fieldbus Controllerr	88	**758-870/000-312** I/O-IPC-G2 Linux 2.6	48
	750-337 Fieldbus Coupler	80	**750-838** Prog. Fieldbus Controller, D-Sub	90	**758-870/000-112** I/O-IPC-G2 Linux 2.6 CoDeSys Visu	48
	750-338 Fieldbus Coupler, D-Sub	82			**758-874/000-012** I/O-IPC-C6 Linux 2.6	50
	750-347 ECO Fieldbus Coupler	84			**758-874/000-112** I/O-IPC-C6 Linux 2.6 CoDeSys Visu	50
	750-348 ECO Fieldbus Coupler, D-Sub	86			**758-875/000-012** I/O-IPC-C10 E Linux 2.6	52
					758-875/000-112 I/O-IPC-C10 E Linux 2.6 CoDeSys Visu	52
					758-876/000-012 I/O-IPC-P14 Linux 2.6	54
					758-876/000-112 I/O-IPC-P14 Linux 2.6 CoDeSys Visu	54



Fieldbus System	Fieldbus Coupler	Page	Prog. Fieldbus Controller	Page	Industrial Compact PC	Page
SERCOS interface	**750-351** Fieldbus Coupler, 2-port, 100 Mbits	92				
MODBUS	**750-312**, Fieldbus Coupler RS-485 (150 ... 19200 Bd)	96	**750-812**, Prog. Fieldbus Controller RS-485 (150 ... 19200 Bd)	98		
	750-314, Fieldbus Coupler RS-232 (150 ... 19200 Bd)	96	**750-814**, Prog. Fieldbus Controller RS-232 (150 ... 19200 Bd)	98		
	750-315, Fieldbus Coupler RS-485 (1.2 ... 115.2 kbd)	96	**750-815**, Prog. Fieldbus Controller RS-485 (1,2 ... 115,2 kbd)	98		
	750-316, Fieldbus Coupler RS-232 (1.2 ... 115.2 kbd)	96	**750-816**, Prog. Fieldbus Controller RS-232 (1,2 ... 115,2 kbd)	98		
INTERBUS	**750-304** Fieldbus Coupler	100	**750-804** Prog. Fieldbus Controller	108		
	750-344 ECO Fieldbus Coupler, 500 kbaud	102				
	750-345 ECO Fieldbus Coupler, 2 Mbaud	104				
	750-334 Fieldbus Coupler with LWL-plug	106				
CC-Link	**750-310** Fieldbus Coupler	110				
CAL	**750-305** Fieldbus Coupler	112				
IEC 60870-5			**750-872** Prog. Telecontrol Controller	114		
II/O-LIGHTBUS	**750-300** Fieldbus Coupler	116				
	750-320 Fieldbus Coupler	118				
KNX			**750-849** Prog. KNX IP Controller	120		
BACnet®			**750-830** Prog. Fieldbus Controller	122		
LONWORKS	**750-319** Fieldbus Coupler	124	**750-819** Prog. Fieldbus Controller	126		
	750-319/004-000 Fieldbus Coupler	128				

Modular I/O System Overview

Digital Inputs



Function	2-Channel Digital Input	Page	4-Channel Digital Input	Page	8-Channel Digital Input	Page
5 V DC			**750-414** 0.2 ms, high-side switch.	131		
5/12 V DC					**753-434** (5 ... 14 V DC) 0.2 ms, high-side switch.	132
24 V DC	**750-400 / 753-400** 3.0 ms, high-side switch.	133	**750-402 / 753-402** 3.0 ms, high-side switch.	136	**750-430 / 753-430** 3.0 ms, high-side switch.	140
	750-401 / 753-401 0.2 ms, high-side switch.	133	**750-403 / 753-403** 0.2 ms, high-side switch.	136	**750-431 / 753-431** 0.2 ms, high-side switch.	140
	750-410 / 753-410 3.0 ms, high-side switch., proximity switch	134	**750-432 / 753-432** 3.0 ms, high-side switch.	137	**750-436 / 753-436** 3.0 ms, low-side switch.	141
	750-411 / 753-411 0.2 ms, high-side switch., proximity switch	134	**750-433 / 753-433** 0.2 ms, high-side switch.	137	**750-437 / 753-437** 0.2 ms, low-side switch.	141
	750-418 / 753-418 3.0 ms, high-side switch., diagnostics, acknol.	135	**750-422 / 753-422** Pulse extension, 10 ms	138	**8-Channel Digital Input/Output**	
	750-421 / 753-421 3.0 ms, high-side switch., diagnostics	135	**750-408 / 753-408** 3.0 ms, low-side switch.	139	**750-1502** 0.5 A, high-side switch., Ribbon cable	142
			750-409 / 753-409 0.2 ms, low-side switch.	139	**750-1506** 0.5 A, high-side switch.	143
	750-425 / 753-425, NAMUR Proximity switch acc. to DIN EN 50227	157			**16-Channel Digital Input**	
	750-424 / 753-424 Intruder detection	158			**750-1400** 3.0 ms, high-side switch., Ribbon cable	144
					750-1405 3.0 ms, high-side switch.	145
					750-1402 3.0 ms, low-side switch., Ribbon cable	146
					750-1407 3.0 ms, low-side switch.	147
24 V AC/DC			**750-415 / 753-415** 20 ms	148		
			750-423 / 753-423 50 ms, power jumper contacts	149		
42 V AC/DC			**750-428 / 753-428** 20 ms	150		
48 V DC	**750-412 / 753-412** 3.0 ms, high-side switch.	151				
60 V DC	**753-429** 3.0 ms, high-side switch.	152				
110 V DC	**750-427 / 753-427** 3.0 ms, high-side switch. or neg. switch	153				
120 V AC	**750-406 / 753-406** 10 ms, high-side switch.	154				
120/230 V AC			**753-440** (120 ... 230 V AC) 10 ms, high-side switch.	155		
230 V AC	**750-405 / 753-405** 10 ms, high-side switch.	156				
					8-Channel Digital Input	
PROFIsafe Modules			**750-661/000-002** ; **753-661/000-002** PROFIsafe V2, 4 FDI 24 V	256	**750-662/000-002 ; 753-662/000-002** PROFIsafe V2, 8 FDI 24 V	257
			750-667/000-002 ; **753-667/000-002** PROFIsafe V2, 4 FDI/4 FDO 24 V/2 A	258	**750-660/000-001**, PROFIsafe, 8 FDI 24 V	259
			750-665/000-001, PROFIsafe, 4 FDO 0.5 A, 4 FDI 24 V	260		
Ex i Modules	**750-438, NAMUR, Ex i** Proximity switch acc. to DIN EN 50227	270				
	1-Channel Digital Input					
	750-435, NAMUR, Ex i Proximity switch acc. to DIN EN 50227	268				

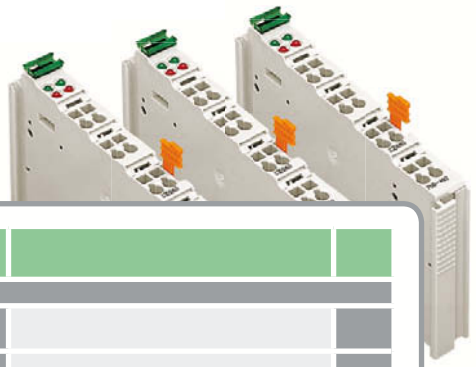
Modular I/O System Overview

Digital Outputs

Function	2-Channel Digital Output	Page	4-Channel Digital Output	Page	8-Channel Digital Output	Page
5 V DC			**750-519** High-side switch.	161		
5/12 V DC					**753-534** (5 ... 14 V DC) 1 A, short-circuit protec., high-side switch.	162
24 V DC	**750-501 / 753-501** 0.5 A, short-circuit protec., high-side switch.	163	**750-504 / 753-504** 0.5 A, short-circuit protec., high-side switch.	167	**750-530 / 753-530** 0.5 A, short-circuit protec., high-side switch.	171
	750-502 / 753-502 2.0 A, short-circuit protec., high-side switch.	164	**750-531 / 753-531** (2-conductor) 0.5 A, short-circuit protec., high-side switch.	168	**750-536 / 753-536** 0.5 A, short-circuit protec., low-side switch.	172
	750-506 / 753-506 0.5 A with diagnostics, Short-circuit protec., high-side switch.	165	**750-516 / 753-516** Short-circuit protec., low-side switch.	169	**750-537** 0.5 A mit Diagnose short-circuit protec., high-side switch.	173
	750-508 / 753-508 2.0 A with diagnostics, Short-circuit protec., high-side switch.	166	**750-532 / 753-532** (2-conductor) 0.5 A with diagnostics, short-circuit protec., high-side switch.	170	**8-Channel Digital Input/Output**	
					750-1502 0.5 A, high-side switch., Ribbon cable	174
					750-1506 0.5 A, high-side switch.	175
					16-Channel Digital Output	
					750-1500 0.5 A, high-side switch., Ribbon cable	176
					750-1504 0.5 A, high-side switch.	177
					750-1501 0.5 A, low-side switch., Ribbon cable	178
					750-1505 0.5 A, low-side switch.	179
120/230 V AC			**753-540** (AC 120 ... 230 V) 0.25 A, high-side switch.	180		
230 V AC/DC	**750-509 / 753-509** 0.3 A, solid state relay	181				
	750-522 0.5 A, solid state relay (3 A < 30 ms)	182				
Relay Modules	**750-514 / 753-514** (2 changeover contacts) Potential free, 125 V AC, 0.5 A	183				
	750-517 / 753-517 (2 changeover contacts) Potential free, 230 V AC, 1 A	184				
	750-512 / 753-512 (2 make contacts) Non-floating, 230 V AC, 2 A	185				
	750-513 / 753-513 (2 make contacts) Potential free, 230 V AC, 2 A	186				
	1-Channel Digital Output					
	750-523 (Relay with manual operation) Potential free, 1 make contact, 230 V AC, 16 A	187				
PROFIsafe Modules			**750-667/000-002** ; **753-667/000-002** PROFIsafe V2, 4 FDI/4 FDO 24 V/2 A	258		
			750-665/000-001, PROFIsafe, 4 FDO 0.5 A, 4 FDI 24 V	260		
Ex i Modules	**750-535, Ex i** Short-circuit protec., high-side switch.	272				

Modular I/O System Overview

Analog Inputs



Function	2-Channel Analog Input	Page	4-Channel Analog Input	Page
0 – 20 mA	**750-452 / 753-452** Differential inputs	189	**750-453 / 753-453** Single-ended (S.E.)	193
	750-465 / 753-465 Single-ended (S.E.)	190		
	750-470 Single-ended (S.E.), short-circuit protec.	191		
	750-472 / 753-472 Single-ended (S.E.), 16 bits	192		
	750-480 / 753-480 Differential measurement inputs	194		
4 – 20 mA	**750-454 / 753-454** Differential inputs	189	**750-455 / 753-455** Single-ended (S.E.)	193
	750-466 / 753-466 Single-ended (S.E.)	190		
	750-473 Single-ended (S.E.), short-circuit protec.	191		
	750-474 / 753-474 Single-ended (S.E.), 16 bits	192		
	750-492 / 753-492 Differential measurement inputs	195		
	750-482 / 753-482 Single-ended (S.E.), 16 bits, HART	196		
0 – 1 A	**750-475 / 753-475** Differential inputs	197		
0 – 10 V	**750-477 / 753-477** Differential inputs	198	**750-468** Single-ended (S.E.)	200
	750-467 / 753-467 Single-ended (S.E.)	199	**750-459 / 753-459** Single-ended (S.E.)	202
	750-478 / 753-478 Single-ended (S.E.), 16 bits	201		
± 10 V	**750-456 / 753-456** Differential inputs	203	**750-457 / 753-457** Single-ended (S.E.)	202
	750-479 / 753-479 Differential measurement inputs	204		
	750-476 / 753-476 Single-ended (S.E.), 16 bits	201		
0 – 30 V	**750-483 / 753-483** Differential measurement inputs	205		
Modules for RTDs	**750-461 / 753-461** PT100 / RTD / NTC 20kΩ	206	**750-460** PT100 / RTD	207
			750-464 NTC, Configurable	208
Thermocouples	**750-469 / 753-469** Sensor types: J, K, B, E, N, R, S, T, U, L	209		
Analog Special Functions	**750-493** 3-Phase Power Measurement Module	211		
	1-Channel Analog Input			
	750-491 Resistor Bridges (Strain Gauge) (DMS)	210		
Ex i Modules	**750-485, Ex i** 4–20 mA, single-ended (S.E.)	274		
	750-484, Ex i 4-20 mA, single-ended (S.E.), HART	276		
	750-481/003-000, Ex i PT100 / RTD	278		
	750-487/003-000, Ex i TC	280		

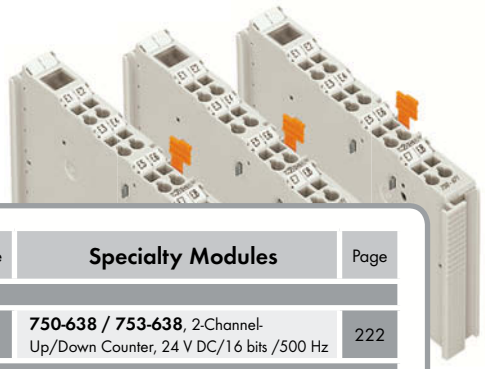
Modular I/O System Overview

Analog Outputs

Function	2-Channel Analog Output	Page	4-Channel Analog Output	Page		
0 – 20 mA	**750-552 / 753-552**	213	**750-553**	215		
4 – 20 mA	**750-554 / 753-554**	213	**750-555**	215		
0/4 – 20 mA	**750-563**	214				
0 – 10 V	**750-550 / 753-550**	216	**750-559 / 753-559**	218		
	750-560 10 bits, 100 mW, 24 V	219				
± 10 V	**750-556 / 753-556**	216	**750-557 / 753-557**	218		
0 V/± 10 V	**750-562**	217				
Ex i Modules	**750-585, Ex i** 0–20 mA	282				

Modular I/O System Overview

Specialty Modules



Function	Specialty Modules	Page	Specialty Modules	Page
Counter Modules	**750-404 / 753-404** Up/Down Counter, 24 V DC, 100 kHz	221	**750-638 / 753-638**, 2-Channel-Up/Down Counter, 24 V DC/16 bits /500 Hz	222
Pulse Width Module	**750-511**, 2-Channel Pulse Width Module, 24 V DC, short-circuit protec., pos. switch.	223		
Distance and Angle Measurement Modules	**750-630** SSI Transmitter Interface	224	**750-631/000-004** Incremental Encoder Interface	225
	750-637, Incremental Encoder Interface	226	**750-635 / 753-635** Digital Impulse Interface	227
Serial Interface	**750-650 / 753-650** Serial Interface RS-232 C	228	**750-653 / 753-653** Serial Interface RS-485	229
	750-651 TTY Interface 20 mA Current Loop	230	**750-654** Data Exchange Module	231
	750-652 Serial Interface RS-232 C/RS-485	232		
KNX/EIB/TP1 Module	**753-646** KNX/EIB/TP1 Module	234		
DALI/DSI Master Module	**750-641** DALI/DSI Master Module	235		
RF Modules	**750-642** EnOcean Radio Receiver Module	236	**750-644** Bluetooth® RF-Transceiver	237
MP-Bus Master Module	**750-643** MP-Bus Master Module	238		
RTC Module	**750-640** RTC Module, Real-Time Clock	239		
AS-Interface Master Module	**750-655** AS-Interface Master	240		
IO-Link Master Module	**750-657** IO-Link Master	242		
Vibration Monitoring	**750-645**, 2-Channel Vibration Velocity/ Bearing Condition Monitoring VIB I/O	244		
Stepper Modules	**750-670** Stepper Controller RS-422, 24 V, 20 mA	246	**750-671** Stepper Controller 24 V, 1.5 A	247
	750-672 Stepper Controller 70 V, 7.5 A, 6 IN, 2 OUT	248	**750-673** Servo Stepper Controller 70 V, 7.5 A, 6 IN, 2 OUT	250
DC-Drive Controller	**750-636** DC-Drive Controller, 24 V, 5 A	252		
PROFIsafe Modules	**750-661/000-002** ; **753-661/000-002** PROFIsafe V2, 4 FDI 24 V	256	**750-662/000-002 ; 753-662/000-002** PROFIsafe V2, 8 FDI 24 V	257
	750-667/000-002 ; **753-667/000-002** PROFIsafe V2, 4 FDI/4 FDO 24 V/2 A	258	**750-660/000-001**, PROFIsafe, 8 FDI 24 V	259
	750-665/000-001, PROFIsafe, 4 FDO 0.5 A, 4 FDI 24 V	260		

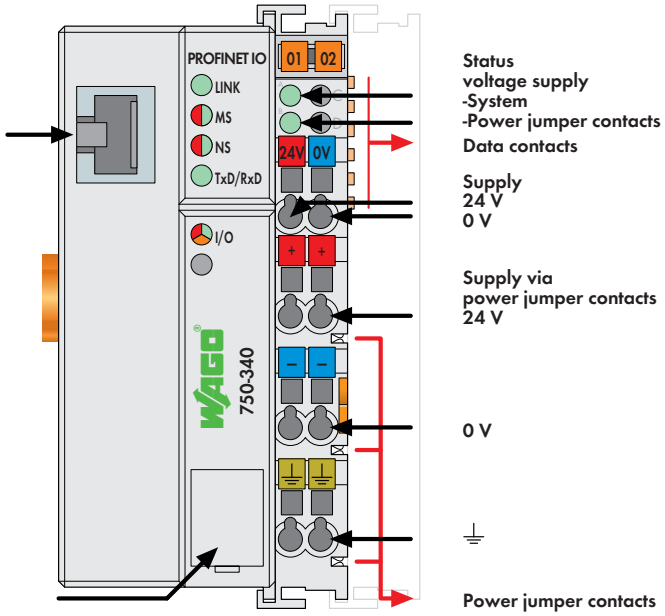
Modular I/O System Overview

System Modules

Function	System Modules	Page	System Modules	Page
Internal Data Bus Extension	**750-627** End Module	285	**750-628** Coupler Module	286
24 V DC Power Supply Modules	**750-602,** 24 V DC, passive	287	**750-601,** 24 V DC, max. 6.3 A without diagnostics, with fuse carrier	288
	750-610, 24 V DC, max. 6.3 A with diagnostics, with fuse carrier	289	**750-623,** 24 V DC, 5 ... 15 V	290
24 V DC Internal System Supply Module with Bus Power Supply	**750-613,** 24 V DC	291		
120 V AC Power Supply Module	**750-615,** 120 V AC, max. 6.3 A without diagnostics, with fuse carrier	288		
230 V AC Power Supply Modules	**750-612,** 0 ... 230 V AC/DC without diagnostics, passive	287	**750-609,** 230 V AC, max. 6.3 A without diagnostics, with fuse carrier	288
	750-611, 230 V AC, max. 6.3 A with diagnostics, with fuse carrier	289		
Filter Modules	**750-624** Field Side Power Supply Filter	292	**750-626** Power Supply Filter with Overvoltage (Surge) Protection	293
Field Side Connection Modules	**750-604 / 753-604** 0 V DC	296	**750-603 / 753-603** 24 V DC	295
	750-614 / 753-614 0 ... 230 V AC/DC	294		
Separation Modules	**750-616** Separation Module	298	**750-621** Separation Module with Contacts	298
Binary Spacer Module	**750-622** Binary Spacer Module	297		
End Module	**750-600,** End Module	299		
Ex i Modules	**750-625, Ex i Supply Module** with fuse carrier	264		
	750-606, Ex i Supply Module	266		

PROFINET IO Fieldbus Coupler

10/100 Mbit/s; digital and analog signals



This fieldbus coupler connects the WAGO-I/O-SYSTEM as a slave to the PROFINET IO Industrial ETHERNET standard for automation. The fieldbus coupler supports all WAGO-I/O-SYSTEM modules.
The coupler automatically configures, creating a local process image which may include analog, digital, or specialty modules. Analog and specialty module data is sent via words and/or bytes; digital data is sent bit by bit.
The fieldbus coupler is integrated into the application as a PROFINET IO device.
The coupler also supports many common ETHERNET protocols for system management and diagnostics (HTTP, BootP, DHCP, DNS, SNTP, FTP, and SNMP).

Description	Item No.	Pack. Unit
PROFINET IO 100 MBit	**750-340**	1

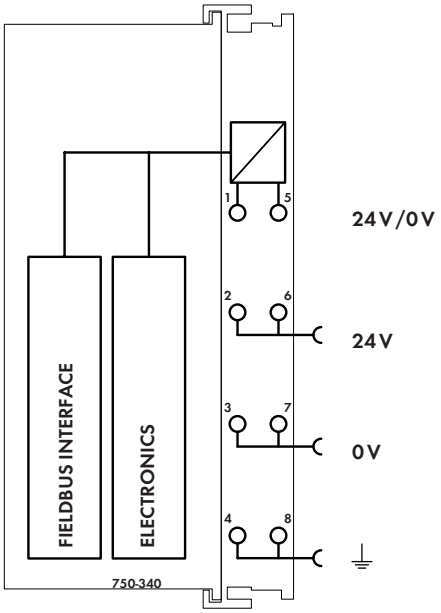
Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

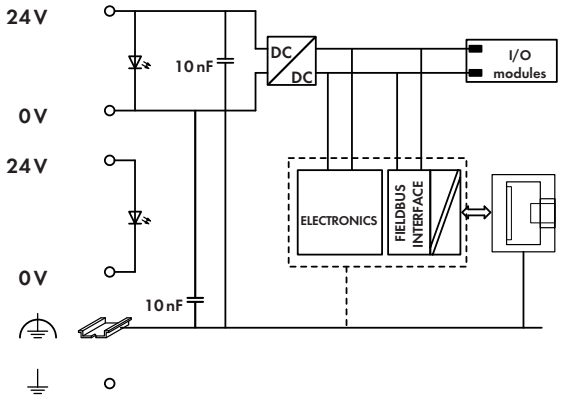
Approvals

Conformity marking	CE
UL 508	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4

System Data

No. of couplers connected to Master	limited by ETHERNET specification
Transmission medium	Twisted Pair S-UTP 100 Ω cat. 5
Max. length of fieldbus segment	100 m between hub station and 750-340; max. length of network limited by ETHERNET specification
Baud rate	10/100 Mbit/s
Buscoupler connection	RJ-45
Protocols	PROFINET RT V2.0, HTTP, DCP, DHCP, DNS, SNTP, FTP, SNMP, SMTP





Technical Data

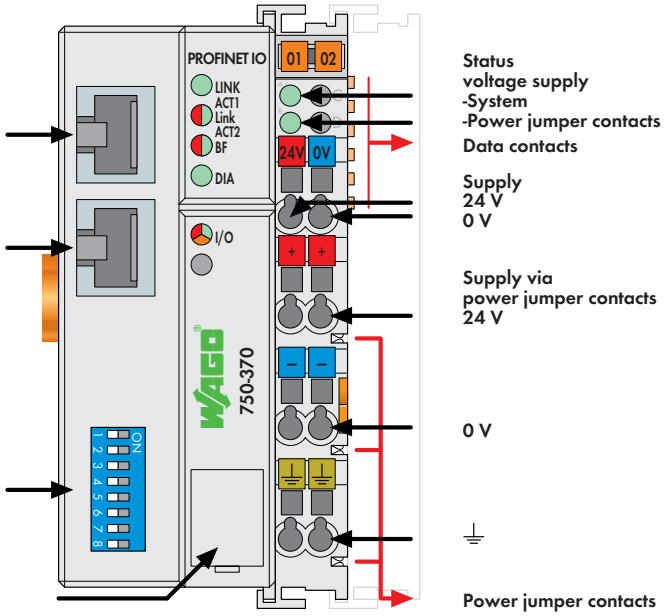
Number of I/O modules	64
with bus extension	250
Fieldbus	
Max. input process image	2 Kbytes
Max. output process image	2 Kbytes
Configuration	via PC
Voltage supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	179.5 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

PROFINET IO Fieldbus Coupler

2-port; 100 Mbit/s; digital and analog signals



This fieldbus coupler connects to the WAGO-I/O-SYSTEM as a slave of the PROFINET IO, the open Industrial ETHERNET standard for automation.
The fieldbus coupler supports all I/O modules. The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes; digital data is sent bit by bit.
This buscoupler can integrate into the application as a PROFINET IO device.
The buscoupler features an integrated 2-port switch, allowing easy line structure creation without requiring any additional network components.
The device name can be assigned via LLDP protocol or be adjusted by a DIP switch if the protocol is not supported by the control systems.

Description	Item No.	Pack. Unit
PROFINET IO 100 MBit 2-port	**750-370**	1

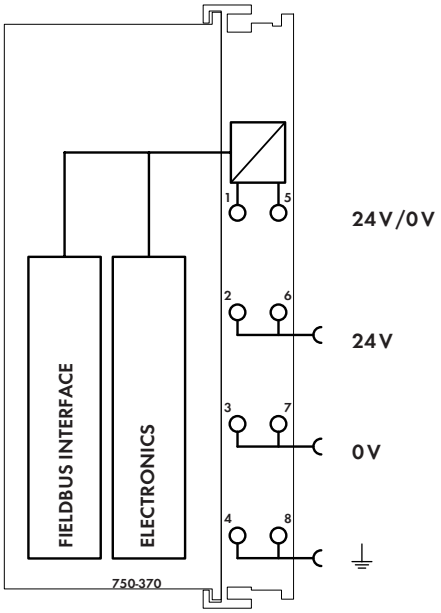
Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

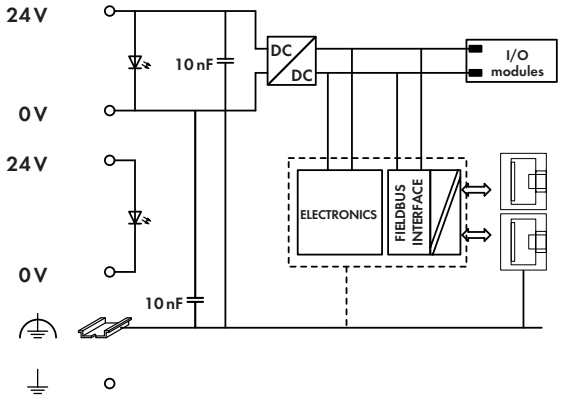
Approvals

Conformity marking	CE

System Data

No. of couplers connected to Master	limited by PROFINET specification
Transmission medium	Twisted Pair S-UTP 100 Ω cat. 5
Max. length of fieldbus segment	100 m between switch and 750-370; max. length of network limited by PROFINET specification
Baud rate	10/100 Mbit/s
Buscoupler connection	2 x RJ-45
Protocols	PROFINET IO RT, DCP, SNMP, LLDP





Technical Data

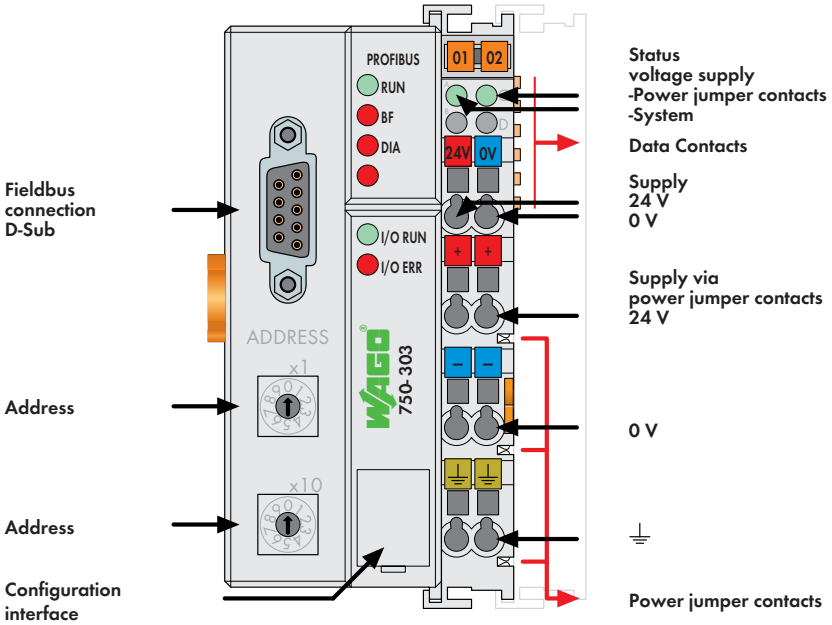
Number of I/O modules	64
with bus extension	128
Fieldbus	
Max. input process image	320 bytes
Max. output process image	320 bytes
Configuration	via PC
Voltage supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	180 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)

PROFIBUS DP/FMS Fieldbus Coupler

12 Mbaud; digital and analog signals



This buscoupler connects the WAGO-I/O-SYSTEM as a slave to the PROFIBUS fieldbus.
The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes, digital data is sent bit by bit.
PROFIBUS stores the process image in the corresponding Master control (PLC, PC or NC).

The local process image is divided into two data zones containing the data received and the data to be sent. The process data can be sent via the PROFIBUS fieldbus to the PLC, PC or NC for further processing, and received from the field via PROFIBUS.
The data of the analog modules is stored in the process image which is created automatically according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and added to the analog data. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.

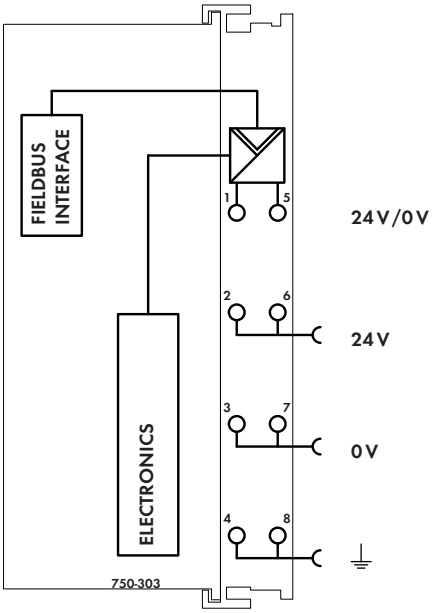
When implementing new installations with PROFIBUS DP, please consider 750-333 Fieldbus Coupler with extended functions (page 40).
Notice: GSD files required

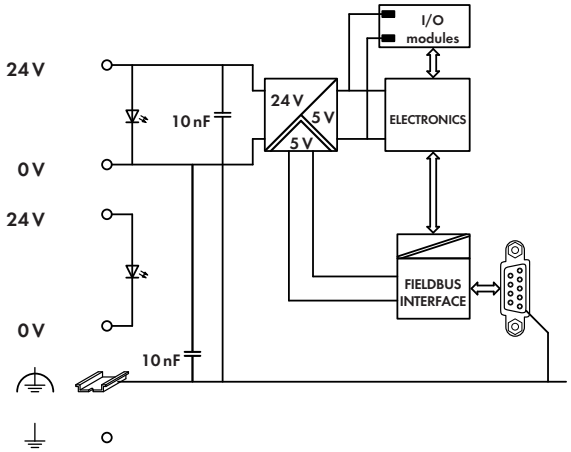
Description	Item No.	Pack. Unit
PROFIBUS DP/FMS 12 MBd	**750-303**	1

Accessories		Item No.	Pack. Unit
GSD files	Download: www.wago.com		
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

System Data	
No. of couplers connected to Master	96 with repeater
Max. no. of I/O points	approx. 6000 (depends on master)
Transmission medium	Cu cable acc. to EN 50170
Max. length of fieldbus segment	100 m ... 1200 m (depends on baud rate/cable)
Baud rate	9.6 Kbaud ... 12 Mbaud
Transmission time	typ. 1 ms (10 couplers; 32 digital I/Os per coupler at 12 Mbaud) max. 3.3 ms
Buscoupler connection	1 x D-Sub 9; socket

Standards and Approvals	
Standard	EN 50170
Certification	PNO
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4
Shipbuilding	see "Approvals Overview" in section 1





Technical Data

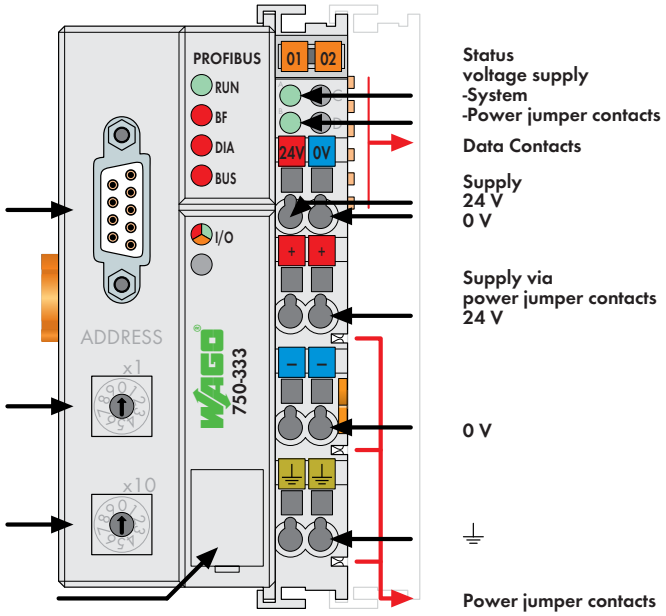
Number of I/O modules	64
Fieldbus	
Max. input process image	128 bytes
Max. output process image	128 bytes
	up version 05xx, max. 64 bytes
Configuration	via PC or PLC
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	226 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

PROFIBUS DP/V1 Fieldbus Coupler

12 Mbaud; digital and analog signals



This buscoupler interfaces the I/O modules of the WAGO-I/O-SYSTEM to PROFIBUS DP.

When initializing, the buscoupler determines the module structure of the node, to create the process image in PROFIBUS. In order to optimize addresses, the I/O modules with a bit width smaller than 8 are grouped in one byte.

It is furthermore possible to deactive I/O modules and to modify the image of the node according to the connected signals without having to modify the existing application.

The diagnosis concept is based on diagnostics according to the EN 50170 standard. Therefore the programming of modules is not necessary to interpret the diagnostic information from each manufacturer.

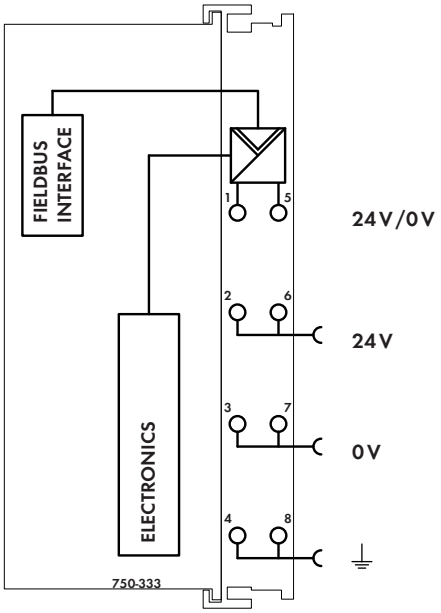
Notice: GSD files required

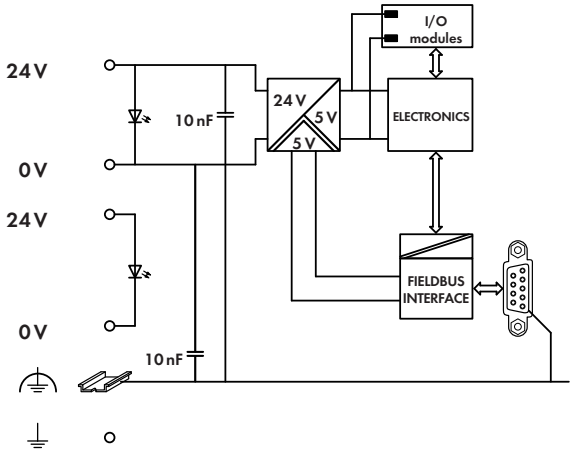
Description	Item No.	Pack. Unit
PROFIBUS DP/V1 12MBd	**750-333**	1
PROFIBUS DP/V1/T	**750-333/025-000**	1
Operating temperature -20 °C ... +60 °C		

Accessories		Item No.	Pack. Unit
GSD files	Download: www.wago.com		
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Standards and Approvals	(Approvals for product variations upon request)
Standard	EN 50170
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4
	BR-Ex nA II T4
Shipbuilding	see "Approvals Overview" in section 1

System Data	
No. of couplers connected to Master	96 with repeater
Max. no. of I/O points	approx. 6000 (depends on master)
Transmission medium	Cu cable acc. to EN 50170
Max. length of fieldbus segment	100 m ... 1200 m (depends on baud rate/cable)
Baud rate	9.6 Kbaud ... 12 Mbaud
Transmission time	typ. 1 ms (10 couplers; 32 digital I/Os per coupler at 12 Mbaud) max. 3.3 ms
Buscoupler connection	1 x D-Sub 9; socket





Technical Data

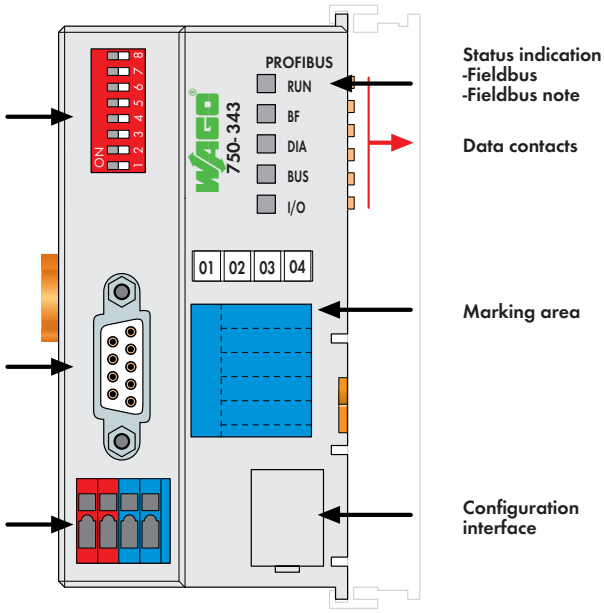
Number of I/O modules	63
Fieldbus	
Max. input process image	244 bytes
Max. output process image	244 bytes
Configuration	via PC or PLC
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	200 mA
Total current for I/O modules (5 V)	1800 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	182 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

PROFIBUS DP ECO Fieldbus Coupler

12 Mbaud; digital and analog signals



The ECO fieldbus coupler is designed for applications with a reduced scale I/O requirement. Using digital only process data or small amounts of analogs, while retaining all of the choice that's offered by the Series 750 I/O.

The coupler has an integrated supply terminal for the system voltage. The field power jumper contacts are supplied via a separate supply module.

When initializing, the buscoupler determines the module structure of the node, to create the process image in PROFIBUS. In order to optimize addresses, the I/O modules with a bit width smaller than 8 are grouped in one byte.

Notice: GSD files required

It is furthermore possible to deactive I/O modules and to modify the image of the node according to the connected signals without having to modify the existing application.

The diagnosis concept is based on diagnostics according to the EN 50170 standard. Therefore the programming of modules is not necessary to interpret the diagnostic information from each manufacturer.

Description	Item No.	Pack. Unit
PROFIBUS DP ECO 12 MBd	**750-343**	1

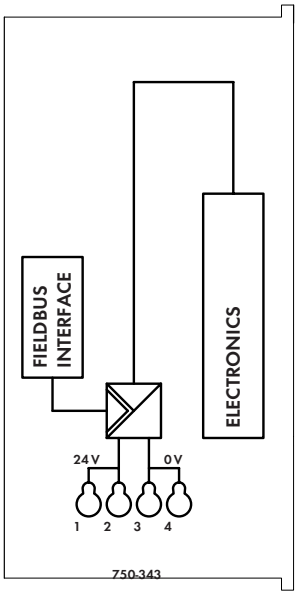
Accessories		Item No.	Pack. Unit
GSD files	Download: www.wago.com		
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

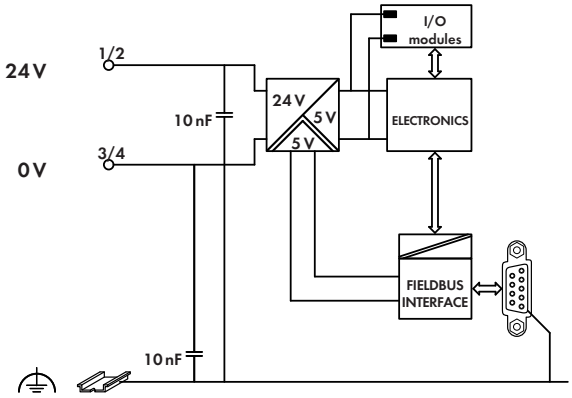
Standards and Approvals

Standard	EN 50170
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4
	BR-Ex nA II T4
Shipbuilding	see "Approvals Overview" in section 1

System Data

No. of couplers connected to Master	125 with repeater
Max. no. of I/O points	approx. 6000 (depends on master)
Transmission medium	Cu cable acc. to EN 50170
Max. length of fieldbus segment	100 m ... 1200 m (depends on baud rate/cable)
Baud rate	9.6 Kbaud ... 12 Mbaud
Transmission time	typ. 1 ms (10 couplers; 32 digital I/Os per coupler at 12 Mbaud) max. 3.3 ms
Buscoupler connection	1 x D-Sub 9; socket





Technical Data

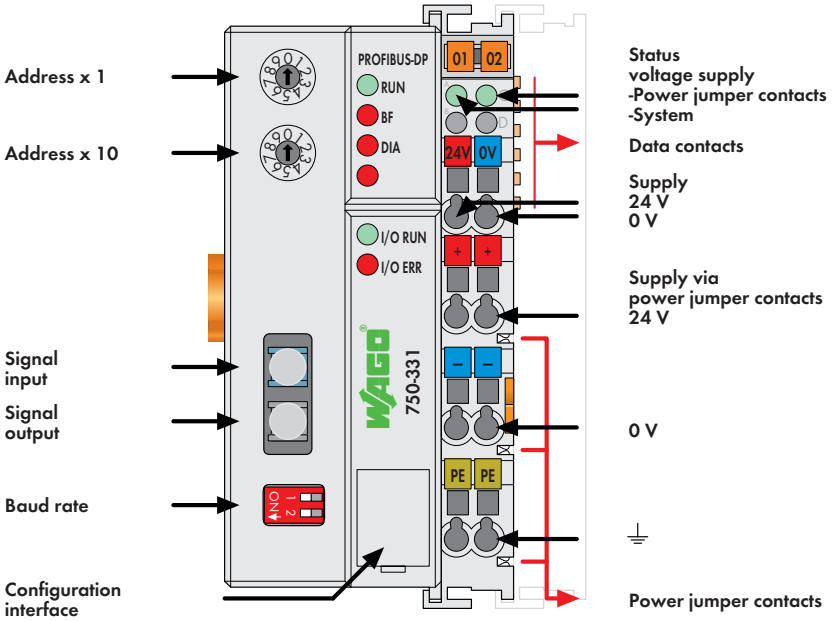
Number of I/O modules	63
Fieldbus	
Max. input process image	32 bytes
Max. output process image	32 bytes
Configuration	via PC or PLC
Voltage supply	24 V DC (-15 % ... +20 %)
Input current typ. at rated load (24 V)	260 mA
Efficiency of the power supply (typ.) at	
nominal load (24 V)	80 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	650 mA

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 1.5 mm² / AWG 28 ... 14
	AWG 12 /14: THHN, THWN
Stripped lengths	5 ... 6 mm / 0.22 in
Dimensions (mm) W x H x L	50 x 65 x 97
	Height from upper-edge of DIN 35 rail
Weight	115 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to	
interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of	
interference	acc. to Germanischer Lloyd (2003)

PROFIBUS DP Fieldbus Coupler

1.5 Mbaud; digital and analog signals



This buscoupler connects the WAGO-I/O-SYSTEM as a slave to the PROFIBUS DP fieldbus.

The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes, digital data is sent bit by bit.

The local process image is divided into two data zones containing the data received and the data to be sent. The process data can be sent via the PROFIBUS DP fieldbus to the PLC, PC or NC for further processing, and received from the field via PROFIBUS DP.

The data of the analog modules is stored in the process image which is created automatically according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and added to the analog data. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.

For the operation of a PROFIBUS DP coupler with fiber optic cable connection, an interface module is also necessary to transfer RS-485 on a fiber optic ring. A subring can contain up to 10 other fiber optic modules. The baud rate is set via two DIP switches on the buscoupler.

Notice: GSD files required

Description	Item No.	Pack. Unit
PROFIBUS DP 1.5 MBd / Opt. Fibre	**750-331**	1

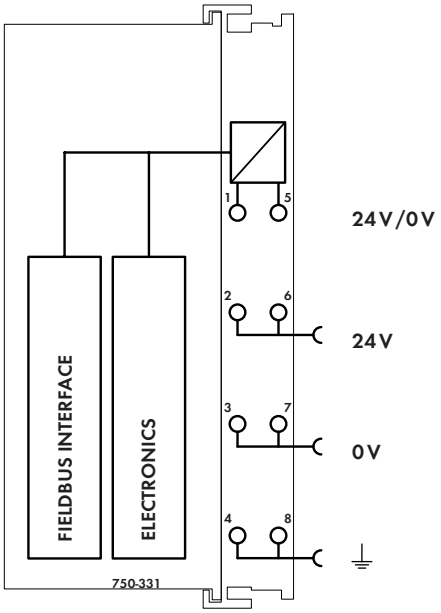
Accessories		Item No.	Pack. Unit
GSD files	Download: www.wago.com		
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

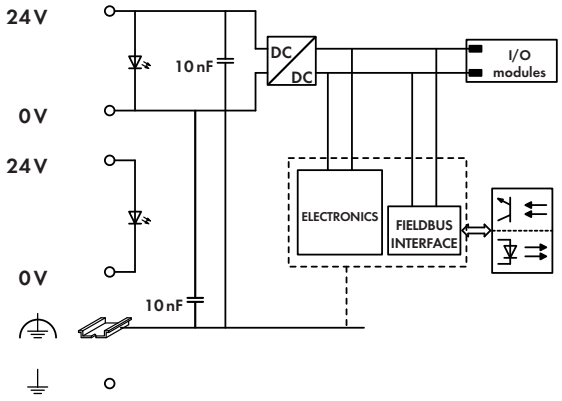
Standards and Approvals

Standard	EN 50170
Conformity marking	CE
UL 508	

System Data

No. of couplers connected to Master	10 in the subring
Transmission medium	APF (plastic) fiber (1000µm)
Max. length of fieldbus segment	1 m ... 25 m
Topology	Subring, single-fiber ring
Baud rate	93.75 Kbaud ... 1500 Kbaud
Buscoupler connection	HP Simplex fiber optic plug (included)





Technical Data

Number of I/O modules	64
Fieldbus	
Max. input process image	128 bytes
Max. output process image	128 bytes
Configuration	via PC or PLC
Voltage supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

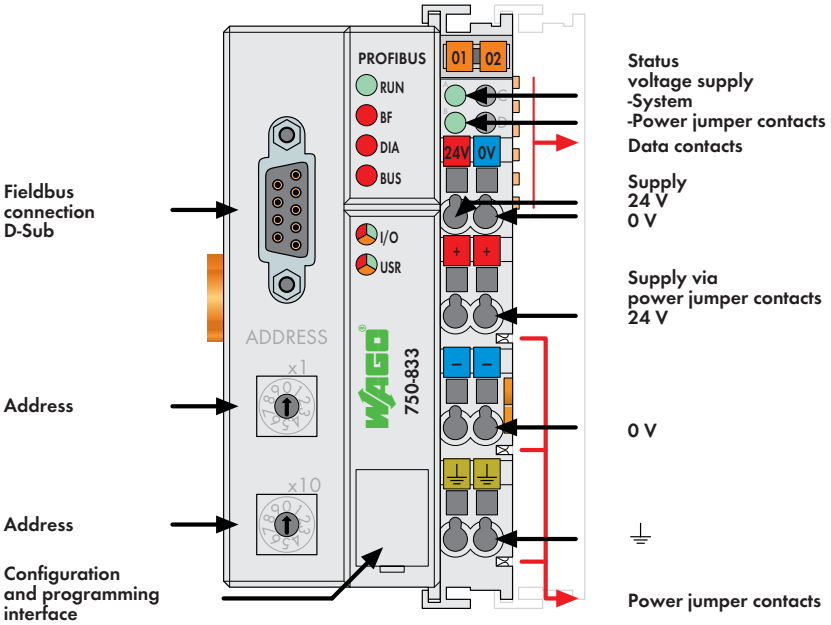
Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	187 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

DIP Switches

Baud rate	93.75 kBd / S1 = off; S2 = off
	187.5 kBd / S1 = off; S2 = on
	500 kBd / S1 = on; S2 = off
	1500 kBd / S1 = on; S2 = on

PROFIBUS DP/V1 Programmable Fieldbus Controller

12 Mbaud; digital and analog signals



The 750-833 Programmable Fieldbus Controller combines the PROFIBUS DP functionality of the 750-333 Fieldbus Coupler with the functionality of a Programmable Logic Control (PLC). Programming of the application is performed in accordance with IEC 61131-3, covering all 5 programming languages. The programmer can access all fieldbus and I/O data.

Characteristics and use:

- The use of decentralized control can better support a PLC or PC
- Complex applications can be divided into multiple tasks
- Programmable response in the event of a fieldbus failure
- Signal pre-processing reduces fieldbus transmissions
- Peripheral equipment can be controlled directly, resulting in faster system response times
- Simple, self-sufficient control

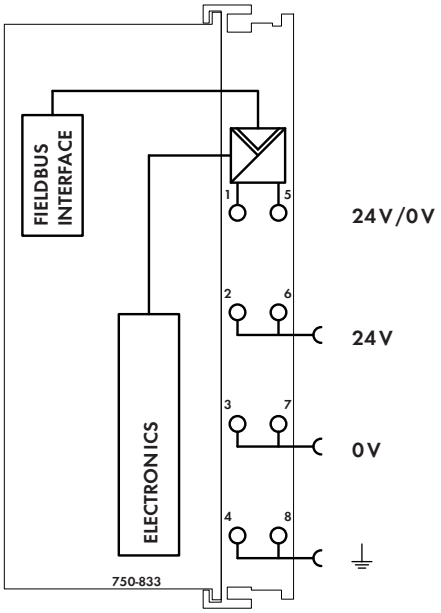
Notice: GSD files required

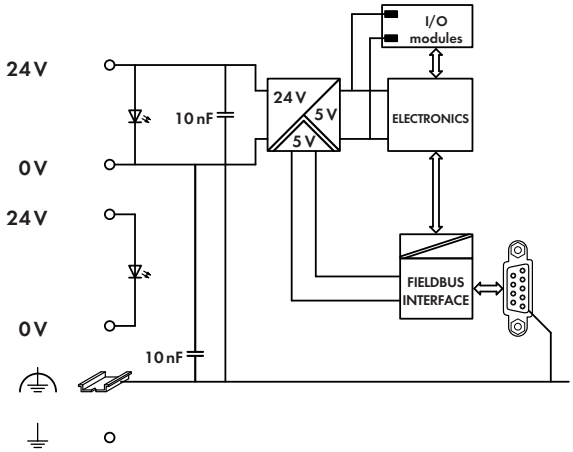
Description	Item No.	Pack. Unit
Contr. PROFIBUS DP/V1 12 MBd	**750-833**	1
PROFIBUS DP/V1 Controller/T	**750-833/025-000**	1
Operating temperature -20 °C ... +60 °C		

Accessories		Item No.	Pack. Unit
GSD files	Download: www.wago.com		
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Standards and Approvals	(Approvals for product variations upon request)
Standard	EN 50170
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4
	BR-Ex nA II T4
Shipbuilding	see "Approvals Overview" in section 1

System Data	
No. of controllers connected to Master	96 with repeater
Max. no. of I/O points	approx. 6000 (depends on master)
Transmission medium	Cu cable acc. to EN 50170
Max. length of fieldbus segment	100 m ... 1200 m (depends on baud rate/cable)
Baud rate	9.6 Kbaud ... 12 Mbaud
Transmission time	typ. 1 ms (10 controller; 32 digital I/Os per controller at 12 Mbaud) max. 3.3 ms
Buscoupler connection	1 x D-Sub 9; socket
Programming	WAGO-I/O-PRO 32 (as of firmware SW 07 also programmable with WAGO-I/O-PRO CAA)
IEC 61131-3	IL, LD, FBD, ST, FC





Technical Data

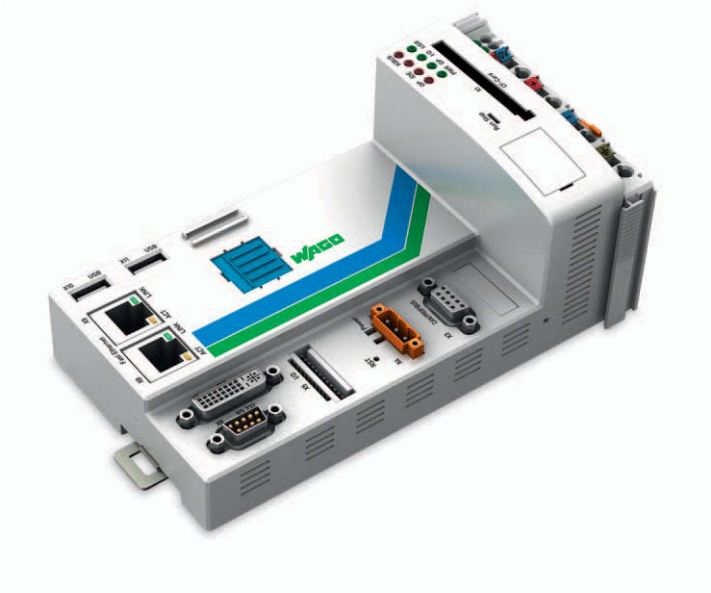
Number of I/O modules	63
Fieldbus	
Max. input process image	244 bytes
Max. output process image	244 bytes
Max. input variables	244 bytes
Max. output variables	244 bytes
Configuration	automatic
Program memory	128 Kbytes
Data memory	64 Kbytes
Non-volatile memory (retain)	8 Kbytes
Cycle time	< 3 ms for 1,000 statements / 256 dig. I/Os
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	200 mA
Total current for I/O modules (5 V)	1800 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	184 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

WAGO-I/O-IPC-G2 Linux 2.6

Industrial PC with Geode 266 MHz

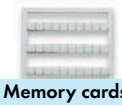


The WAGO-I/O-IPC is a compact industrial PC designed for general control applications. Despite its compact design, the IPC integrates all standard PC functions, including network and fieldbus interfaces.
Due to its compact housing, the I/O-IPC can be mounted on DIN 35 rail. Input and output modules of the WAGO-I/O-SYSTEM can be directly connected. Besides the processing industry and building automation, typical markets for IPC application include the standard machine and plant industries (e.g., packaging, bottling, textiles, production and metal & wood processing).

Programmable in accordance with IEC 61131-3

- Programmable with WAGO-I/O-PRO CAA, compatible with CoDeSys Automation Alliance.
- DIN 35 rail-mountable compact PC
- Direct connection of WAGO I/O modules
- COM1, 2 x LAN, 2 x USB, DVI
- Linux 2.6 operating system with RT-Preempt patch

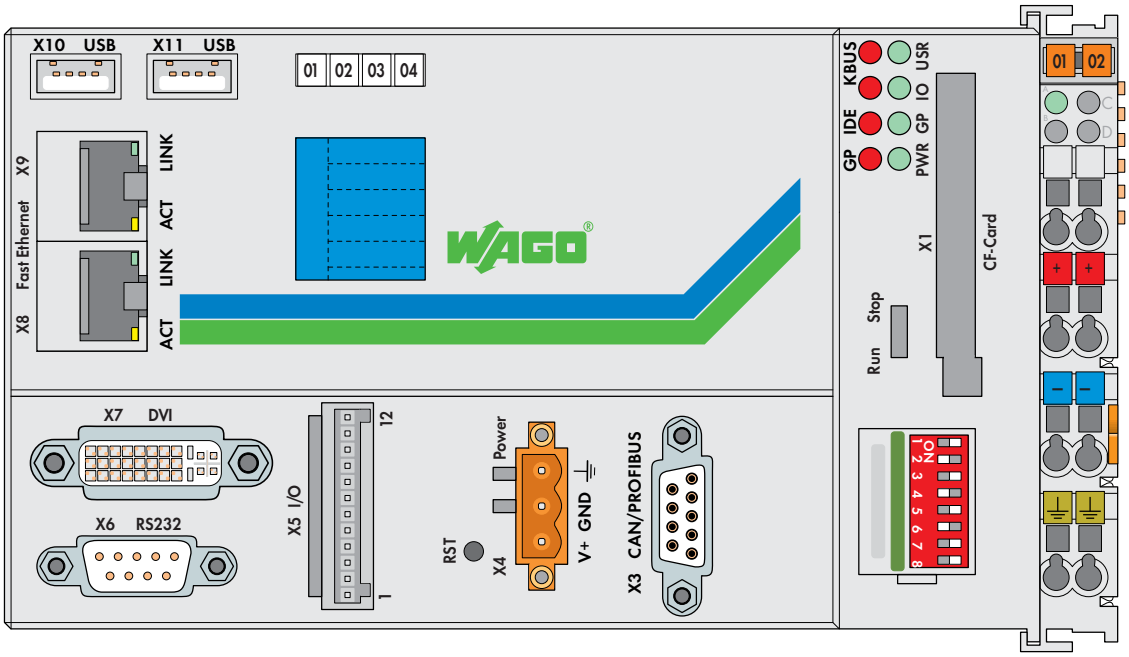
Description	Item No.	Pack. Unit
I/O-IPC-G2 Linux 2.6	**758-870/000-310**	1
I/O-IPC-G2 Linux 2.6 PROFIBUS DP Master	**758-870/000-311**	1
I/O-IPC-G2 Linux 2.6 CANopen Master	**758-870/000-312**	1
I/O-IPC-G2 Linux 2.6 PROFIBUS DP Slave	**758-870/000-314**	1
I/O-IPC-G2 Linux 2.6 CoDeSys Visu	**758-870/000-110**	1
I/O-IPC-G2 Linux 2.6 CoDeSys Visu	**758-870/000-111**	1
PROFIBUS DP Master		
I/O-IPC-G2 Linux 2.6 CoDeSys Visu	**758-870/000-112**	1
CANopen Master		
I/O-IPC-G2 Linux 2.6 CoDeSys Visu	**758-870/000-114**	1
PROFIBUS DP Slave		
I/O-IPC-G2 Linux TeleControl	**758-870/000-130**	1
I/O-IPC-G2 Linux TeleControl PDP-M	**758-870/000-131**	1

Accessories		Item No.	Pack. Unit
WAGO-I/O-PRO CAA		**759-333**	1
CF memory card		**758-879**	10
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	
Memory cards, connection cables		see page 397	

Approvals

UL 508	
Conformity marking	CE

Technical Data	
Number of I/O modules (per node)	64
with bus extension	250
Max. input process image	500 bytes
Max. output process image	500 bytes
CPU	Geode SC1200; 266 MHz
Main memory (RAM)	128 Mbytes
Internal memory (flash)	128 Mbytes
Non-volatile memory (retain)	128 Kbytes
Bios	Insyde
Graphic	DVI, 1024*768; LCD / Panellink
Memory expansion	Compact Flash Type I/II
LAN	2 x 10Base-T/100Base-TX
Fieldbus (optional)	PROFIBUS DP master, PROFIBUS DP slave, CANopen master



Technical Data	
I/O interfaces (serial)	1 x serial interface;
	COM 1 acc. to EIA RS-232 standard;
	9-pole D-Sub plug
I/O interfaces (USB)	2 x USB port acc. to Specification 1.1
Additional interfaces	2 x digital output, isolated;
	2 x digital input, isolated
Diagnostic LEDs	Power supply;
	Watchdog;
	PROFIBUS DP, CANopen;
	Run/Stop;
	IDE;
	Internal data bus
Programming	WAGO-I/O-PRO CAA
IEC 61131-3	IL, LD, FBD, ST, FC
Operating system	Linux 2.6 with RT-Preempt patch
RT support	128 KB PLC SRAM battery backup;
	NMI timer
Watchdog	Trigger interval 400 ms (reset triggered at
	time-out)
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	770 mA
Total current for I/O modules (5 V)	1000 mA
Ambient conditions	
Operating temperature	0 °C ... +55 °C
Storage temperature	-10 °C ... +85 °C
Vibration resistance	
Operation	0.5 G, 10-500 Hz
Storage/transit	1 G, 10-500 Hz
Shock resistance	
Operation	5 g, 11 ms, 6 axis
Storage/transit	30 g, 11 ms., 6 axis
Humidity	
Operation	5-90 %, non condensing at 50 °C
Storage/transit	0-90 %, non condensing at 50 °C
Altitude	
Operation	0 ... 10,000 ft
Storage/transit	0 ... 50,000 ft

Technical Data	
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	172 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	550 g
Electromagnetic compatibility	Unwanted emission limits and operation
	acc. to DIN EN 55022,
	DIN EN 50081-1;
	Interference immunity limits and operation
	acc. to DIN EN 50082-2
Protection & safety	Safety limits and operation acc. to
	DIN EN 60950
Degree of protection	IP20 acc. to DIN 40050
Type of mounting	DIN 35 rail
Housing material	Plastics

WAGO-I/O-IPC-C6 Linux 2.6

Industrial PC with Celeron®M600 MHz

Compact and robust, the WAGO-I/O-IPC-C6 is designed for general control applications. The high-performance IPC can fully perform controlling, monitoring and visualization tasks.

The I/O-IPC features 600 MHz Celeron® M processor and all standard PC interfaces (e.g., 2 x USB, RS-232, DVI-I and 2 x ETHERNET).

Depending on the application, WAGO-I/O-SYSTEM modules are connected to the I/O-IPC to suit the particular task. Two opto-isolated digital I/Os (24VDC) are directly integrated for fast signal transmission.

With optional CANopen and PROFIBUS DP fieldbuses in master version, the I/O-IPC may also function as a main PLC in industrial environments.

Using Linux operating system and optional CoDeSys PLC software, including CoDeSys visualization, a stable and high-performance automation system featuring universal communication characteristics is available for long-term, reliable service.

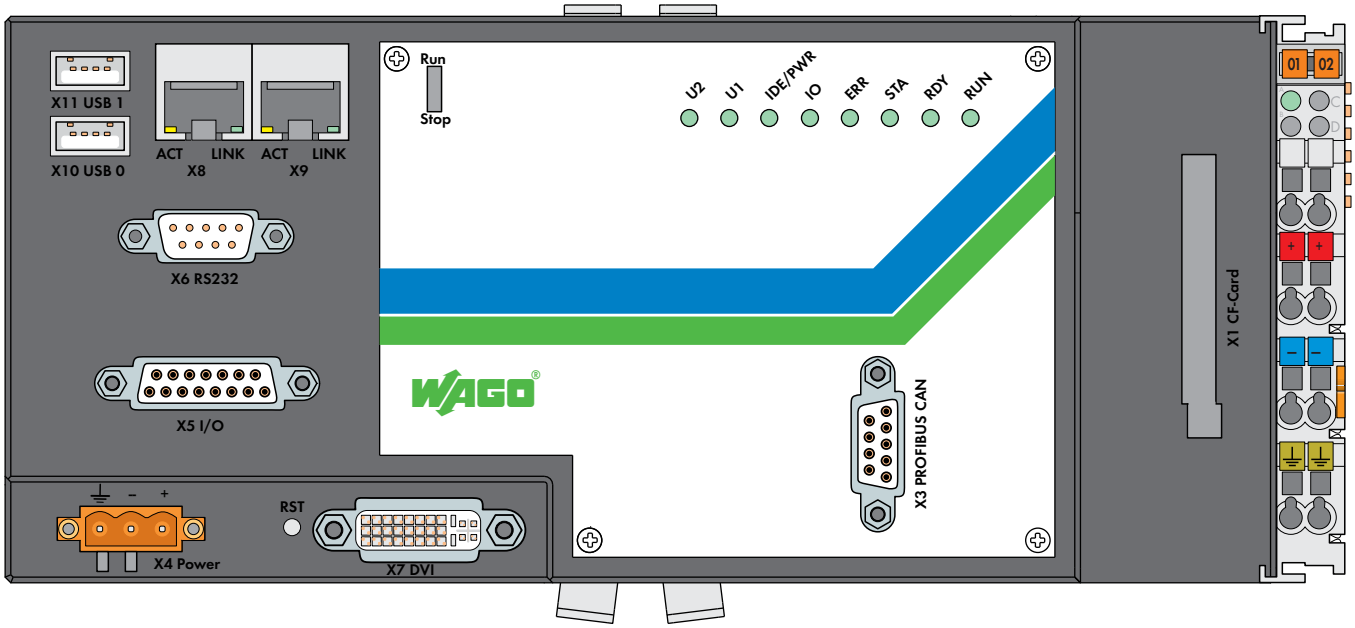
Description	Item No.	Pack. Unit
I/O-IPC-C6 Linux 2.6	**758-874/000-010**	1
I/O-IPC-C6 Linux 2.6 PROFIBUS DP Master	**758-874/000-011**	1
I/O-IPC-C6 Linux 2.6 CANopen Master	**758-874/000-012**	1
I/O-IPC-C6 Linux 2.6 CoDeSys Visu	**758-874/000-110**	1
I/O-IPC-C6 Linux 2.6 CoDeSys Visu	**758-874/000-111**	1
PROFIBUS DP Master		
I/O-IPC-C6 Linux 2.6 CoDeSys Visu	**758-874/000-112**	1
CANopen Master		

Accessories		Item No.	Pack. Unit
WAGO-I/O-PRO CAA		**759-333**	1
CF memory card		**758-879**	10
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	
Memory cards, connection cables		see page 397	

Approvals

UL 508	
Conformity marking	CE

Technical Data	
Number of I/O modules (per node)	64
with bus extension	250
Max. input process image	500 bytes
Max. output process image	500 bytes
CPU	Celeron®M; 600 MHz
Main memory (RAM)	256 Mbytes
Internal memory (flash)	512 Mbytes
Non-volatile memory (retain)	1024 Kbytes
Bios	Insyde
Graphic	DVI, 1280*1024; LCD / Panellink
Memory expansion	Compact Flash Type I/II
LAN	2 x 10Base-T/100Base-TX
Fieldbus (optional)	PROFIBUS DP master, CANopen master



Technical Data

I/O interfaces (serial)	1 x serial interface;
	COM 1 acc. to EIA RS-232 standard;
	9-pole D-Sub plug
I/O interfaces (USB)	2 x USB port acc. to Specification 2.0
Additional interfaces	2 x digital output, isolated;
	2 x digital input, isolated
Diagnostic LEDs	Power supply;
	Watchdog;
	PROFIBUS DP, CANopen;
	Run/Stop;
	IDE;
	Internal data bus
Programming	WAGO-I/O-PRO CAA
IEC 61131-3	IL, LD, FBD, ST, FC
Operating system	Linux 2.6 with RT-Preempt patch
RT support	1024 KB PLC SRAM battery backup;
	NMI timer
Watchdog	Trigger interval 400 ms (reset triggered at
	time-out)
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	770 mA
Total current for I/O modules (5 V)	1000 mA
Ambient conditions	
Operating temperature	0 °C ... +55 °C
Storage temperature	-10 °C ... +85 °C
Vibration resistance	
Operation	0.5 G, 10-500 Hz
Storage/transit	1 G, 10-500 Hz
Shock resistance	
Operation	5 g, 11 ms, 6 axis
Storage/transit	30 g, 11 ms., 6 axis
Humidity	
Operation	5-90 %, non condensing at 50 °C
Storage/transit	0-90 %, non condensing at 50 °C
Altitude	
Operation	0 ... 10,000 ft
Storage/transit	0 ... 50,000 ft

Technical Data

Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	236 x 70 x 100
	Height from upper-edge of DIN 35 rail
Weight	1100 g
Electromagnetic compatibility	Unwanted emission limits and operation
	acc. to DIN EN 55022,
	DIN EN 50081-1;
	Interference immunity limits and operation
	acc. to DIN EN 50082-2
Protection & safety	Safety limits and operation acc. to
	DIN EN 60950
Degree of protection	IP20 acc. to DIN 40050
Type of mounting	DIN 35 rail
Housing material	Aluminum

WAGO-I/O-IPC-C10 E Linux 2.6

Industrial PC with Celeron®M 1 GHz for extended application range

Compact and robust, the WAGO-I/O-IPC-C10 E is designed for general control applications. The high-performance IPC can fully perform controlling, monitoring and visualization tasks.

The I/O-IPC features 1 GHz Celeron®M processor and all standard PC interfaces (e.g., 2 x USB, RS-232, DVI-I and 2 x ETHERNET).

Depending on the application, WAGO-I/O-SYSTEM modules are connected to the I/O-IPC to suit the particular task. Two opto-isolated digital I/Os (24VDC) are directly integrated for fast signal transmission.

With optional CANopen and PROFIBUS DP fieldbuses in master version, the I/O-IPC may also function as a main PLC in industrial environments.

Using Linux operating system and optional CoDeSys PLC software, including CoDeSys visualization, a stable and high-performance automation system featuring universal communication characteristics is available for long-term, reliable service.

Description	Item No.	Pack. Unit
I/O-IPC-C10 E Linux 2.6	**758-875/000-010**	1
I/O-IPC-C10 E Linux 2.6 PROFIBUS DP Master	**758-875/000-011**	1
I/O-IPC-C10 E Linux 2.6 CANopen Master	**758-875/000-012**	1
I/O-IPC-C10 E Linux 2.6 CoDeSys Visu	**758-875/000-110**	1
I/O-IPC-C10 E Linux 2.6 CoDeSys Visu	**758-875/000-111**	1
PROFIBUS DP Master		
I/O-IPC-C10 E Linux 2.6 CoDeSys Visu	**758-875/000-112**	1
CANopen Master		
I/O-IPC-C10 E Linux TeleControl	**758-875/000-130**	1

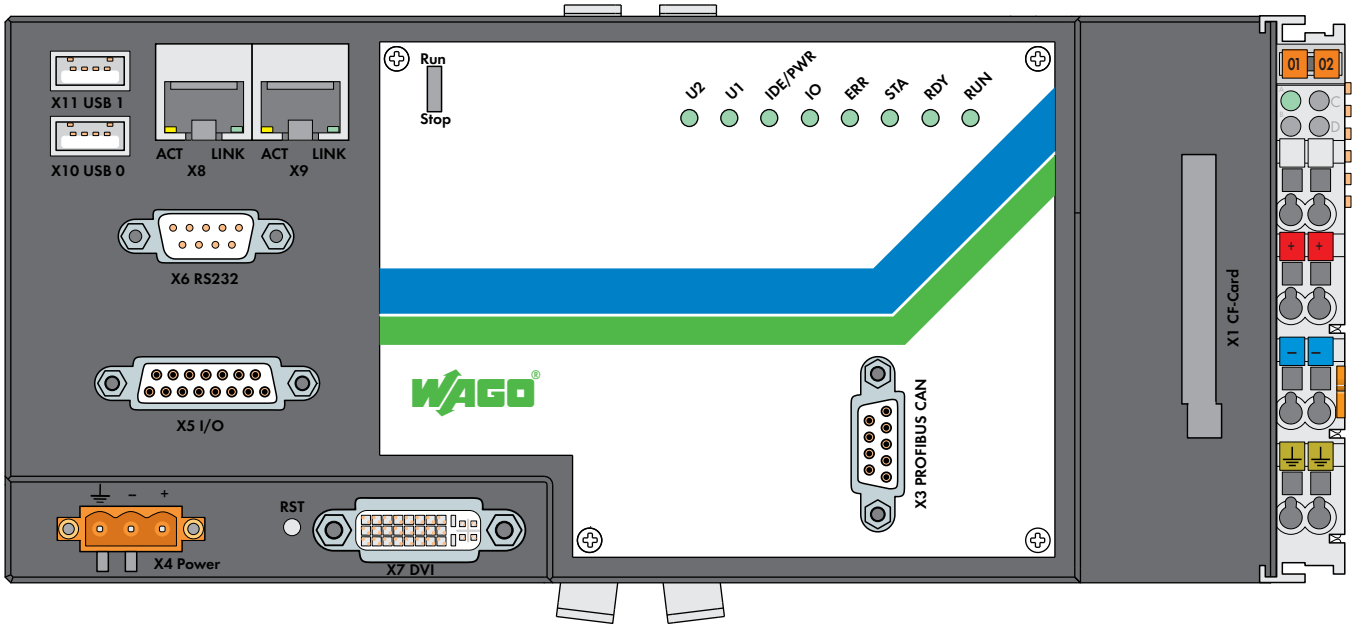
Accessories		Item No.	Pack. Unit
WAGO-I/O-PRO CAA		**759-333**	1
CF memory card		**758-879**	10
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	
Memory cards, connection cables		see page 397	

Approvals

UL 508	
Conformity marking	CE
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Number of I/O modules (per node)	64
with bus extension	250
Max. input process image	500 bytes
Max. output process image	500 bytes
CPU	Celeron®M; 1 GHz
Main memory (RAM)	256 Mbytes
Internal memory (flash)	512 Mbytes
Non-volatile memory (retain)	1024 Kbytes
Bios	Insyde
Graphic	DVI, 1280*1024; LCD / Panellink
Memory expansion	Compact Flash Type I/II
LAN	2 x 10Base-T/100Base-TX
Fieldbus (optional)	PROFIBUS DP master, CANopen master



Technical Data

I/O interfaces (serial)	1 x serial interface;
	COM 1 acc. to EIA RS-232 standard;
	9-pole D-Sub plug
I/O interfaces (USB)	2 x USB port acc. to Specification 1.1
Additional interfaces	2 x digital output, isolated;
	2 x digital input, isolated
Diagnostic LEDs	Power supply;
	Watchdog;
	PROFIBUS DP, CANopen;
	Run/Stop;
	IDE;
	Internal data bus
Programming	WAGO-I/O-PRO CAA
IEC 61131-3	IL, LD, FBD, ST, FC
Operating system	Linux 2.6 with RT-Preempt patch
RT support	1024 KB PLC SRAM battery backup;
	NMI timer
Watchdog	Trigger interval 400 ms (reset triggered at
	time-out)
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	770 mA
Total current for I/O modules (5 V)	1000 mA
Ambient conditions	
Operating temperature	-20 °C ... +60 °C
Storage temperature	-20 °C ... +85 °C
Vibration resistance	
Operation	0.5 G, 10-500 Hz
Storage/transit	1 G, 10-500 Hz
Shock resistance	
Operation	5 g, 11 ms, 6 axis
Storage/transit	30 g, 11 ms., 6 axis
Humidity	
Operation	5-90 %, non condensing at 50 °C
Storage/transit	0-90 %, non condensing at 50 °C
Altitude	
Operation	0 ... 10,000 ft
Storage/transit	0 ... 50,000 ft

Technical Data

Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	236 x 70 x 100
	Height from upper-edge of DIN 35 rail
Weight	1100 g
Electromagnetic compatibility	Unwanted emission limits and operation
	acc. to DIN EN 55022,
	DIN EN 50081-1;
	Interference immunity limits and operation
	acc. to DIN EN 50082-2
Protection & safety	Safety limits and operation acc. to
	DIN EN 60950
Degree of protection	IP20 acc. to DIN 40050
Type of mounting	DIN 35 rail
Housing material	Aluminum
EMC marine applications - Immunity to	
interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of	
interference	acc. to Germanischer Lloyd (2003)

WAGO-I/O-IPC-P14 Linux 2.6

High-performance industrial PC with Pentium®M 1,4 GHz

Compact and robust, the WAGO-I/O-IPC-P14 is designed for general control applications. The high-performance IPC can fully perform controlling, monitoring and visualization tasks.

The I/O-IPC features 1.4 GHz Pentium®M processor and all standard PC interfaces (e.g., 2 x USB, RS-232, DVI-I and 2 x ETHERNET).

Depending on the application, WAGO-I/O-SYSTEM modules are connected to the I/O-IPC to suit the particular task. Two opto-isolated digital I/Os (24VDC) are directly integrated for fast signal transmission.

With optional CANopen and PROFIBUS DP fieldbuses in master version, the I/O-IPC may also function as a main PLC in industrial environments.

Using Linux operating system and optional CoDeSys PLC software, including CoDeSys visualization, a stable and high-performance automation system featuring universal communication characteristics is available for long-term, reliable service.

Description	Item No.	Pack. Unit
I/O-IPC-P14 Linux 2.6	**758-876/000-010**	1
I/O-IPC-P14 Linux 2.6 PROFIBUS DP Master	**758-876/000-011**	1
I/O-IPC-P14 Linux 2.6 CANopen Master	**758-876/000-012**	1
I/O-IPC-P14 Linux 2.6 CoDeSys Visu	**758-876/000-110**	1
I/O-IPC-P14 Linux 2.6 CoDeSys Visu	**758-876/000-111**	1
PROFIBUS DP Master		
I/O-IPC-P14 Linux 2.6 CoDeSys Visu	**758-876/000-112**	1
CANopen Master		

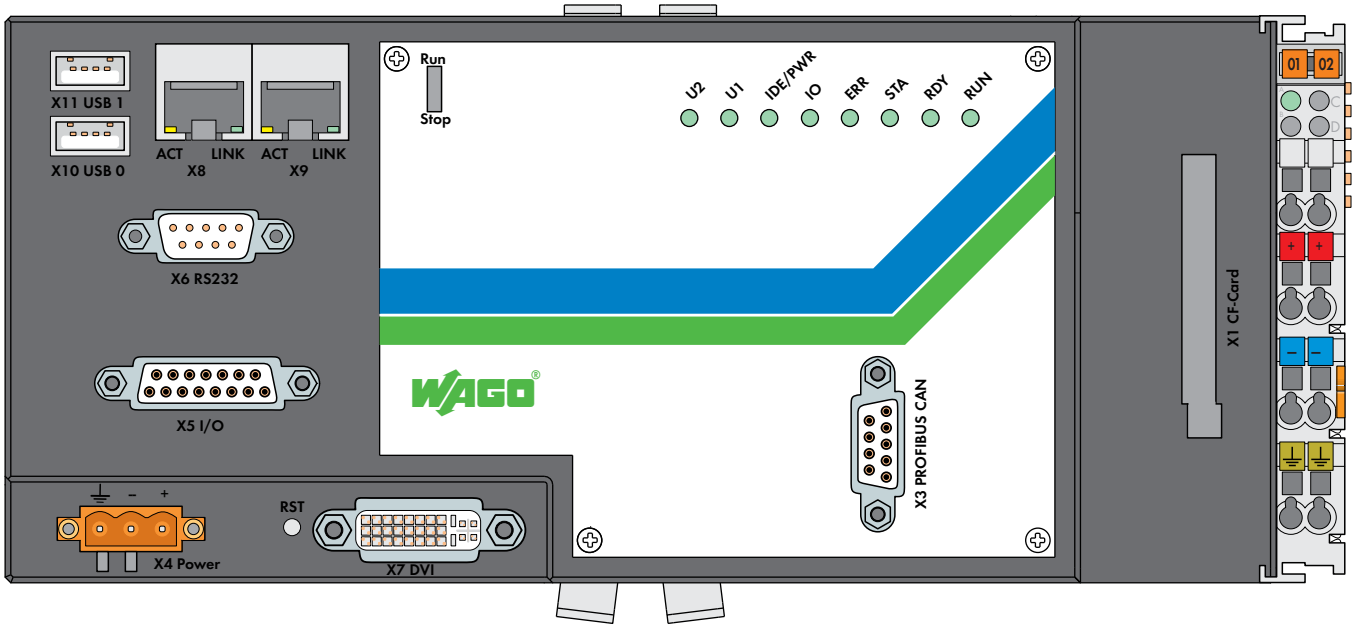
Accessories		Item No.	Pack. Unit
WAGO-I/O-PRO CAA		**759-333**	1
CF memory card		**758-879**	10
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	
Memory cards, connection cables		see page 397	

Approvals

UL 508	
Conformity marking	CE

Technical Data

Number of I/O modules (per node)	64
with bus extension	250
Max. input process image	500 bytes
Max. output process image	500 bytes
CPU	Pentium®M; 1.4 GHz
Main memory (RAM)	256 Mbytes
Internal memory (flash)	512 Mbytes
Non-volatile memory (retain)	1024 Kbytes
Bios	Insyde
Graphic	DVI, 1280*1024; LCD / Panellink
Memory expansion	Compact Flash Type I/II
LAN	2 x 10Base-T/100Base-TX
Fieldbus (optional)	PROFIBUS DP master,
	CANopen master



Technical Data

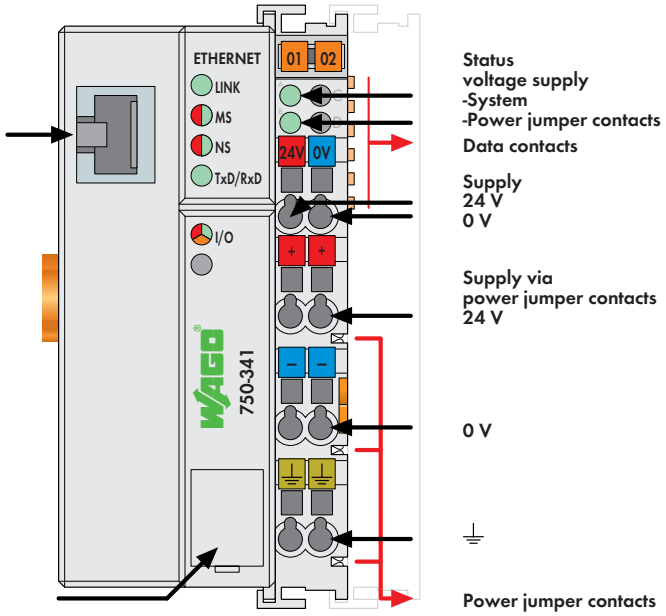
I/O interfaces (serial)	1 x serial interface;
	COM 1 acc. to EIA RS-232 standard;
	9-pole D-Sub plug
I/O interfaces (USB)	2 x USB port acc. to Specification 2.0
Additional interfaces	2 x digital output, isolated;
	2 x digital input, isolated
Diagnostic LEDs	Power supply;
	Watchdog;
	PROFIBUS DP, CANopen;
	Run/Stop;
	IDE;
	Internal data bus
Programming	WAGO-I/O-PRO CAA
IEC 61131-3	IL, LD, FBD, ST, FC
Operating system	Linux 2.6 with RT-Preempt patch
RT support	1024 KB PLC SRAM battery backup;
	NMI timer
Watchdog	Trigger interval 400 ms (reset triggered at
	time-out)
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	770 mA
Total current for I/O modules (5 V)	1000 mA
Ambient conditions	
Operating temperature	0 °C ... +55 °C
Storage temperature	-10 °C ... +85 °C
Vibration resistance	
Operation	0.5 G, 10-500 Hz
Storage/transit	1 G, 10-500 Hz
Shock resistance	
Operation	5 g, 11 ms, 6 axis
Storage/transit	30 g, 11 ms., 6 axis
Humidity	
Operation	5-90 %, non condensing at 50 °C
Storage/transit	0-90 %, non condensing at 50 °C
Altitude	
Operation	0 ... 10,000 ft
Storage/transit	0 ... 50,000 ft

Technical Data

Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	236 x 70 x 100
	Height from upper-edge of DIN 35 rail
Weight	1100 g
Electromagnetic compatibility	Unwanted emission limits and operation
	acc. to DIN EN 55022,
	DIN EN 50081-1;
	Interference immunity limits and operation
	acc. to DIN EN 50082-2
Protection & safety	Safety limits and operation acc. to
	DIN EN 60950
Degree of protection	IP20 acc. to DIN 40050
Type of mounting	DIN 35 rail
Housing material	Aluminum

ETHERNET TCP/IP Fieldbus Coupler

10/100 Mbit/s; digital and analog signals



This fieldbus coupler connects the WAGO-I/O-SYSTEM as a slave to the ETHERNET fieldbus.
The fieldbus coupler is capable of supporting all I/O modules. The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty data is sent via words and/or bytes, digital data is sent bit by bit.
This buscoupler is suitable for data rates of 10MBit/s and 100MBit/s.
The buscoupler offers many different application protocols which can be used for data acquisition or control (MODBUS, ETHERNET /IP) or for system managing and diagnostics (HTTP, BootP, DHCP, DNS, SNTP, FTP and SNMP).
HTML pages can be placed on an internal server for use in Web-based applications.

Description	Item No.	Pack. Unit
ETHERNET TCP/IP 100 MBit	**750-341**	1

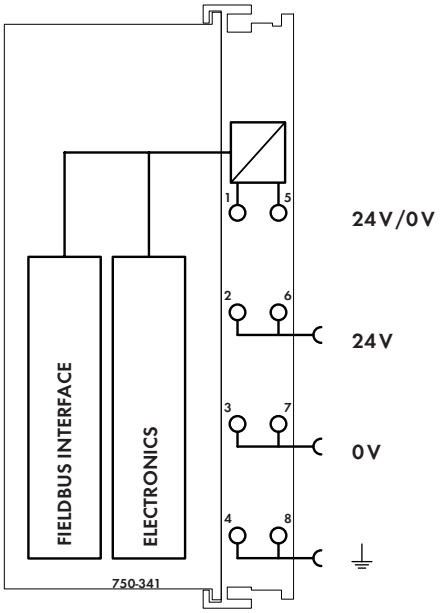
Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

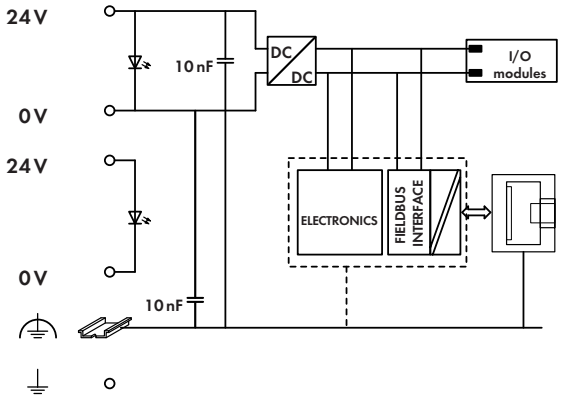
Approvals

Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

System Data

No. of couplers connected to Master	limited by ETHERNET specification
Transmission medium	Twisted Pair S-UTP 100 Ω cat. 5
Max. length of fieldbus segment	100 m between hub station and 750-341; max. length of network limited by ETHERNET specification
Baud rate	10/100 Mbit/s
Buscoupler connection	RJ-45
Protocols	MODBUS/TCP (UDP), EtherNet/IP, HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP





Technical Data

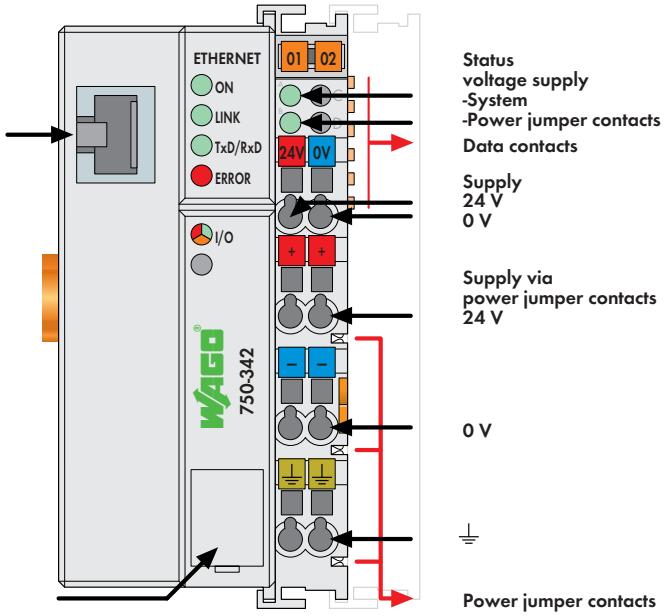
Number of I/O modules	64
with bus extension	250
Fieldbus	
Max. input process image	2 Kbytes
Max. output process image	2 Kbytes
Configuration	via PC
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	179.5 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

ETHERNET TCP/IP Fieldbus Coupler

10 Mbit/s; digital and analog signals



The ETHERNET TCP/IP fieldbus coupler supports a number of network protocols to send process data via ETHERNET TCP/IP. By observing the relevant IT standards, connection to existing local or global networks (LAN, Internet) is possible without any problem.
Using ETHERNET as a fieldbus makes universal data transmission between the factory and the office possible. Moreover, the ETHERNET TCP/IP fieldbus coupler offers remote maintenance, i.e. processes can be controlled regardless of the location.
Process data exchange is done using the MODBUS/TCP protocol. The buscoupler supports all I/O modules and automatically configures, creating a local process image.
The HTML pages that are stored in the fieldbus coupler allow access to information on configuration, status, or I/O data of the ETHERNET TCP/IP fieldbus coupler. Only a standard WEB browser is required.
Dynamic configuration of the IP addresses via a BootP server provides a flexible and easy way to configure the network.

Description	Item No.	Pack. Unit
ETHERNET TCP/IP 10 MBit	**750-342**	1

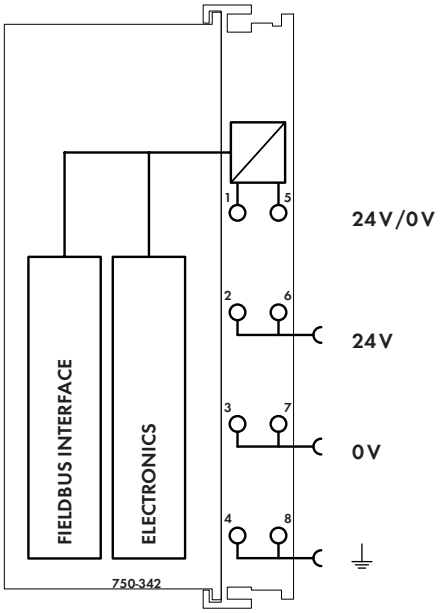
Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

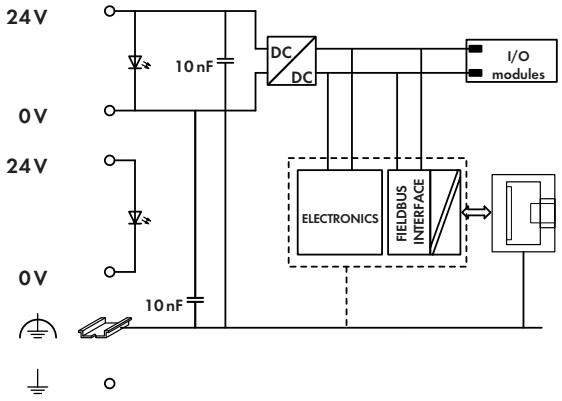
Approvals

Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
	BR-Ex nA II T4
Shipbuilding	see "Approvals Overview" in section 1

System Data

No. of couplers connected to Master	limited by ETHERNET specification
Transmission medium	Twisted Pair S-UTP 100 Ω cat. 5
Max. length of fieldbus segment	100 m between hub station and 750-342; max. length of network limited by ETHERNET specification
Baud rate	10 Mbit/s
Buscoupler connection	RJ-45
Protocols	MODBUS/TCP, HTTP, BootP, MODBUS/UDP





Technical Data

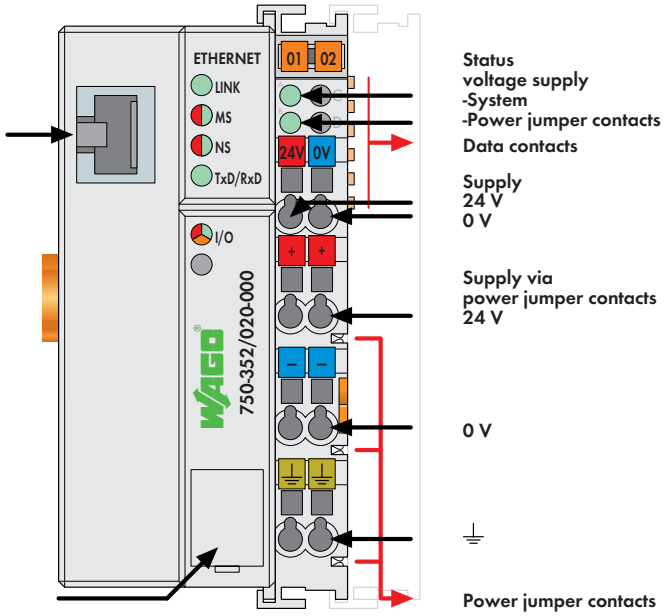
Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Max. number of socket connections	1 HTTP; 3 MODBUS / TCP
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	200 mA
Total current for I/O modules (5 V)	1800 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	197 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

ETHERNET TCP/IP Eco Fieldbus Coupler

10/100 Mbit/s; digital and analog signals



This Eco fieldbus coupler connects the WAGO-I/O-SYSTEM as a slave to the ETHERNET fieldbus.
The fieldbus coupler is capable of supporting all I/O modules. The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty data is sent via words and/or bytes, digital data is sent bit by bit.
This buscoupler is suitable for data rates of 10MBit/s and 100MBit/s.
The buscoupler offers many different application protocols which can be used for data acquisition or control (MODBUS, ETHERNET /IP) or for system managing and diagnostics (HTTP, BootP, DHCP, DNS and SNMP).
HTML pages can be placed on an internal server for use in Web-based applications.

Description	Item No.	Pack. Unit
ETHERNET TCP/IP 100 MBit/s ECO	**750-352/020-000**	1

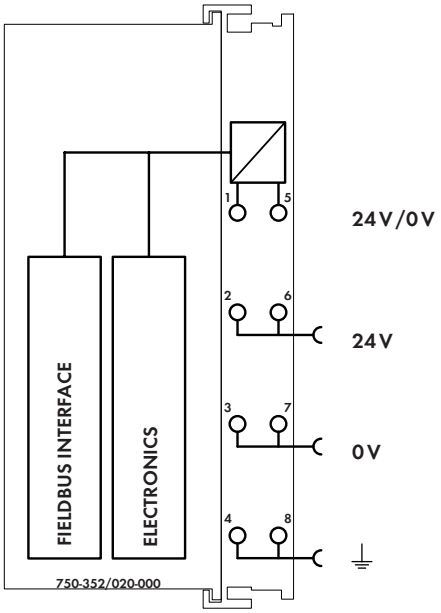
Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

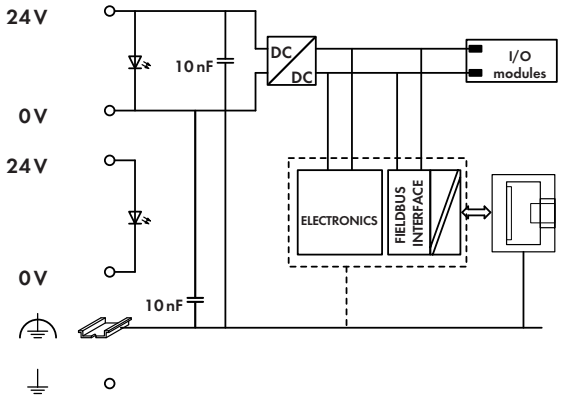
Approvals

Conformity marking	CE
UL 508	

System Data

No. of couplers connected to Master	limited by ETHERNET specification
Transmission medium	Twisted Pair S-UTP 100 Ω cat. 5
Max. length of fieldbus segment	100 m between hub station and 750-352/020-000; max. length of network limited by ETHERNET specification
Baud rate	10/100 Mbit/s
Buscoupler connection	RJ-45
Protocols	MODBUS/TCP (UDP), EtherNet/IP, SNMP, HTTP, BootP, DHCP, DNS





Technical Data

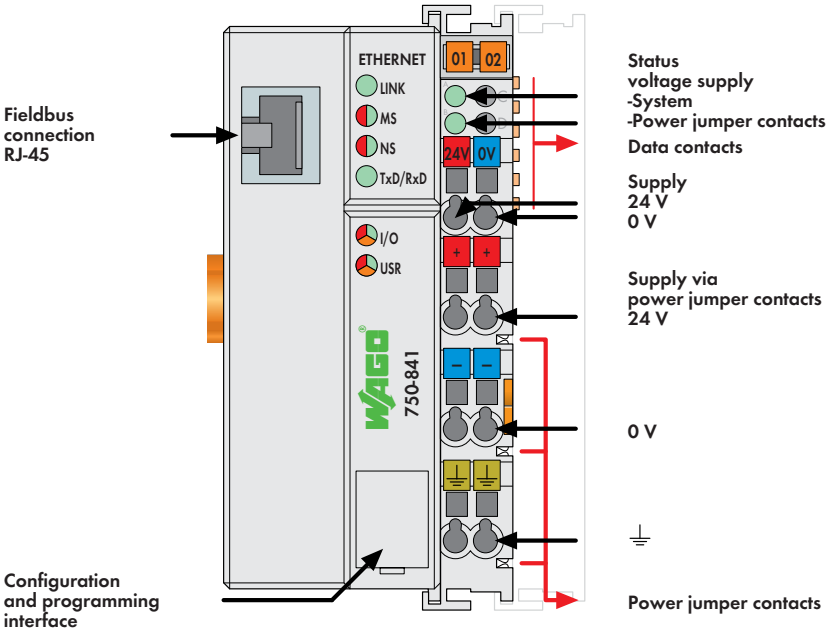
Number of I/O modules	64
Fieldbus	
Max. input process image	256 bytes
Max. output process image	256 bytes
Configuration	via PC
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	179.5 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

ETHERNET TCP/IP Programmable Fieldbus Controller

10/100 Mbit/s; digital and analog signals



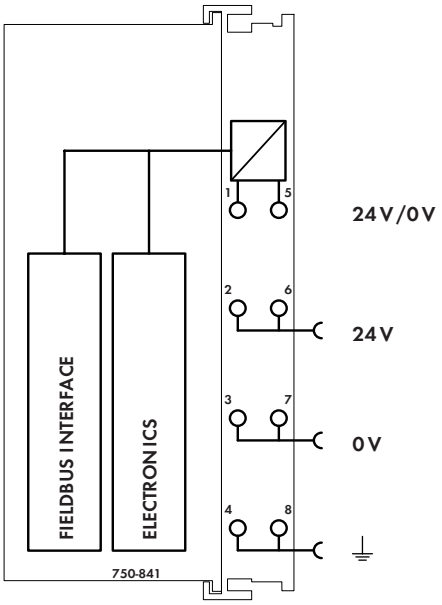
This fieldbus controller connects the WAGO-I/O-SYSTEM as a slave to the ETHERNET fieldbus. The fieldbus controller is capable of supporting all I/O modules.
The fieldbus controller automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes, digital data is sent bit by bit.
This controller is suitable for data rates of 10 Mbit /s and 100 Mbit /s. It is programmable according to IEC 61131-3 using 512 KB program memory, 256 KB data memory and 24 KB retentive memory. This 32-bit based CPU is capable of multitasking and has a real-time clock.
The controller offers many different application protocols which can be used for data acquisition or control (MODBUS,ETHERNET /IP) or for system managing and diagnostics (HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP and SMTP). HTML pages can be placed on an internal server for use in Web-based applications. Programs can be directly accessed via XML and ASP. Library functions for mail, SOAP, ASP, IP configurations, ETHERNET sockets and filesystem complement the product profile.

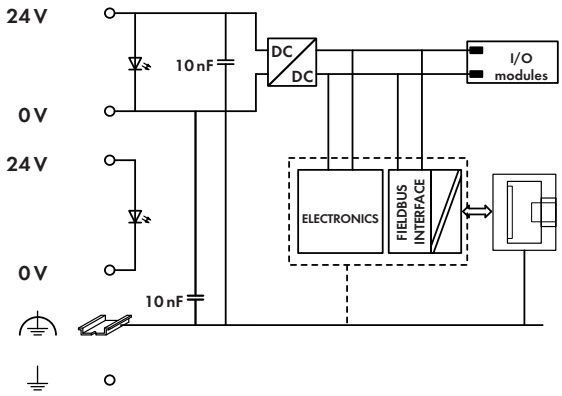
Description	Item No.	Pack. Unit
ETHERNET Controller 100 MBit	**750-841**	1
ETHERNET Controller 100 MBit/s/T	**750-841/025-000**	1
Operating temperature -20 °C ... +60 °C		

Accessories	Item No.	Pack. Unit
WAGO-I/O-PRO CAA	**759-333**	1
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals	(Approvals for product variations upon request)
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4
Shipbuilding	see "Approvals Overview" in section 1

System Data	
No. of controllers connected to Master	limited by ETHERNET specification
Transmission medium	Twisted Pair S-UTP 100 Ω cat. 5
Max. length of fieldbus segment	100 m between hub station and 750-841; max. length of network limited by ETHERNET specification
Baud rate	10/100 Mbit/s
Buscoupler connection	RJ-45
Protocols	MODBUS/TCP (UDP), EtherNet/IP, HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP, SMTP
Programming	WAGO-I/O-PRO CAA
IEC 61131-3	IL, LD, FBD, ST, FC





Technical Data

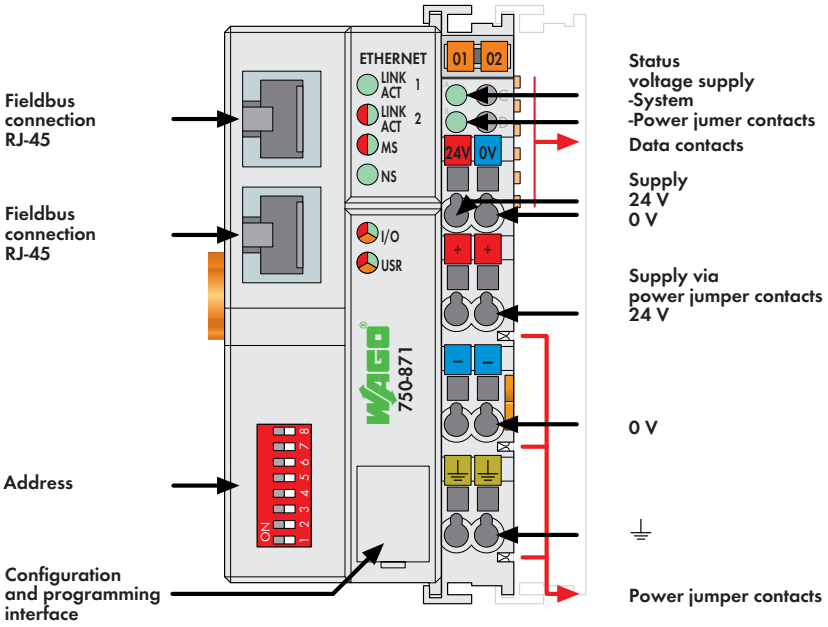
Number of I/O modules	64
with bus extension	250
Fieldbus	
Max. input process image	2 Kbytes
Max. output process image	2 Kbytes
Max. input variables	512 bytes
Max. output variables	512 bytes
Configuration	via PC
Program memory	512 Kbytes
Data memory	256 Kbytes
Non-volatile memory (retain)	24 Kbytes (16 Kbytes retain, 8 Kbytes flag)
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	184 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

ETHERNET TCP/IP 2 Port Programmable Fieldbus Controller

10/100 Mbit/s; digital and analog signals



This fieldbus controller connects the WAGO-I/O-SYSTEM to the ETHERNET fieldbus.
The fieldbus controller automatically configures, creating a local process image that may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes; digital data is sent bit by bit.
This fieldbus controller permits data transmission rates of 10/100 Mbits/s and is programmable in accordance with IEC 61131-3. The controller provides 512 KB program memory, 256 KB data memory and 24 KB retain memory. It is capable of multitasking, has a battery-backed, real-time clock and is based on a 32-bit CPU.

The controller offers many different application protocols which can be used for data acquisition or control (MODBUS, ETHERNET/IP) or for system management and diagnostics (HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP and SMTP).
HTML pages can be placed on an internal server for use in Web-based applications.
The second Ethernet interface allows daisy-chaining up to a maximum segment length of 100 m. Due to signal propagation time, the maximum number of controllers that can be wired in series is 20.
In addition, the controller provides the option of configuring the IP address via built-in DIP switch.

Description	Item No.	Pack. Unit
ETHERNET TCP/IP 2-port Controller	**750-871**	1

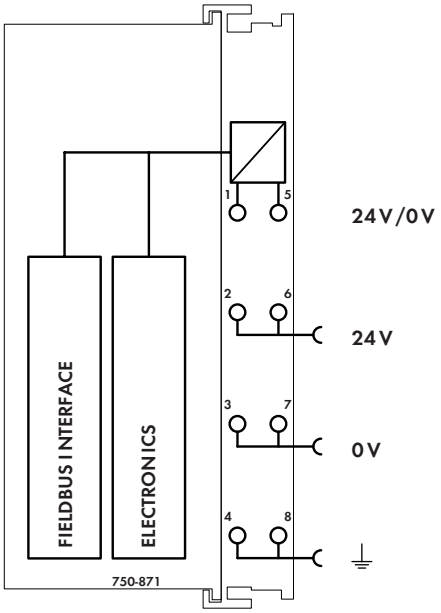
Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

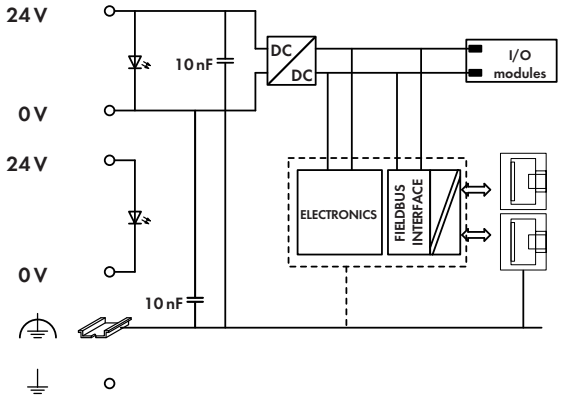
Approvals

Conformity marking	CE
UL 508	
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4
Shipbuilding	see "Approvals Overview" in section 1

System Data

No. of controllers connected to Master	limited by ETHERNET specification
Transmission medium	Twisted Pair S-UTP 100 Ω Cat 5
Max. length of fieldbus segment	100 m hub station and 750-871; max. length of network limited by ETHERNET specification
Baud rate	10/100 Mbit/s
Buscoupler connection	2 x RJ-45
Protocols	MODBUS/TCP (UDP), EtherNet/IP, HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP
Programming	WAGO-I/O-PRO CAA
IEC 61131-3	IL, LD, FBD, ST, FC





Technical Data

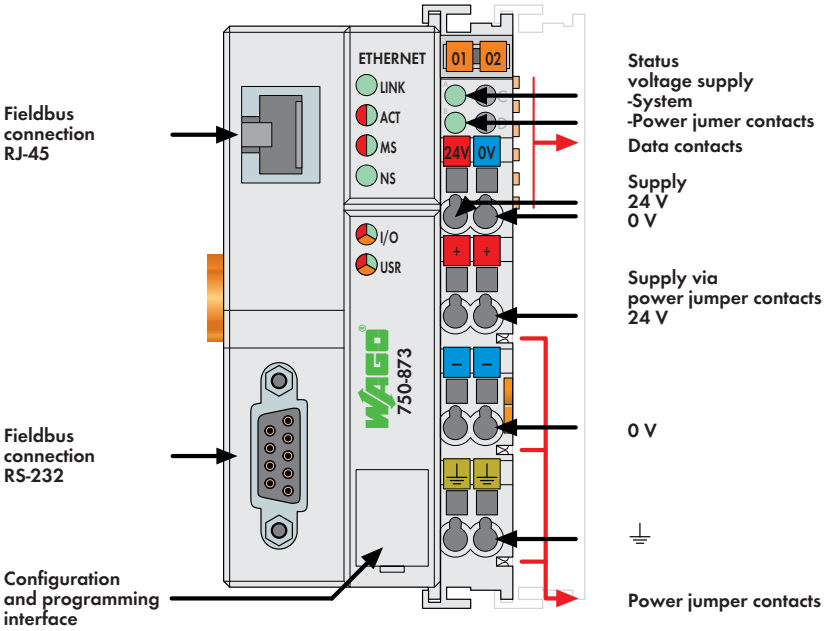
Number of I/O modules	64
with bus extension	250
Fieldbus	
Max. input process image	2 Kbytes
Max. output process image	2 Kbytes
Max. input variables	512 bytes
Max. output variables	512 bytes
Configuration	via PC
Program memory	512 Kbytes
Data memory	256 Kbytes
Non-volatile memory (retain)	24 Kbytes (16 Kbytes retain, 8 Kbytes flag)
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	214.3 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

ETHERNET TCP/IP & RS-232 Programmable Fieldbus Controller

10/100 Mbit/s; digital and analog signals



This fieldbus controller connects the WAGO-I/O-SYSTEM to ETHERNET.
The fieldbus controller automatically configures, creating a local process image that may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes; digital data is sent bit by bit.
This fieldbus controller permits data transmission rates of 10/100 Mbits/s and is programmable in accordance with IEC 61131-3. The controller provides 512 KB program memory, 256 KB data memory and 24 KB retain memory. It is capable of multitasking, has a battery-backed, real-time clock and is based on a 32-bit CPU.
The controller offers many different application protocols which can be used for data acquisition or control (MODBUS, ETHERNET/IP) or for system management and diagnostics (HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP and SMTP).

HTML pages can be placed on an internal server for use in Web-based applications.
The integrated RS-232 interface communicates with external devices.
The controller can also be addressed as Modbus RTU slave via RS-232 interface.

Description	Item No.	Pack. Unit
ETHERNET TCP/IP RS-232 Controller	**750-873**	1

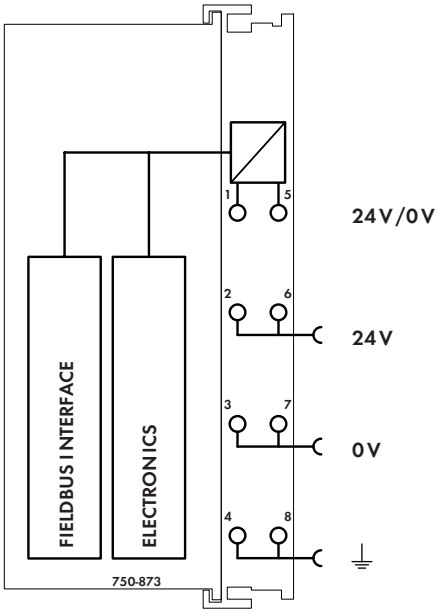
Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

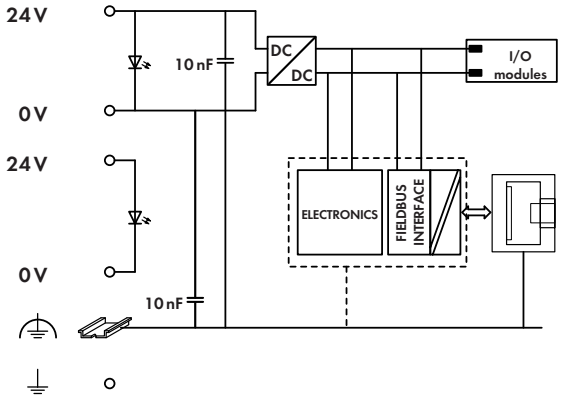
Approvals

Conformity marking	CE
UL 508	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

System Data

System data ETHERNET:	
No. of controllers connected to Master	limited by ETHERNET specification
Transmission medium	Twisted Pair S-UTP 100 Ω Cat 5
Max. length of fieldbus segment	100 m hub station and 750-873; max. length of network limited by ETHERNET specification
Baud rate	10/100 Mbit/s
Buscoupler connection	RJ-45
Protocols	MODBUS/TCP (UDP), EtherNet/IP, HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP
System data Serial:	
Transmission medium	shielded Cu cable 2 (4) x 0.25 mm²
Max. length of fieldbus segment	15 m depending on the baud rate / on the cable (at 19200 baud)
Baud rate	9600 baud ... 115 200 baud
Buscoupler connection	1 x D-Sub 9; socket
Programming	WAGO-I/O-PRO CAA
IEC 61131-3	IL, LD, FBD, ST, FC





Technical Data

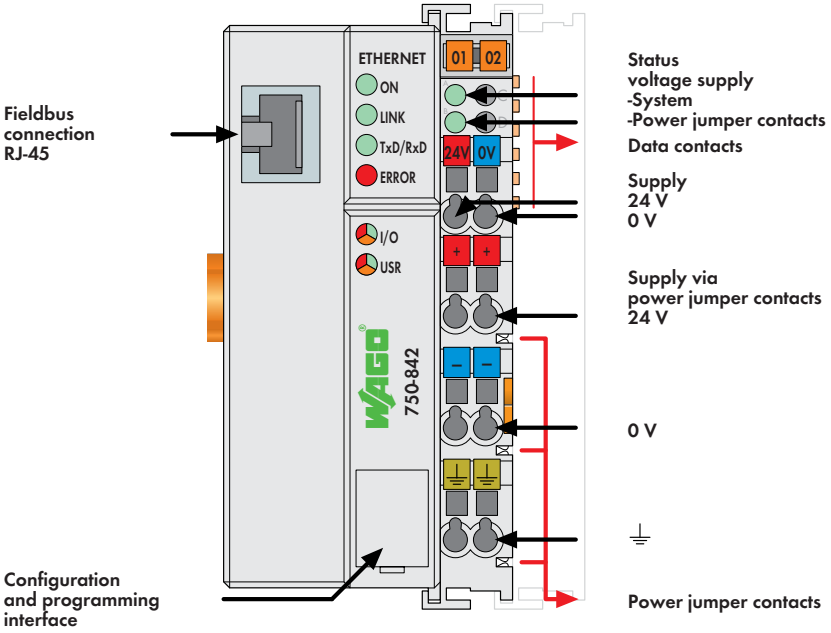
Number of I/O modules	64
with bus extension	250
Fieldbus	
Max. input process image	2 Kbytes
Max. output process image	2 Kbytes
Max. input variables	512 bytes
Max. output variables	512 bytes
Configuration	via PC
Program memory	512 Kbytes
Data memory	256 Kbytes
Non-volatile memory (retain)	24 Kbytes (16 Kbytes retain, 8 Kbytes flag)
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	184 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

ETHERNET TCP/IP Programmable Fieldbus Controller

10 Mbit/s; digital and analog signals



The programmable fieldbus controller for ETHERNET combines the WAGO fieldbus coupler for ETHERNET with the functionality of a PLC. Programming of the application is performed in accordance with IEC 61131-3. By means of function blocks the programmer can program the clients and servers for all transport protocols (TCP, UDP, etc.) via Socket-APIs.

Characteristics and use:

- The use of decentralized control can better support a PLC or PC
- Complex applications can be divided into multiple tasks
- Programmable response in the event of a fieldbus failure
- Signal pre-processing reduces fieldbus transmissions
- Peripheral equipment can be controlled directly, resulting in faster system response times
- Simple, self-sufficient control

Description	Item No.	Pack. Unit
ETHERNET Controller 10 MBit	**750-842**	1

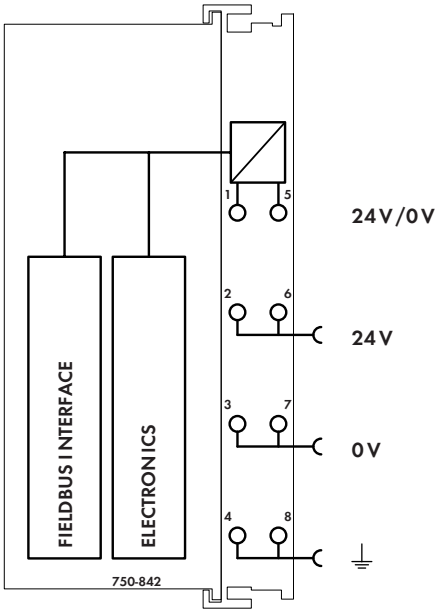
Accessories		Item No.	Pack. Unit
WAGO-I/O-PRO		**759-333**	1
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

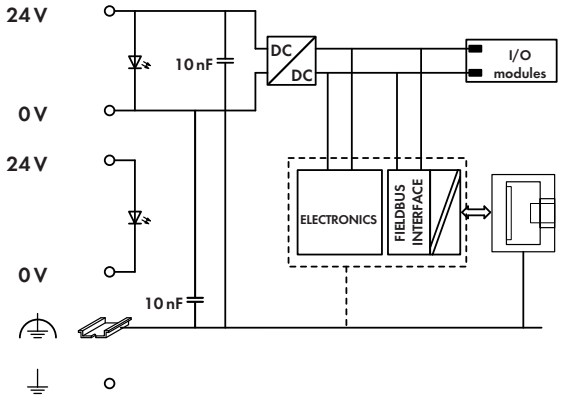
Approvals

Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4
	BR-Ex nA II T4
Shipbuilding	see "Approvals Overview" in section 1

System Data

No. of controllers connected to Master	limited by ETHERNET specification
Transmission medium	Twisted Pair S-UTP 100 Ω cat. 5
Max. length of fieldbus segment	100 m between hub station and 750-842; max. length of network limited by ETHERNET specification
Baud rate	10 Mbit/s
Buscoupler connection	RJ-45
Protocols	MODBUS/TCP, HTTP, BootP, MODBUS/UDP
Programming	WAGO-I/O-PRO 32 (as of firmware SW 15 also programmable with WAGO-I/O-PRO CAA)
IEC 61131-3	IL, LD, FBD, ST, FC





Technical Data

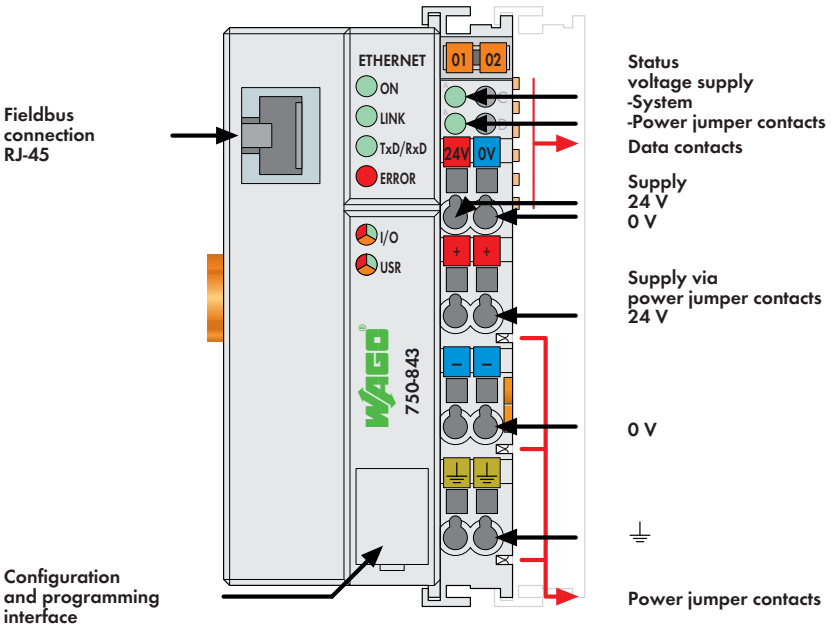
Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Max. input variables	512 bytes
Max. output variables	512 bytes
Configuration	automatic
Program memory	128 Kbytes
Data memory	64 Kbytes
Non-volatile memory (retain)	8 Kbytes
Cycle time	< 3ms for 1,000 statements / 256 dig. I/Os
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	200 mA
Total current for I/O modules (5 V)	1800 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	197 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

ETHERNET TCP/IP Programmable Fieldbus Controller

10 Mbit/s; digital and analog signals



The programmable fieldbus controller for ETHERNET combines the WAGO fieldbus coupler for ETHERNET with the functionality of a PLC. Programming of the application is performed in accordance with IEC 61131-3. By means of function blocks the programmer can program the clients and servers for all transport protocols (TCP, UDP, etc.) via Socket-APIs.

Characteristics and use:

- The use of decentralized control can better support a PLC or PC
- Complex applications can be divided into multiple tasks
- Programmable response in the event of a fieldbus failure
- Signal pre-processing reduces fieldbus transmissions
- Peripheral equipment can be controlled directly, resulting in faster system response times
- Simple, self-sufficient control

Description	Item No.	Pack. Unit
ETHERNET Controller 10 MBit	**750-843**	1

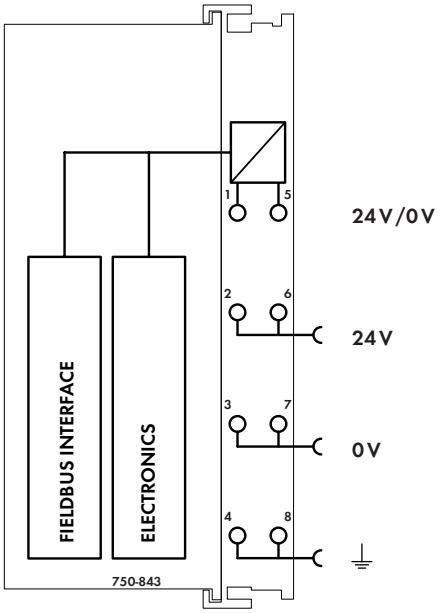
Accessories	Item No.	Pack. Unit
WAGO-I/O-PRO CAA	**759-333**	1
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

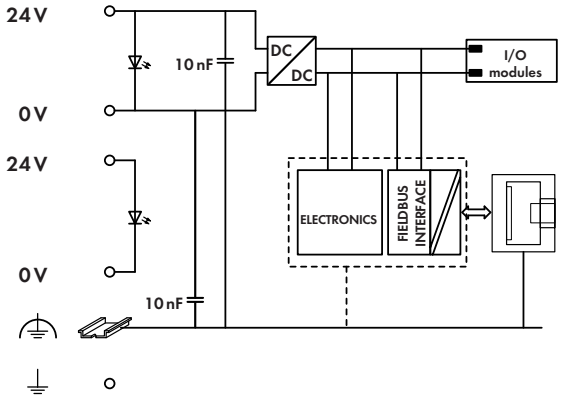
Approvals

Conformity marking	CE
UL 508	

System Data

No. of controllers connected to Master	limited by ETHERNET specification
Transmission medium	Twisted Pair S-UTP 100 Ω cat. 5
Max. length of fieldbus segment	100 m between hub station and 750-843; max. length of network limited by ETHERNET specification
Baud rate	10 Mbit/s
Buscoupler connection	RJ-45
Protocols	MODBUS/TCP, HTTP, BootP, MODBUS/UDP
Programming	WAGO-I/O-PRO CAA
IEC 61131-3	IL, LD, FBD, ST, FC





Technical Data

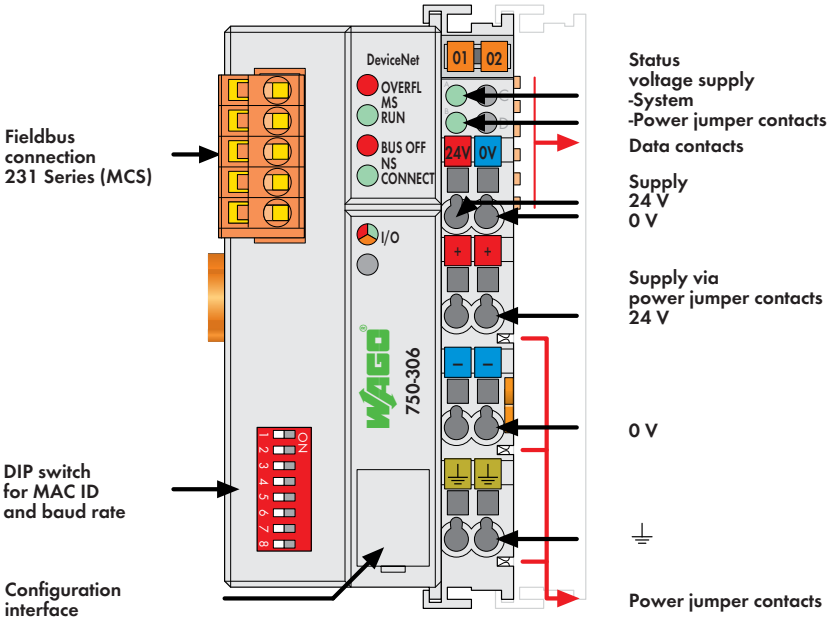
Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Max. input variables	512 bytes
Max. output variables	512 bytes
Configuration	automatic
Program memory	64 Kbytes
Data memory	64 Kbytes
Non-volatile memory (retain)	8 Kbytes
Cycle time	< 3ms for 1,000 statements / 256 dig. I/Os
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	200 mA
Total current for I/O modules (5 V)	1800 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	197 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

DeviceNet Fieldbus Coupler

125 ... 500 Kbaud; digital and analog signals



This buscoupler connects the WAGO-I/O-SYSTEM as a slave to the Device**Net**™ fieldbus.

The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes, digital data is sent bit by bit.

Device**Net**™ stores the process image in the corresponding Master control (PLC, PC or NC).

Notice: EDS files required

The local process image is divided into two data zones containing the data received and the data to be sent. The process data can be sent via the Device**Net**™ fieldbus to the PLC, PC or NC for further processing, and received from the field via Device**Net**™.

The data of the analog modules is stored in the process image which is created automatically according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and added to the analog data. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.

Description	Item No.	Pack. Unit
DeviceNet, w/ status byte	**750-306**	1
DeviceNet (only function with digital modules)	**750-306/000-005**	1
DeviceNet (without buskoppler status byte)	**750-306/000-006**	1

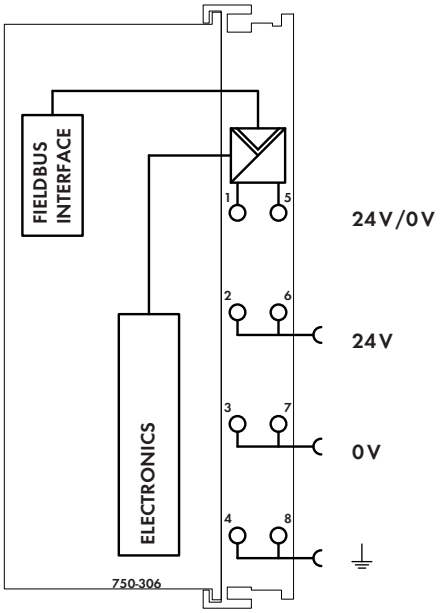
Accessories		Item No.	Pack. Unit
EDS files	Download: www.wago.com		
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

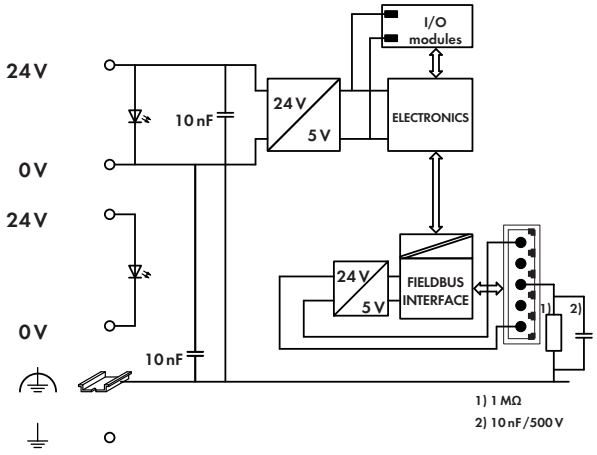
Approvals

Certification	ODVA
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4
Shipbuilding	see "Approvals Overview" in section 1

System Data

No. of couplers connected to Master	64 with scanner
Max. no. of I/O points	approx. 6000 (depends on master)
Transmission medium	Shielded Cu cable
	Trunk line: 2 x 0.82 mm² + 2 x 1.7 mm²
	Drop line: 2 x 0.2 mm² + 2 x 0.32 mm²
Max. length of bus line	100 m ... 500 m
	(depends on baud rate/cable)
Baud rate	125 Kbaud, 250 Kbaud, 500 Kbaud
Buscoupler connection	5-pole male connector, 231 Series (MCS),
	female connector 231-305/ 010-000/
	050-000 (included)





Technical Data

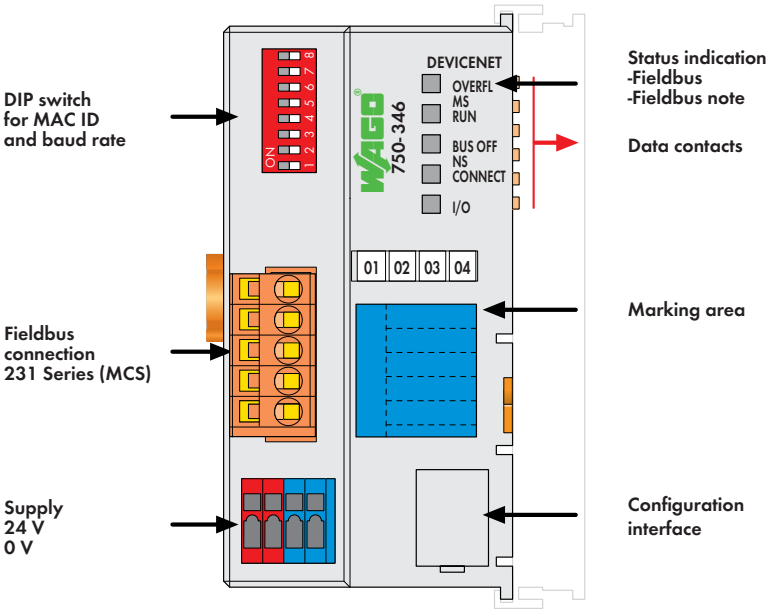
Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Configuration	via PC or PLC
DeviceNet features	Polled I/O message connection
	Strobed I/O message connection
	Change of state
	Cyclic message connection
	Group 2 only, slave
Voltage supply	24 V DC (-25 % ... +30 %)
Current consumption	
via power supply terminal	< 500 mA / 24 V
via DeviceNet interface	< 120 mA / 11 V
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	200.4 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

DeviceNet ECO Fieldbus Coupler

125 ... 500 Kbaud; digital and analog signals



The ECO fieldbus coupler is designed for applications with a reduced scale I/O requirement. Using digital only process data or small amounts of analogs, while retaining all of the choice that's offered by the Series 750 I/O.
The coupler has an integrated supply terminal for the system voltage. The field power jumper contacts are supplied via a separate supply module.
The Device**Net**™ buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules.
Device**Net**™ stores the process image in the corresponding Master control (PLC, PC or NC).

The local process image is divided into two data zones containing the data received and the data to be sent. The process data can be sent via the Device**Net**™ fieldbus to the PLC, PC or NC for further processing, and received from the field via Device**Net**™.
The data of the analog modules is stored in the process image which is created automatically according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and added to the analog data. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.

Notice: EDS files required

Description	Item No.	Pack. Unit
DeviceNet ECO	**750-346**	1

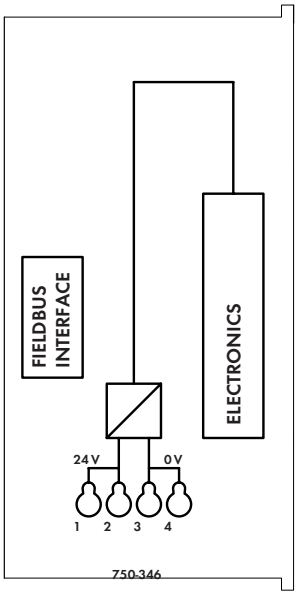
Accessories		Item No.	Pack. Unit
EDS files	Download: www.wago.com		
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

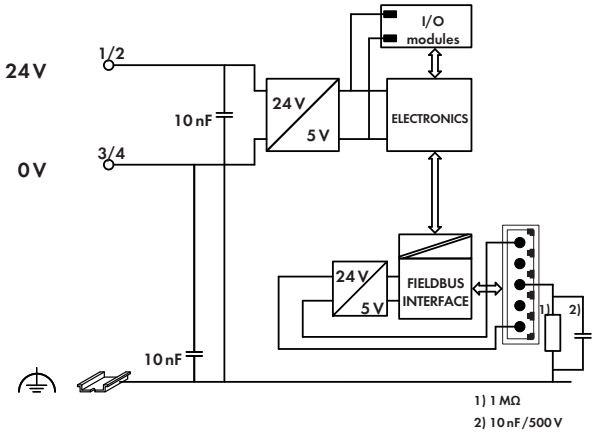
Approvals

Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4
	BR-Ex nA II T4

System Data

No. of couplers connected to Master	64 with scanner
Max. no. of I/O points	approx. 6000 (depends on master)
Transmission medium	Shielded Cu cable
	Trunk line: 2 x 0.82 mm² + 2 x 1.7 mm²
	Drop line: 2 x 0.2 mm² + 2 x 0.32 mm²
Max. length of bus line	100 m ... 500 m
	(depends on baud rate/cable)
Baud rate	125 Kbaud, 250 Kbaud, 500 Kbaud
Buscoupler connection	5-pole male connector, 231 Series (MCS),
	female connector 231-305/ 010-000/
	050-000 (included)





Technical Data

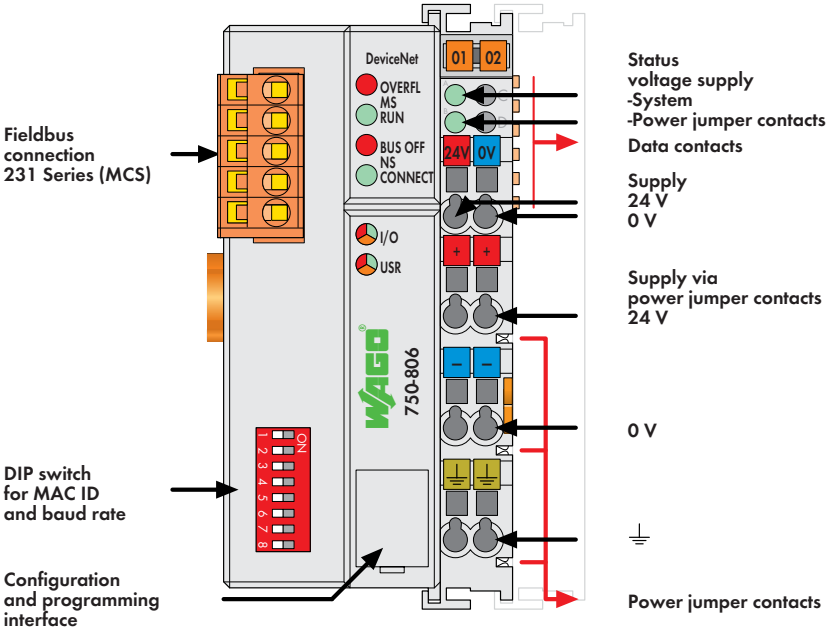
Number of I/O modules	64
Fieldbus	
Max. input process image	32 bytes
Max. output process image	32 bytes
Configuration	via PC or PLC
Voltage supply	24 V DC (-15 % ... +20 %)
Current consumption	
via power supply terminal (typ.) at	
nominal load (24 V)	260 mA
via DeviceNet interface	< 120 mA / 11 V
Efficiency of the power supply (typ.) at	
nominal load (24 V)	80 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	650 mA

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 1.5 mm² / AWG 28 ... 14
	AWG 12 /14: THHN, THWN
Stripped lengths	5 ... 6 mm / 0.22 in
Dimensions (mm) W x H x L	50 x 65 x 97
	Height from upper-edge of DIN 35 rail
Weight	115 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

DeviceNet Programmable Fieldbus Controller

125 ... 500 Kbaud; digital and analog signals



The programmable fieldbus controller for Device**Net**™ combines the functionality of the Device**Net**™ fieldbus coupler with the functionality of a Programmable Logic Control (PLC).

Programming of the application is performed in accordance with IEC 61131-3. The programmer can access all fieldbus and I/O data.

Characteristics and use:

- The use of decentralized control can better support a PLC or PC
- Complex applications can be divided into multiple tasks
- Programmable response in the event of a fieldbus failure
- Signal pre-processing reduces fieldbus transmissions
- Peripheral equipment can be controlled directly, resulting in faster system response times
- Simple, self-sufficient control

Notice: EDS files required

Description	Item No.	Pack. Unit
Contr. DeviceNet	**750-806**	1

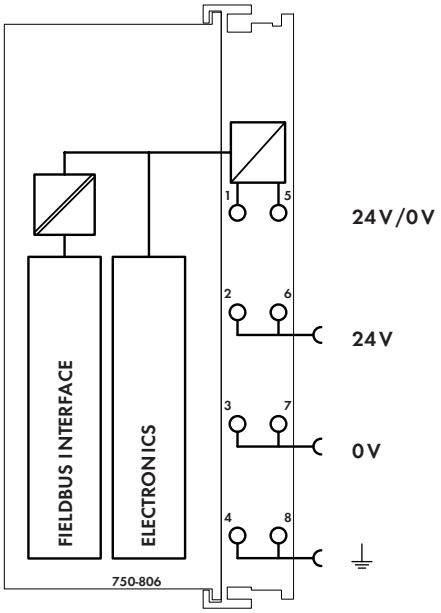
Accessories		Item No.	Pack. Unit
EDS files	Download: www.wago.com		
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

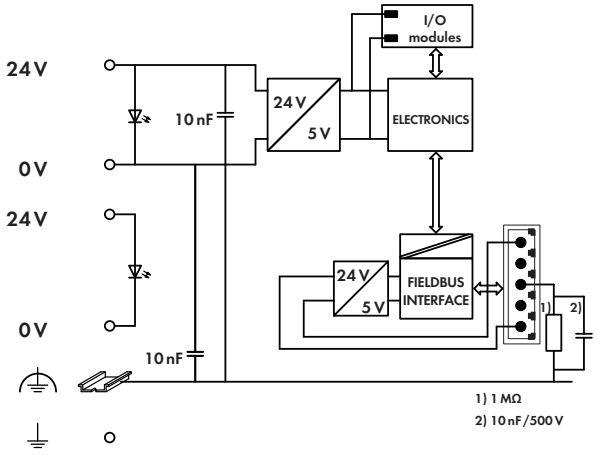
Approvals

Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4
	BR-Ex nA II T4
Shipbuilding	see "Approvals Overview" in section 1

System Data

No. of controllers connected to Master	64 with scanner
Max. no. of I/O points	approx. 6000 (depends on master)
Transmission medium	Shielded Cu cable
	Trunk line: 2 x 0.82 mm² + 2 x 1.7 mm²
	Drop line: 2 x 0.2 mm² + 2 x 0.32 mm²
Max. length of bus line	100 m ... 500 m
	(depends on baud rate/cable)
Baud rate	125 Kbaud, 250 Kbaud, 500 Kbaud
Buscoupler connection	5-pole male connector, 231 Series (MCS),
	female connector 231-305/ 010-000/
	050-000 (included)
Programming	WAGO-I/O-PRO 32 (as of firmware
	SW 08 also programmable with
	WAGO-I/O-PRO CAA)
IEC 61131-3	IL, LD, FBD, ST, FC





Technical Data

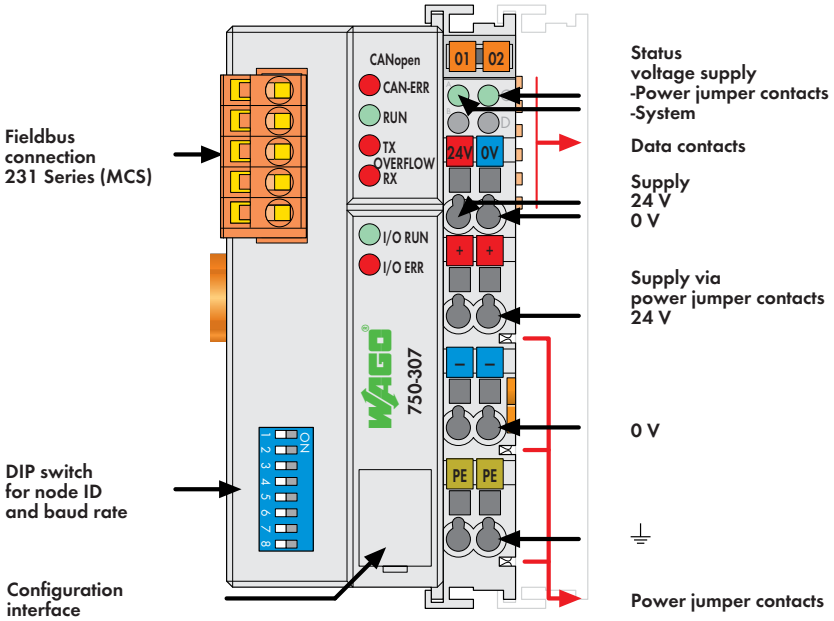
Number of I/O modules	64
Fieldbus	
Max. input process image	1024 bytes
Max. output process image	1024 bytes
Max. input variables	512 bytes
Max. output variables	512 bytes
Configuration	via PC or PLC
Program memory	128 Kbytes
Data memory	64 Kbytes
Non-volatile memory (retain)	8 Kbytes
Cycle time	< 3 ms for 1,000 statements / 256 dig. I/Os
DeviceNet features	Polled I/O message connection
	Strobed I/O message connection
	Change of state
	Cyclic message connection
	UCMM
	DeviceNet master can be programmed using function blocks
Voltage supply	24 V DC (-25 % ... +30 %)
Current consumption	
via power supply terminal	< 500 mA / 24 V
via DeviceNet interface	< 120 mA / 11 V
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	200 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

CANopen Fieldbus Coupler

10 Kbaud ... 1 Mbaud; digital and analog signals



This buscoupler connects the WAGO-I/O-SYSTEM as a slave to the CANopen fieldbus. The module data is transmitted using PDOs and SDOs.
The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes, digital data is sent bit by bit.
The local process image is divided into two data zones containing the data received and the data to be sent. The process data can be sent via the CANopen fieldbus to the PLC, PC or NC for further processing, and received from the field via CANopen.

The data of the analog modules is stored in the PDOs according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and also mapped in the PDOs. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.
All entries of the object dictionary can be mapped - as the user likes - in the 5 Rx PDOs and 5 Tx PDOs.
The complete input and output process image can be transmitted using SDOs.

When implementing new installations, please consider 750-337 Fieldbus Coupler with extended functions (page 80).
Notice: EDS files required

Description	Item No.	Pack. Unit
CANopen	**750-307**	1

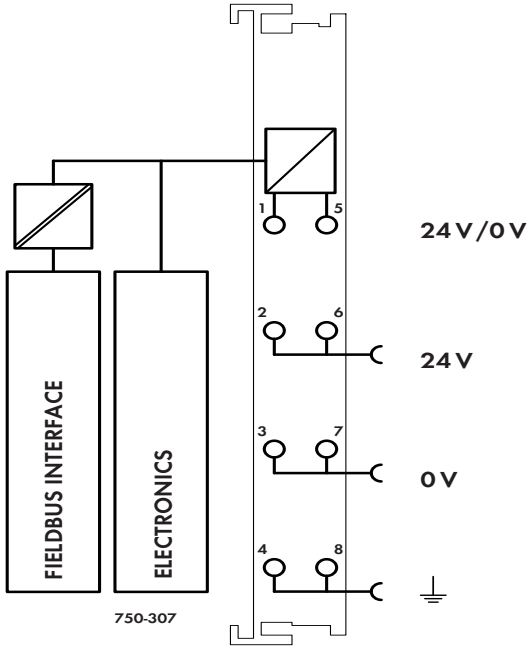
Accessories		Item No.	Pack. Unit
EDS files	Download: www.wago.com		
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

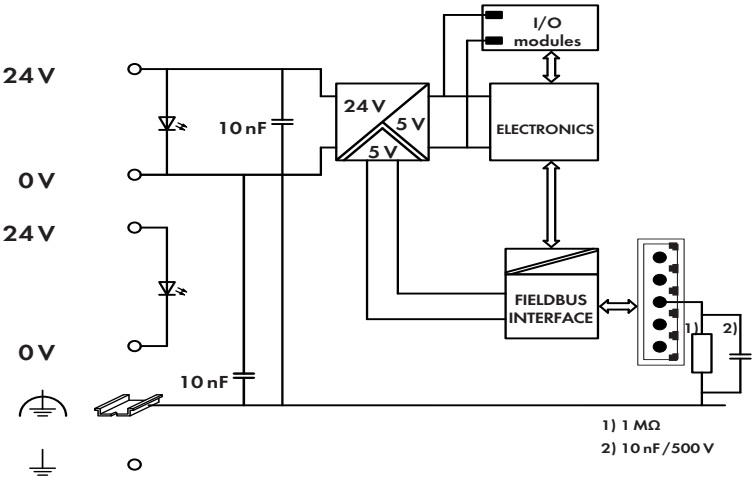
Approvals

Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4

System Data

No. of couplers connected to Master	110
Transmission medium	Shielded Cu cable 3 x 0.25 mm²
Max. length of bus line	30 m ... 1000 m
	(depends on baud rate/cable)
Baud rate	10 Kbaud ... 1 Mbaud
Buscoupler connection	5-pole male connector, 231 Series (MCS),
	female connector 231-305/ 010-000
	(included)





Technical Data

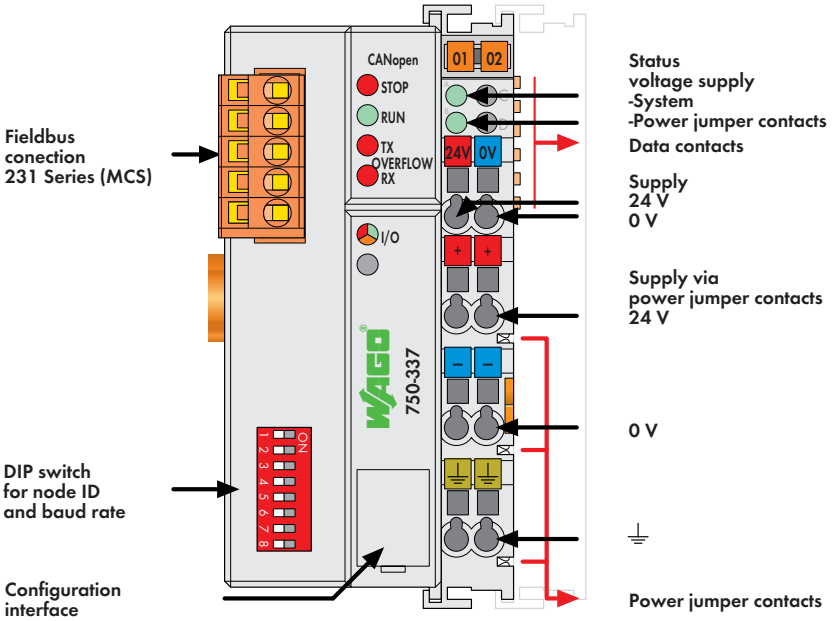
Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Configuration	via PC or PLC
No. of PDOs	5 Tx / 5 Rx
No. of SDOs	2 server SDOs
Communication profile	DS-301 V3.0
Device profile	DS-401 V1.4
COB ID distribution	SDO, standard
Node ID distribution	DIP switches
Other CANopen features	NMT slave
	Minimum boot-up
	Variable PDO mapping
	Emergency message
	Life guarding
Voltage supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	200 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

CANopen Fieldbus Coupler

10 Kbaud ... 1 Mbaud; digital and analog signals



This buscoupler connects the WAGO-I/O-SYSTEM as a slave to the CANopen fieldbus. The module data is transmitted using PDOs and SDOs.
The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes, digital data is sent bit by bit.
The local process image is divided into two data zones containing the data received and the data to be sent. The process data can be sent via the CANopen fieldbus to the PLC, PC or NC for further processing, and received from the field via CANopen.

The data of the analog modules is stored in the PDOs according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and also mapped in the PDOs. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.
All entries of the object dictionary can be mapped - as the user likes - in the 32 Rx PDOs and 32 Tx PDOs.
The complete input and output process image can be transmitted using SDOs. "Spacer modules" can be set via software.

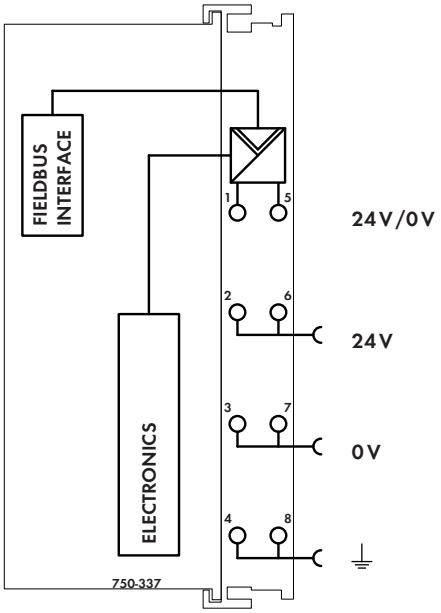
Notice: EDS files required

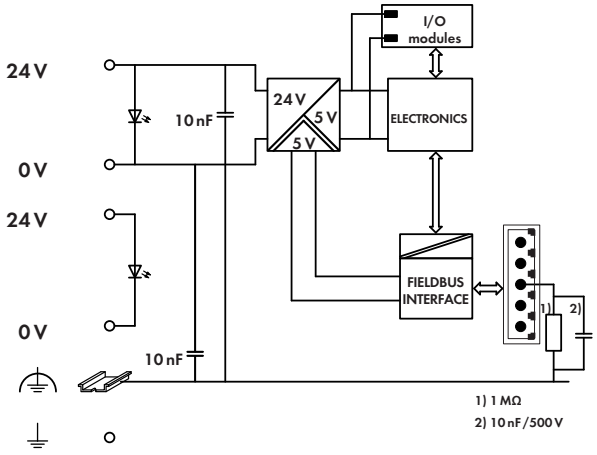
Description	Item No.	Pack. Unit
CANopen MCS	**750-337**	1
CANopen MSS/T	**750-337/025-000**	1
Operating temperature -20 °C ... +60 °C		

Accessories		Item No.	Pack. Unit
EDS files	Download: www.wago.com		
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals	(Approvals for product variations upon request)
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4
	BR-Ex nA II T4
Shipbuilding	see "Approvals Overview" in section 1

System Data	
No. of couplers connected to Master	110
Transmission medium	Shielded Cu cable 3 x 0.25 mm²
Max. length of bus line	30 m ... 1000 m
	(depends on baud rate/cable)
Baud rate	10 Kbaud ... 1 Mbaud
Buscoupler connection	5-pole male connector, 231 Series (MCS),
	female connector 231-305/ 010-000
	(included)





Technical Data

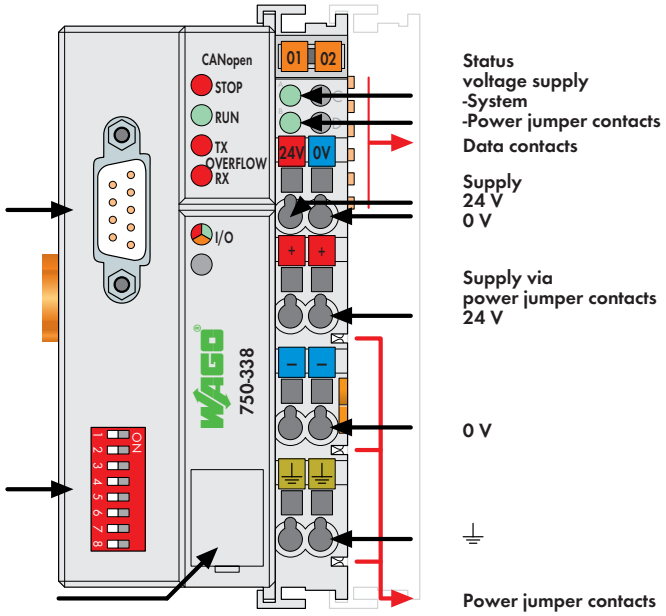
Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Configuration	via PC or PLC
No. of PDOs	32 Tx / 32 Rx
No. of SDOs	2 server SDOs
Communication profile	DS-301 V4.1
Device profile	DS 401 V2.0
	Marginal check
	Edge-triggered PDOs
	Programmable error response
COB ID distribution	SDO, standard
Node ID distribution	DIP switches
Other CANopen features	NMT slave
	Minimum boot-up
	Variable PDO mapping
	Emergency message
	Life guarding
	Configuration of virtual modules
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	200 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

CANopen Fieldbus Coupler D-Sub

10 Kbaud ... 1 Mbaud; digital and analog signals



This buscoupler connects the WAGO I/O SYSTEM as a slave to the CANopen fieldbus.
The module data is transmitted using PDOs and SDOs.
The buscoupler is capable of supporting all bus modules. The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes, digital data is packed into bytes. CANopen allows the storing of the process image in the corresponding Master control (PLC, PC or NC).
The local process image is divided into two data zones containing the data received and the data to be sent.

The process data can be sent via the CANopen fieldbus to the PLC, PC or NC for further processing, and received from the field via CANopen.
The data of the analog modules is stored in the PDOs according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and also mapped in the PDOs. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.
All entries of the object dictionary can be mapped - as the user likes - in the 32 Rx PDOs and 32 Tx PDOs.
The complete input and output process image can be transmitted using SDOs.
"Spacer modules" can be set via software.

Notice: EDS files required

Description	Item No.	Pack. Unit
CANopen D-Sub	**750-338**	1

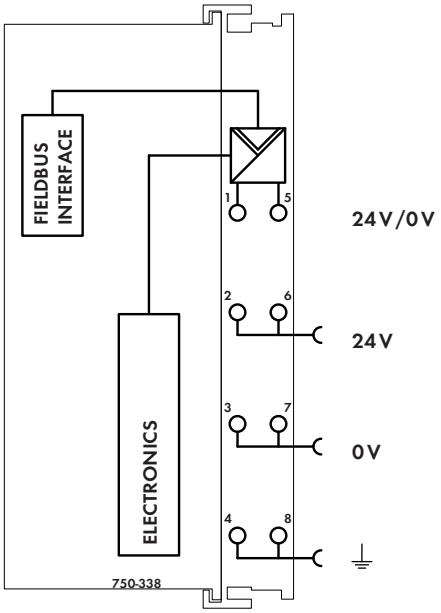
Accessories		Item No.	Pack. Unit
EDS files	Download: www.wago.com		
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

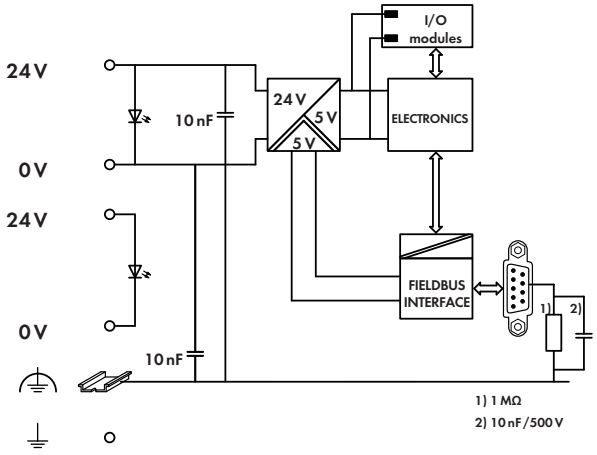
Approvals

Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4

System Data

No. of couplers connected to Master	110
Transmission medium	Shielded Cu cable 3 x 0.25 mm²
Max. length of bus line	30 m ... 1000 m
	(depends on baud rate/cable)
Baud rate	10 Kbaud ... 1 Mbaud
Buscoupler connection	1 x D-Sub 9; plug





Technical Data

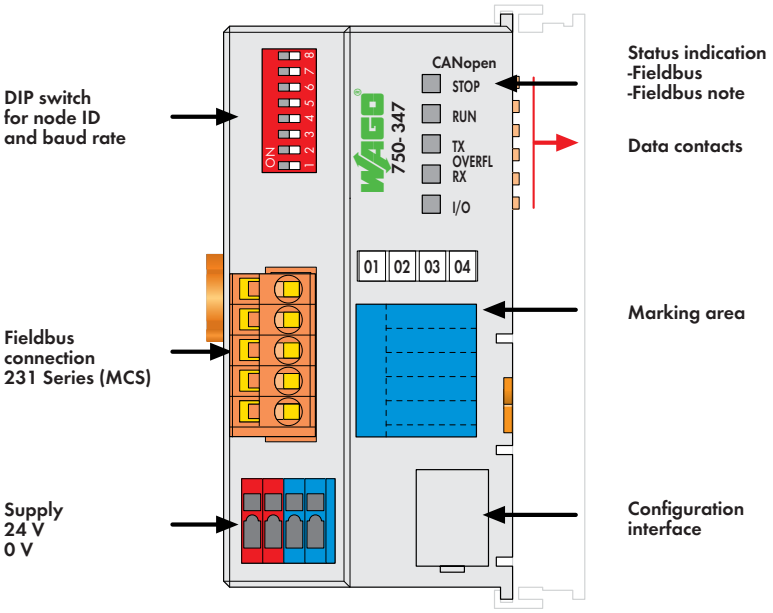
Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Configuration	via PC or PLC
No. of PDOs	32 Tx / 32 Rx
No. of SDOs	2 server SDOs
Communication profile	DS-301 V4.1
Device profile	DS 401 V2.0
	Marginal check
	Edge-triggered PDOs
	Programmable error response
COB ID distribution	SDO, standard
Node ID distribution	DIP switches
Other CANopen features	NMT slave
	Minimum boot-up
	Variable PDO mapping
	Emergency message
	Life guarding
	Configuration of virtual modules
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	200 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

CANopen ECO Fieldbus Coupler MCS

10 Kbaud ... 1 Mbaud; digital and analog signals



The ECO fieldbus coupler is designed for applications with a reduced scale I/O requirement. Using digital only process data or small amounts of analogs, while retaining all of the choice that's offered by the Series 750 I/O.
The coupler has an integrated supply terminal for the system voltage. The field power jumper contacts are supplied via a separate supply module.
The CANopen bus coupler is capable of supporting all I/O modules and automatically configures, creating a local process image.
The local process image is divided into two data zones containing the data received and the data to be sent. The process data can be sent via the CANopen fieldbus to the PLC, PC or NC for further processing, and received from the field via CANopen.

The data of the analog modules is stored in the PDOs according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and also mapped in the PDOs. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.
All entries of the object dictionary can be mapped - as the user likes - in the 5 Rx PDOs and 5 Tx PDOs.
The complete input and output process image can be transmitted using SDOs. "Spacer modules" can be set via software.

Description	Item No.	Pack. Unit
CANopen ECO MCS	**750-347**	1

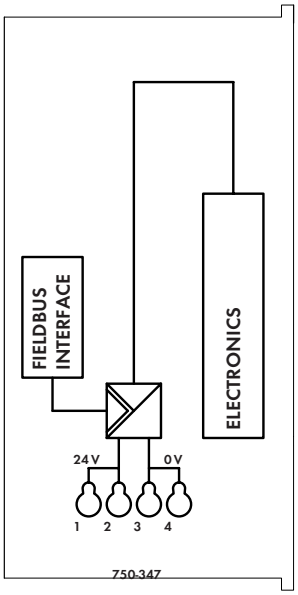
Accessories		Item No.	Pack. Unit
EDS files	Download: www.wago.com		
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

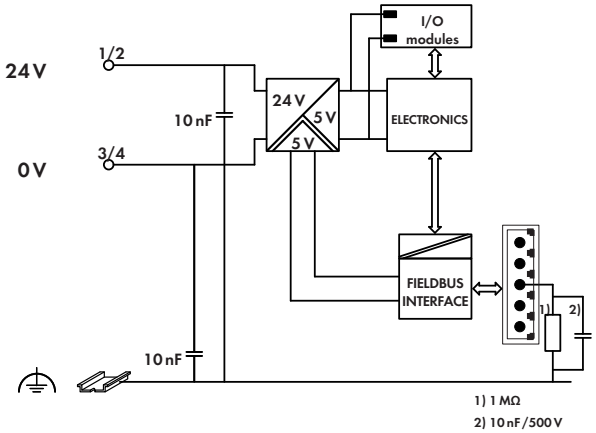
Approvals

Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4
	BR-Ex nA II T4
Shipbuilding	see "Approvals Overview" in section 1

System Data

No. of couplers connected to Master	110
Transmission medium	Shielded Cu cable 3 x 0.25 mm²
Max. length of bus line	30 m ... 1000 m
	(depends on baud rate/cable)
Baud rate	10 Kbaud ... 1 Mbaud
Buscoupler connection	5-pole male connector, 231 Series (MCS),
	female connector 231-305/ 010-000
	(included)





Technical Data

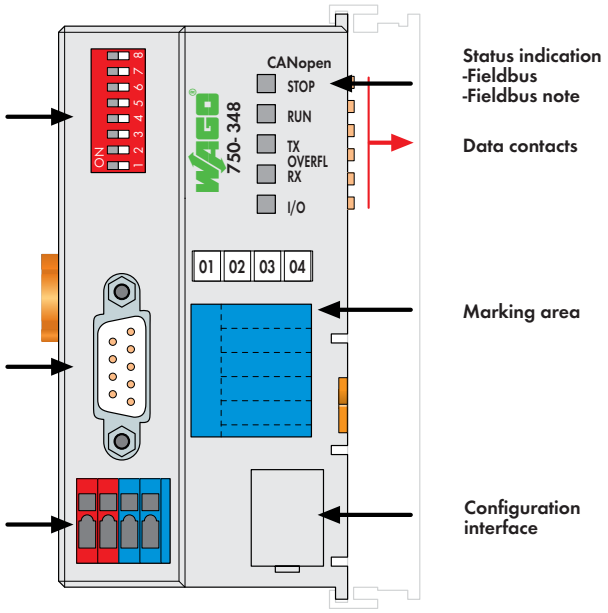
Number of I/O modules	64
Fieldbus	
Max. input process image	32 bytes
Max. output process image	32 bytes
Configuration	via PC or PLC
No. of PDOs	5 Tx / 5 Rx
No. of SDOs	1 server SDO
Communication profile	DS-301 V4.1
Device profile	DS-401 V2.0
	Programmable error response
COB ID distribution	SDO, standard
Node ID distribution	DIP switches
Other CANopen features	NMT slave
	Minimum boot-up
	Variable PDO mapping
	Emergency message
	Life guarding
Voltage supply	24 V DC (-15 % ... +20 %)
Input current typ. at rated load (24 V)	260 mA
Efficiency of the power supply (typ.) at nominal load (24 V)	80 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	650 mA

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 1.5 mm² / AWG 28 ... 14
	AWG 12 /14: THHN, THWN
Stripped lengths	5 ... 6 mm / 0.22 in
Dimensions (mm) W x H x L	50 x 65 x 97
	Height from upper-edge of DIN 35 rail
Weight	115 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

CANopen ECO Fieldbus Coupler D-Sub

10 Kbaud ... 1 Mbaud; digital and analog signals



The ECO fieldbus coupler is designed for applications with a reduced scale I/O requirement. Using digital only process data or small amounts of analogs, while retaining all of the choice that's offered by the Series 750 I/O.
The coupler has an integrated supply terminal for the system voltage. The field power jumper contacts are supplied via a separate supply module.
The CANopen bus coupler is capable of supporting all I/O modules and automatically configures, creating a local process image.
The local process image is divided into two data zones containing the data received and the data to be sent. The process data can be sent via the CANopen fieldbus to the PLC, PC or NC for further processing, and received from the field via CANopen.

The data of the analog modules is stored in the PDOs according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and also mapped in the PDOs. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.
All entries of the object dictionary can be mapped - as the user likes - in the 5 Rx PDOs and 5 Tx PDOs.
The complete input and output process image can be transmitted using SDOs. "Spacer modules" can be set via software.

Description	Item No.	Pack. Unit
CANopen ECO D-Sub	**750-348**	1

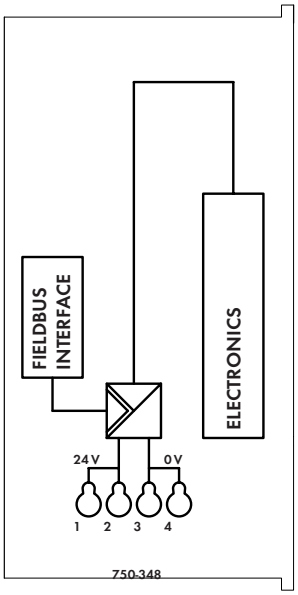
Accessories		Item No.	Pack. Unit
EDS files	Download: www.wago.com		
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

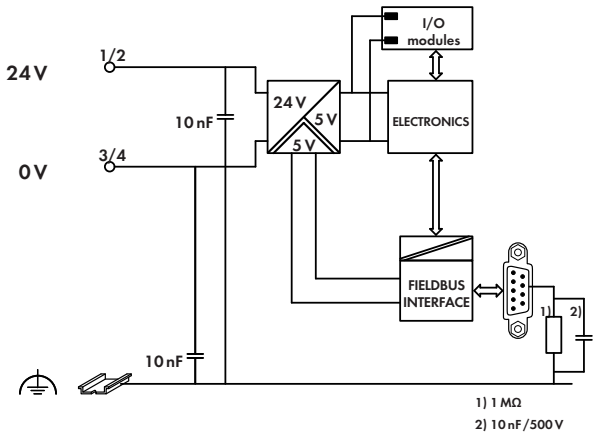
Approvals

Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4
	BR-Ex nA II T4
Shipbuilding	see "Approvals Overview" in section 1

System Data

No. of couplers connected to Master	110
Transmission medium	Shielded Cu cable 3 x 0.25 mm²
Max. length of bus line	30 m ... 1000 m
	(depends on baud rate/cable)
Baud rate	10 Kbaud ... 1 Mbaud
Buscoupler connection	1 x D-Sub 9; plug





Technical Data

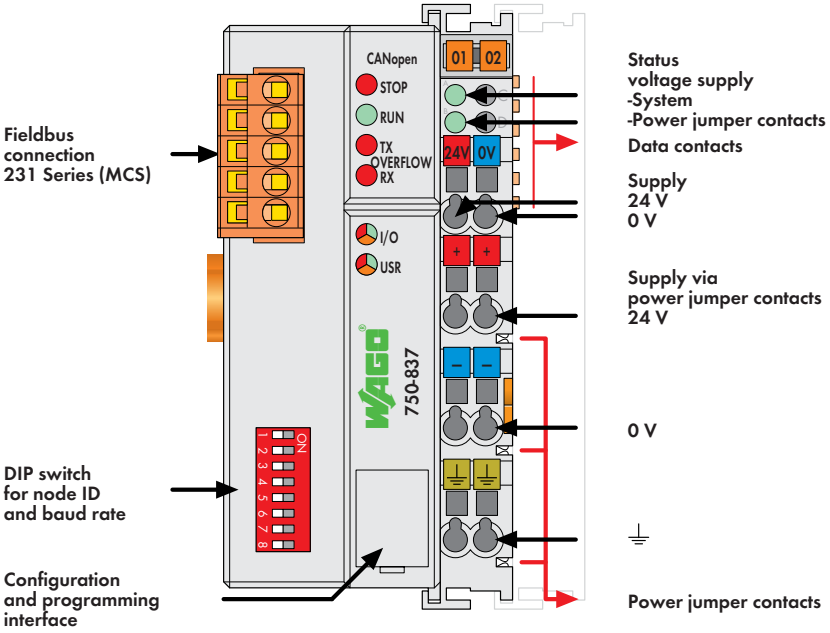
Number of I/O modules	64
Fieldbus	
Max. input process image	32 bytes
Max. output process image	32 bytes
Configuration	via PC or PLC
No. of PDOs	5 Tx / 5 Rx
No. of SDOs	1 server SDO
Communication profile	DS-301 V4.1
Device profile	DS-401 V2.0
	Programmable error response
COB ID distribution	SDO, standard
Node ID distribution	DIP switches
Other CANopen features	NMT slave
	Minimum boot-up
	Variable PDO mapping
	Emergency message
	Life guarding
Voltage supply	24 V DC (-15 % ... +20 %)
Input current typ. at rated load (24 V)	260 mA
Efficiency of the power supply (typ.) at nominal load (24 V)	80 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	650 mA

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 1.5 mm² / AWG 28 ... 14
	AWG 12 /14: THHN, THWN
Stripped lengths	5 ... 6 mm / 0.22 in
Dimensions (mm) W x H x L	50 x 65 x 97
	Height from upper-edge of DIN 35 rail
Weight	115 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

CANopen Programmable Fieldbus Controller MCS

10 Kbaud ... 1 Mbaud; digital and analog signals



The programmable fieldbus controller for CANopen combines the functionality of the CANopen fieldbus coupler with the functionality of a Programmable Logic Controller (PLC).

Programming of the application is performed in accordance with IEC 61131-3. The programmer can access all fieldbus and I/O data.

Characteristics and use:

- The use of decentralized control can better support a PLC or PC
- Complex applications can be divided into multiple tasks
- Programmable response in the event of a fieldbus failure
- Signal pre-processing reduces fieldbus transmissions
- Peripheral equipment can be controlled directly, resulting in faster system response times
- Simple, self-sufficient control

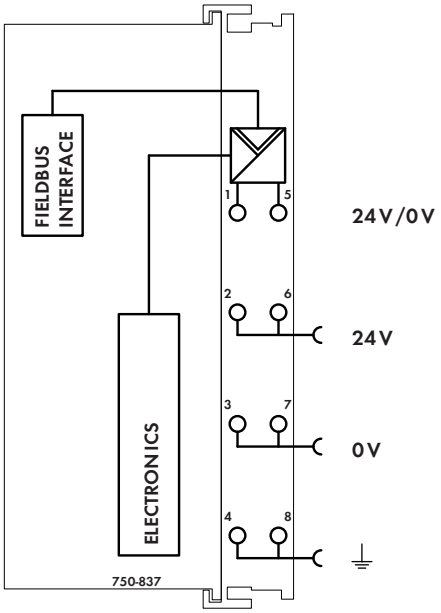
Notice: EDS files required

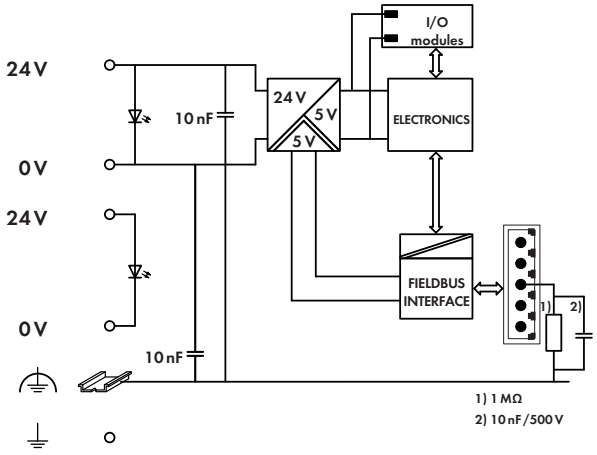
Description	Item No.	Pack. Unit
CANopen Controller MCS	**750-837**	1
CANopen Controller MCS	**750-837/020-000**	1
Program memory 256 Kbytes;		
Data memory 192 Kbytes		
CANopen Controller MCS	**750-837/021-000**	1
Program memory 640 Kbytes;		
Data memory 832 Kbytes		

Accessories		Item No.	Pack. Unit
EDS files	Download: www.wago.com		
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals	(Approvals for product variations upon request)
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4
	BR-Ex nA II T4
Shipbuilding	see "Approvals Overview" in section 1

System Data	
No. of controllers connected to Master	110
Transmission medium	Shielded Cu cable 3 x 0.25 mm²
Max. length of bus line	30 m ... 1000 m
	(depends on baud rate/cable)
Baud rate	10 Kbaud ... 1 Mbaud
Buscoupler connection	5-pole male connector, 231 Series (MCS),
	female connector 231-305/ 010-000
	(included)
Programming	WAGO-I/O-PRO 32 (as of firmware
	SW 11 also programmable with
	WAGO-I/O-PRO CAA)
IEC 61131-3	IL, LD, FBD, ST, FC





Technical Data

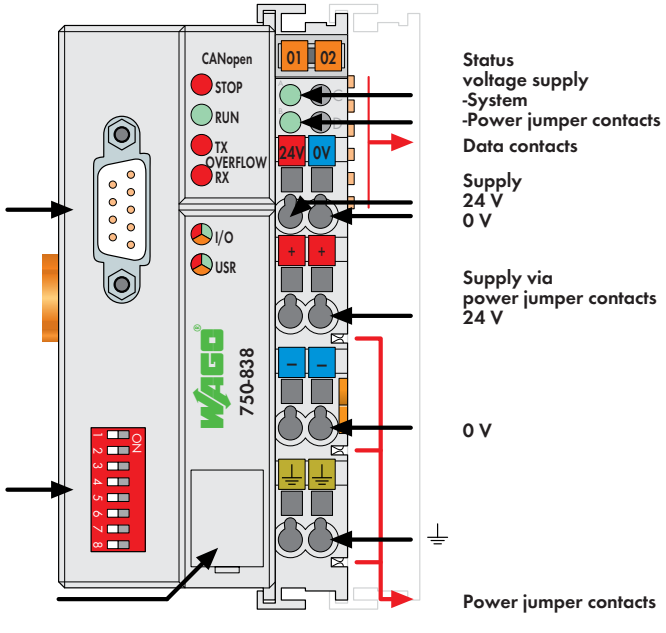
Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Max. input variables	512 bytes
Max. output variables	512 bytes
Configuration	automatic
Program memory	128 Kbytes
Data memory	64 Kbytes
Non-volatile memory (retain)	8 Kbytes
Cycle time	< 3 ms for 1,000 statements / 256 dig. I/Os
No. of PDOs	32 Tx / 32 Rx
No. of SDOs	2 server SDOs / 16 client SDOs
Communication profile	DS-301 V4.01
Device profile	DS-401 V 2.0
	Marginal check
	Edge-triggered PDOs
	Programmable error response
	DSP 405
	using function blocks
	NMT master can be programmed
COB ID distribution	SDO, standard
Node ID distribution	DIP switches
Other CANopen features	NMT slave
	Minimum boot-up
	Variable PDO mapping
	Emergency message
	Life guarding / heartbeat
	Configuration of virtual modules
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	200 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

CANopen Programmable Fieldbus Controller D-Sub

10 Kbaud ... 1 Mbaud; digital and analog signals



The programmable fieldbus controller for CANopen combines the functionality of the CANopen fieldbus coupler with the functionality of a Programmable Logic Controller (PLC).
Programming of the application is performed in accordance with IEC 61131-3, covering all 5 programming languages. The programmer can access all fieldbus and I/O data.

Characteristics and use:
- The use of decentralized control can better support a PLC or PC
- Signal pre-processing reduces fieldbus transmissions
- Complex applications can be divided into multiple tasks
- Tasks can be prioritized
- Peripheral equipment can be controlled directly, resulting in faster system response times
- Programmable response in the event of a fieldbus failure
- Simple, self-sufficient control

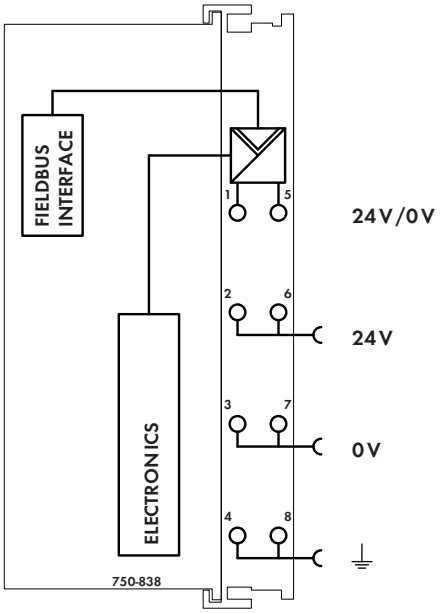
Notice: EDS files required

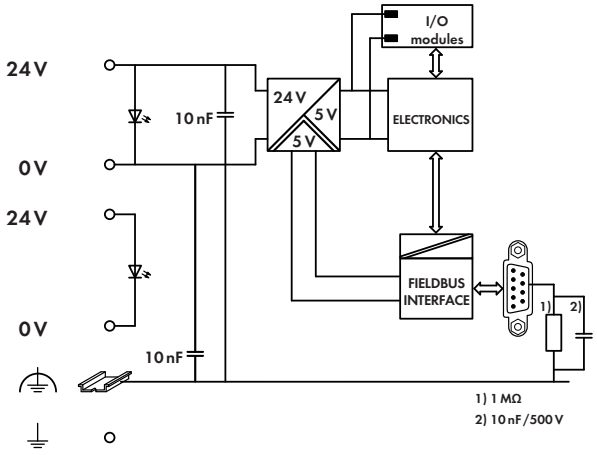
Description	Item No.	Pack. Unit
Contr. CANopen D-Sub	**750-838**	1
Contr. CANopen D-Sub	**750-838/020-000**	1
Program memory 256 Kbytes;		
Data memory 192 Kbytes		
Contr. CANopen D-Sub	**750-838/021-000**	1
Program memory 640 Kbytes;		
Data memory 832 Kbytes		

Accessories		Item No.	Pack. Unit
EDS files	Download: www.wago.com		
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals	(Approvals for product variations upon request)
Conformity marking	CE
UL 508	
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4

System Data	
No. of controllers connected to Master	110
Transmission medium	Shielded Cu cable 3 x 0.25 mm²
Max. length of bus line	30 m ... 1000 m
	(depends on baud rate/cable)
Baud rate	10 Kbaud ... 1 Mbaud
Buscoupler connection	1 x D-Sub 9; plug
Programming	WAGO-I/O-PRO CAA
IEC 61131-3	IL, LD, FBD, ST, FC





Technical Data

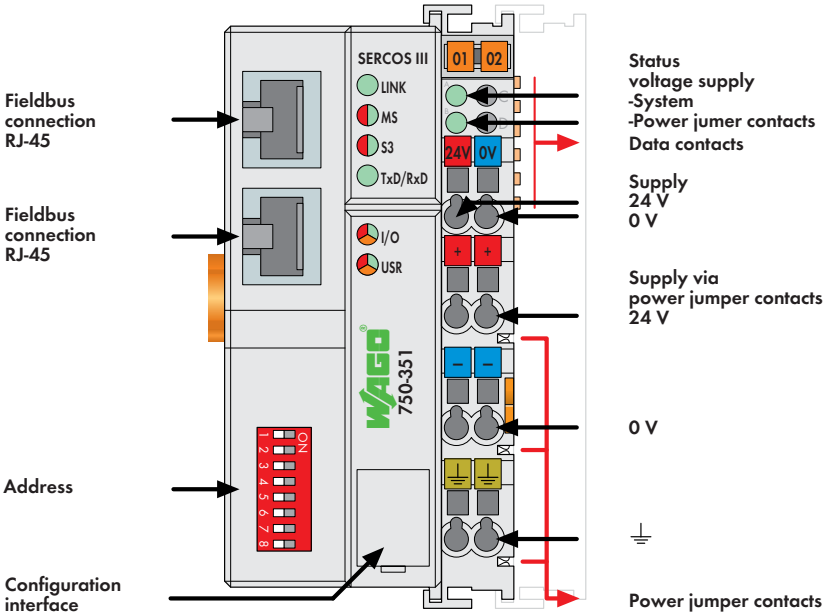
Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Max. input variables	512 bytes
Max. output variables	512 bytes
Configuration	via PC or PLC
Program memory	128 Kbytes
Data memory	64 Kbytes
Non-volatile memory (retain)	8 Kbytes
Cycle time	< 3 ms for 1,000 statements / 256 dig. I/Os
No. of PDOs	32 Tx / 32 Rx
No. of SDOs	2 server SDOs / 16 client SDOs
Communication profile	DS-301 V4.01
Device profile	DS-401 V 2.0
	Marginal check
	Edge-triggered PDOs
	Programmable error response
	DSP 405
	using function blocks
	NMT master can be programmed
COB ID distribution	SDO, standard
Node ID distribution	DIP switches
Other CANopen features	NMT slave
	Minimum boot-up
	Variable PDO mapping
	Emergency message
	Life guarding / heartbeat
	Configuration of virtual modules
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	200 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

SERCOS III Fieldbus Coupler

2-port; 100 Mbit/s; digital and analog signals



The 750-351 Fielbus Coupler connects the WAGO-I/O-SYSTEM to the SERCOS III network.
The fieldbus coupler is capable of supporting all WAGO I/O modules.
The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes; digital data is sent bit by bit.
The buscoupler can integrate into the application as a SERCOS III I/O device and supports the SERCOS III service channel (SVC), real-time channel (RTC) and TCP/IP communication standard.

Two integrated ports allow easy creation of a line or ring structure without requiring additional components. The ports support Auto-MDI/MDIX and will automatically detect the data direction so interchanging cables on the coupler will not impact operation.
The SERCOS III node ID is assigned directly via network configuration.

Description	Item No.	Pack. Unit
SERCOS III Coupler	**750-351**	1

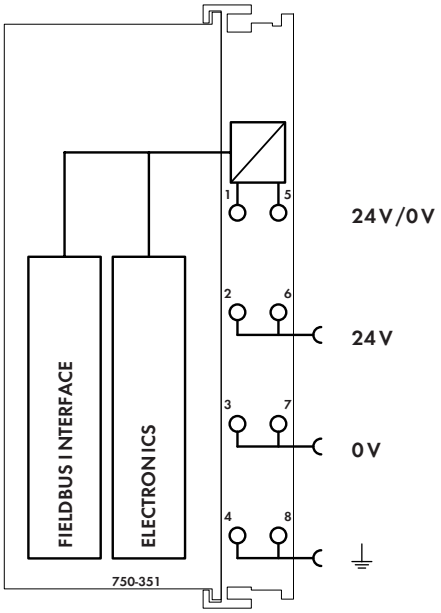
Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

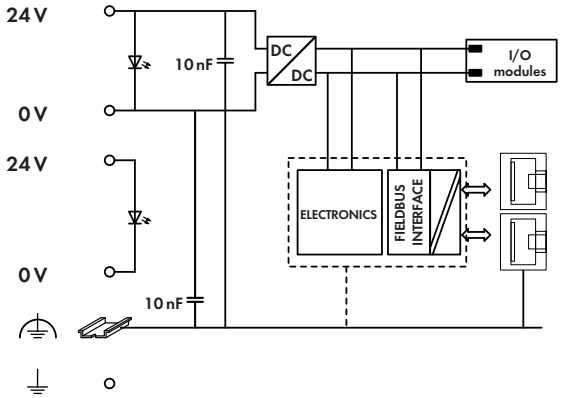
Approvals

Conformity marking	CE
Shipbuilding	see "Approvals Overview" in section 1
SERCOSIII version	V1.1 (pending)
(GDP_Basic, SCP_FixCFG,	
SCP_VarCFG, SCP_Sync)	
IO profile	V1.1 (pending)

System Data

Number of couplers (slaves) in Sercos ring	512
Transmission medium	Twisted Pair S-UTP 100 Ω Cat. 5
Max. length of fieldbus segment	100 m, limited by ETHERNET specification
Max. length of network	51.2 km, limited by ETHERNET specification
Baud rate	100 Mbit/s, full duplex
Buscoupler connection	2 x RJ-45
Protocols	SERCOS III, FSP-IO, TCP/IP, FTP, HTTP
Supported services	SVC, RTC, CC, IP, hot plug, ring break





Technical Data

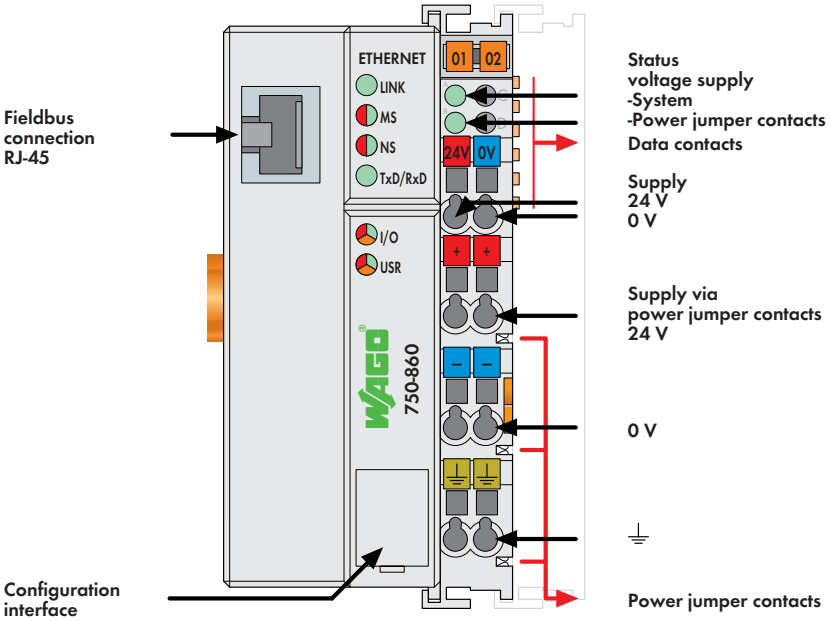
Number of I/O modules	64
with bus extension	250
Fieldbus	
Max. input process image	2 Kbytes (RTC and SVC)
Max. output process image	2 Kbytes (RTC and SVC)
Configuration	Node configuration via:
	WAGO ETHERNET settings,
	Web-based management,
	WAGO-I/O-CHECK,
	SERCOS III-Master (CP2 or higher),
	address selector switch
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	210 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

Linux® Programmable Fieldbus Controller

ETHERNET 10/100 Mbit/s; digital and analog signals



With the Linux ETHERNET controller, a platform is now available for a high-level language software running on an open operating system.

The Linux operating system (kernel version 2.6), which is tailor-made for the embedded controller, allows an efficient software development as known from PC application areas.

Free availability of Linux source code and license-free use of the operating system are the major advantages of the Linux operating system.

The Linux ETHERNET controller can be used in a wide variety of applications in which only special hardware or small PC systems are used.

Usually, software development is also performed in a Linux environment and is supported by descriptive examples.

Support:
Owing to the complexity of the open Linux ETHERNET controller and WAGO-I/O-IPC, the large number of application options and related error sources, WAGO will only provide a hardware support for these versions. The user must directly address the other product partners for the required software support (this may have an additional fee).

Description	Item No.	Pack. Unit
Linux ETHERNET Controller	**750-860**	1

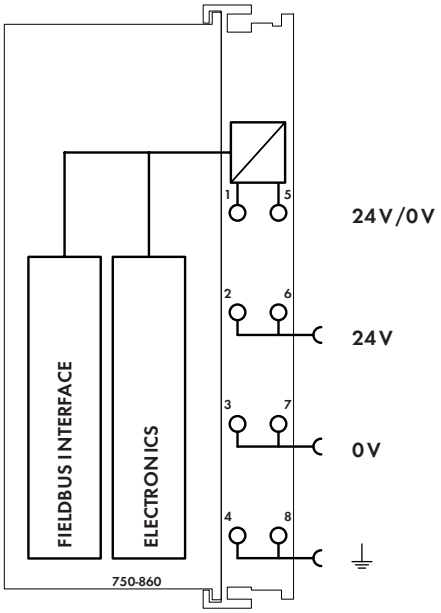
Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	
Linux Controller Distribution CD		**759-914**	

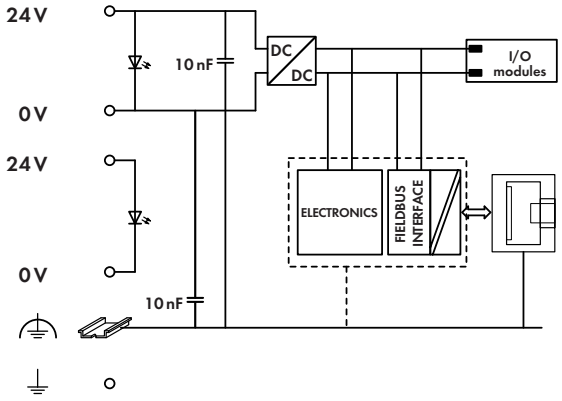
Approvals

Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4

System Data

No. of controllers connected to Master	limited by ETHERNET specification
Transmission medium	Twisted Pair S-UTP 100 Ω Cat. 5
Max. length of fieldbus segment	100 m between hub station and 750-860; max. length of network limited by ETHERNET specification
Baud rate	10/100 Mbit/s
Buscoupler connection	RJ-45
Protocols	MODBUS/TCP, HTTP, BootP, DHCP, DNS, SNTP, FTP, NFS





Technical Data

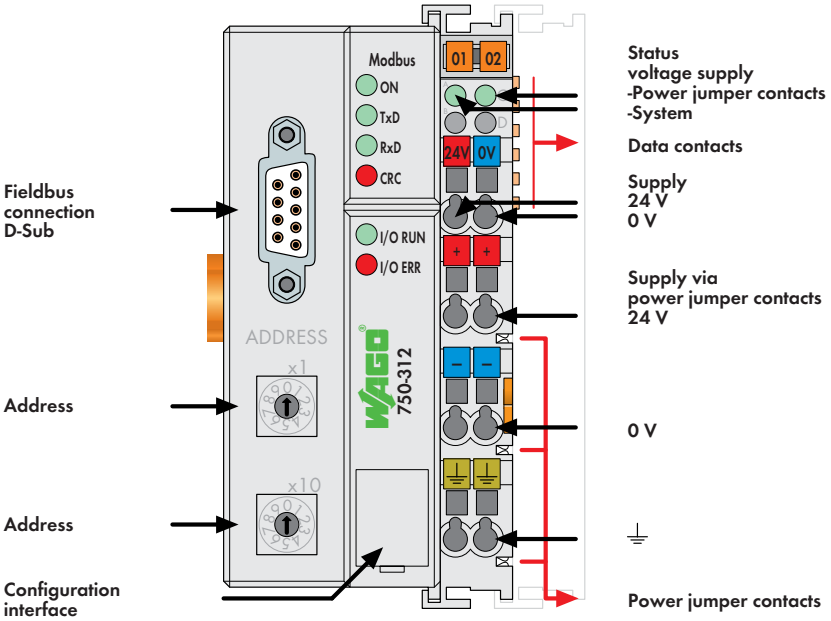
Number of I/O modules	64
with bus extension	250
Fieldbus	
Max. input process image	2 Kbytes
Max. output process image	2 Kbytes
CPU	32-Bit-Risc ARM7TDMI
RAM memory	16 Mbyte SDRAM, 32 Kbyte NOVRAM
Flash	4 Mbytes
EEPROM	4 Kbytes
Operating system	Linux (Kernel version 2.6)
Voltage supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	195 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

MODBUS Fieldbus Coupler

RS 232/485; 150 (1200) baud ... 19.2 (115.2) Kbaud; digital and analog signals



This buscoupler allows connection of the WAGO-I/O-SYSTEM as a slave to the MODBUS fieldbus.

The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes, digital data is sent bit by bit.

The data of the analog modules is stored in the process image which is created automatically according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and added to the analog data. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.

When implementing new installations, please consider 750-812, 750-814, 750-815 and 750-816 Fieldbus Controllers (page 98) with extended functions.

Description	Item No.	Pack. Unit
MODBUS / RS 485 / 150 ... 19200 Bd	**750-312**	1
MODBUS / RS 232 / 150 ... 19200 Bd	**750-314**	1
MODBUS / RS 485 / 1.2 ... 115.2 kBd	**750-315**	1
MODBUS / RS 232 / 1.2 ... 115.2 kBd	**750-316**	1

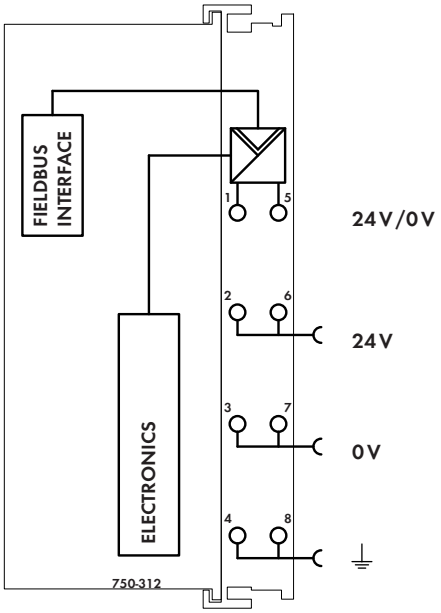
Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

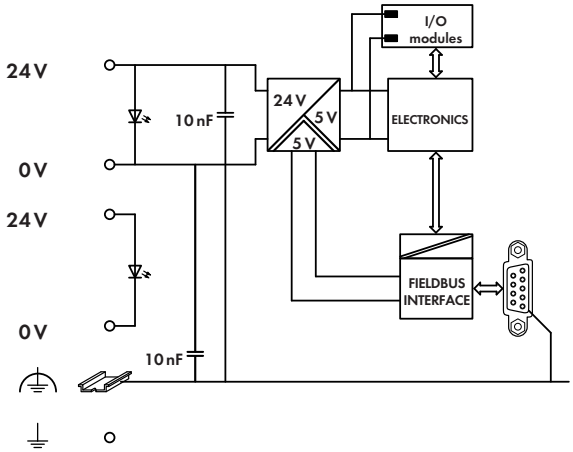
Approvals

Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4
	BR-Ex nA II T4
Shipbuilding	see "Approvals Overview" in section 1

System Data

No. of couplers connected to Master	99 with repeater
Max. no. of I/O points	approx. 6000 (depends on master)
Transmission medium	Shielded Cu cable 2 (4) x 0.25 mm²
Max. length of fieldbus segment	1200 m (depends on baud rate/cable)
Baud rate	150 (1200) Baud ... 19.2 (115.2) kbaud
Buscoupler connection	1 x D-Sub 9; socket





Technical Data

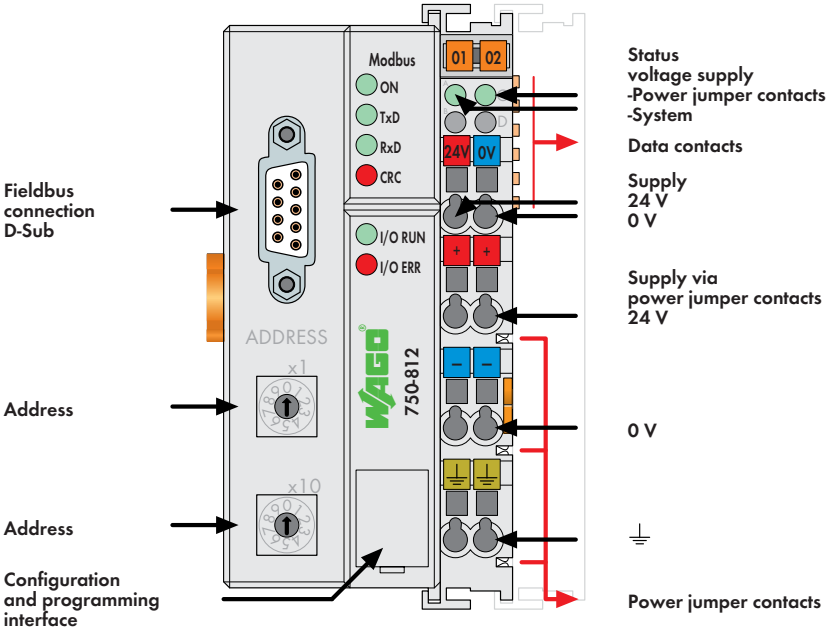
Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Configuration	DIP switch and 2 decimal coders or via PC or PLC
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	199 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

MODBUS Programmable Fieldbus Controller

RS 232/485; 150 (1200) baud ... 19.2 (115.2) Kbaud; digital and analog signals



The programmable fieldbus controller for MODBUS is an expansion of the WAGO-I/O-SYSTEM.

This controller combines the WAGO fieldbus coupler for MODBUS with the functionality of a PLC. Programming of the application is performed in accordance with IEC 61131-3. The programmer can access all fieldbus and I/O data.

Characteristics and use:

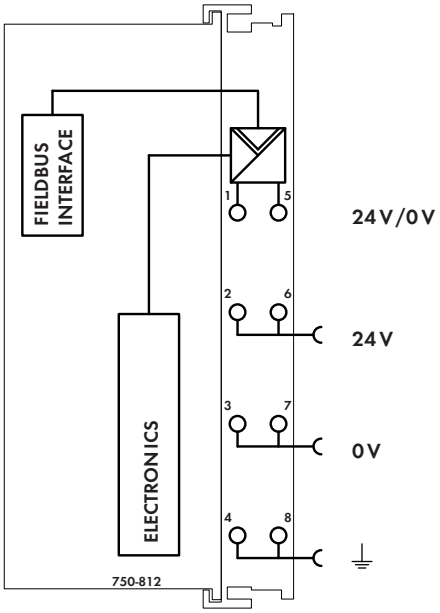
- The use of decentralized control can better support a PLC or PC
- Complex applications can be divided into multiple tasks
- Programmable response in the event of a fieldbus failure
- Signal pre-processing reduces fieldbus transmissions
- Peripheral equipment can be controlled directly, resulting in faster system response times
- Simple, self-sufficient control

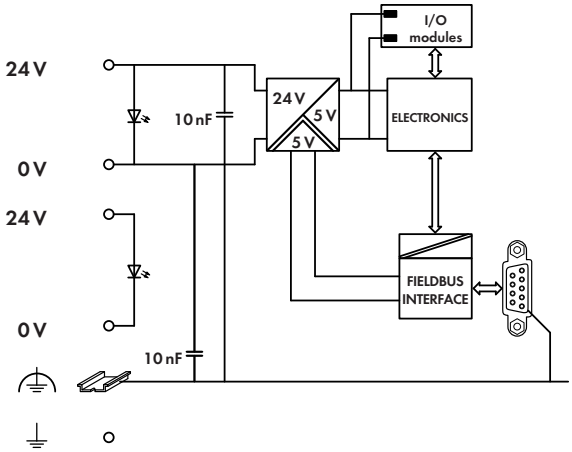
Description	Item No.	Pack. Unit
Contr. MODBUS / RS 485 / 150 ... 19200 Bd	**750-812**	1
Contr. MODBUS / RS 232 / 150 ... 19200 Bd	**750-814**	1
Contr. MODBUS / RS 485 / 1.2 ... 115.2 kBd	**750-815**	1
Contr. MODBUS / RS 232 / 1.2 ... 115.2 kBd	**750-816**	1
Contr. MODBUS / RS 485 / 150 ... 19200 Bd/T	**750-812/025-000**	1
Operating temperature -20 °C ... +60 °C		
Contr. MODBUS / RS 485 / 1.2 ... 115.2 kBd/T	**750-815/025-000**	1
Operating temperature -20 °C ... +60 °C		

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals	(Approvals for product variations upon request)
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4
	BR-Ex nA II T4
Shipbuilding	see "Approvals Overview" in section 1

System Data	
No. of controllers connected to Master	99 with repeater
Max. no. of I/O points	approx. 6000 (depends on master)
Transmission medium	Shielded Cu cable 2 (4) x 0.25 mm²
Max. length of fieldbus segment	1200 m (depends on baud rate/cable)
Baud rate	150 (1200) baud ... 19.2 (115.2) Kbaud
Buscoupler connection	1 x D-Sub 9; socket
Programming	WAGO-I/O-PRO 32
IEC 61131-3	IL, LD, FBD, ST, FC





Technical Data

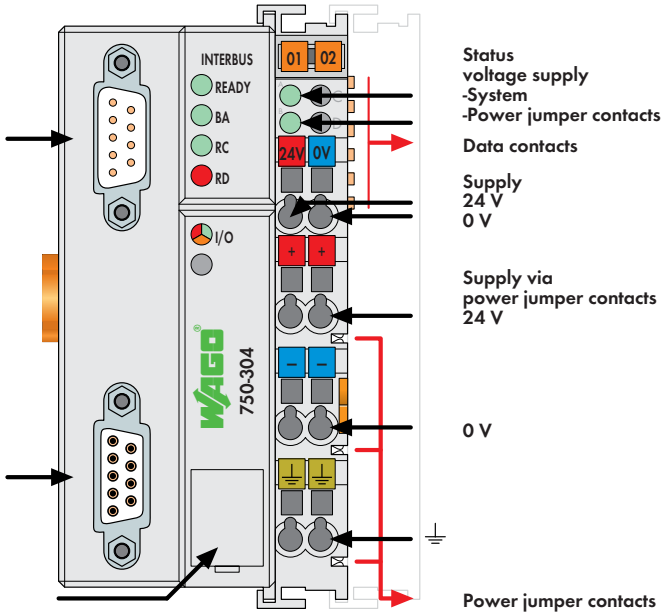
Number of I/O modules	64
Fieldbus	
Max. input process image	1024 bytes
Max. output process image	1024 bytes
Max. input variables	512 bytes
Max. output variables	512 bytes
Configuration	automatic and via switches
Program memory	32 Kbytes
Data memory	32 Kbytes
Non-volatile memory (retain)	8 Kbytes
Cycle time	< 3 ms for 1,000 statements / 256 dig. I/Os
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	205 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

INTERBUS Fieldbus Coupler

500 Kbaud; digital and analog signals



This buscoupler connects the WAGO-I/O-SYSTEM as a slave to the INTERBUS fieldbus.

The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes, digital data is sent bit by bit.

INTERBUS stores the process image in the corresponding Master control (PLC, PC or NC).

The local process image is divided into two data zones containing the data received and the data to be sent. The process data can be sent via the INTERBUS fieldbus to the PLC, PC or NC for further processing, and received from the field via INTERBUS. The process data can be sent via the INTERBUS fieldbus to the PLC, PC or NC for further processing, and received from the field via INTERBUS.

The data of the analog modules is stored in the process image which is created automatically according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and added to the analog data. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.

Description	Item No.	Pack. Unit
INTERBUS 500 kBd	**750-304**	1

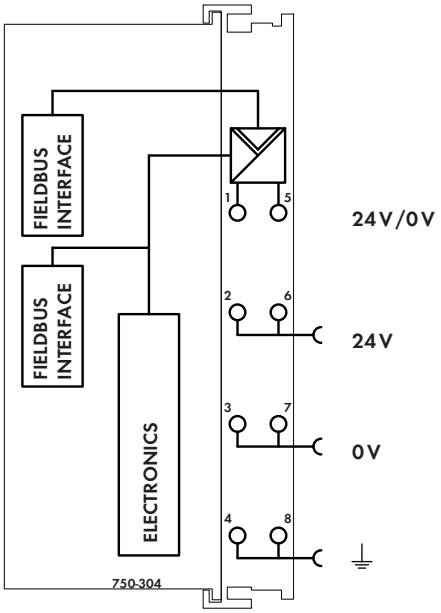
Accessories		Item No.	Pack. Unit
INTERBUS files		Download: www.wago.com	
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

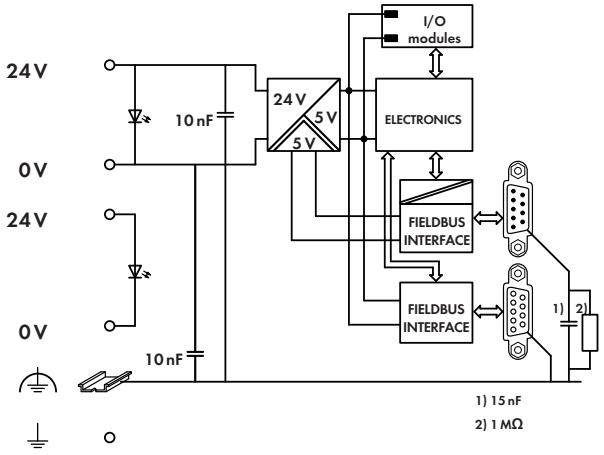
Standards and Approvals

Standard	EN 50254
Certification	INTERBUS CLUB
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4

System Data

No. of couplers connected to Master	256
Max. no. of I/O points	4096 (depends on master)
Transmission medium	Certified Cu cable
Max. length of fieldbus segment	400 m
Baud rate	500 Kbaud
Transmission time	typ. 1.43 ms (10 couplers; 32 digital I/Os per coupler)
Buscoupler connection	1 x D-Sub 9; plug for input interface 1 x D-Sub 9; socket for output interface





Technical Data

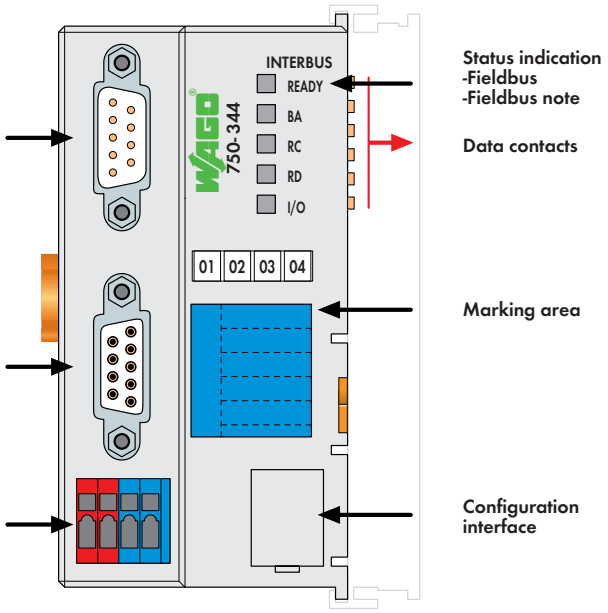
Number of I/O modules	64
Fieldbus	
Max. input process image	64 bytes
Max. output process image	64 bytes
Configuration	via PC or PLC
Voltage supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
	(as from version 0101),
	450 mA (previous versions)
Total current for I/O modules (5 V)	1700 mA
	(as from version 0101),
	1550 mA (previous versions)
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	192 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

INTERBUS ECO Fieldbus Coupler

500 Kbaud; digital and analog signals



The ECO fieldbus coupler is designed for applications with a reduced scale I/O requirement. Using digital only process data or small amounts of analogs, while retaining all of the choice that's offered by the Series 750 I/O.

The coupler has an integrated supply terminal for the system voltage. The field power jumper contacts are supplied via a separate supply module.

The INTERBUS bus coupler automatically configures, creating a local process image which may include analog, digital or specialty modules.

INTERBUS stores the process image in the corresponding Master control (PLC, PC or NC).

The local process image is divided into two data zones containing the data received and the data to be sent. The process data can be sent via the INTERBUS fieldbus to the PLC, PC or NC for further processing, and received from the field via INTERBUS.

The data of the analog modules is stored in the process image which is created automatically according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and added to the analog data. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.

Description	Item No.	Pack. Unit
INTERBUS ECO 500 kBd	**750-344**	1

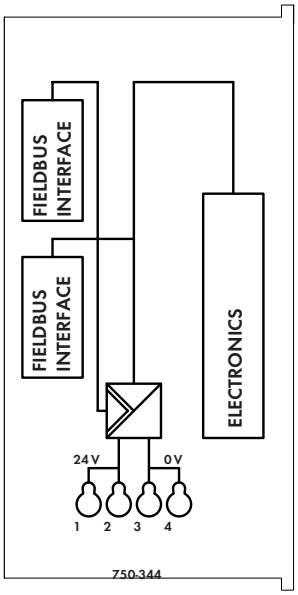
Accessories		Item No.	Pack. Unit
INTERBUS files		Download: www.wago.com	
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

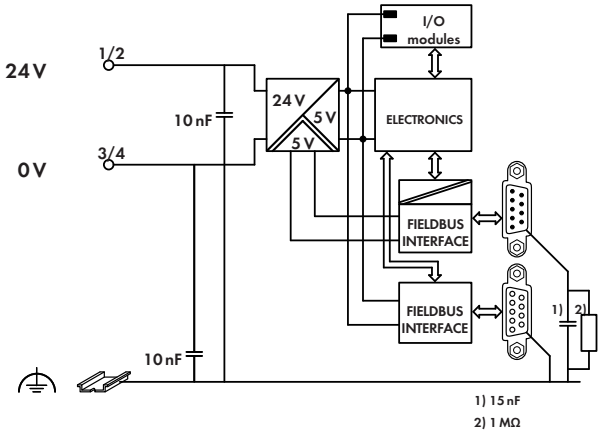
Standards and Approvals

Standard	EN 50254
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
	BR-Ex nA II T4

System Data

No. of couplers connected to Master	256
Max. no. of I/O points	4096 (depends on master)
Transmission medium	Certified Cu cable
Max. length of fieldbus segment	400 m
Baud rate	500 Kbaud
Transmission time	typ. 1.43 ms (10 couplers; 32 digital I/Os per coupler)
Buscoupler connection	1 x D-Sub 9; plug for input interface 1 x D-Sub 9; socket for output interface





Technical Data

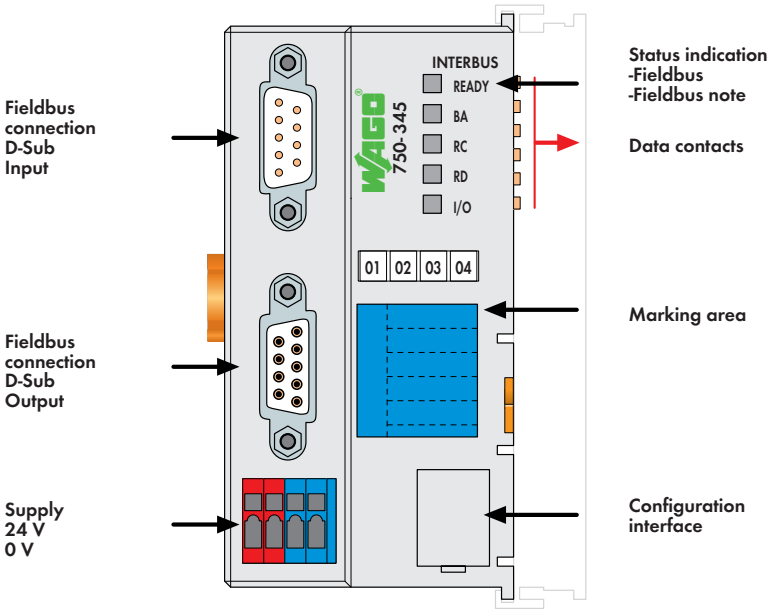
Number of I/O modules	64
Fieldbus	
Max. input process image	20 bytes
Max. output process image	20 bytes
Configuration	via PC or PLC
Voltage supply	24 V DC (-15 % ... +20 %)
Input current typ. at rated load (24 V)	260 mA
Efficiency of the power supply (typ.) at	
nominal load (24 V)	80 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	650 mA

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 1.5 mm² / AWG 28 ... 14
	AWG 12 /14: THHN, THWN
Stripped lengths	5 ... 6 mm / 0.22 in
Dimensions (mm) W x H x L	50 x 65 x 97
	Height from upper-edge of DIN 35 rail
Weight	115 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

INTERBUS ECO Fieldbus Coupler

2 Mbaud; digital and analog signals



This buscoupler connects the WAGO-I/O-SYSTEM as a slave to the INTERBUS fieldbus.

The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes, digital data is sent bit by bit.

INTERBUS stores the process image in the corresponding Master control (PLC, PC or NC).

The local process image is divided into two data zones containing the data received and the data to be sent. The process data can be sent via the INTERBUS fieldbus to the PLC, PC or NC for further processing, and received from the field via INTERBUS.

The data of the analog modules is stored in the process image which is created automatically according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and added to the analog data. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.

Description	Item No.	Pack. Unit
INTERBUS ECO 2 MBd	**750-345**	1

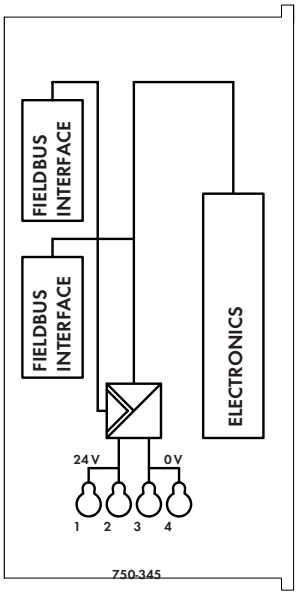
Accessories		Item No.	Pack. Unit
INTERBUS files		Download: www.wago.com	
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

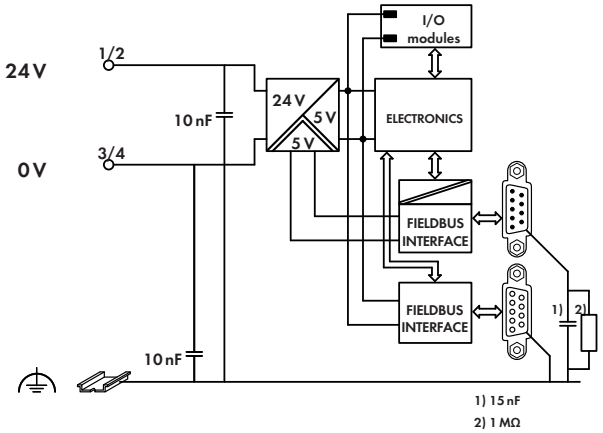
Standards and Approvals

Standard	EN 50254
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
	BR-Ex nA II T4

System Data

No. of couplers connected to Master	256
Max. no. of I/O points	4096 (depends on master)
Transmission medium	Certified Cu cable
Max. length of fieldbus segment	150 m
Baud rate	2 Mbaud
Transmission time	on request
Buscoupler connection	1 x D-Sub 9; plug for input interface
	1 x D-Sub 9; socket for output interface





Technical Data

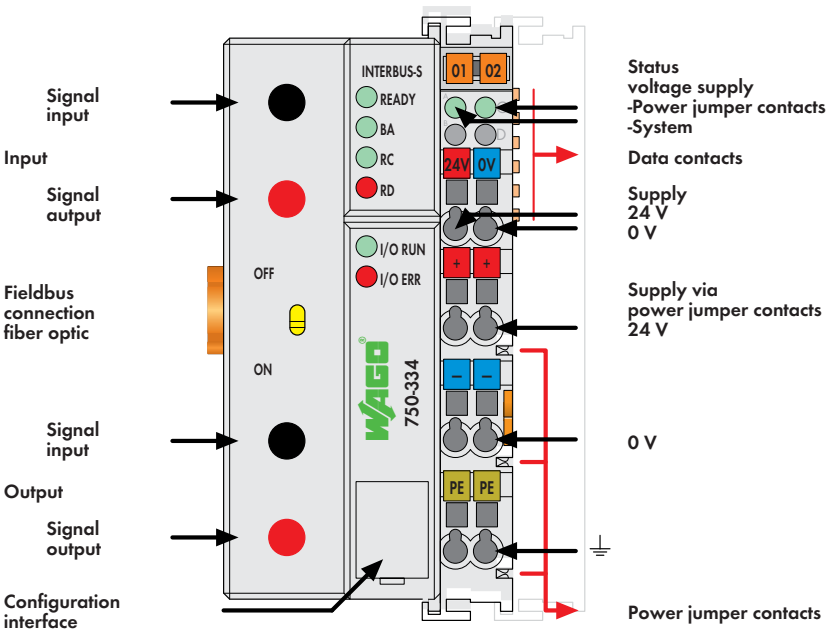
Number of I/O modules	64
Fieldbus	
Max. input process image	20 bytes
Max. output process image	20 bytes
Configuration	via PC or PLC
Voltage supply	24 V DC (-15 % ... +20 %)
Input current typ. at rated load (24 V)	260 mA
Efficiency of the power supply (typ.) at	
nominal load (24 V)	80 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	650 mA

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 1.5 mm² / AWG 28 ... 14
	AWG 12 /14: THHN, THWN
Stripped lengths	5 ... 6 mm / 0.22 in
Dimensions (mm) W x H x L	50 x 65 x 97
	Height from upper-edge of DIN 35 rail
Weight	115 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

INTERBUS Fieldbus Coupler

digital and analog signals; fiber optic



This buscoupler connects the WAGO-I/O-SYSTEM as a slave to the INTERBUS fieldbus.

The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes, digital data is sent bit by bit.

The local process image is divided into two data zones containing the data received and the data to be sent. The process data can be sent via the INTERBUS fieldbus to the PLC, PC or NC for further processing, and received from the field via INTERBUS.

The data of the analog modules is stored in the process image which is created automatically according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and added to the analog data. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.

The fiber optic INTERBUS coupler can be put in any place on the ring.

Description	Item No.	Pack. Unit
INTERBUS 500 kBd / Opt. Fiber	**750-334**	1

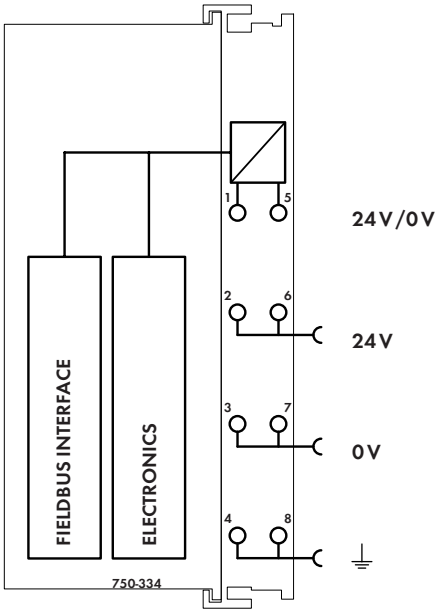
Accessories		Item No.	Pack. Unit
INTERBUS files		Download: www.wago.com	
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

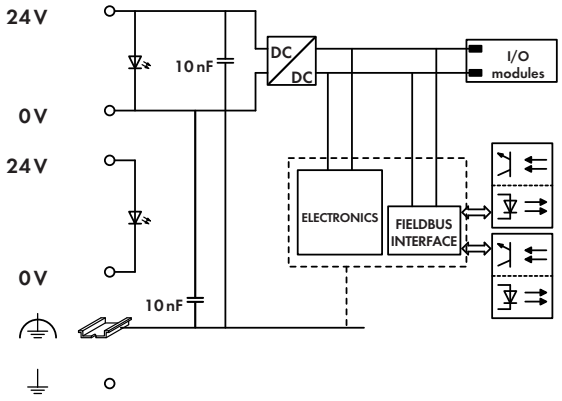
Standards and Approvals

Standard	EN 50254
Certification	INTERBUS CLUB
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 50021	II 3 GD EEx nA II T4
	BR-Ex nA II T4

System Data

No. of couplers connected to Master	256
Max. no. of I/O points	4096 (depends on master)
Transmission medium	APF (plastic) fiber (1000µm)
Topology	Ring, double fiber ring
Max. length of fieldbus segment	1 m ... 40 m
Baud rate	500 Kbaud
Buscoupler connection	F- SMA





Technical Data

Number of I/O modules	64
Fieldbus	
Max. input process image	64 bytes
Max. output process image	64 bytes
Configuration	via PC or PLC
Voltage supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

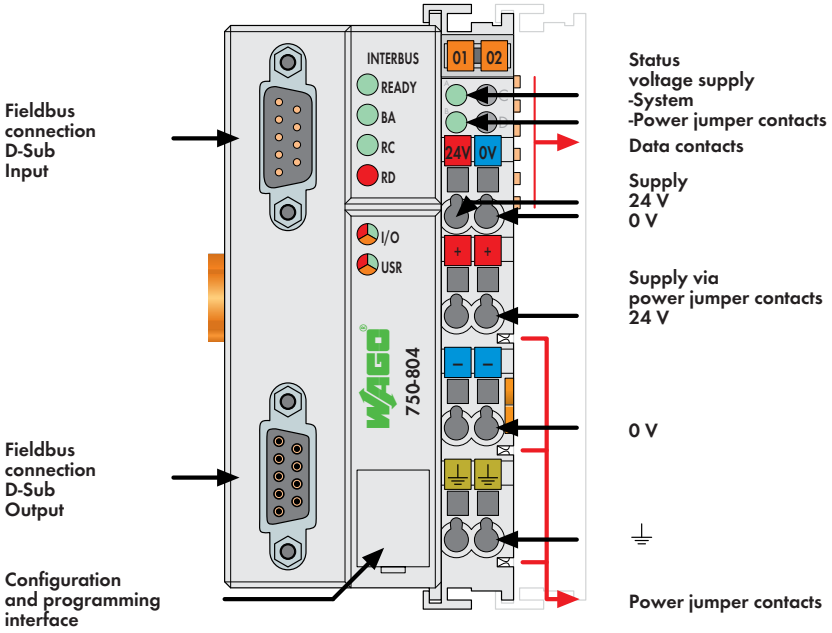
Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	202 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

Switch

OFF	Fieldbus coupler is the last fieldbus device
ON	Output fieldbus interface is active

INTERBUS Programmable Fieldbus Controller

500 Kbaud; digital and analog signals



The programmable fieldbus controller for INTERBUS is an expansion of the WAGO-I/O-SYSTEM.

This controller combines the WAGO fieldbus coupler for INTERBUS with the functionality of a PLC. Programming of the application is performed in accordance with IEC 61131-3, covering all 5 programming languages. The programmer can access all fieldbus and I/O data.

Characteristics and use:

- The use of decentralized control can better support a PLC or PC
- Complex applications can be divided into multiple tasks
- Programmable response in the event of a fieldbus failure
- Signal pre-processing reduces fieldbus transmissions
- Peripheral equipment can be controlled directly, resulting in faster system response times
- Simple, self-sufficient control

Description	Item No.	Pack. Unit
Contr. INTERBUS	**750-804**	1

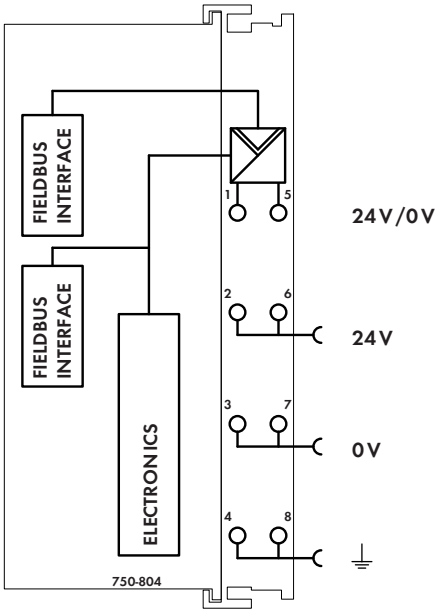
Accessories		Item No.	Pack. Unit
INTERBUS files		Download: www.wago.com	
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

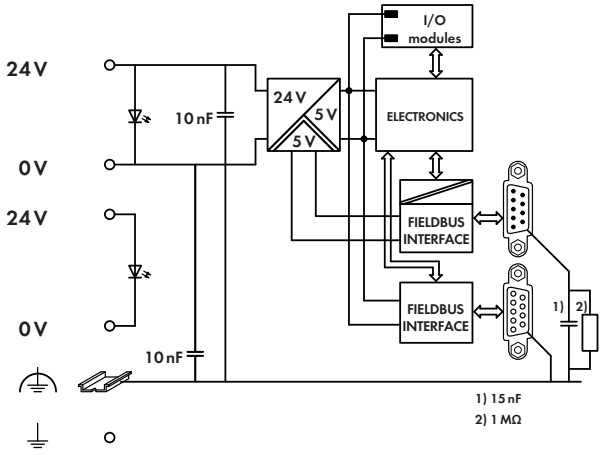
Standards and Approvals

Standard	EN 50254
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
	BR-Ex nA II T4

System Data

No. of controllers connected to Master	256
Max. no. of I/O points	4096 (depends on master)
Transmission medium	Certified Cu cable
Max. length of fieldbus segment	400 m
Baud rate	500 Kbaud
Transmission time	typ. 1.43 ms (10 couplers; 32 digital I/Os per coupler)
Buscoupler connection	1 x D-Sub 9; plug for input interface 1 x D-Sub 9; socket for output interface
Programming	WAGO-I/O-PRO 32
IEC 61131-3	IL, LD, FBD, ST, FC





Technical Data

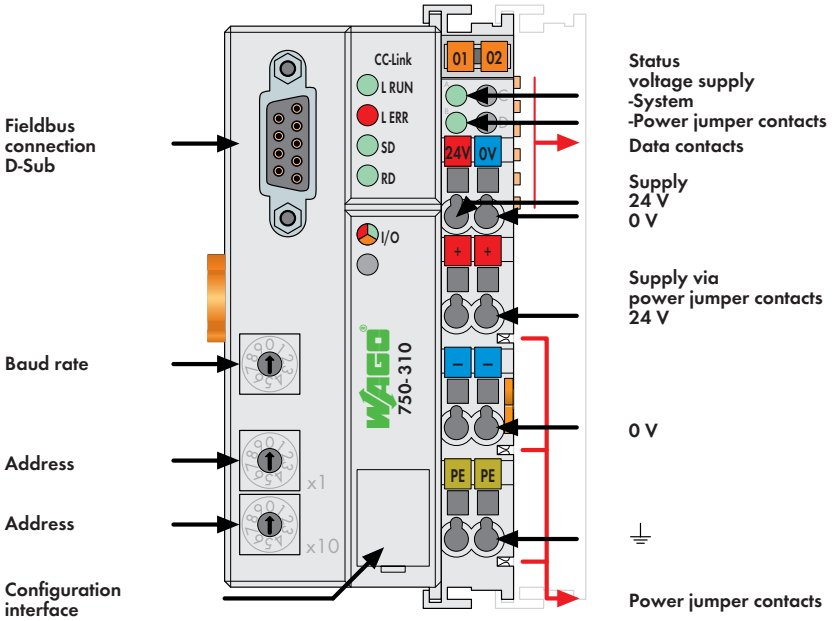
Number of I/O modules	64
Fieldbus	
Max. input process image	64 bytes
Max. output process image	64 bytes
Max. input variables	64 bytes
Max. output variables	64 bytes
Configuration	automatic
Program memory	128 Kbytes
Data memory	64 Kbytes
Non-volatile memory (retain)	8 Kbytes
Cycle time	< 3 ms for 1,000 statements / 256 dig. I/Os
Voltage supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	400 mA
Total current for I/O modules (5 V)	1600 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	200 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

CC-Link Fieldbus Coupler

156 Kbaud ... 10 Mbaud; digital and analog signals



This buscoupler connects the WAGO-I/O-SYSTEM as a slave to the CC-Link fieldbus.

The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes, digital data is sent bit by bit.

CC-Link stores the process image in the corresponding Master control (PLC, PC or NC).

The local process image is divided into two data zones containing the data received and the data to be sent. The process data can be sent via the CC-Link fieldbus to the PLC, PC or NC for further processing, and received from the field via CC-Link.

The data of the analog modules is stored in the process image which is created automatically according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and added to the analog data. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.

Description	Item No.	Pack. Unit
CC-Link	**750-310**	1

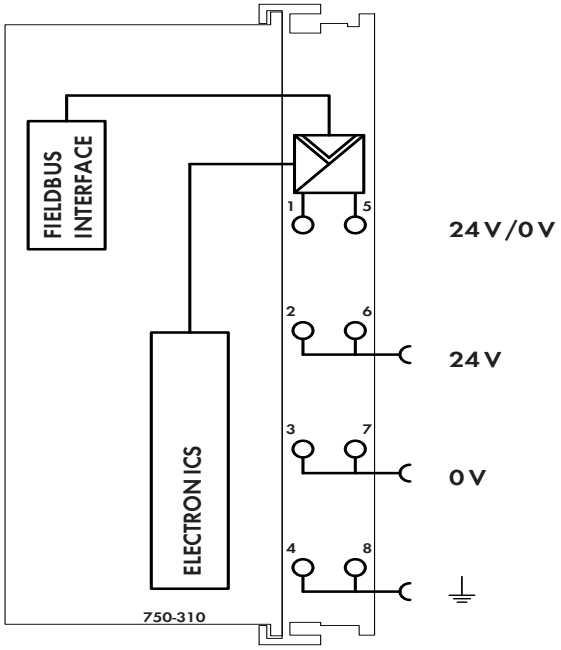
Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	
Bus connector with D-Sub male connector; 9 poles		**750-965**	1

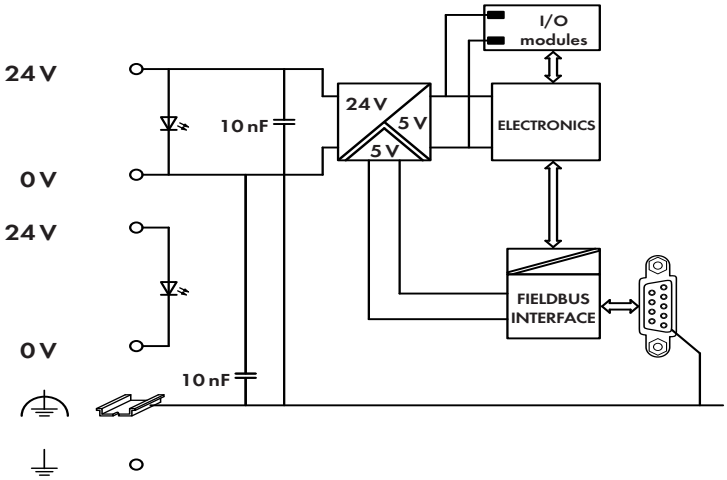
Approvals

Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4

System Data

No. of couplers connected to Master	64
Transmission medium	Shielded Cu cable 2 / 3 x 0.5 mm²
Max. length of bus line	100 m ... 1200 m
	(depends on baud rate/cable)
Baud rate	156 Kbaud ... 10 Mbaud
Buscoupler connection	1 x D-Sub 9; socket





Technical Data

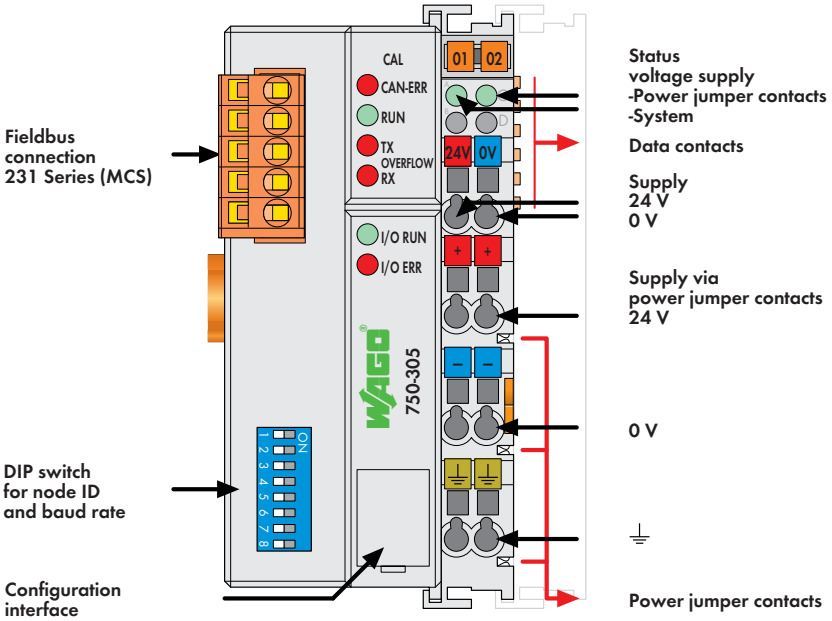
Number of I/O modules	64
Station addresses	up to 4
Fieldbus	
Max. input process image	14-byte digital,
	2-byte system,
	32-byte analog
Max. output process image	14-byte digital,
	2-byte system,
	32-byte analog
Voltage supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	210 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

CAL Fieldbus Coupler

10 Kbaud ... 1 Mbaud; digital and analog signals



This buscoupler connects the WAGO-I/O-SYSTEM as a slave to the CAL fieldbus. The module data is transmitted using Communication Objects (COB).

The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes, digital data is sent bit by bit.

The local process image is divided into two data zones containing the data received and the data to be sent. The process data can be sent via the CAL fieldbus to the PLC, PC or NC for further processing, and received from the field via CAL.

The data of the analog modules is stored in the process image which is created automatically according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and added to the analog data. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte. The input and output process image is transmitted using the Basic Domain Protocol.

A Communication Object (COB) is assigned to each channel of an analog module and each digital byte group. They are transmitted using the Basic Variable Protocol.

Description	Item No.	Pack. Unit
CAL	**750-305**	1

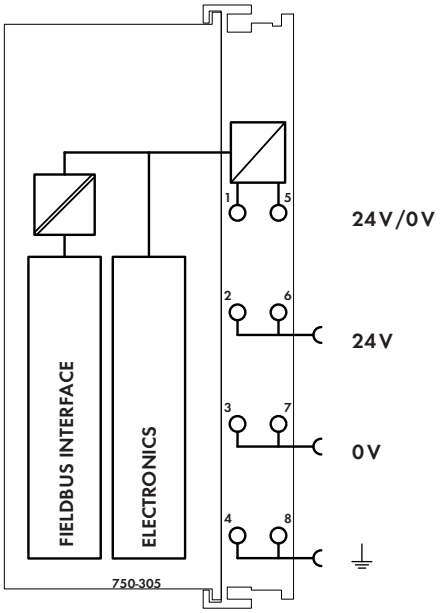
Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

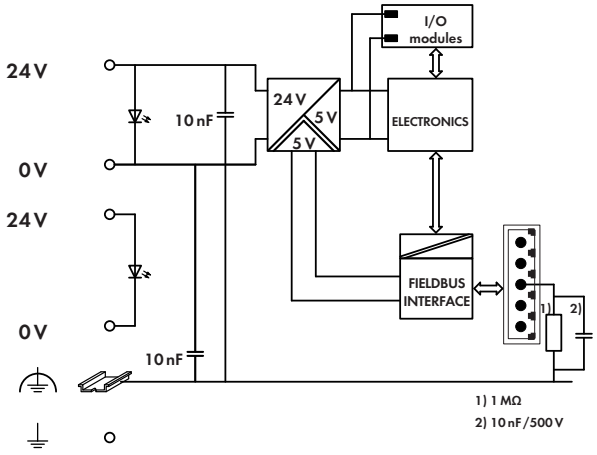
Approvals

Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4

System Data

No. of couplers connected to Master	25
Transmission medium	Shielded Cu cable 3 x 0.25 mm²
Max. length of bus line	1000 m (depends on baud rate/cable)
Baud rate	10 Kbaud ... 1 Mbaud
Buscoupler connection	5-pole male connector, 231 Series (MCS), female connector 231-305/ 010-000 (included)





Technical Data

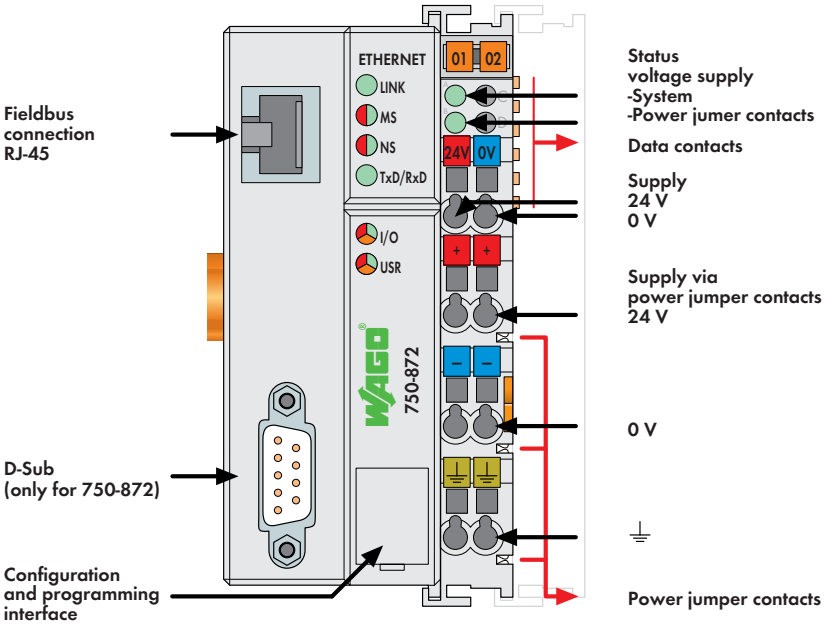
Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Configuration	via PC or PLC
Voltage supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	205 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

Programmable Fieldbus Controller for Telecontrol Applications

10/100 Mbit/s; digital and analog signals



The programmable fieldbus controller of the WAGO-I/O-SYSTEM meets the requirements for use in telecontrol applications.

The controller offers many different application protocols which can be used for data acquisition or control (MODBUS TCP/ -RTU, IEC60870-5-101/-104, 3964R, RK512, ETHERNET/IP) or for system management and diagnostics (HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP and SMTP).
HTML pages can be placed on an internal server for use in WEB-based applications. Programs can be called directly via XML and ASP. Furthermore, the product incorporates library functions for e-mail, SOAP, ASP, IP configuration, ETHERNET sockets and file system.

The controller, based on a 32-bit CPU, is capable of multitasking and has a battery-backed, real-time clock. Programming of the application is performed in accordance with IEC 61131-3. The programmer can access all fieldbus and I/O data.

The programmer can access the IEC60870-5-101 and –104 telecontrol protocol via function blocks using the CoDeSys program.

As an alternative, users who do not want to write a PLC program can simply parameterize the IEC 60870-5-101 and -104 telecontrol protocol within the CoDeSys environment.

Description	Item No.	Pack. Unit
Telecontrol Controller RJ-45 + D-Sub	**750-872**	1
Telecontrol Controller RJ-45	**750-872/020-000**	1

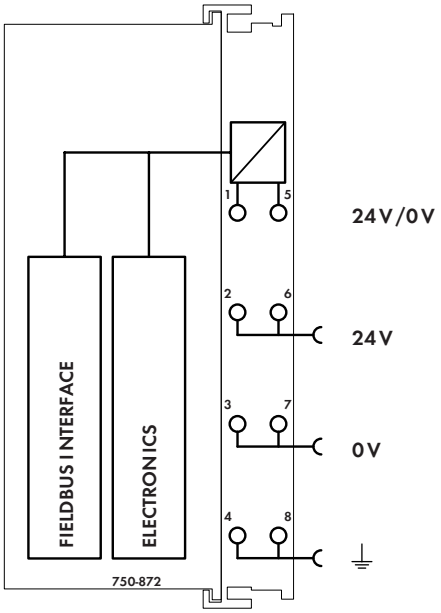
Accessories		Item No.	Pack. Unit
WAGO-I/O-PRO CAA		**759-333**	1
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

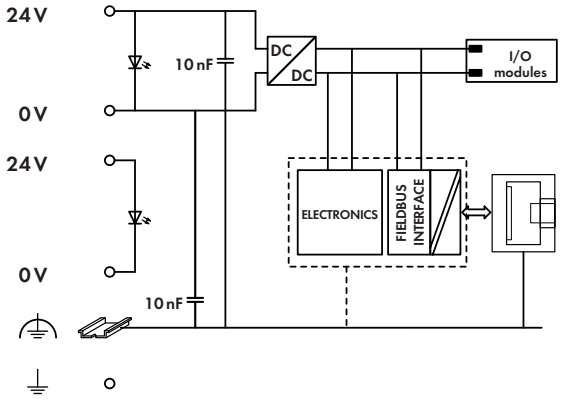
Approvals

Conformity marking	CE
UL 508	
Shipbuilding	see "Approvals Overview" in section 1

System Data

System data ETHERNET:	
No. of controllers connected to Master	limited by ETHERNET specification
Transmission medium	Twisted Pair S-UTP 100 Ω Cat 5
Max. length of fieldbus segment	100 m hub station and 750-872; max. length of network limited by ETHERNET specification
Baud rate	10/100 Mbit/s
Buscoupler connection	RJ-45
Protocols	MODBUS/TCP (UDP), EtherNet/IP, HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP
System data Serial:	
(only for 750-872)	
No. of controllers connected to Master	limited
Transmission medium	Shielded Cu cable 2 (4) x 0.25 mm²
Max. length of fieldbus segment	1200 m (depending on baud rate/cable)
Baud rate	9600 baud ... 115 200 baud
Buscoupler connection	1 x D-Sub 9; socket
Programming	WAGO-I/O-PRO CAA
IEC 61131-3	IL, LD, FBD, ST, FC
Libraries	IEC 60870-5-101/-104, 3964R/RK512





Technical Data

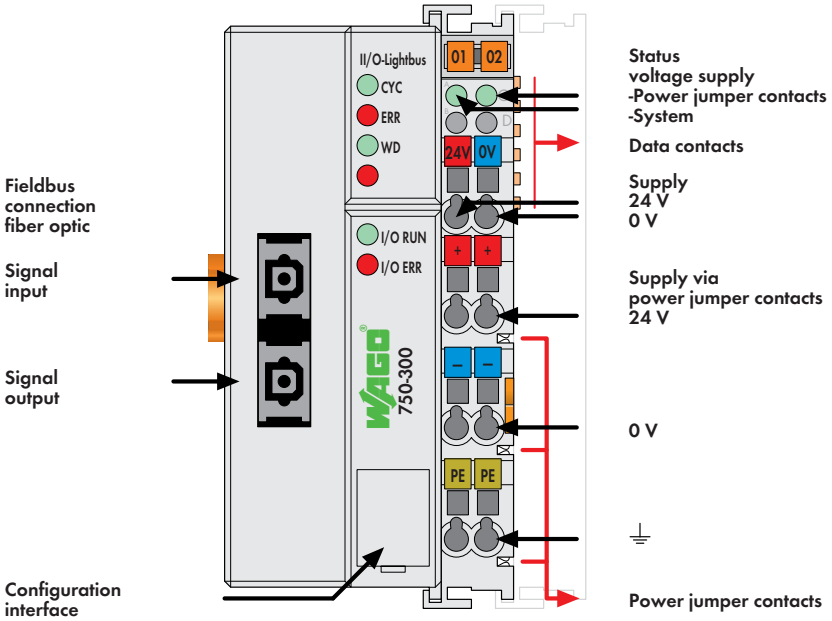
Number of I/O modules	64
with bus extension	250
Fieldbus	
Max. input process image	2 Kbytes
Max. output process image	2 Kbytes
Max. input variables	512 bytes
Max. Output variables	512 bytes
Configuration	via PC
Program memory	512 Kbytes
Data memory	256 Kbytes
Non-volatile memory (retain)	24 Kbytes (16 Kbytes retain, 8 Kbytes flag)
File system	
750-872	2 Mbytes
750-872/020-000	1 Mbytes
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC
IEC60870-5-101 and -104 library:	
Document of conformity	see www.wago.com
Number of control stations	4
Number of information objects	512

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	184 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

II/O-LIGHTBUS Fieldbus Coupler

2.5 Mbaud; digital and analog signals



This buscoupler connects the WAGO-I/O-SYSTEM as a slave to the LIGHTBUS fieldbus.
The buscoupler is capable of supporting all bus modules. The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes, digital data is sent bit by bit.

The data of the analog modules is stored in the process image which is created automatically according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and added to the analog data. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.

Description	Item No.	Pack. Unit
II/O-LIGHTBUS	**750-300**	1

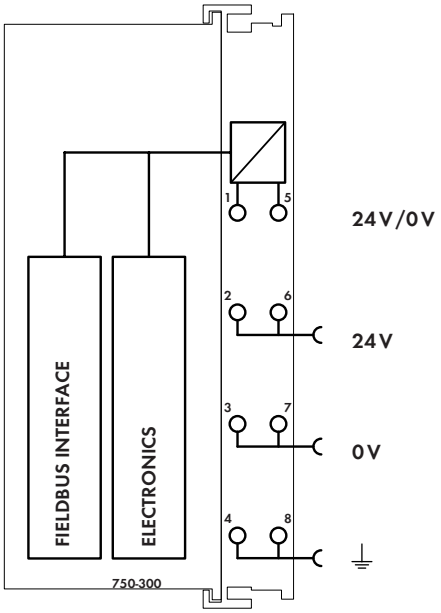
Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

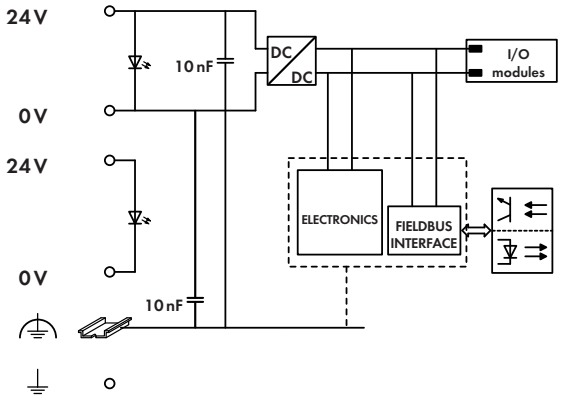
Approvals

Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 50021	II 3 G EEx nA II T4

System Data

No. of couplers connected to Master	254
Max. no. of I/O points	16192
Transmission medium	Fiber optic cable; APF (pastic) or HCS
Max. length of fieldbus segment	140 ft (45 m) [APF]; 900 ft (300 m) [HCS]
Baud rate	2.5 Mbaud
Transmission time	1 ms (10 couplers; 32 digital I/Os per coupler)
Buscoupler connection	2 x fiber optic cable Z1000 (APF); Z1010 (HCS)





Technical Data

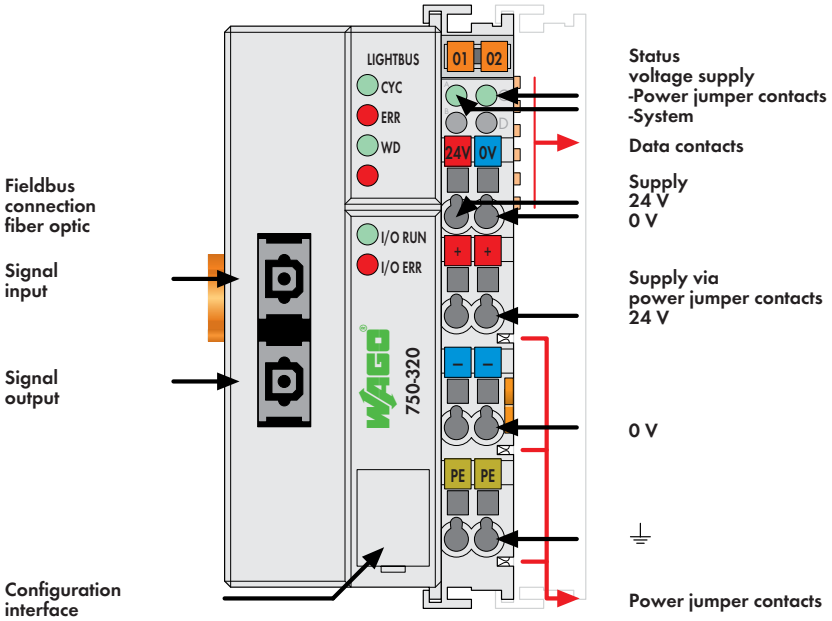
Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Configuration	via PC or PLC
Voltage supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	197 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

II/O-LIGHTBUS Fieldbus Coupler

2.5 Mbaud; digital signals



This buscoupler connects the WAGO-I/O-SYSTEM as a slave to the LIGHTBUS fieldbus. The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules.

The data of the modules is stored in the process image which is created automatically according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and added to the analog data. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.

Description	Item No.	Pack. Unit
II/O-LIGHTBUS / Digital	**750-320**	1

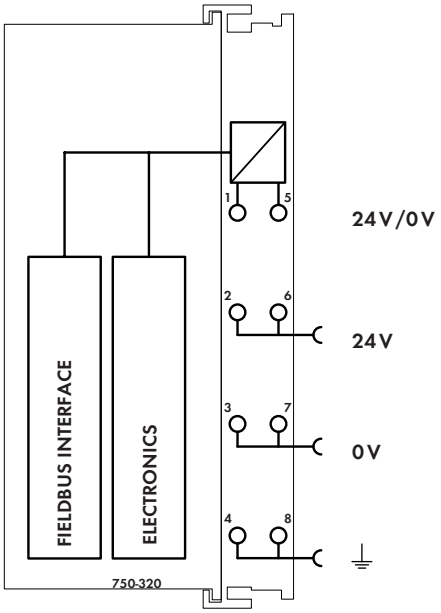
Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

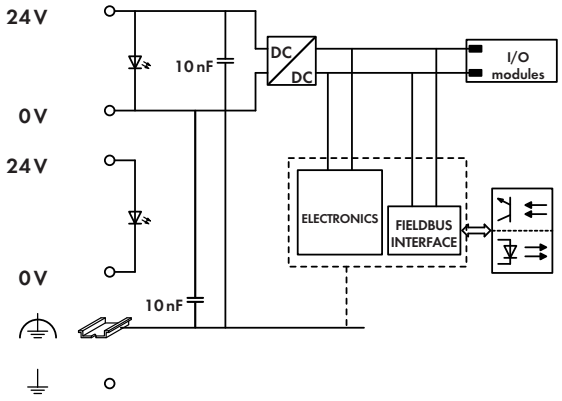
Approvals

Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 50021	II 3 G EEx nA II T4

System Data

No. of couplers connected to Master	254
Max. no. of I/O points	16192
Transmission medium	Fiber optic cable; APF (pastic) or HCS
Max. length of fieldbus segment	140 ft (45 m) [APF]; 900 ft (300 m) [HCS]
Baud rate	2.5 Mbaud
Transmission time	1 ms (10 couplers; 32 digital I/Os per coupler)
Buscoupler connection	2 x fiber optic cable Z1000 (APF); Z1010 (HCS)





Technical Data

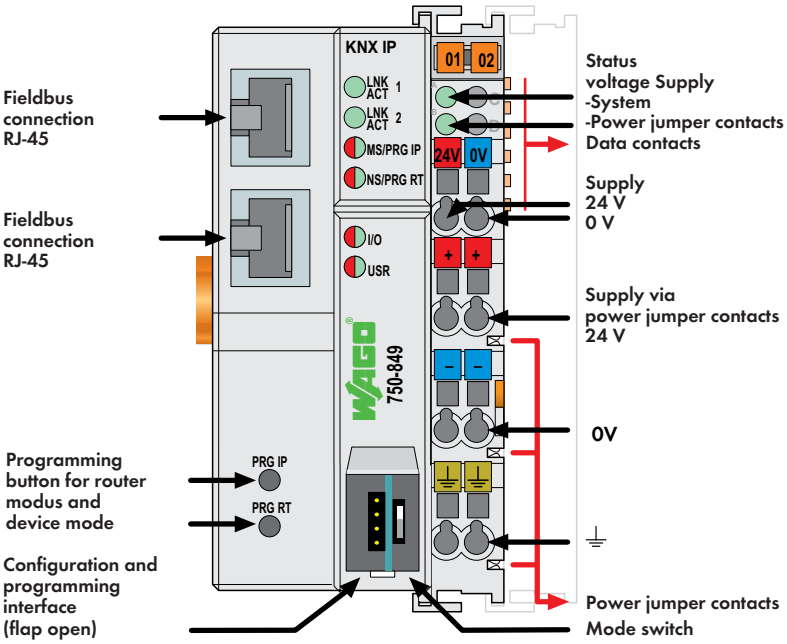
Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Configuration	via PC or PLC
Voltage supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	200 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

KNX IP Programmable Fieldbus Controller

10/100 Mbit/s; digital and analog signals



The controller can include up to two logical KNX devices at the same time.

- In conjunction with the WAGO-I/O-SYSTEM, the KNX IP Controller can be used as a programmable application controller within the KNX IP network. The controller supports 750/753 Series digital, analog and specialty modules.
  The controller facilitates data transmission rates of 10/100 Mbits/s. It is programmable in accordance with IEC 61131-3. KNX objects of any type (EIS/DPT) can be created using the programming tool. Libraries including ready-made function blocks are readily available on the WAGO Web site for programming.
  The controller supports a maximum of 253 communication objects, 254 group addresses and 254 associations.
  Supported DPTs: All (acc. to KNX standard 03_07_02 Datapoint Types V1.0).
- Combined with the KNX/EIB/TP1 module, the KNX IP Controller 750-849 can be operated as router on an IP backbone (Ethernet). No IEC application is required for the router functionality.

Both devices are commissioned and configured in the ETS3 using the WAGO product database. The software includes a plug-in that automatically installs and opens for configuration.
The KNX IP Controller features an integrated 2-port 10/100 Mbits/s switch and allows easy line structure creation without requiring additional network components.
The maximum number of controllers that can be wired in series is 20.
An internal server is available for Web-based applications.
The controller has 512 KB program memory, 256 KB data memory and 24 KB retentive memory. It is capable of multitasking, has a battery-backed, real-time clock and is based on a 32-bit CPU. The controller offers many different application protocols for control tasks (Modbus, KNXnet/IP), as well as for system management and diagnostics (HTTP, BootP, DHCP, DNS, AutoIP, SNTP, FTP, SNMP and SMTP).
The number of KNX/EIB/TP1 modules (753-646) that are supported by the KNX IP Controller does not depend on the application.

Description	Item No.	Pack. Unit
KNX IP Controller	**750-849**	1

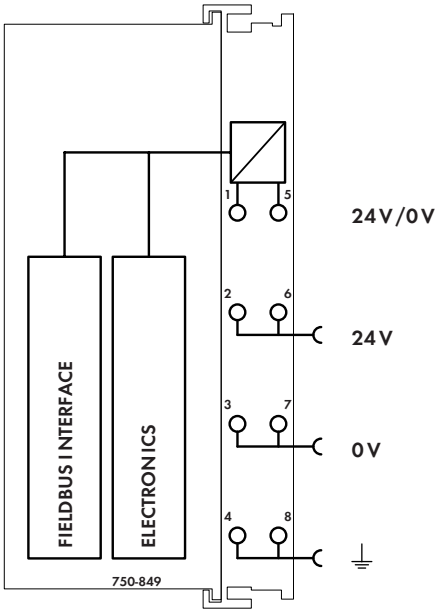
Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	
WAGO ETS3 plug-in (included in WAGO ETS3 product database)			
Download: www.wago.com: Service - Downloads - Building Automation - ETS3 - Product Database			

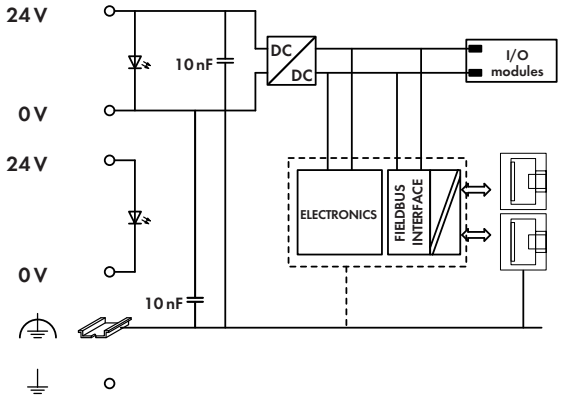
Approvals

Conformity marking	CE
UL 508	
Shipbuilding	see "Approvals Overview" in section 1
KNX certified	KNX
	IP controller: 61/8316/08
	IP router: 61/8317/08

System Data

No. of controllers	limited by network topology
Transmission medium	S-UTP 100 Ω Cat 5
Max. length of fieldbus segment	100 m limited by IEEE 802.3
Max. length of network	≤ 2000 m; max. 20 controllers in series
Baud rate	10/100 Mbit/s
Buscoupler connection	2 x RJ-45 (linked via 2-port switch)
Protocols	KNXnet/IP, MODBUS/TCP (UDP), HTTP, BootP, DHCP, DNS, AutoIP, SNTP, FTP, SNMP V3, SMTP
Programming	WAGO-I/O-PRO CAA
IEC 61131-3	IL, LD, FBD (CFC), ST, FC
KNX-specific	
KNX/TP1 bus specification	1.0
Commissioning (KNX side)	with ETS3 plug-in, 2 programming buttons
Device mode:	
Number of communication objects	253
Number of group addresses	254
Number of associations	254
Supported DPTs	All (*acc. to KNX Specification 03_07_02 Data Point Types V 1.0)
Max. number of logical KNX devices, simultaneous	2; 1. device, 2. router (with 1. KNX/EIB/TP1 module)





Technical Data

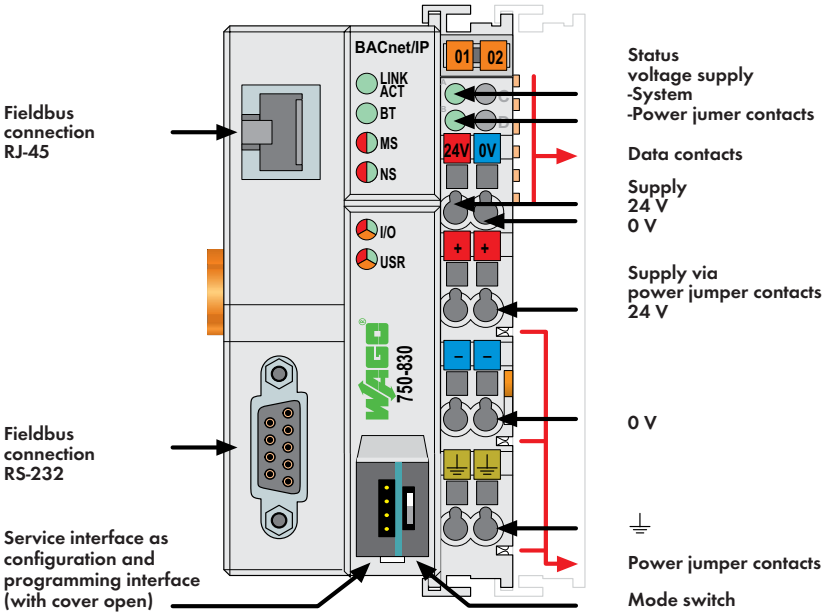
Number of I/O modules	64
with bus extension	250
Configuration	via PC
Program memory	512 Kbytes
Data memory	256 Kbytes
Non-volatile memory (retain)	24 Kbytes (16 Kbytes retain, 8 Kbytes flag)
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC
Fieldbus (Modbus/TCP):	
Max. input process image	2 Kbytes
Max. output process image	2 Kbytes
Max. input variables	512 bytes
Max. output variables	512 bytes

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	9.1 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

BACnet/IP Programmable Fieldbus Controller

10/100 Mbit/s; digital and analog signals



The 750-830 BACnet Controller connects the WAGO-I/O-SYSTEM with the BACnet protocol.
The 750-830 controller corresponds to BACnet B-BC device profile according to DIN EN ISO 16484-5.
The controller provides the three following functionalities:

- Native server: For each channel, appropriate BACnet objects are generated automatically for the digital, analog input and output modules that are connected to the controller.
- Application server: Other supported BACnet objects can be created via IEC 61131-3 programming environment.
- Application client: Using the client functionality, objects and their properties can be accessed by other BACnet devices.

Access to BACnet/IP networks is provided by the controller's RJ-45 interface.
The RS-232 interface can be used as standard RS-232 or as BACnet-PTP connection to other PTP-capable BACnet devices.
For the 750-830 controller, application programming is completed in accordance with IEC 61131-3.
The controller, based on a 32-bit CPU, is capable of multitasking and has a battery-backed, real-time clock.
HTML pages can be placed on an internal server for use in Web-based applications.
Start-up and configuration of the BACnet networks is performed using the Windows-compliant WAGO BACnet configurator.

Description	Item No.	Pack. Unit
BACnet/IP Controller	**750-830**	1

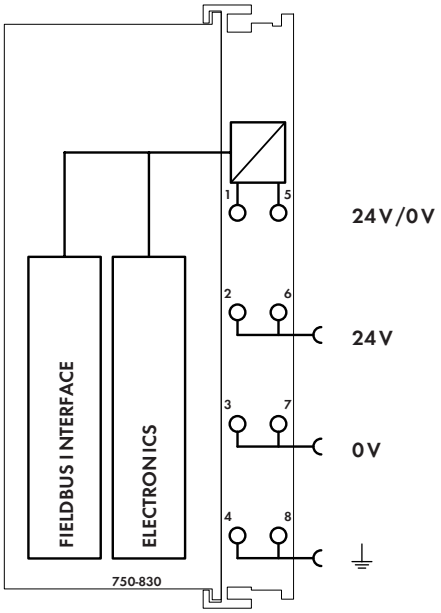
Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	
PC software		WAGO BACnet configurator	

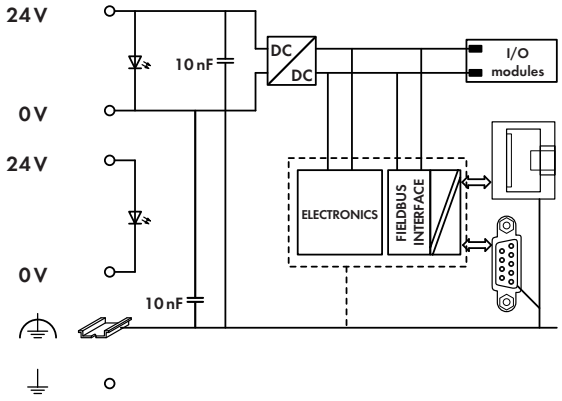
Approvals

Conformity marking	CE
UL 508	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1
BACnet certified	pending

System Data

System data ETHERNET:	
No. of controllers	limited by network topology
Transmission medium	S-UTP 100 Ω Cat 5
Max. length of fieldbus segment	100 m limited by IEEE 802.3
Max. length of network	acc. to IEEE 802.3 standard
Baud rate	10/100 Mbit/s
Buscoupler connection	RJ-45
Protocols	BACnet/IP, MODBUS/TCP (UDP), HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP V1, SMTP
System data Serial:	
Transmission medium	Shielded Cu cable 2 (4) x 0.25 mm²
Max. length of fieldbus segment	15 m depending on baud rate/cable (at 19200 baud)
Baud rate	9600 baud ... 115 200 baud
Buscoupler connection	1 x D-Sub 9; socket
Programming	WAGO-I/O-PRO CAA
IEC 61131-3	IL, LD, FBD (CFC), ST, FC
BACnet device profile	B-BC (BACnet Building Controller)





Technical Data

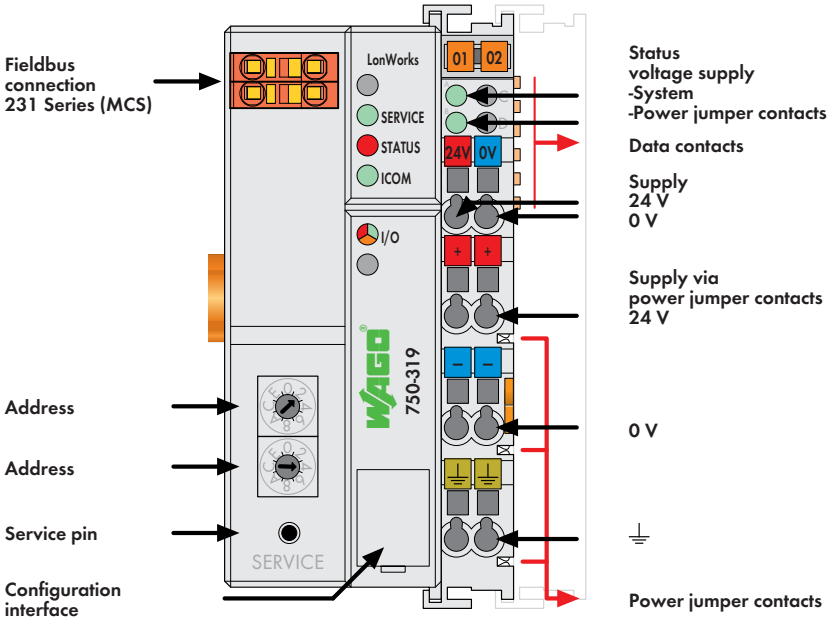
Number of I/O modules	64
with bus extension	250
Configuration	via PC
Program memory	512 Kbytes
Data memory	256 Kbytes
Non-volatile memory (retain)	24 Kbytes (16 Kbytes retain, 8 Kbytes flag)
Flash	4,5 Mbytes
Voltage supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC
BACnet implementation acc. to	DIN EN ISO 16484-5 =ANSI/ASHRAE 135-2004
Fieldbus (Modbus/TCP):	
Max. input process image	2 Kbytes
Max. output process image	2 Kbytes
Max. input variables	512 bytes
Max. output variables	512 bytes

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	200 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

LONWORKS® Fieldbus Coupler

78 kbps; digital and analog signals



This buscoupler connects the WAGO-I/O-SYSTEM to the LON® fieldbus using FTT (Free Topologie Transceiver).

The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes, digital data is sent bit by bit.

The following LNS compliant plug-ins are available:

- WAGO TOPLON®-PRIO (Programmable Remote I/O) is the interface between the I/Os of the fieldbus coupler and the LON® network
- Processing of up to 248 digital or 124 analog inputs /outputs
- To each network variable any SNVT can be assigned
- A maximum of 52 network variables, types available NVI/NVOs: 0/52; 20/32; 26/26; 32/20; 52/0
- WAGO TOPLON®-IF (Installation Functions) with ready-to-use applications in any combination. For example, for stairwell light control, ambient light control, touch control dimmer, and window blind control.
- Processing of up to 48 digital inputs /outputs
- 48 network variables of the SNVT_switch type are available.

Description	Item No.	Pack. Unit
LonWorks®	**750-319**	1

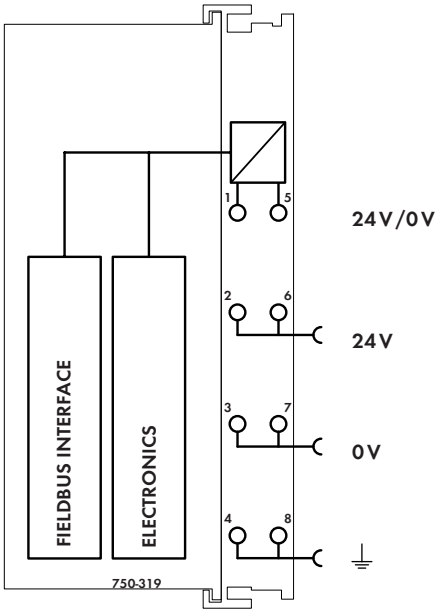
Accessories	Item No.	Pack. Unit
WAGO LNS Plug-In PRIO	see page 324	
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

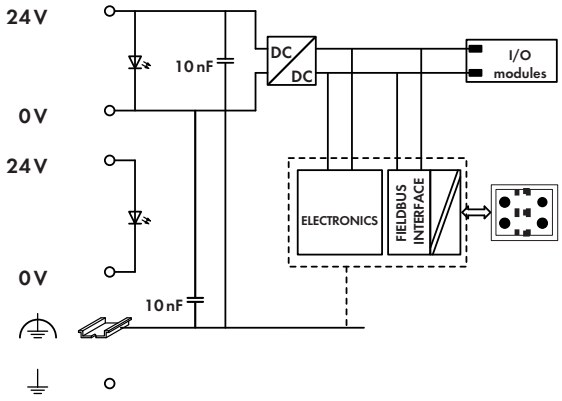
Approvals

Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4
	BR-Ex nA II T4

System Data

No. of couplers connected to Master	64 without repeater, 127 with repeater
Transmission medium	Twisted pair - FTT
Max. length of fieldbus segment	500 m (free topology) 2700 m (bus-topology)
Topology	in accordance with LON specification
Baud rate	78 kbps
Buscoupler connection	2-pole male connector, 231 Series (MCS), female connector (231-302) (included)





Technical Data

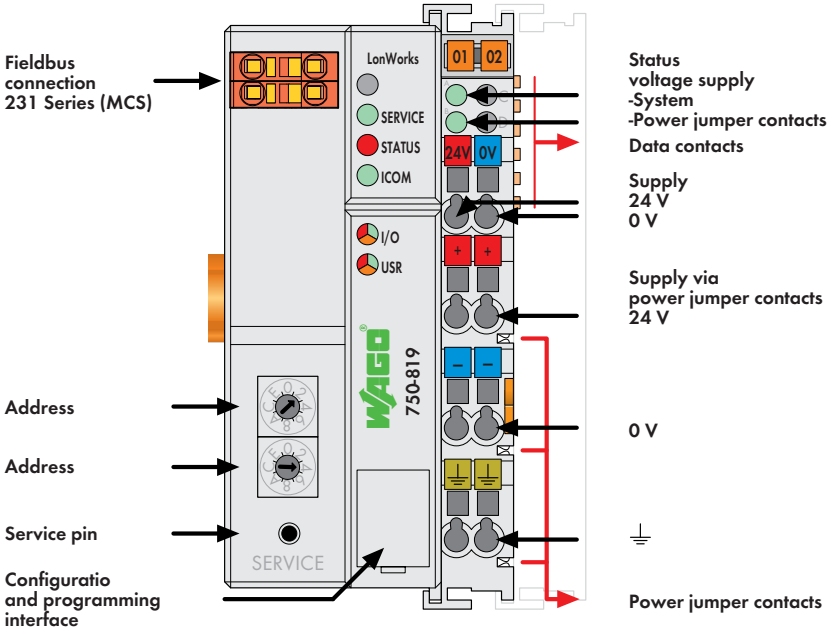
Number of I/O modules	62
Digital signals	max. 248 (in- and outputs)
Analog signals	max. 124 (in- and outputs)
Configuration	via PC with LON Interface
Voltage supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC
Transceiver	FTT 10 A

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	200 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

LONWORKS® Programmable Fieldbus Controller

78 kbps; digital and analog signals



The programmable fieldbus controller for LONWORKS® is an expansion of the WAGO-I/O-SYSTEM.
Programming of the application is performed in accordance with IEC 61131-3. The programmer can access all fieldbus and I/O data.
Characteristics and use:
In addition to the Neuron chip the LONWORKS® controller has a host processor (40 MHz) that can be programmed with WAGO-I/O-PRO.
All available types of modules up to 248 digital or 124 analog inputs/outputs as well as modules with special functions can be addressed and handled using the WAGO-I/O-PRO generated program.

The Neuron chip connection is made through IEC 61131-3 variables with special addresses. With TOPLON® PRIO, that supports the LNS™ Plug-in standard, these variables can be read and assigned to a maximum of 51 network variables.
To each of these network variables any SNVT can be assigned.
The TOPLON® PRIO Plug-in supports all the SNVTs of the LONMARK® SNVT Master List (data length 1-31 bytes).
The network variables can be assigned to any SNVT ensuring the best possible interoperability between WAGO LON products and LONMARK products of other manufacturers.

Description	Item No.	Pack. Unit
LonWorks® Controller	**750-819**	1

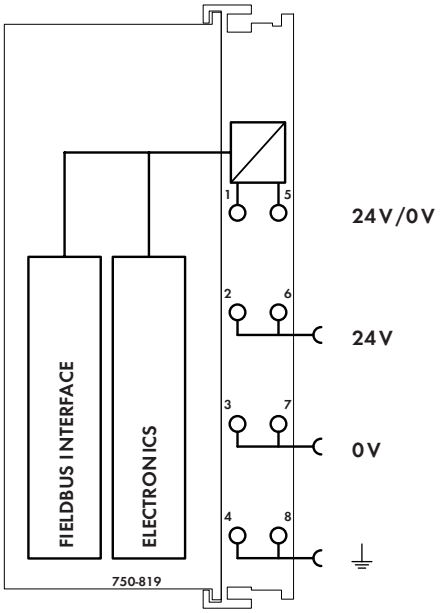
Accessories	Item No.	Pack. Unit
WAGO LNS Plug-In PRIO	see page 324	
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

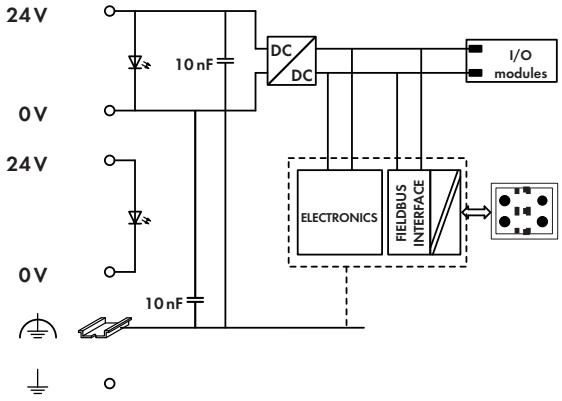
Approvals

Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4
	BR-Ex nA II T4

System Data

No. of controllers connected to Master	64 without repeater, 127 with repeater
Transmission medium	Twisted pair - FTT
Max. length of fieldbus segment	500 m (free topology)
	2700 m (bus-topology)
Topology	in accordance with LON specification
Baud rate	78 kbps
Buscoupler connection	2-pole male connector, 231 Series (MCS),
	female connector (231-302) (included)
Programming	WAGO-I/O-PRO 32 (as of firmware
	SW 07 also programmable with
	WAGO-I/O-PRO CAA)
IEC 61131-3	IL, LD, FBD, ST, FC





Technical Data

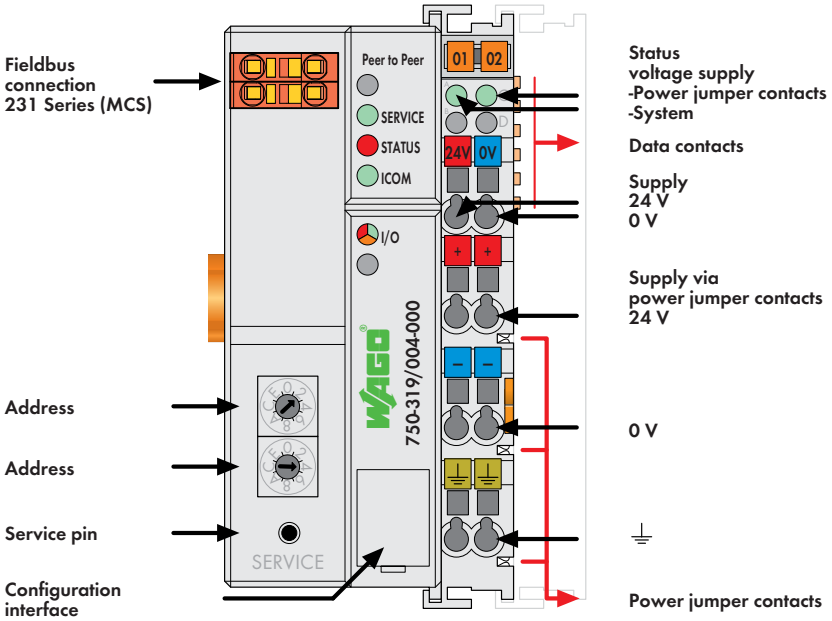
Number of I/O modules	62
Digital signals	max. 248 (in- and outputs)
Analog signals	max. 124 (in- and outputs)
Configuration	via PC with LON Interface
Program memory	128 Kbytes
Data memory	64 Kbytes
Non-volatile memory (retain)	7 Kbytes
Voltage supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC
Transceiver	FTT 10 A

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	205 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

LON® Data Exchange Coupler (Peer to Peer)

78 kbps; digital and analog signals



The data exchange coupler transfers the input process image data to the output process image of the coupled partner. The data exchange coupler is a variant of the LON® fieldbus coupler.

Applications:

- **Peer to Peer**
  one master and one slave
- **Broadcast**
  one master and several slaves

The coupler, together with I/O modules, is a fieldbus node which is connected to other nodes by means of a twisted wire pair. The coupler can also be integrated into existing LON® networks if appropriate node addresses are available.

The coupler automatically creates the process image using the types and widths of data of the connected I/O modules. The input process image is transferred to the output process image of the partner or partners.

The monitoring system switches digital outputs off or stores the last analog value if the connection to the coupled partner is interrupted longer than 1 second.

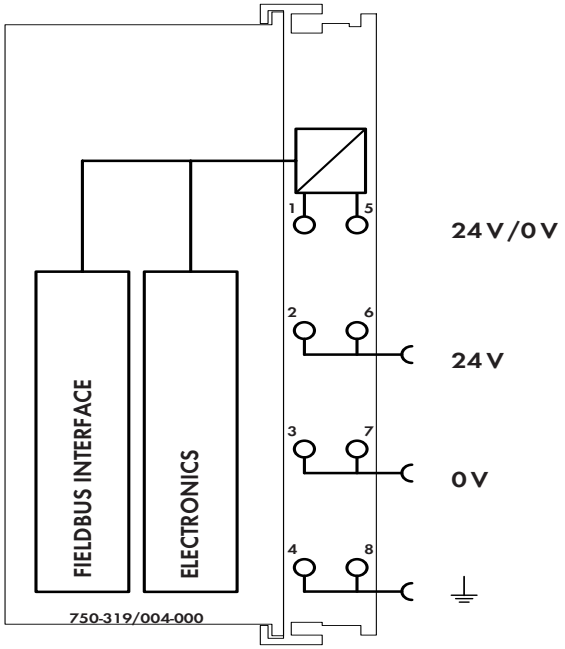
LON® is a registered trademark of Echelon Corporation.

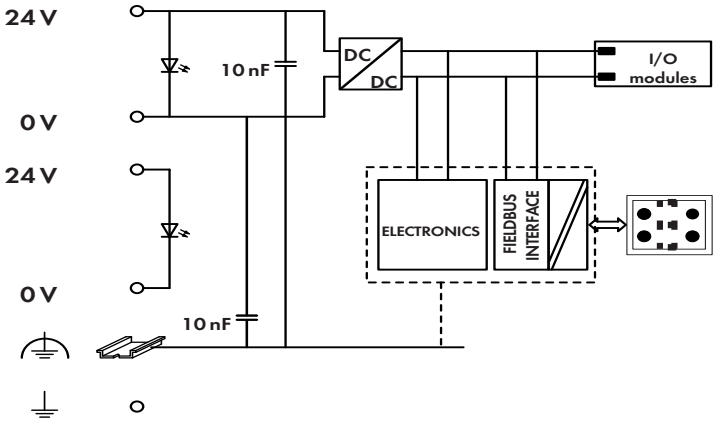
Description	Item No.	Pack. Unit
Peer to Peer Coupler	**750-319/004-000**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4

System Data	
No. of couplers connected to Master	64 without repeater, 127 with repeater
Transmission medium	Twisted pair - FTT
Max. length of fieldbus segment	500 m (free topology) 2700 m (bus-topology)
Topology	in accordance with LON specification
Baud rate	78 kbps
Buscoupler connection	2-pole male connector, 231 Series (MCS), female connector (231-302) (included)





Technical Data

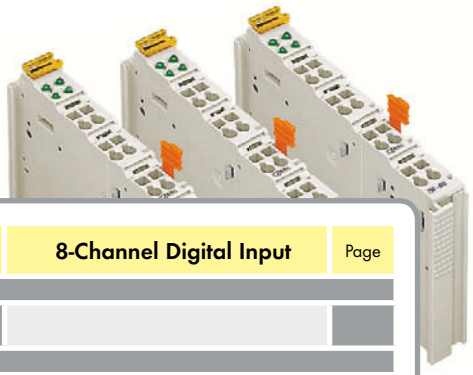
Number of I/O modules	62
Digital signals	max. 248 (in- and outputs)
Analog signals	max. 124 (in- and outputs)
Configuration	via PC with LON Interface
Voltage supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC
Transceiver	FTT 10 A

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	200 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

Modular I/O System Overview

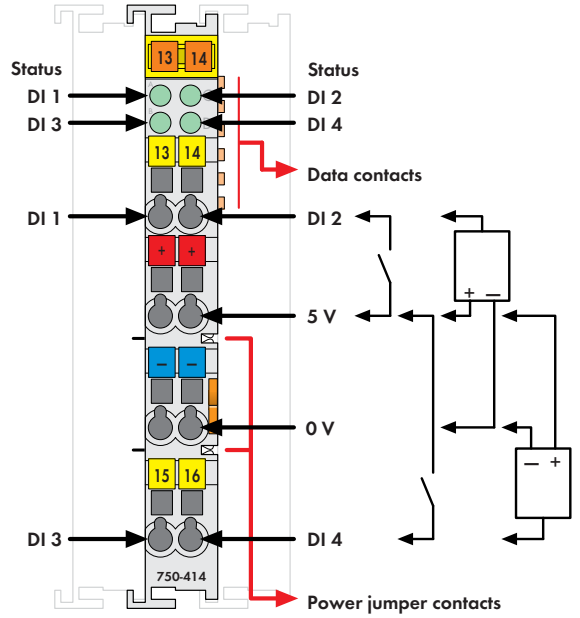
Digital Inputs

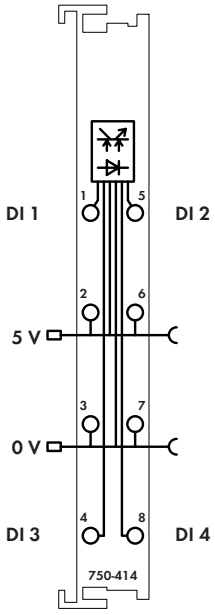


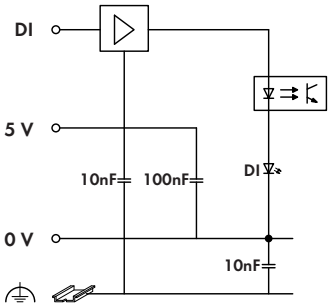
Function	2-Channel Digital Input	Page	4-Channel Digital Input	Page	8-Channel Digital Input	Page
5 V DC			**750-414** 0.2 ms, high-side switch.	131		
5/12 V DC					**753-434** (5 ... 14 V DC) 0.2 ms, high-side switch.	132
24 V DC	**750-400 / 753-400** 3.0 ms, high-side switch.	133	**750-402 / 753-402** 3.0 ms, high-side switch.	136	**750-430 / 753-430** 3.0 ms, high-side switch.	140
	750-401 / 753-401 0.2 ms, high-side switch.	133	**750-403 / 753-403** 0.2 ms, high-side switch.	136	**750-431 / 753-431** 0.2 ms, high-side switch.	140
	750-410 / 753-410 3.0 ms, high-side switch., proximity switch	134	**750-432 / 753-432** 3.0 ms, high-side switch.	137	**750-436 / 753-436** 3.0 ms, low-side switch.	141
	750-411 / 753-411 0.2 ms, high-side switch., proximity switch	134	**750-433 / 753-433** 0.2 ms, high-side switch.	137	**750-437 / 753-437** 0.2 ms, low-side switch.	141
	750-418 / 753-418 3.0 ms, high-side switch., diagnostics, acknol.	135	**750-422 / 753-422** Pulse extension, 10 ms	138	**8-Channel Digital Input/Output**	
	750-421 / 753-421 3.0 ms, high-side switch., diagnostics	135	**750-408 / 753-408** 3.0 ms, low-side switch.	139	**750-1502** 0.5 A, high-side switch., Ribbon cable	142
			750-409 / 753-409 0.2 ms, low-side switch.	139	**750-1506** 0.5 A, high-side switch.	143
	750-425 / 753-425, NAMUR Proximity switch acc. to DIN EN 50227	157			**16-Channel Digital Input**	
	750-424 / 753-424 Intruder detection	158			**750-1400** 3.0 ms, high-side switch., Ribbon cable	144
					750-1405 3.0 ms, high-side switch.	145
					750-1402 3.0 ms, low-side switch., Ribbon cable	146
					750-1407 3.0 ms, low-side switch.	147
24 V AC/DC			**750-415 / 753-415** 20 ms	148		
			750-423 / 753-423 50 ms, power jumper contacts	149		
42 V AC/DC			**750-428 / 753-428** 20 ms	150		
48 V DC	**750-412 / 753-412** 3.0 ms, high-side switch.	151				
60 V DC	**753-429** 3.0 ms, high-side switch.	152				
110 V DC	**750-427 / 753-427** 3.0 ms, high-side switch. or neg. switch	153				
120 V AC	**750-406 / 753-406** 10 ms, high-side switch.	154				
120/230 V AC			**753-440** (120 ... 230 V AC) 10 ms, high-side switch.	155		
230 V AC	**750-405 / 753-405** 10 ms, high-side switch.	156				
					8-Channel Digital Input	
PROFIsafe Modules			**750-661/000-002** ; **753-661/000-002** PROFIsafe V2, 4 FDI 24 V	256	**750-662/000-002 ; 753-662/000-002** PROFIsafe V2, 8 FDI 24 V	257
			750-667/000-002 ; **753-667/000-002** PROFIsafe V2, 4 FDI/4 FDO 24 V/2 A	258	**750-660/000-001**, PROFIsafe, 8 FDI 24 V	259
			750-665/000-001, PROFIsafe, 4 FDO 0.5 A, 4 FDI 24 V	260		
Ex i Modules	**750-438, NAMUR, Ex i** Proximity switch acc. to DIN EN 50227	270				
	1-Channel Digital Input					
	750-435, NAMUR, Ex i Proximity switch acc. to DIN EN 50227	268				

4-Channel Digital Input Module 5 V DC

2- to 3-conductor connection; high-side switching







Delivered without miniature WSB markers

The digital input module receives control signals from digital field devices (sensors, etc.).

Each input module has a noise-rejection filter.

An optocoupler is used for electrical isolation between the bus and the field side.

Notice:
An additional supply module must be added for operation with 5VDC.

Description	Item No.	Pack. Unit
4DI 5V DC 0.2ms	**750-414**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

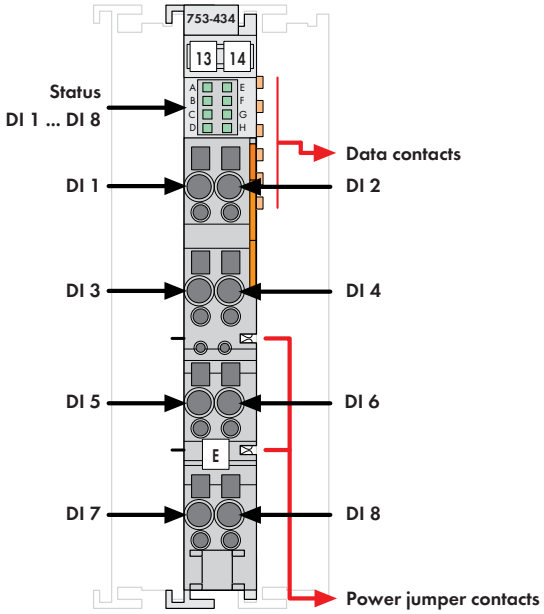
750 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 50021	II 3 G EEx nA II T4

Technical Data

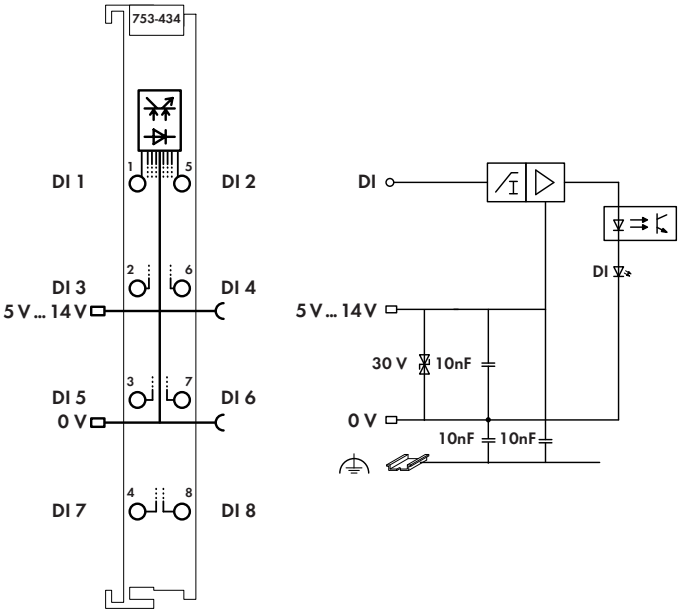
Number of inputs	4
Current consumption (internal)	5 mA
Voltage via power jumper contacts	5 V DC
Signal voltage (0)	0 V ... +0.8 V DC
Signal voltage (1)	2.4 V ... 5 V DC
Input filter	0.2 ms
Input current (typ.)	50 µA
Isolation	500 V system/supply
Internal bit width	4 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	49.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

8-Channel Digital Input Module 5 ... 14 V DC

1-conductor connection; high-side switching



Delivered without miniature WSB markers



NOTE: Connection point marking (i.e., 1 ... 8) does not refer to channel assignment

The digital input module provides 8 channels maintaining a width of only 12mm.
It receives control signals from the digital field devices (sensors, etc.).

Each input module has a noise-rejection filter.

Field and system levels are electrically isolated.

Notice:
An additional supply module must be added for operation with 5-14VDC.

Description	Item No.	Pack. Unit
8DI 5 (14)V DC 0.2ms (without connector)	**753-434**	1

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

753 Series	
Conformity marking	CE
UL 508	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	applied for

Technical Data

Number of inputs	8
Current consumption (internal)	4 mA
Voltage via power jumper contacts	5 V ... 14 V DC (-15 % ... +20 %)
Signal voltage (0)	-3 V DC ... 0.2 x V_y
Signal voltage (1)	0.5 V_y ... 1.1 V_y
Input filter	0.2 ms
Input current (typ.)	60 µA at 12 V
Input resistance	> 100 kΩ
Isolation	500 V system/supply
Internal bit width	8 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	42.3 g
EMC CE-Immunity to interference	acc. to EN 61131-2 (2003)
EMC CE-Emission of interference	acc. to EN 61131-2 (2003)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Digital Input Module 24 V DC

2- to 4-conductor connection; high-side switching

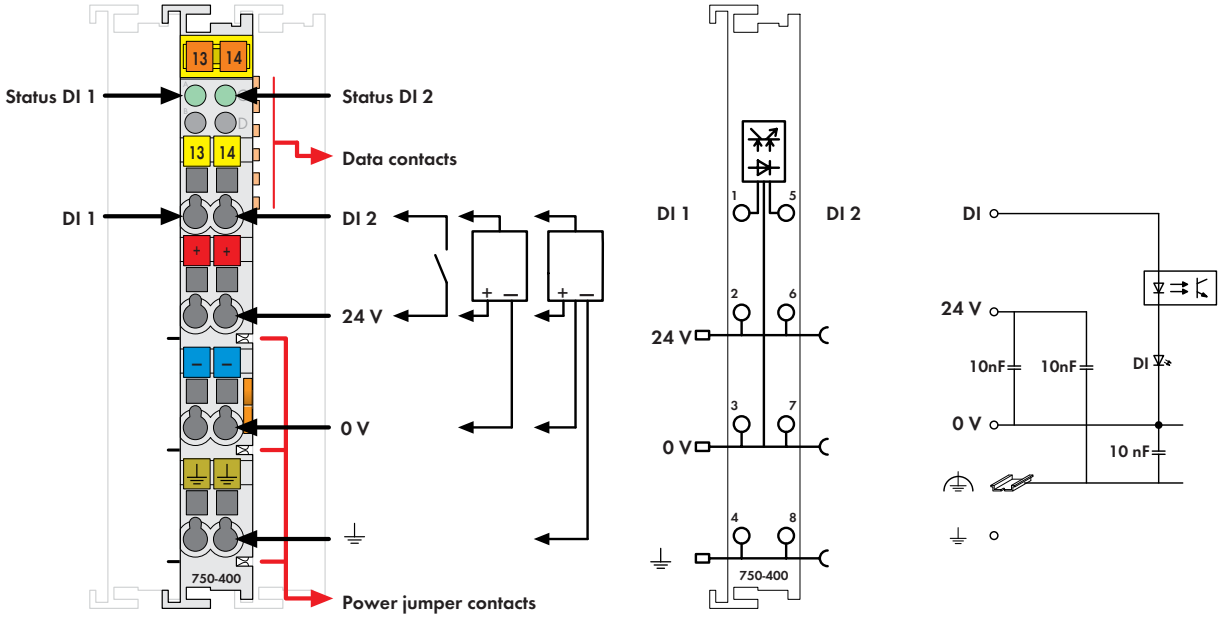


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The digital input modules receive the control signal from digital field devices (sensors, etc.).

The module is a 2-channel, 4-conductor device and sensors with a ground (earth) wire may be directly connected to the module.

Each input module has a noise-rejection filter. This filter is available with different time constants.

An optocoupler is used for electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
2DI 24V DC 3.0ms	**750-400**	10[1]
2DI 24V DC 0.2ms	**750-401**	10[1]
2DI 24V DC 3.0ms	**750-400/025-000**	1
(Operating temperature -20 °C ... +60 °C)		
2DI 24V DC 3.0ms (without connector)	**753-400**	10[1]
2DI 24V DC 0.2ms (without connector)	**753-401**	10[1]

[1] Also available individually

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Number of inputs	2
Current consumption (internal)	3.7 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	3.0 ms (750-400 / 753-400)
	0.2 ms (750-401 / 753-401)
Input current (typ.)	4.5 mA
Isolation	500 V system/supply
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	47.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Digital Input Module 24 V DC

2- to 4-conductor connection; high-side switching

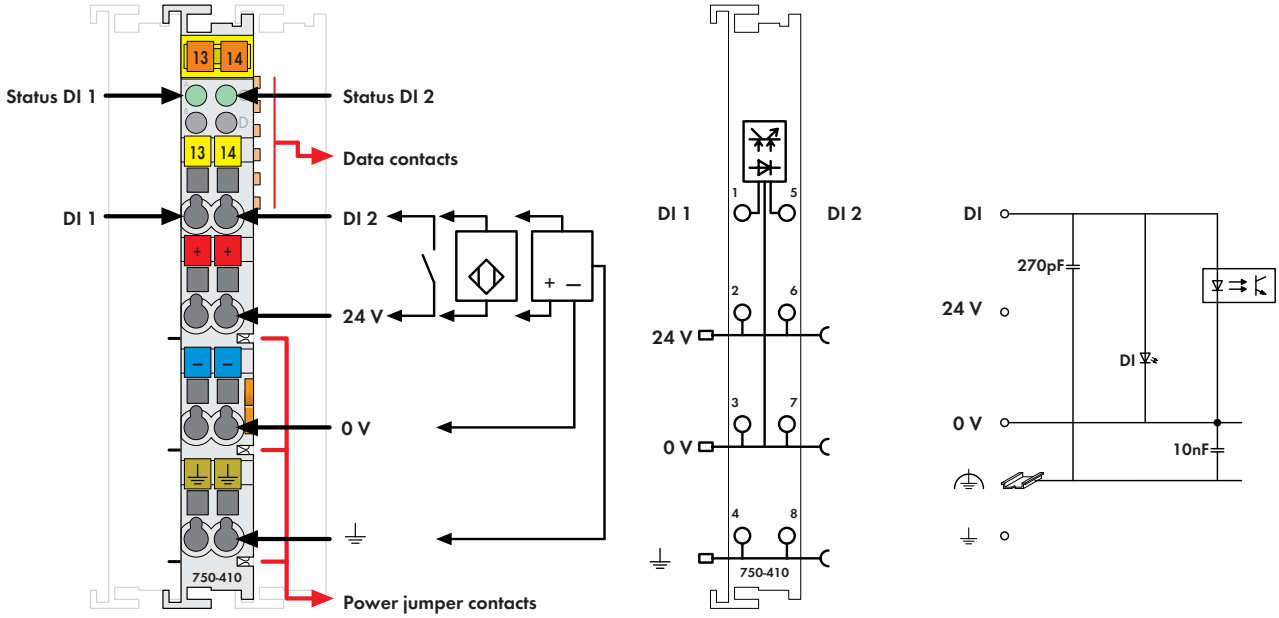


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The digital input module receives the control signal from digital field devices (sensors, etc.).

The module is a 2-channel, 4-conductor device and sensors with a ground (earth) wire may be directly connected to the module.

Each input module has a noise-rejection filter. This filter is available with different time constants.

An optocoupler is used for electrical isolation between the bus and the field side.

A 2-wire proximity switch can be connected to this module.

Description	Item No.	Pack. Unit
2DI 24V DC 3.0ms, proximity switch	**750-410**	10[1]
2DI 24V DC 0.2ms, proximity switch	**750-411**	1
2DI 24V DC 3.0ms, proximity switch (without connector)	**753-410**	10[1]
2DI 24V DC 0.2ms, proximity switch (without connector)	**753-411**	1

[1] Also available individually

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Number of inputs	2
Max. current consumption (internal)	2.5 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	3.0 ms (750-410 / 753-410)
	0.2 ms (750-411 / 753-411)
Input current (typ.)	8 mA
Isolation	500 V system/supply
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	48.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Digital Input Module 24 V DC

2- to 3-conductor connection; high-side switching; diagnostics

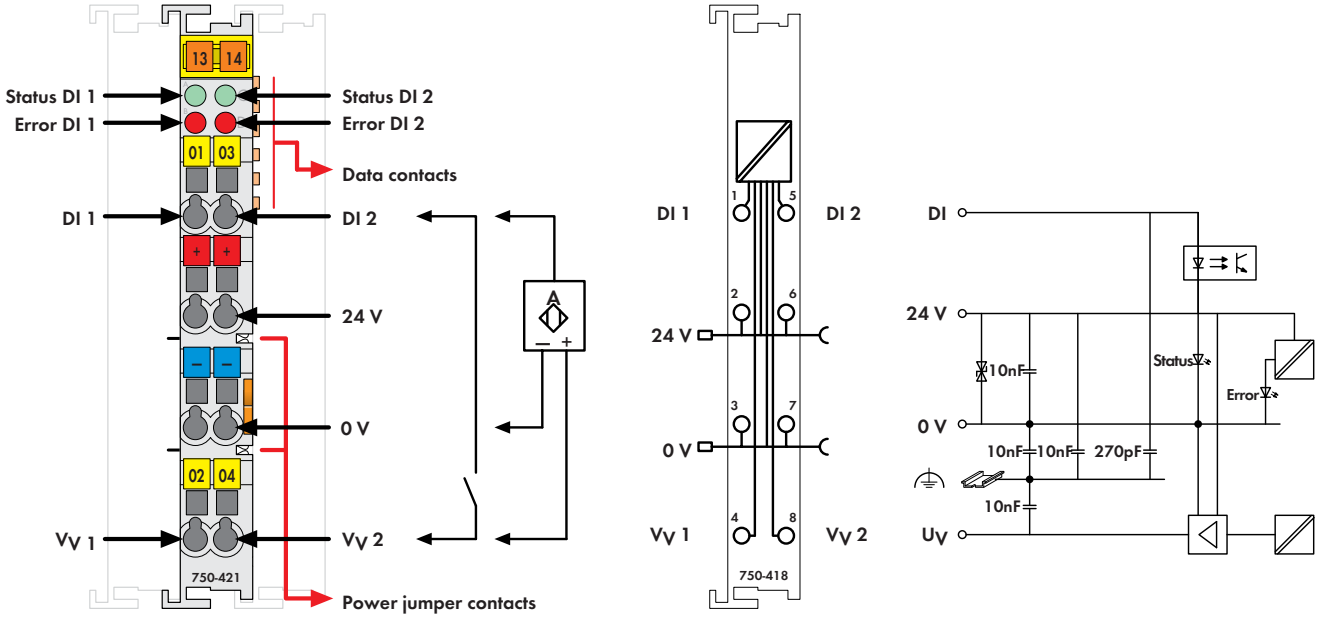


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The digital input module receives control signals from the field side and supplies a short-circuit proof voltage to the sensors. The module transfers the control signals and other information via fieldbus coupler to a supervisory control.

Each input module has a noise-rejection filter.

Each sensor can be supplied separately. A short circuit to ground is indicated as an error/fieldbus failure and a message is sent to the supervisory control. After the error has been eliminated the 750-418 Input Module will require an acknowledgement (performed by the operator via control). The 750-421 Input Module will acknowledge automatically.

An optocoupler is used for electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
2DI 24V DC 3.0ms, diagnostics, acknowledgement	**750-418**	1
2DI 24V DC 3.0ms, diagnostics	**750-421**	1
2DI 24V DC 3.0ms, diagnostics, acknowledgement (without connector)	**753-418**	1
2DI 24V DC 3.0ms, diagnostics (without connector)	**753-421**	1

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	Miniature WSB Quick marking system		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
	BR-Ex nA II T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Number of inputs	2
No. of outputs	2 for transmitter supply
Current consumption (internal)	< 12 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	3.0 ms
Input current (typ.)	3.7 mA
Short-circuit current	1.5 A, undulating because of thermal overload protection
Sensor supply V_V	24 V DC
Max. output current	0.5 A
Isolation	500 V system/supply
Internal bit width	4 bits in; 4 bits out (750-418 / 753-418)
	4 bits in (750-421 / 753-421)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel Digital Input Module 24 V DC

2- to 3-conductor connection; high-side switching

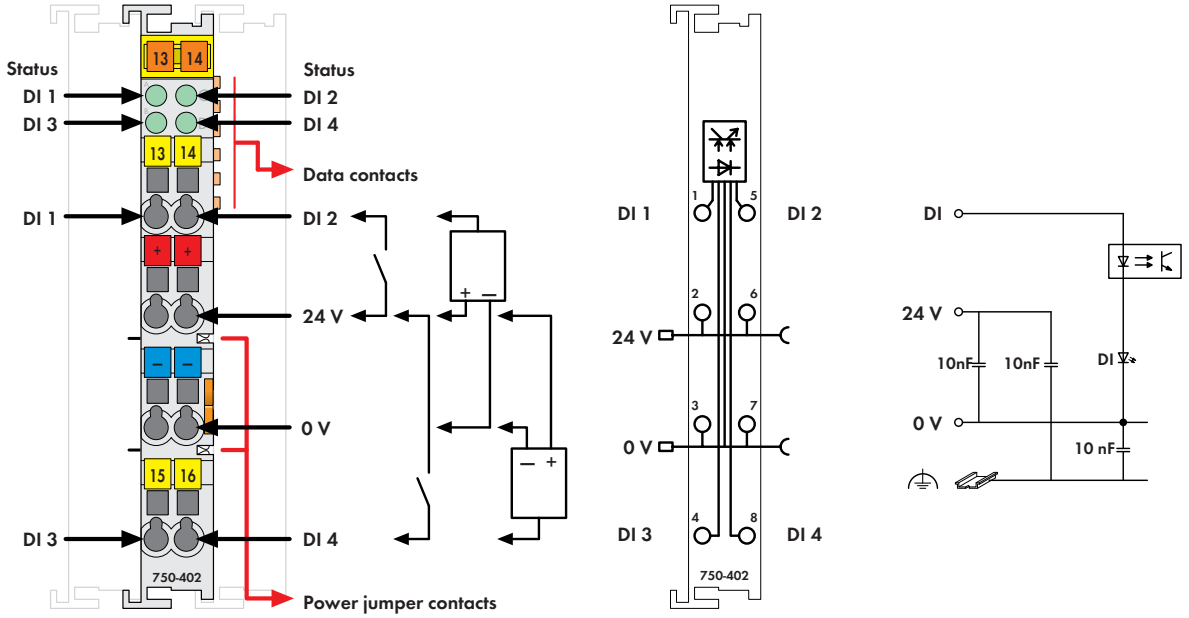


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The digital input modules receive the control signal from digital field devices (sensors, etc.).

Each input module has a noise-rejection filter. This filter is available with different time constants.

An optocoupler is used for electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
4DI 24V DC 3.0ms	**750-402**	10[1]
4DI 24V DC 0.2ms	**750-403**	10[1]
4DI 24V DC 3.0ms	**750-402/025-000**	1
(Operating temperature -20 °C ... +60 °C)		
4DI 24V DC 3.0ms (without connector)	**753-402**	10[1]
4DI 24V DC 0.2ms (without connector)	**753-403**	10[1]

[1] Also available individually

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Number of inputs	4
Current consumption (internal)	7.5 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	3.0 ms (750-402 / 753-402)
	0.2 ms (750-403 / 753-403)
Input current (typ.)	4.5 mA
Isolation	500 V system/supply
Internal bit width	4 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	48.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel Digital Input Module 24 V DC

2-conductor connection; high-side switching

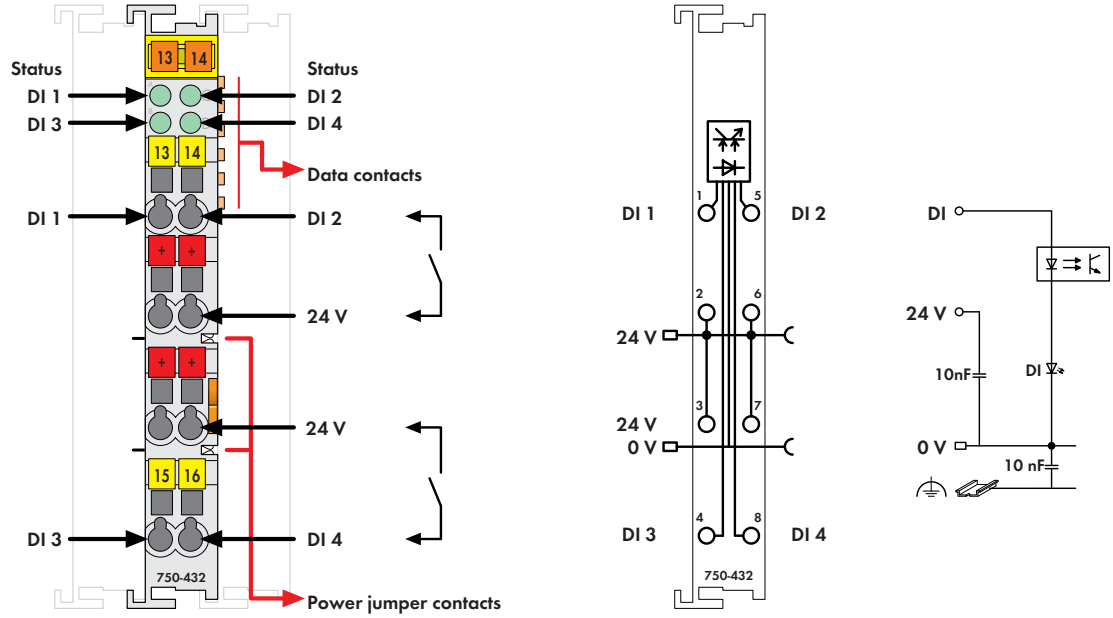


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The digital input module receives control signals from digital field devices (sensors, etc.).
The module is a 4-input channel, 2-conductor device. Due to its four 24V connections, four sensors may be directly connected to the module.

Each input module has a noise-rejection filter. This filter is available with different time constants.

An optocoupler is used for electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
4DI 24V DC 3.0ms/2-conductor	**750-432**	10[1]
4DI 24V DC 0.2ms/2-conductor	**750-433**	10[1]
4DI 24V DC 3.0ms/2-conductor (without connector)	**753-432**	10[1]
4DI 24V DC 0.2ms/2-conductor (without connector)	**753-433**	10[1]

[1] Also available individually

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	Miniature WSB Quick marking system		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Number of inputs	4
Current consumption (internal)	5.5 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	3.0 ms (750-432 / 753-432)
	0.2 ms (750-433 / 753-433)
Input current (typ.)	4.5 mA
Isolation	500 V system/supply
Internal bit width	4 bits in
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	48.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel Digital Input Module 24 V DC

2- to 3-conductor connection; high-side switching; 10 ms pulse extension

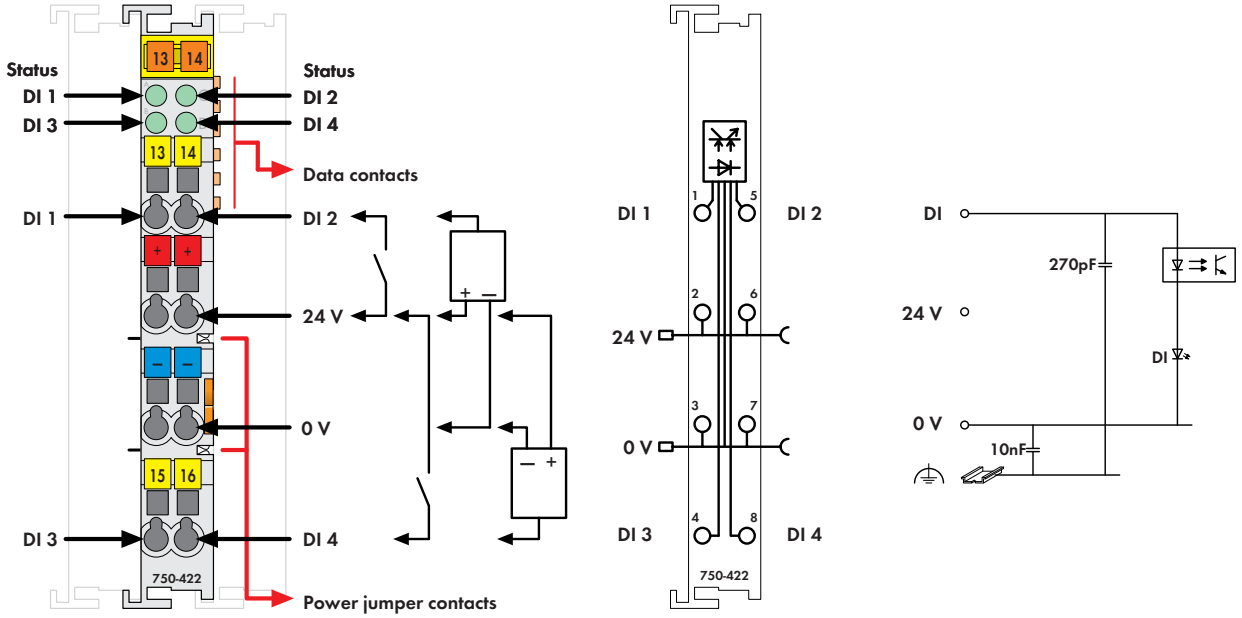
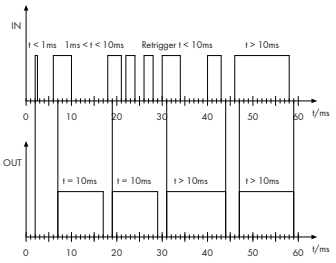


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The digital input module receives control signals from digital field devices (sensors, etc.).

This input module extends input signals to at least 10ms. Only signals ≥ 1ms will be acquired. Input signals > 10ms will not be extended (see timing technical data).

An optocoupler is used for electrical isolation between the bus and the field side.



Description	Item No.	Pack. Unit
4DI 24V DC, pulse extension	**750-422**	1
4DI 24V DC, pulse extension (without connector)	**753-422**	1

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
	BR-Ex nA II T4

Technical Data

Number of inputs	4
Max. current consumption (internal)	9 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	1.0 ms (± 15 %)
Input current (typ.)	4 mA
Input frequency (max.)	80 Hz
Dead time	1 ms
t ON (IN) < 1 ms	t ON(OUT) = 0
1 ms < t ON(IN) < 10 ms	t ON(OUT) = 10 ms (± 15 %)
t ON (IN) > 10 ms	t ON(OUT) = t ON(IN)
Pulse extension	see graphic
Isolation	500 V system/supply
Internal bit width	4 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, *750/753 Series*	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 50081-1 (1993)

4-Channel Digital Input Module 24 V DC

2- to 3-conductor connection; low-side switching

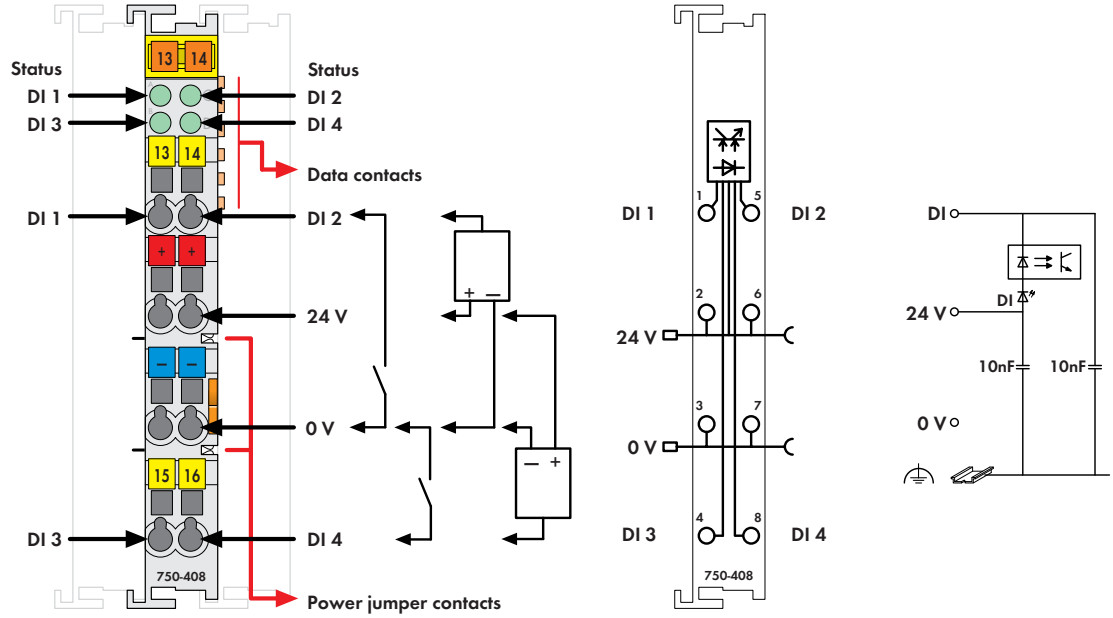


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The digital input module receives the control signal from digital field devices (sensors, etc.).

Each input module has a noise-rejection filter. This filter is available with different time constants.

An optocoupler is used for electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
4DI 24V DC 3.0ms, low-side switching	**750-408**	10[1]
4DI 24V DC 0.2ms, low-side switching	**750-409**	10[1]
4DI 24V DC 3.0ms, low-side switching (without connector)	**753-408**	10[1]
4DI 24V DC 0.2ms, low-side switching (without connector)	**753-409**	10[1]

[1] Also available individually

Accessories

	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

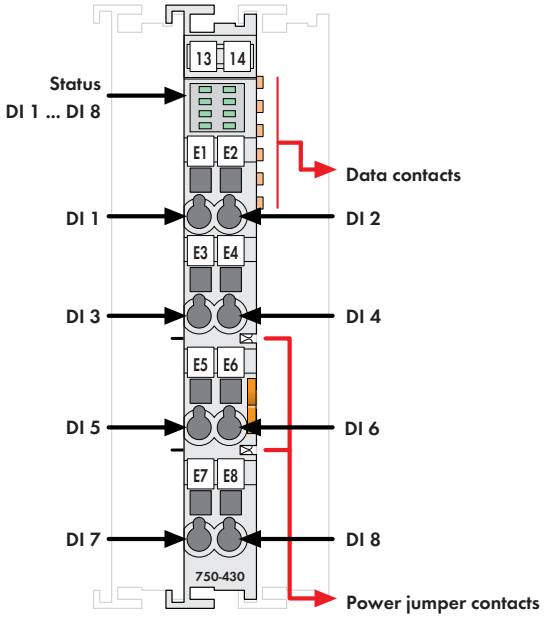
750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4

Technical Data

Number of inputs	4
Current consumption (internal)	5 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Signal voltage (0)	(V_V - 5 V DC) ... V_V
Signal voltage (1)	-3 V DC (V_V - 15 V)
Input filter	3.0 ms (750-408 / 753-408)
	0.2 ms (750-409 / 753-409)
Input current (typ.)	7 mA
Isolation	500 V system/supply
Internal bit width	4 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	48 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

8-Channel Digital Input Module 24 V DC

1-conductor connection; high-side switching



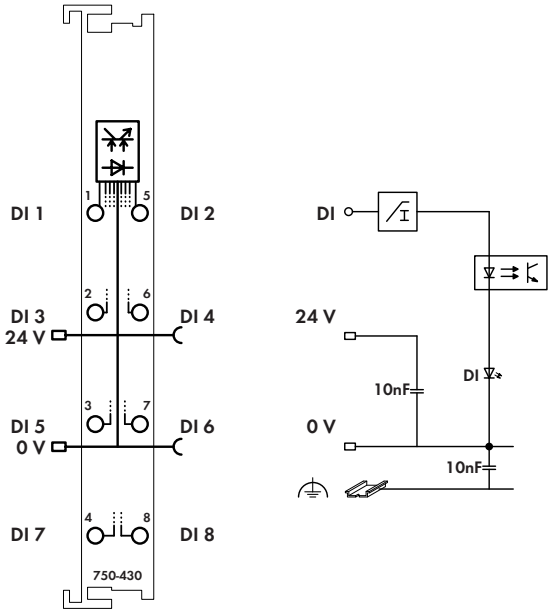


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers 750/753 Series marking see pages 12 ... 13 / 14 ... 15

NOTE: Connection point marking (i.e., 1 ... 8) does not refer to channel assignment

The digital input modules provide 8 channels maintaining a width of only 12mm. They receive control signals from digital field devices (sensors, etc.).

Each input module has a noise-rejection filter. This filter is available with different time constants.

An optocoupler is used for electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
8DI 24V DC, 3.0ms	**750-430**	10[1]
8DI 24V DC, 0.2ms	**750-431**	10[1]
8DI 24V DC, 3.0ms	**750-430/025-000**	1
(Operating temperature -20 °C ... +60 °C)		
8DI 24V DC, 3.0ms (without connector)	**753-430**	10[1]
8DI 24V DC, 0.2ms (without connector)	**753-431**	10[1]

[1] Also available individually

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

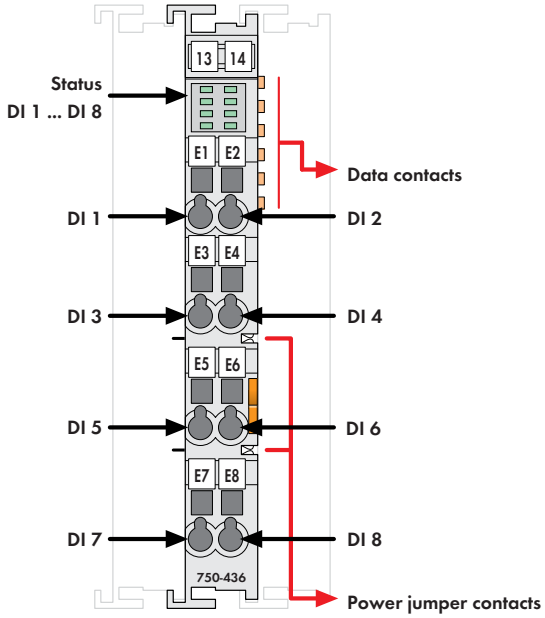
750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
	BR-Ex nA II T4
Shipbuilding	see "Approvals Overview" in section 1

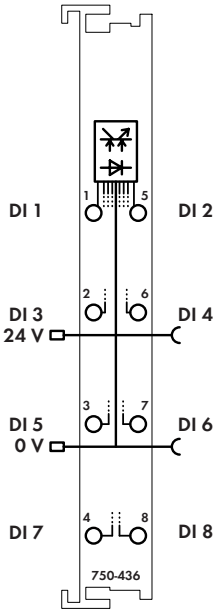
Technical Data

Number of inputs	8
Current consumption (internal)	17 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	3.0 ms (750-430 / 753-430)
	0.2 ms (750-431 / 753-431)
Input current (typ.)	2.8 mA
Isolation	500 V system/supply
Internal bit width	8 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	48.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

8-Channel Digital Input Module 24 V DC

1-conductor connection; low-side switching





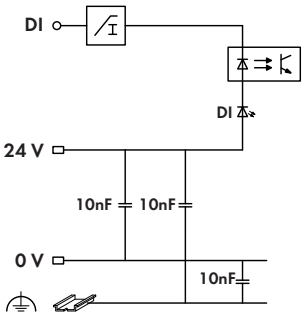


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers 750/753 Series marking see pages 12 ... 13 / 14 ... 15

NOTE: Connection point marking (i.e., 1 ... 8) does not refer to channel assignment

The digital input module provides 8 channels maintaining a width of only 12mm.
It receives control signals from the digital field devices (sensors, etc.).

Each input module has a noise-rejection filter.
This filter is available with different time constants.

Field and system levels are electrically isolated.

Description	Item No.	Pack. Unit
8DI 24V DC 3.0ms	**750-436**	1
8DI 24V DC 0.2ms	**750-437**	1
8DI 24V DC 3.0ms (without connector)	**753-436**	1
8DI 24V DC 0.2ms (without connector)	**753-437**	1

Accessories

	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

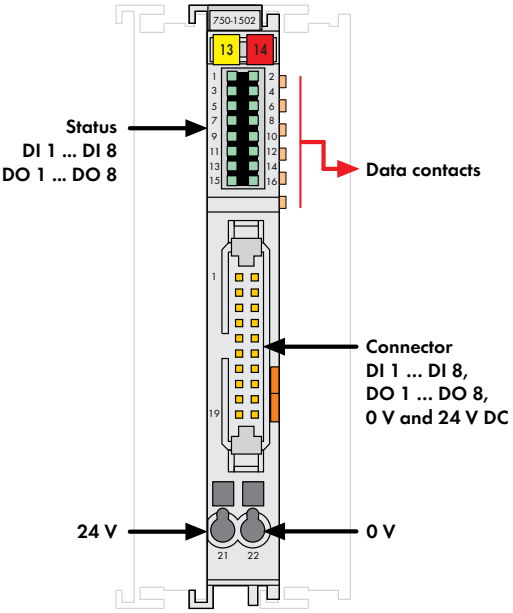
750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

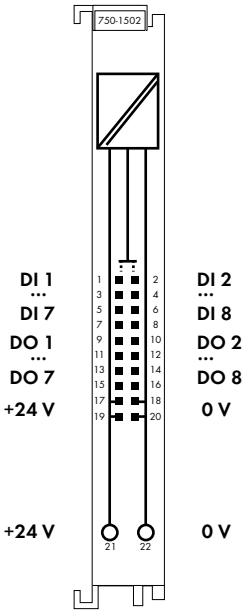
Technical Data

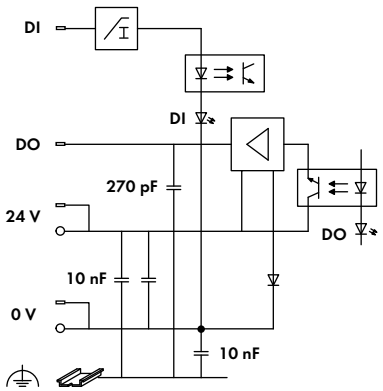
Number of inputs	8
Max. current consumption (internal)	13 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Signal voltage (0)	15 V ... 30 V DC
Signal voltage (1)	-3 V ... +5 V DC
Input filter	3.0 ms (750-436 / 753-436)
	0.2 ms (750-437 / 753-437)
Input current (typ.)	2.8 mA
Isolation	500 V system/supply
Internal bit width	8 bits in
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	48 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

8-Channel Digital Input/Output Module 24 V DC

Ribbon cable, high-side switching







Delivered without miniature WSB markers

The digital input/output module provides 8 inputs and 8 outputs at a width of just 12mm (0.47in).
It receives binary control signals from digital field devices and transmits these signals to connected actuators (e.g., magnetic valves, contactors, transmitters, relays or other electrical loads).
The 750-1502 connects to electronic modules via 20-pole ribbon cable.
The 24V power is fed to the electronic modules via two CAGE CLAMP® terminals.
A green LED indicates the switched status of each channel.
An optocoupler provides electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
8DI 8DO 24V DC 0.5A, ribbon cable	**750-1502**	1
Interference-free for use in safety functions (see manual)		

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	
Cable and interface modules		see pages 308 ... 315	

Approvals

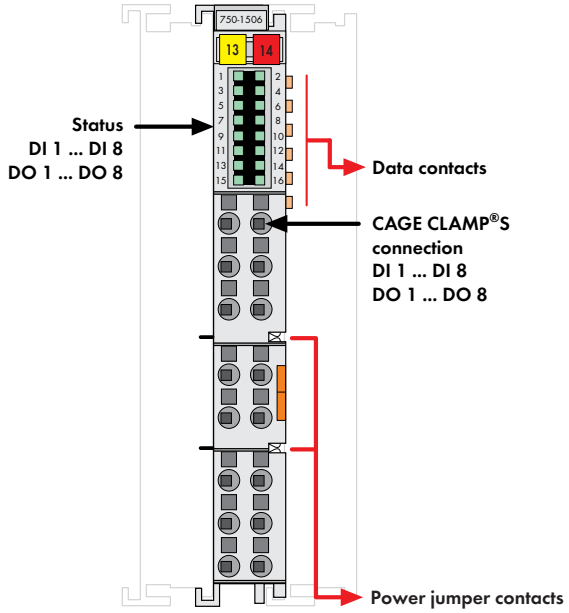
750 Series	
Conformity marking	CE
UL 508	

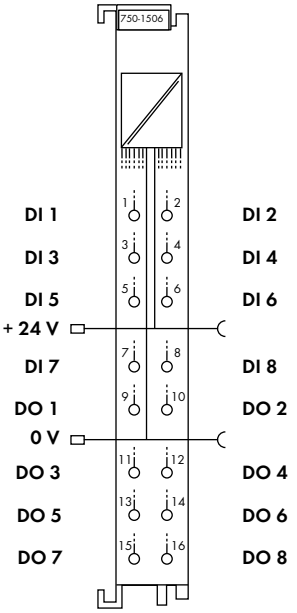
Technical Data

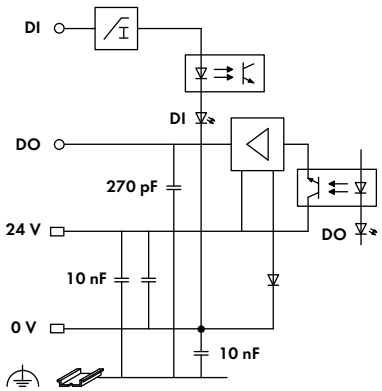
Digital inputs:	
Number of inputs	8
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input filter	3.0 ms
Input current (typ.)	+0.6 mA (at -3 V ... +5 V DC)
	+2.2 mA ... +2.5 mA (at 15 V ... +32 V DC)
Digital outputs:	
No. of outputs	8
Type of load	resistive, inductive, lamps
Switching frequency (max.)	1 kHz
Output current (max.)	0.5 A, short-circuit protected
Current consumption typ. (field side)	16 mA
General specifications:	
Voltage supply	24 V DC (-25 % ...+30 %)
Current consumption (internal)	30 mA
Isolation	500 V system/field
Wire connection	20-pole male connector / CAGE CLAMP®
Cross sections CAGE CLAMP®	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	12 x 73 x 100
	Height from upper-edge of DIN 35 rail
Weight	50 g

8-Channel Digital Input/Output Module 24 V DC

High-side switching







Delivered without miniature WSB markers

The digital input/output module provides 8 inputs and 8 outputs at a width of just 12mm (0.47in).
It receives binary control signals from digital field devices and transmits control signals from the automation device to connected actuators (e.g., magnetic valves, contactors, transmitters, relays or other electrical loads).
CAGE CLAMP®S terminations provide direct insertion of solid conductors.
A green LED indicates the switched status of each channel.
An optocoupler provides electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
8DI 8DO 24V DC 0.5A	**750-1506**	1
Interference-free for use in safety functions (see manual)		

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

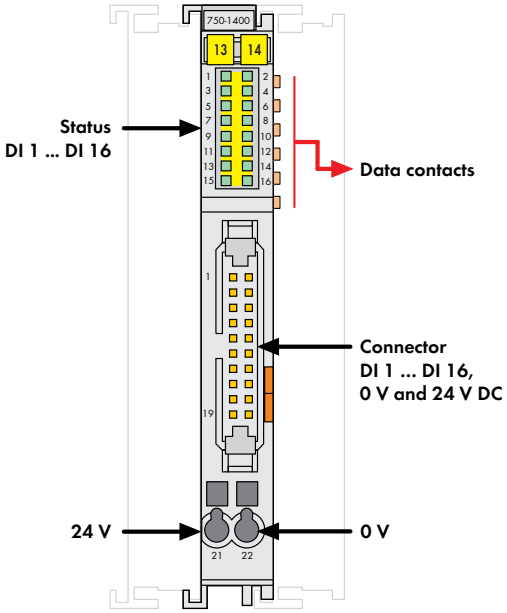
750 Series	
Conformity marking	CE

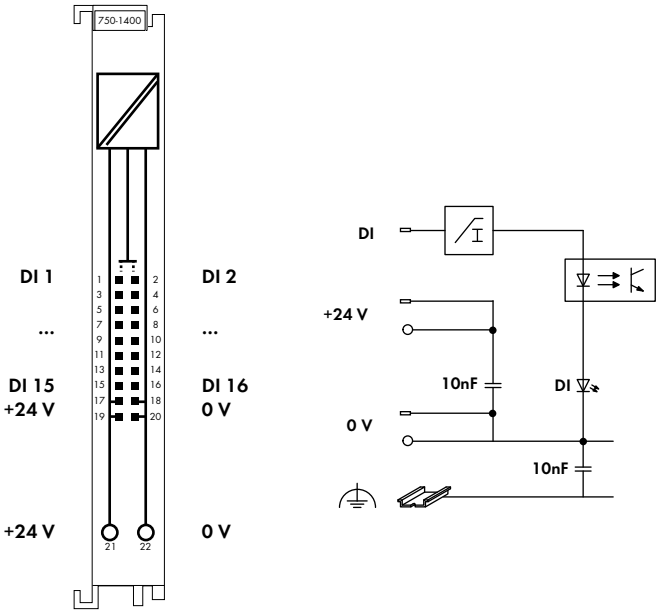
Technical Data

Digital inputs:	
Number of inputs	8
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input filter	3.0 ms
Input current (typ.)	+0.6 mA (at -3 V ... +5 V DC)
	+2.2 mA ... +2.5 mA (at 15 V ... +32 V DC)
Digital outputs:	
No. of outputs	8
Type of load	resistive, inductive, lamps
Switching frequency (max.)	1 kHz
Output current (max.)	0.5 A, short-circuit protected
Current consumption typ. (field side)	16 mA
General specifications:	
Current consumption (internal)	30 mA
Isolation	500 V system/field
Wire connection	CAGE CLAMP®S
Cross sections	0.08 mm² solid / 0.25 mm²
	fine-stranded ... 1.5 mm² /
	AWG 28 /22 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	50 g

16-Channel Digital Input Module 24 V DC

Ribbon cable, high-side switching





Delivered without miniature WSB markers

The digital input module provides 16 channels at a width of just 12mm (0.47in).
It receives binary control signals from digital field devices (e.g., sensors, encoders, switches or proximity switches).
The 750-1400 connects to electronic modules via 20-pole ribbon cable.
The 24V power is fed to the electronic modules via two CAGE CLAMP® terminals.
Each input channel has a noise-rejection RC filter with a 3.0ms time constant.
A green LED indicates the switched status of each channel.
An optocoupler provides electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
16DI 24V DC 3.0ms, ribbon cable	**750-1400**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	
Cable and interface modules		see pages 308 ... 315	

Approvals

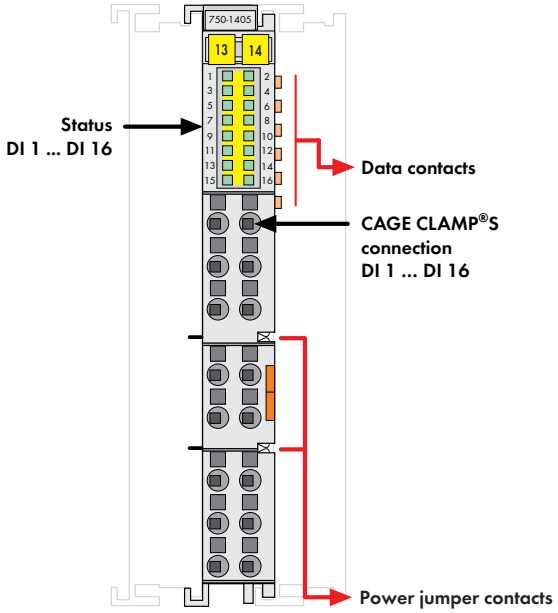
750 Series	
Conformity marking	CE
UL 508	

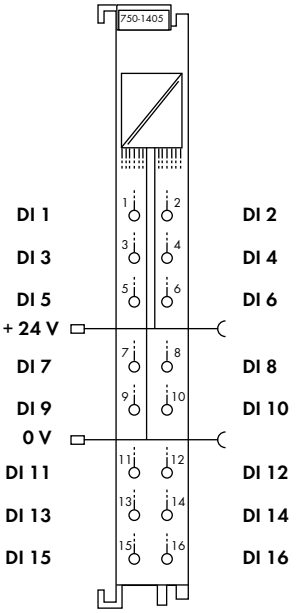
Technical Data

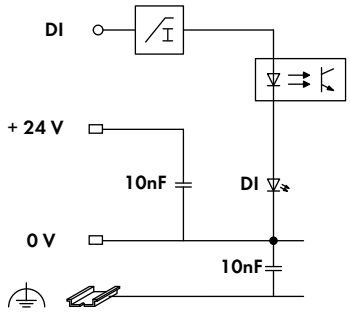
Number of inputs	16
Current consumption (internal)	25 mA
Voltage supply	24 V DC (-25 % ...+30 %)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input filter	3.0 ms
Input current (typ.)	+0.6 mA (at -3 V ... +5 V DC)
	+2.2 mA ... +2.5 mA (at 15 V ... +32 V DC)
Isolation	500 V system/field
Wire connection	20-pole male connector / CAGE CLAMP®
Cross sections CAGE CLAMP®	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	12 x 73 x 100
	Height from upper-edge of DIN 35 rail
Weight	50 g

16-Channel Digital Input Module 24 V DC

High-side switching







Delivered without miniature WSB markers

The digital input module provides 16 channels at a width of just 12mm (0.47in).
It receives binary control signals from digital field devices (e.g., sensors, encoders, switches or proximity switches).
CAGE CLAMP®S terminations provide direct insertion of solid conductors.
Each input channel has a noise-rejection RC filter with a 3.0ms time constant.
A green LED indicates the switched status of each channel.
An optocoupler provides electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
16DI 24VDC 3.0ms	**750-1405**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

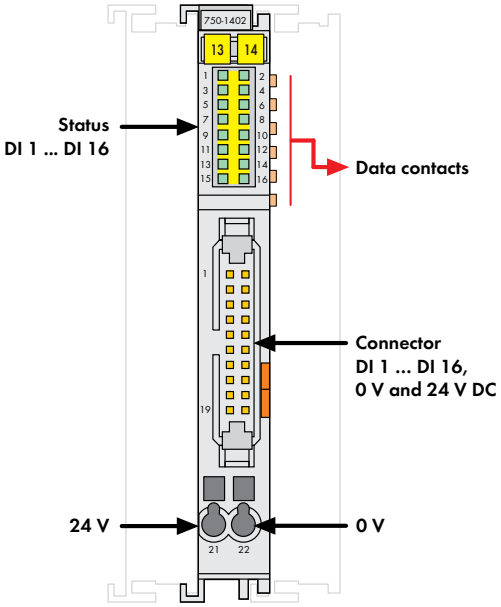
750 Series	
Conformity marking	CE

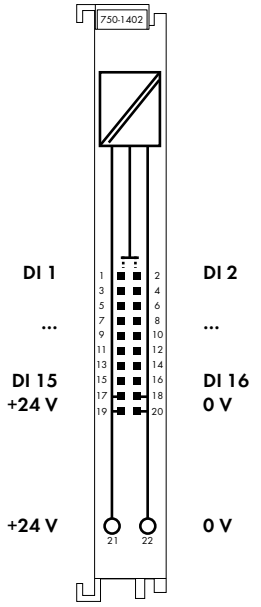
Technical Data

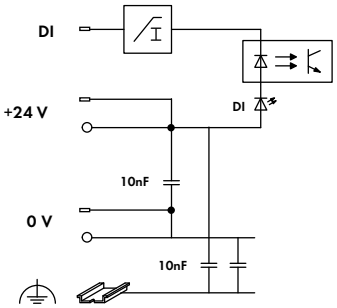
Number of inputs	16
Current consumption (internal)	25 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input filter	3.0 ms
Input current (typ.)	+0.6 mA (at -3 V ... +5 V DC)
	+2.1 mA ... +2.4 mA (at 15 V ... +32 V DC)
Isolation	500 V system/field
Wire connection	CAGE CLAMP®S
Cross sections	0.08 mm² solid / 0.25 mm²
	fine-stranded ... 1.5 mm² /
	AWG 28 /22 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	50 g

16-Channel Digital Input Module 24 V DC

Ribbon cable, low-side switching



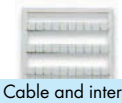




Delivered without miniature WSB markers

The digital input module provides 16 channels at a width of just 12mm (0.47in).
It receives binary control signals from digital field devices (e.g., sensors, encoders, switches or proximity switches).
The 750-1402 connects to electronic modules via 20-pole ribbon cable.
The 24V power is fed to the electronic modules via two CAGE CLAMP® terminals.
Each input channel has a noise-rejection RC filter with a 3.0ms time constant.
A green LED indicates the switched status of each channel.
An optocoupler provides electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
16DI 24V DC 3.0ms, ribbon cable, low-side switching	**750-1402**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	
Cable and interface modules		see pages 308 ... 315	

Approvals

750 Series

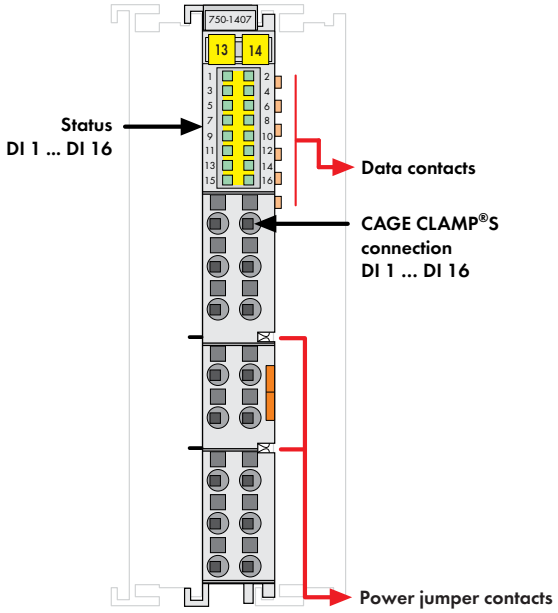
Conformity marking CE

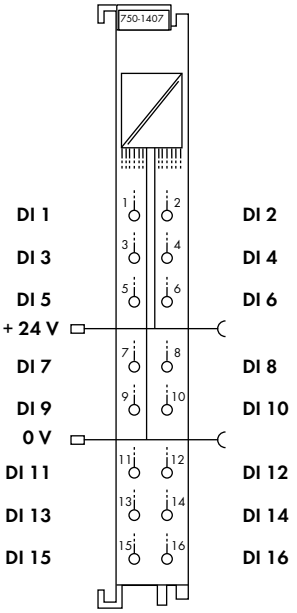
UL 508

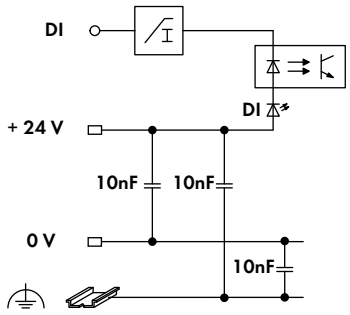
Technical Data	
Number of inputs	16
Current consumption (internal)	25 mA
Voltage supply	24 V DC (-25 % ...+30 %)
Signal voltage (0)	(V_V - 5 V DC) ... V_V
Signal voltage (1)	-3 V DC ... (V_V - 15 V)
Input filter	3.0 ms
Input current (typ.)	-0.6 mA (at -3 V ... +5 V DC)
	-2.2 mA ... -2.5 mA (at 15 V ... +32 V DC)
Isolation	500 V system/field
Wire connection	20-pole male connector / CAGE CLAMP®
Cross sections CAGE CLAMP®	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	12 x 73 x 100
	Height from upper-edge of DIN 35 rail
Weight	50 g

16-Channel Digital Input Module 24 V DC

Low-side switching







Delivered without miniature WSB markers

The digital input module provides 16 channels at a width of just 12mm (0.47in).
It receives binary control signals from digital field devices (e.g., sensors, encoders, switches or proximity switches).
CAGE CLAMP®S terminations provide direct insertion of solid conductors.
Each input channel has a noise-rejection RC filter with a 3.0ms time constant.
A green LED indicates the switched status of each channel.
An optocoupler provides electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
16DI 24VDC 3.0ms, low-side switching	**750-1407**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 Series	
Conformity marking	CE

Technical Data	
Number of inputs	16
Current consumption (internal)	25 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Signal voltage (0)	(V_V - 5 V DC) ... V_V
Signal voltage (1)	-3 V DC ... (V_V - 15 V)
Input filter	3.0 ms
Input current (typ.)	-0.6 mA (at -3 V ... +5 V DC)
	-2.1 mA ... -2.4 mA (at 15 V ... +32 V DC)
Isolation	500 V system/field
Wire connection	CAGE CLAMP®S
Cross sections	0.08 mm² solid / 0.25 mm²
	fine-stranded ... 1.5 mm² /
	AWG 28 /22 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	50 g

4-Channel Digital Input Module 24 V AC/DC

2-conductor connection

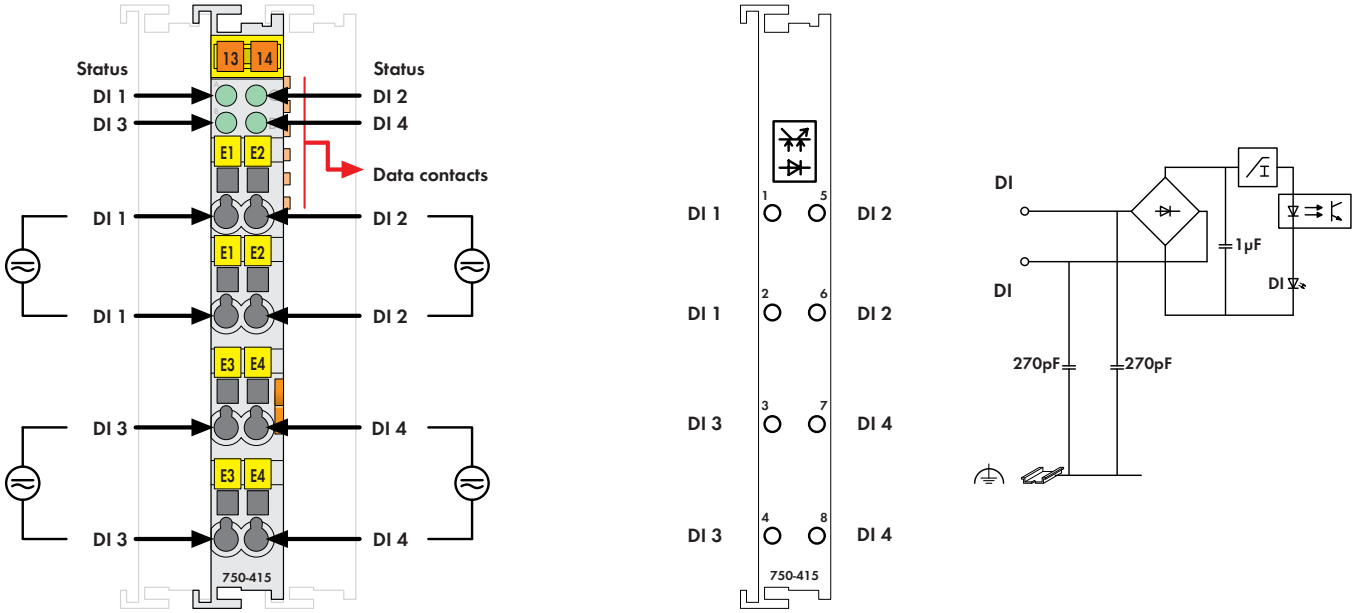


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The digital input module receives control signals from digital field devices (sensors, etc.).

For AC/DC operation, the inputs have a bridge rectifier, a capacitor and a current limitation.

Each input has a noise-rejection filter with a time constant.

An optocoupler is used for electrical isolation between the bus and the field side.

All inputs are isolated.

Description	Item No.	Pack. Unit
4DI 24V AC/DC 20ms	**750-415**	1
4DI 24V AC/DC 20ms (without connector)	**753-415**	1

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
	BR-Ex nA II T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Number of inputs	4
Current consumption (internal)	10 mA
Signal voltage (0)	-3 V ... +5 V DC; 0 V .. 5 V AC
Signal voltage (1)	11 V ... 30 V DC; 10 V .. 27 V AC
Input filter	20 ms
Input current (typ.)	7.5 mA DC; 9.5 mA AC
Isolation	500 V system/supply ;
	50 V channel/channel
Internal bit width	4 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	49.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to	
interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of	
interference	acc. to Germanischer Lloyd (2003)

4-Channel Digital Input Module 24 V AC/DC

2- to 3-conductor connection; with power jumper contacts

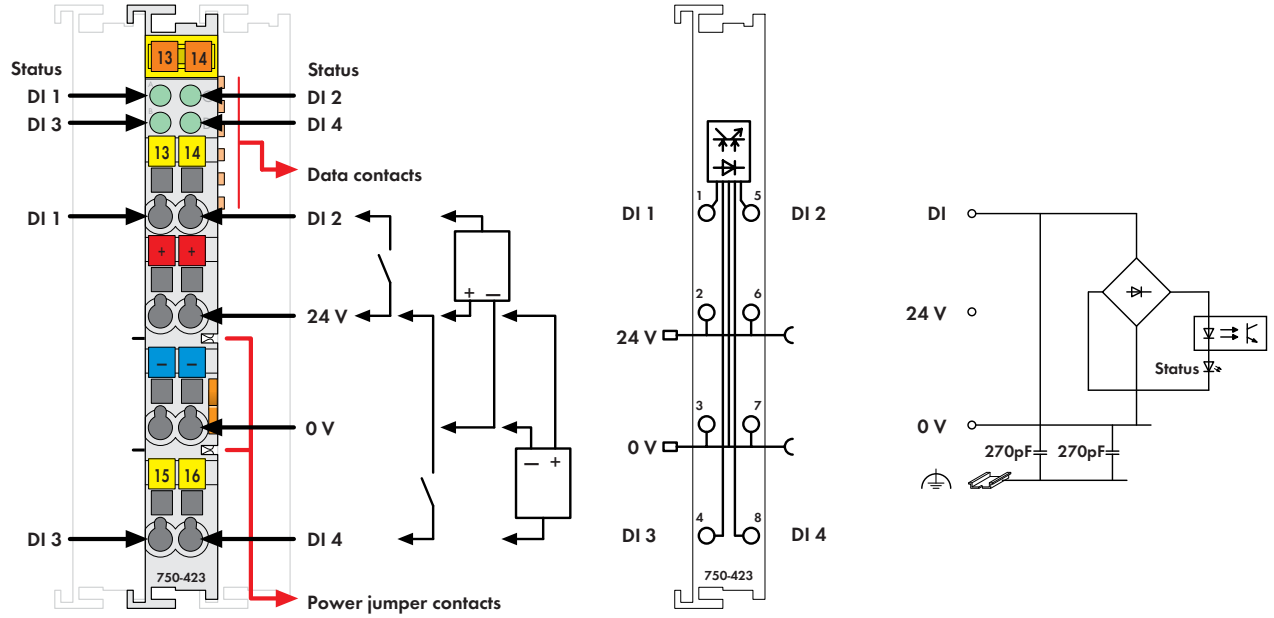


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The digital input module receives control signals from digital field devices (sensors, etc.).

Each input module has a noise-rejection filter with a time constant.

An optocoupler is used for electrical isolation between the bus and the field side.

Notice:
An additional supply module must be added for operation with 24VAC.

Description	Item No.	Pack. Unit
4DI 24V AC/DC, 50ms, power contacts	**750-423**	1
4DI 24V AC/DC, 50ms, power contacts (without connector)	**753-423**	1

Accessories

	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
	BR-Ex nA II T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Number of inputs	4
Current consumption (internal)	10 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Signal voltage (0)	-3 V ... +5 V DC; 0 V .. 5 V AC
Signal voltage (1)	11 V ... 30 V DC; 10 V .. 27 V AC
Input filter	50 ms
Input current (typ.)	7.5 mA DC; 9.5 mA AC
Isolation	500 V system/supply
Internal bit width	4 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	65 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel Digital Input Module 42 V AC/DC

2-conductor connection

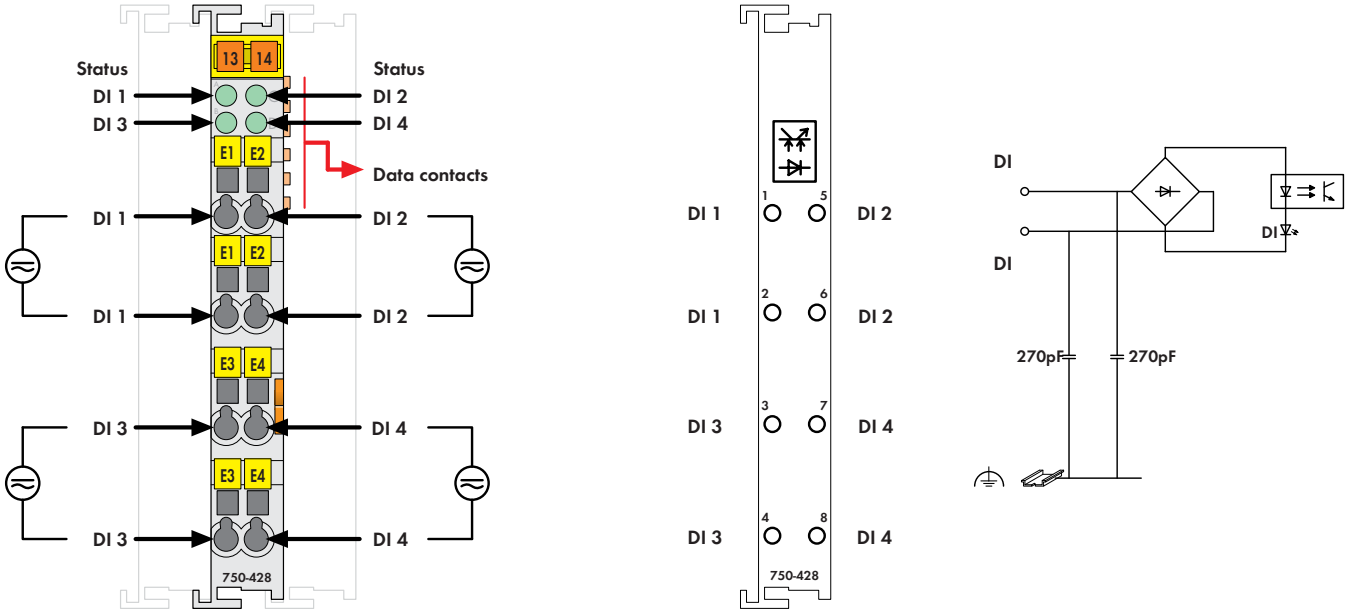


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The digital input module receives control signals from digital field devices (sensors, etc.).

Each input module has a noise-rejection filter with a time constant.

An optocoupler is used for electrical isolation between the bus and the field side.

All inputs are isolated.

Description	Item No.	Pack. Unit
4DI 42V AC/DC 20ms	**750-428**	1
4DI 42V AC/DC 20ms (without connector)	**753-428**	1

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4

Technical Data

Number of inputs	4
Current consumption (internal)	5 mA
Signal voltage (0)	-3 V ... +10 V DC; 0 V ... 10 V AC
Signal voltage (1)	30 V ... 53 V DC; 30 V ... 53 V AC
Input filter	20 ms
Input current (typ.)	3.6 mA DC; 6.0 mA AC
Isolation	500 V AC system/supply;
	500 V AC channel/channel
Internal bit width	4 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	49.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

2-Channel Digital Input Module 48 V DC

2- to 4-conductor connection; high-side switching

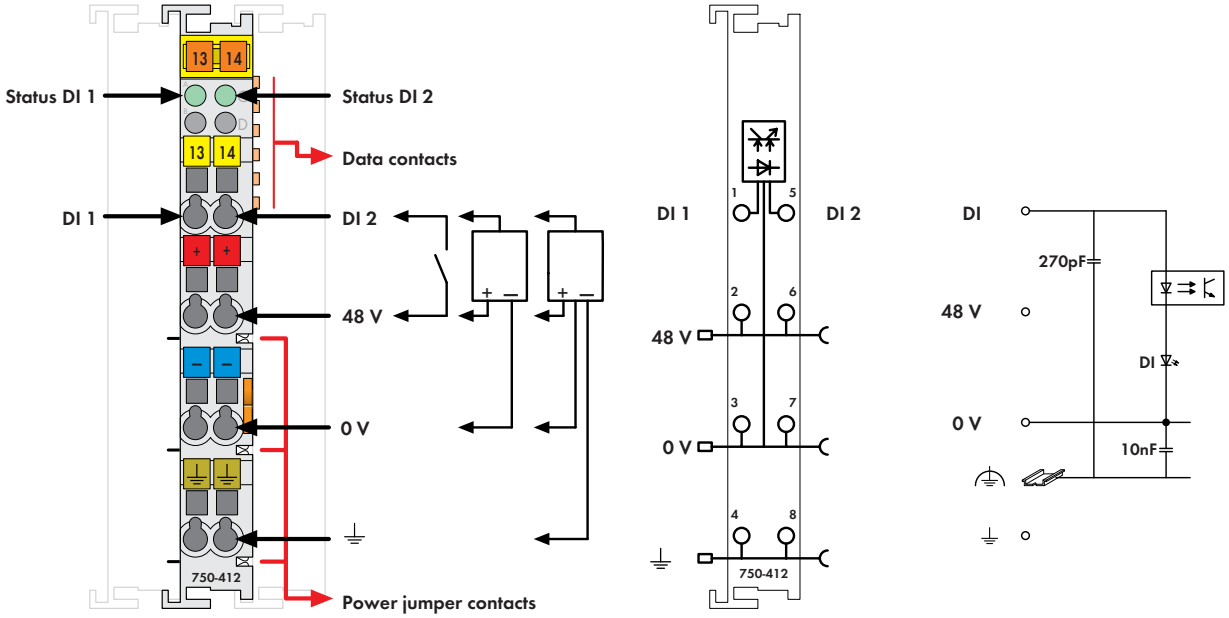


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The digital input module receives control signals from digital field devices (sensors, etc.).

The module is a 2-channel, 4-conductor device and sensors with a ground (earth) wire may be directly connected to the module.

Each input module has a noise-rejection filter with a time constant.

An optocoupler is used for electrical isolation between the bus and the field side.

Notice:
An additional supply module must be added for operation with 48VDC.

Description	Item No.	Pack. Unit
2DI 48V DC 3.0ms	**750-412**	1
2DI 48V DC 3.0ms without power jumper contacts	**750-412/000-001**	1
2DI 48V DC 3.0ms (without connector)	**753-412**	1

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

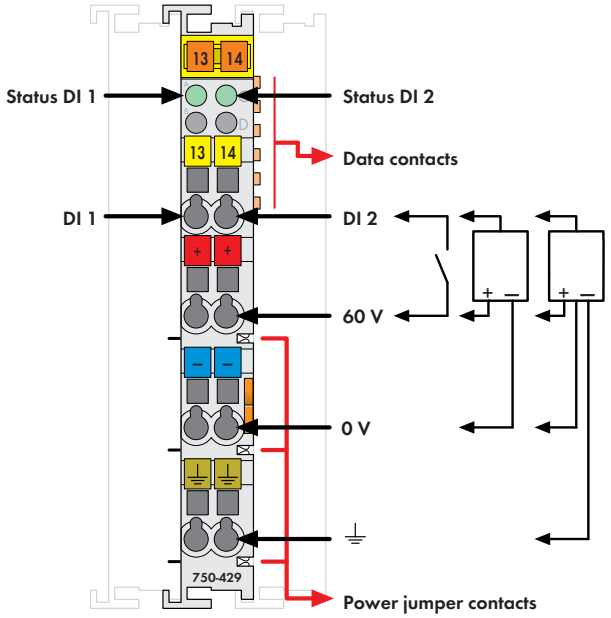
750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4

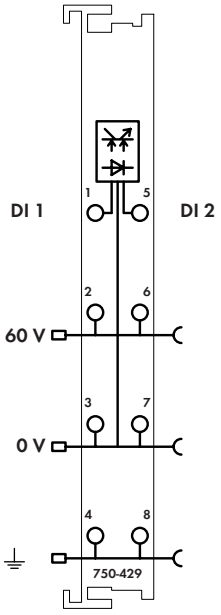
Technical Data

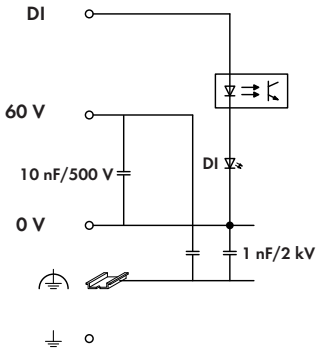
Number of inputs	2
Current consumption (internal)	2.5 mA
Voltage via power jumper contacts	48 V DC (-15 % ... +20 %)
Signal voltage (0)	-6 V ... +10 V DC
Signal voltage (1)	34 V ... 60 V DC
Input filter	3.0 ms
Input current (typ.)	3.8 mA
Isolation	500 V system/supply
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	46.5 g
EMC CE-Immunity to interference	acc. to EN 50082-2 (1996)
EMC CE-Emission of interference	acc. to EN 50081-1 (1993)

2-Channel Digital Input Module 60 V DC

2- to 4-conductor connection; high-side switching







Delivered without miniature WSB markers

The digital input module receives control signals from digital field devices (sensors, etc.).

The module is a 2-channel, 4-conductor device; sensors with a ground (earth) wire may be directly connected to the module.

Each input module has a noise-rejection filter with a time constant.

Field and system levels are electrically isolated.

NOTICE:
An additional supply module (750-612) must be added for operation with 60VDC.

Description	Item No.	Pack. Unit
2DI 60V DC 3.0ms (without connector)	**753-429**	

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

753 Series

Conformity marking CE

Technical Data

Number of inputs	2
Max. current consumption (internal)	2.5 mA
Voltage via power jumper contacts	60 V DC (-20 % ... +25 %)
Signal voltage (0)	-7.5 V ... +12 V DC
Signal voltage (1)	44 V ... 75 V DC
Input filter	3.0 ms
Input current (typ.)	2.9 ms
Isolation	500 V system/field
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	50 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2006)

2-Channel Digital Input Module 110 V DC

Configurable high-side or low-side switching

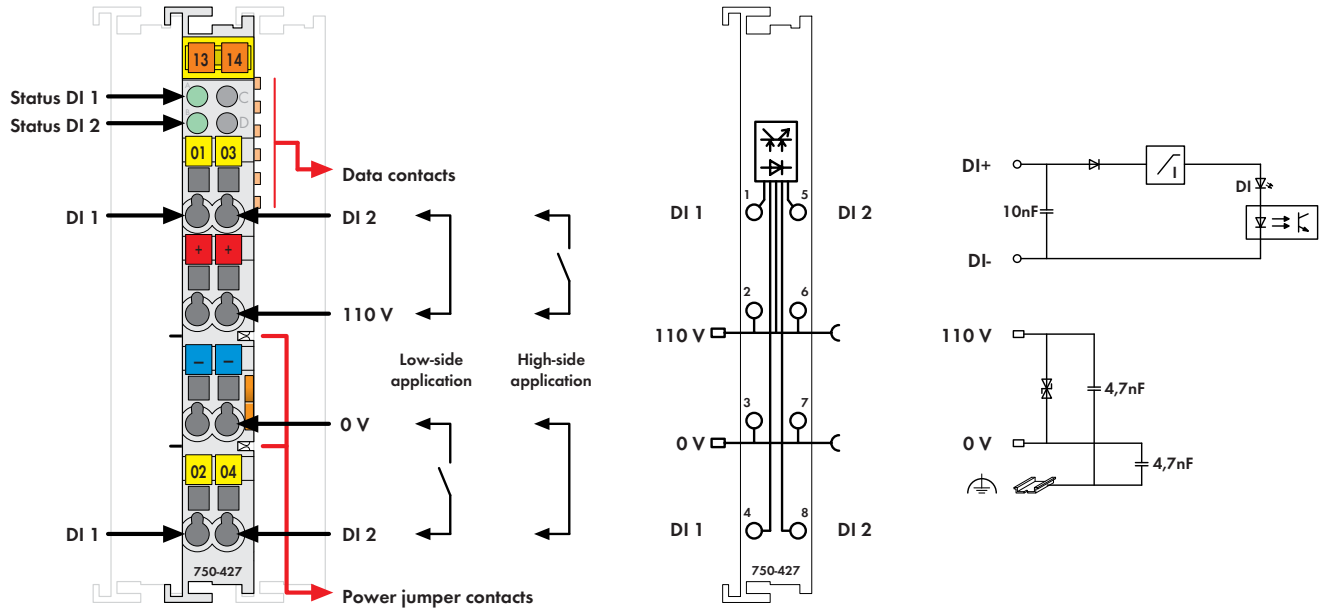


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The digital input module receives control signals from digital field devices (sensors, etc.).

The module is a 2-channel device. Each channel can function as a low-side switch or high-side switch input. The type of input depends on the external wiring.

An optocoupler is used for electrical isolation between the bus and the field side.

Notice:
An additional supply module must be added for operation with 110VDC.

Description	Item No.	Pack. Unit
2DI 110V DC	**750-427**	1
2DI 110V DC (without connector)	**753-427**	1

Accessories

	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
	BR-Ex nA II T4

Technical Data

Number of inputs	2
Current consumption (internal)	2.5 mA
Voltage via power jumper contacts	110 V DC (-20 % ... +25 %)
Signal voltage (0)	< 50 V
Signal voltage (1)	> 70 V
Input filter	3.0 ms
Input current (typ.)	2.5 mA
Isolation	1.5 kV eff. (field/system)*;
	* 2.5 kV rated surge voltage;
	Overvoltage category III
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	37.5 g
EMC CE-Immunity to interference	acc. to EN 50082-2 (1996)
EMC CE-Emission of interference	acc. to EN 50081-1 (1993)

2-Channel Digital Input Module 120 V AC

2- to 4-conductor connection; high-side switching

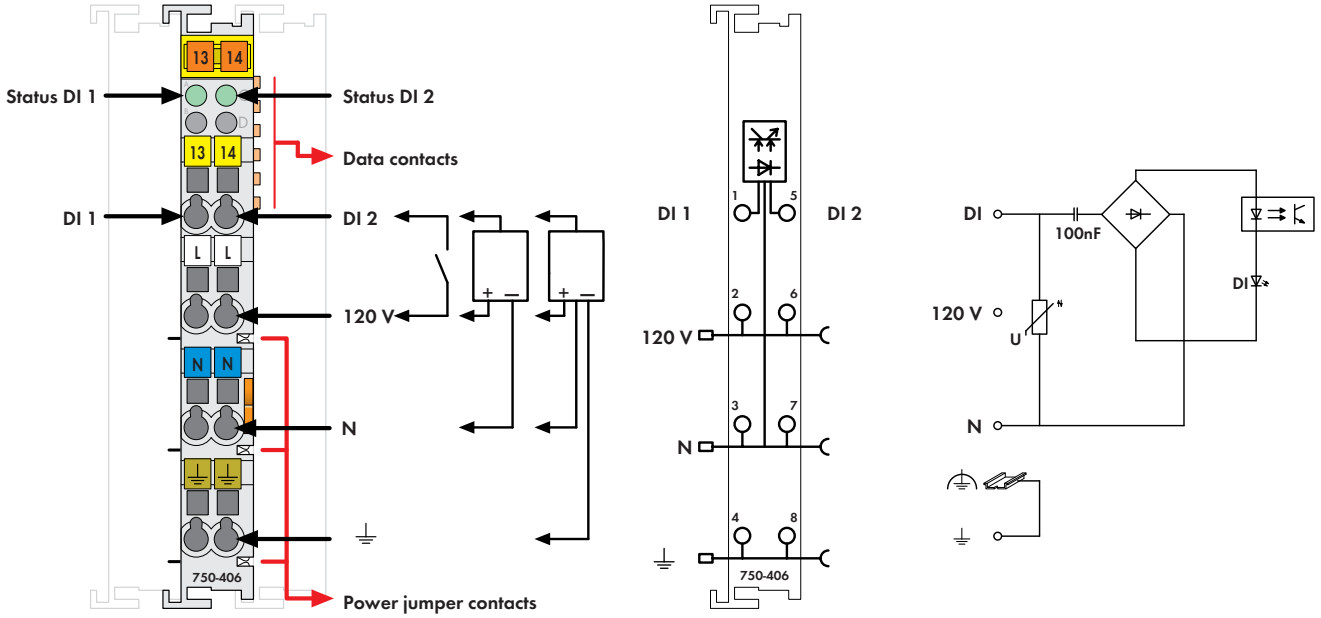


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The digital input module receives control signals from digital field devices (sensors, etc.).

The module is a 2-channel, 4-conductor device and sensors with a ground (earth) wire may be directly connected to the module.

An optocoupler is used for electrical isolation between the bus and the field side.

Notice:
An additional supply module must be added for operation with 120VAC.

Description	Item No.	Pack. Unit
2DI 120V AC	**750-406**	10[1]
2DI 120V AC (without connector)	**753-406**	10[1]

[1] Also available individually

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

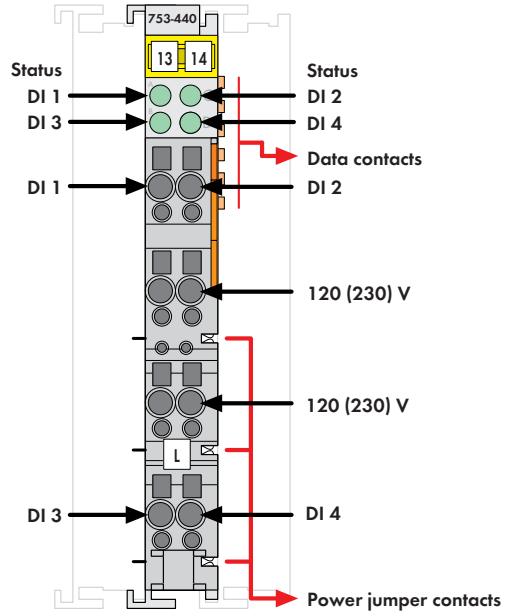
750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

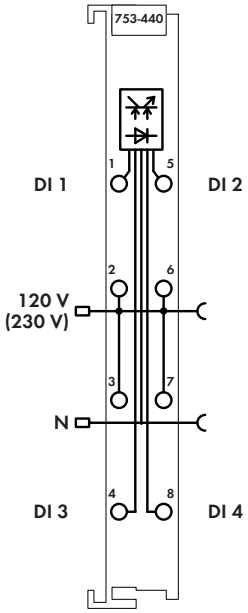
Technical Data

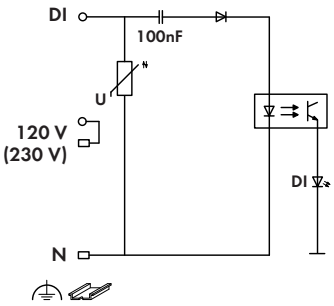
Number of inputs	2
Current consumption (internal)	2 mA
Voltage via power jumper contacts	230 V AC (-15 % ... +20 %);
	(± 20 % 1.5 s)
Signal voltage (0)	0 V ... 20 V AC
Signal voltage (1)	79 V AC ... 1.1 V_N
Input filter	10 ms
Input current (typ.)	4.5 mA
Input frequency	f (nominal) ± 10 %
	50 Hz ± 10 %
	60 Hz ± 10 %
Isolation	1.5 kV eff. (field/system)*;
	* 2.5 kV rated surge voltage;
	Overvoltage category III
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	37.1 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel Digital Input Module 120 (230) V AC

2-conductor connection; high-side switching







Delivered without miniature WSB markers

The digital input module receives control signals from digital field devices (sensors, etc.).

The module is a 4-channel, 2-conductor device and four sensors may be directly connected to the module.

An optocoupler is used for electrical isolation between the bus and the field side.

Notice:
An additional supply module must be added for operation with 120 (230)VAC.

Description	Item No.	Pack. Unit
4DI AC 120 (230) V 10ms (without connector)	**753-440**	1

Accessories

	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

753 Series	
Conformity marking	CE
UL 508	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	applied for

Technical Data

Number of inputs	4
Current consumption (internal)	15 mA
Voltage via power jumper contacts	90 V ... 230 V AC (-15 % ... +10 %)
Signal voltage (0)	0 V ... 40 V AC
Signal voltage (1)	79 V ... 230 V AC (-15 % ... +10 %)
Input filter	10 ms
Overvoltage protection	275 V AC varistor
Input current (typ.)	2.3 mA at 120 V; 4.7 mA at 230 V
Input frequency	f (nominal) ± 10 %;
	50 Hz ± 10 % at 230 V;
	60 Hz ± 10 % at 120 V
Isolation	1.5 kV eff. (field/system)*;
	* 2.5 kV rated surge voltage;
	Overvoltage category III
Internal bit width	4 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	61 g
EMC CE-Immunity to interference	acc. to EN 61131-2 (2003)
EMC CE-Emission of interference	acc. to EN 61131-2 (2003)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Digital Input Module 230 V AC

2- to 4-conductor connection; high-side switching

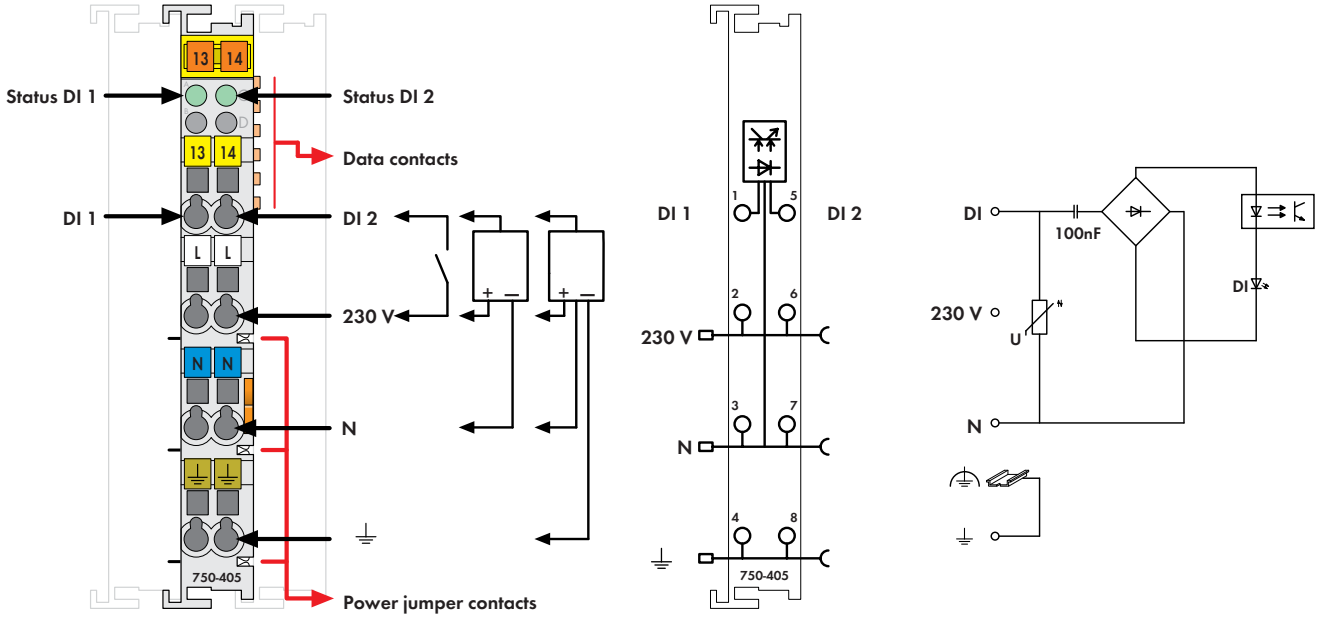


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The digital input module receives control signals from digital field devices (sensors, etc.).

The module is a 2-channel, 4-conductor device and sensors with a ground (earth) wire may be directly connected to the module.

An optocoupler is used for electrical isolation between the bus and the field side.

Notice:
An additional supply module must be added for operation with 230VAC.

Description	Item No.	Pack. Unit
2DI 230V AC	**750-405**	10[1]
2DI 230V AC (without connector)	**753-405**	10[1]

[1] Also available individually

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Number of inputs	2
Current consumption (internal)	2 mA
Voltage via power jumper contacts	230 V AC (-15 % ... +20 %);
	(± 20 % 1.5 s)
Signal voltage (0)	0 V ... 40 V AC
Signal voltage (1)	164 V AC ... 1.1 V_N
Input filter	10 ms
Input current (typ.)	6.5 mA
Input frequency	f (nominal) ± 10 %
	50 Hz ± 10 %
	60 Hz ± 10 %
Isolation	1.5 kV eff. (field/system)*;
	* 2.5 kV rated surge voltage;
	Overvoltage category III
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	50 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Digital Input Module NAMUR

Proximity switch acc. to DIN EN 50227

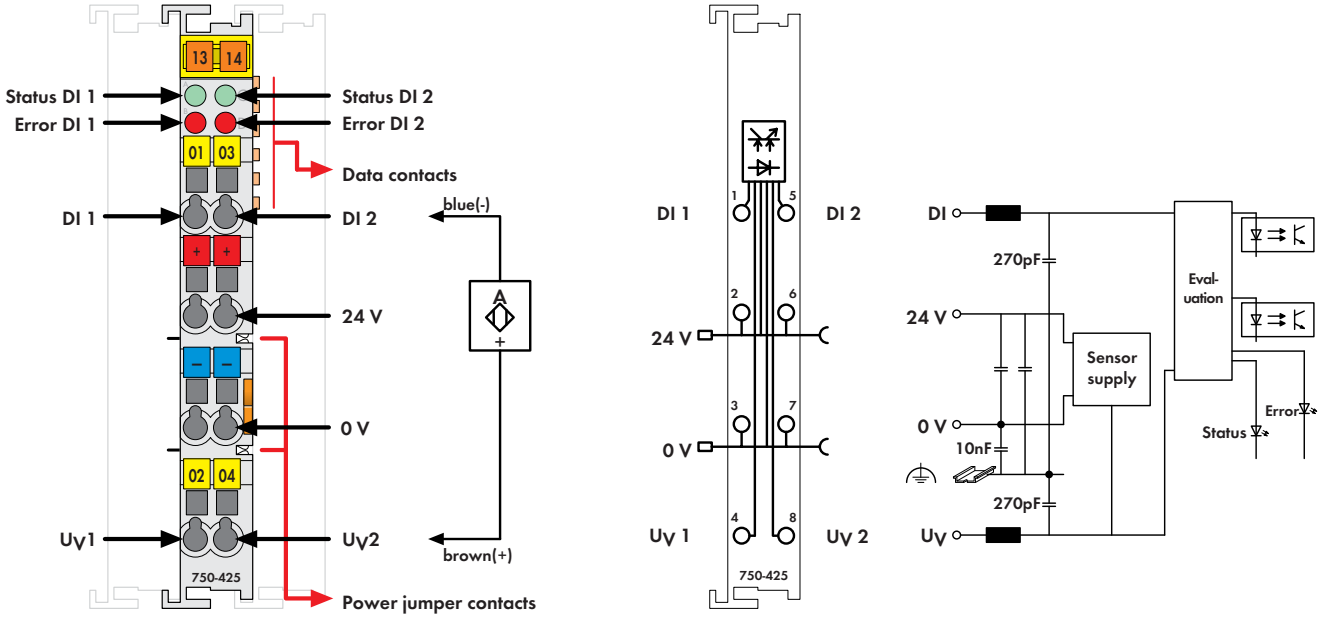


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The digital input module receives control signals from NAMUR proximity sensors (acc. to DIN 19234 and DIN 50227) from the field side.

The voltage supply of each channel of the sensors is delivered by a short circuit proof 8.2V voltage source. A short circuit or a line break is indicated in the process image (1 bit) and via the red LED.

The green LED indicates the input status:
- Signal current (0) LED off
- Signal current (1) LED on

Field and system level are electrically isolated.

Description	Item No.	Pack. Unit
2DI NAMUR	**750-425**	1
2DI NAMUR (without connector)	**753-425**	1

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
	BR-Ex nA II T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Number of inputs	2
Current consumption typ. (internal)	5 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Signal current (0)	≤ 1.2 mA
Signal current (1)	≥ 2.1 mA
Input filter	3.0 ms
Switching hysteresis	0.2 mA
Open-circuit voltage	8.2 V DC
Input resistance	1 kΩ
Input pulse duration	≥ 5 ms
Input pulse separation	≥ 3 ms
Short-circuit current	≤ 8.2 mA
Short circuit monitoring	> 6.5 mA
Line break monitoring	< 0.2 mA
Sensor supply V_V	8.2 V DC
Isolation	500 V system/supply
Internal bit width	4 bits in, 2 bits data, 2 bits error (short circuit/line break)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

Intruder Detection

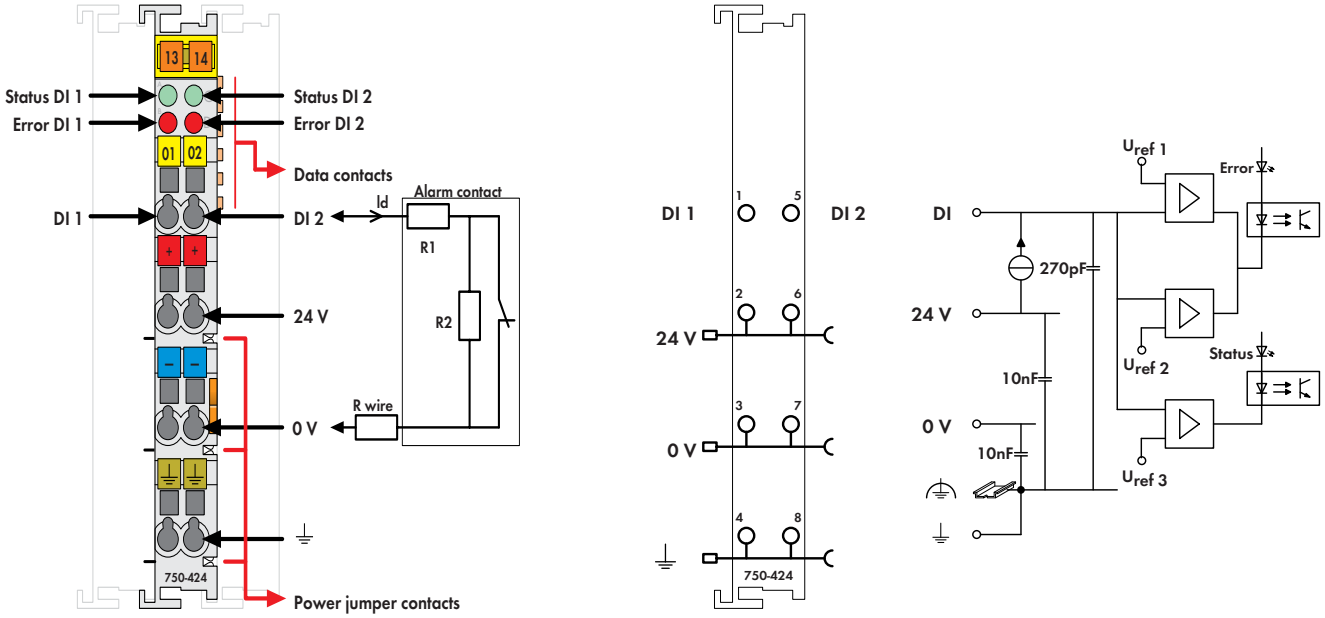


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

This input module incorporates a current loop which makes it possible to monitor alarm contacts with a fixed resistance ratio (R1, R2), for intruder detection.

The module indicates the current status of the contact via LEDs and via status bits in the process image.

Description	Item No.	Pack. Unit
2DI 24V DC Intruder Detection	**750-424**	1
2DI 24V DC Intruder Detection (without connector)	**753-424**	1

Accessories

		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

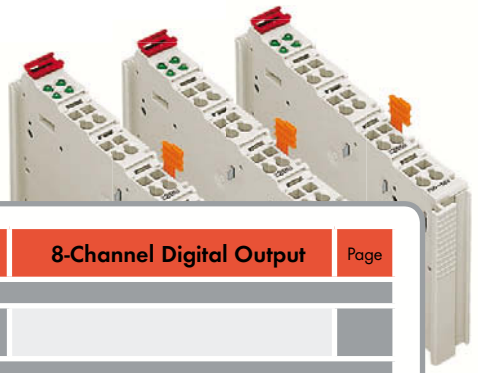
750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
	BR-Ex nA II T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Number of inputs	2
Current consumption typ. (internal)	6 mA
Current consumption max. (field side)	16 mA / 24 V DC
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Loop current typ. (Id)	1 mA
R1	1.5 kΩ (± 5 %)
R2	2.2 kΩ (± 5 %)
R wire (max.)	200 Ω
Isolation	500 V system/supply
Internal bit width	4 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	36 g
	51 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

Modular I/O System Overview

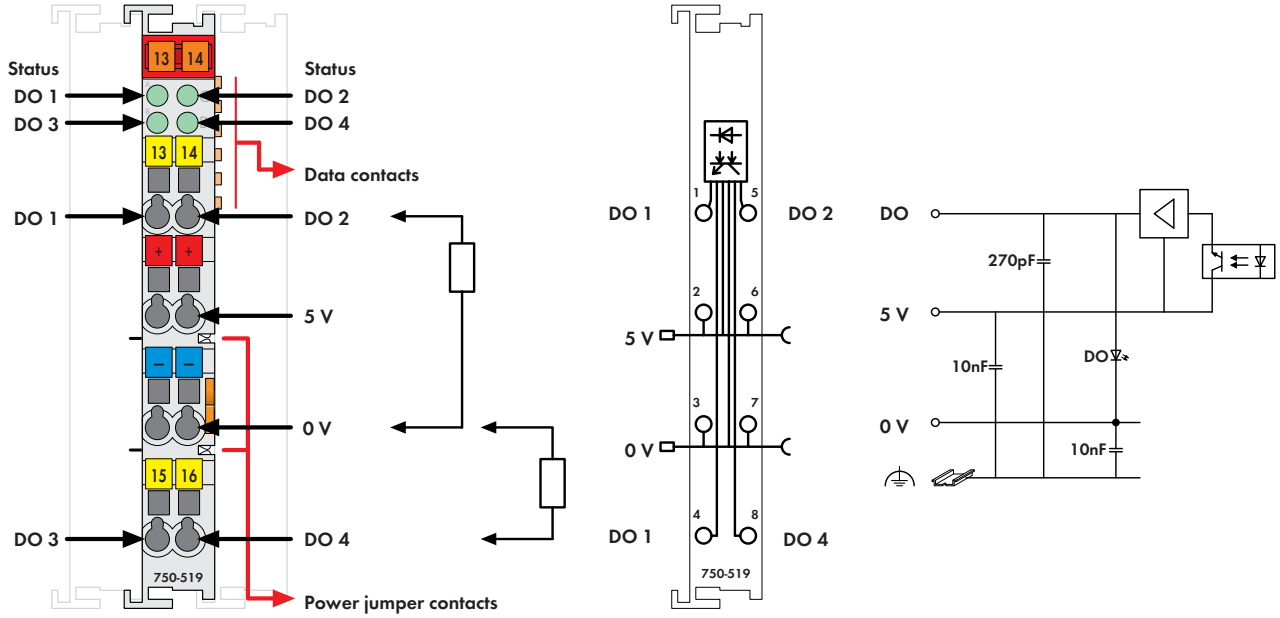
Digital Outputs



Function	2-Channel Digital Output	Page	4-Channel Digital Output	Page	8-Channel Digital Output	Page
5 V DC			**750-519** High-side switch.	161		
5/12 V DC					**753-534** (5 ... 14 V DC) 1 A, short-circuit protec., high-side switch.	162
24 V DC	**750-501 / 753-501** 0.5 A, short-circuit protec., high-side switch.	163	**750-504 / 753-504** 0.5 A, short-circuit protec., high-side switch.	167	**750-530 / 753-530** 0.5 A, short-circuit protec., high-side switch.	171
	750-502 / 753-502 2.0 A, short-circuit protec., high-side switch.	164	**750-531 / 753-531** (2-conductor) 0.5 A, short-circuit protec., high-side switch.	168	**750-536 / 753-536** 0.5 A, short-circuit protec., low-side switch.	172
	750-506 / 753-506 0.5 A with diagnostics, Short-circuit protec., high-side switch.	165	**750-516 / 753-516** Short-circuit protec., low-side switch.	169	**750-537** 0.5 A mit Diagnose short-circuit protec., high-side switch.	173
	750-508 / 753-508 2.0 A with diagnostics, Short-circuit protec., high-side switch.	166	**750-532 / 753-532** (2-conductor) 0.5 A with diagnostics, short-circuit protec., high-side switch.	170	**8-Channel Digital Input/Output**	
					750-1502 0.5 A, high-side switch., Ribbon cable	174
					750-1506 0.5 A, high-side switch.	175
					16-Channel Digital Output	
					750-1500 0.5 A, high-side switch., Ribbon cable	176
					750-1504 0.5 A, high-side switch.	177
					750-1501 0.5 A, low-side switch., Ribbon cable	178
					750-1505 0.5 A, low-side switch.	179
120/230 V AC			**753-540** (AC 120 ... 230 V) 0.25 A, high-side switch.	180		
230 V AC/DC	**750-509 / 753-509** 0.3 A, solid state relay	181				
	750-522 0.5 A, solid state relay (3 A < 30 ms)	182				
Relay Modules	**750-514 / 753-514** (2 changeover contacts) Potential free, 125 V AC, 0.5 A	183				
	750-517 / 753-517 (2 changeover contacts) Potential free, 230 V AC, 1 A	184				
	750-512 / 753-512 (2 make contacts) Non-floating, 230 V AC, 2 A	185				
	750-513 / 753-513 (2 make contacts) Potential free, 230 V AC, 2 A	186				
	1-Channel Digital Output					
	750-523 (Relay with manual operation) Potential free, 1 make contact, 230 V AC, 16 A	187				
PROFIsafe Modules			**750-667/000-002** ; **753-667/000-002** PROFIsafe V2, 4 FDI/4 FDO 24 V/2 A	258		
			750-665/000-001, PROFIsafe, 4 FDO 0.5 A, 4 FDI 24 V	260		
Ex i Modules	**750-535, Ex i** Short-circuit protec., high-side switch.	272				

4-Channel Digital Output Module 5 V DC

Short-circuit protected; high-side switching



Delivered without miniature WSB markers

The connected load is switched via the digital output from the control system.

All outputs are electronically short-circuit-protected.

An optocoupler is used for electrical isolation between the bus and the field side.

Notice:
An additional supply module must be added for operation with 5VDC.

Description	Item No.	Pack. Unit
4DO 5V DC 20mA	**750-519**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

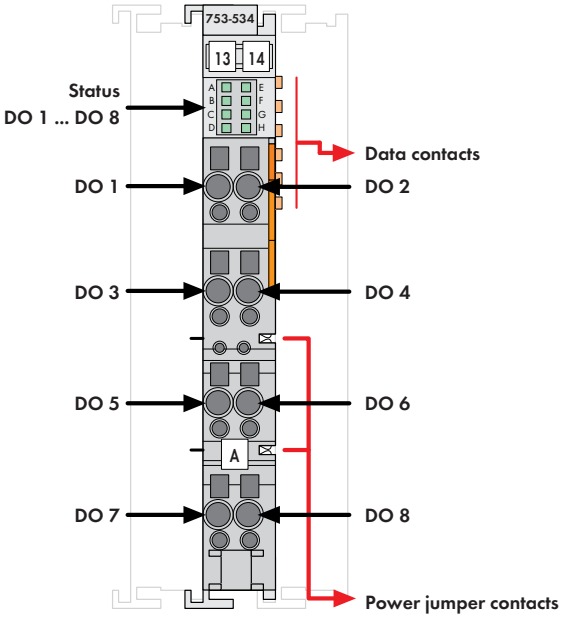
750 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 50021	II 3 GD EEx nA II T4
	BR-Ex nA II T4

Technical Data

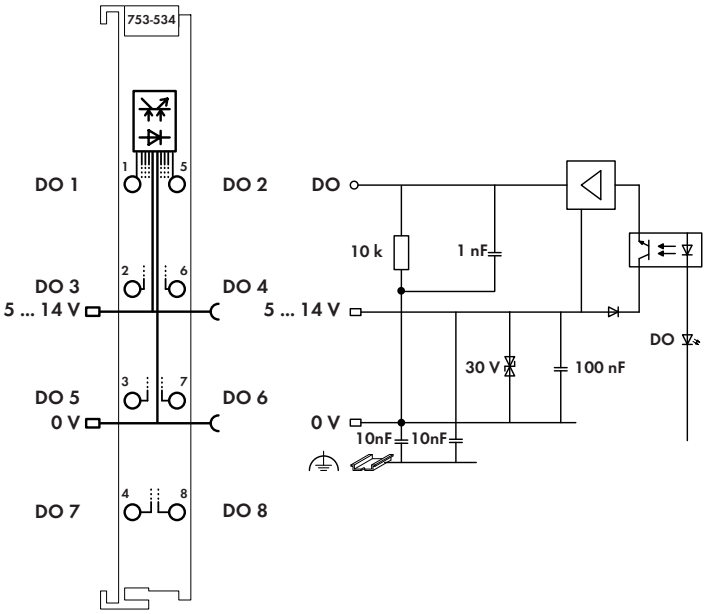
No. of outputs	4
Max. current consumption (internal)	10 mA
Voltage via power jumper contacts	5 V DC
Type of load	resistive, inductive, lamps
Switching frequency (max.)	5 kHz
Output current (max.)	20 mA short-circuit protected
Current consumption typ. (field side)	14 mA
Isolation	500 V system/supply
Internal bit width	4 bits in; 4 bits out
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	50 g
EMC CE-Immunity to interference	acc. to EN 60000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

8-Channel Digital Output Module 5 ... 14 V DC

Short-circuit protected; high-side switching



Delivered without miniature WSB markers



NOTE: Connection point marking (i.e., 1 ... 8) does not refer to channel assignment

The digital output modules provide 8 channels maintaining a width of only 12mm.
The connected load is switched via the digital output from the control system.

All outputs are electronically short-circuit-protected.

Field and system levels are electrically isolated.

Notice:
An additional supply module must be added for operation with 5-14 VDC.

Description	Item No.	Pack. Unit
8DO DC 5 (14) V 1A (without connector)	**753-534**	1

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	Miniature WSB Quick marking system		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

753 Series	
Conformity marking	CE
UL 508	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	applied for

Technical Data

No. of outputs	8
Current consumption (internal)	20 mA
Voltage via power jumper contacts	5 V ... 14 V DC (-15 % ... +20 %)
Type of load	resistive, inductive
Switching frequency (max.)	2 kHz
Output current	1 A, short-circuit-protected
Inductive load switch off energy	
dissipation W (max.)	0.26 J; L max = 2 x W max / I^2
Current consumption typ. (field side)	25 mA / module + load
Isolation	500 V system/supply
Internal bit width	8 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	43.5 g
EMC CE-Immunity to interference	acc. to EN 61131-2 (2003)
EMC CE-Emission of interference	acc. to EN 61131-2 (2003)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Digital Output Module 24 V DC

Short-circuit protected; high-side switching

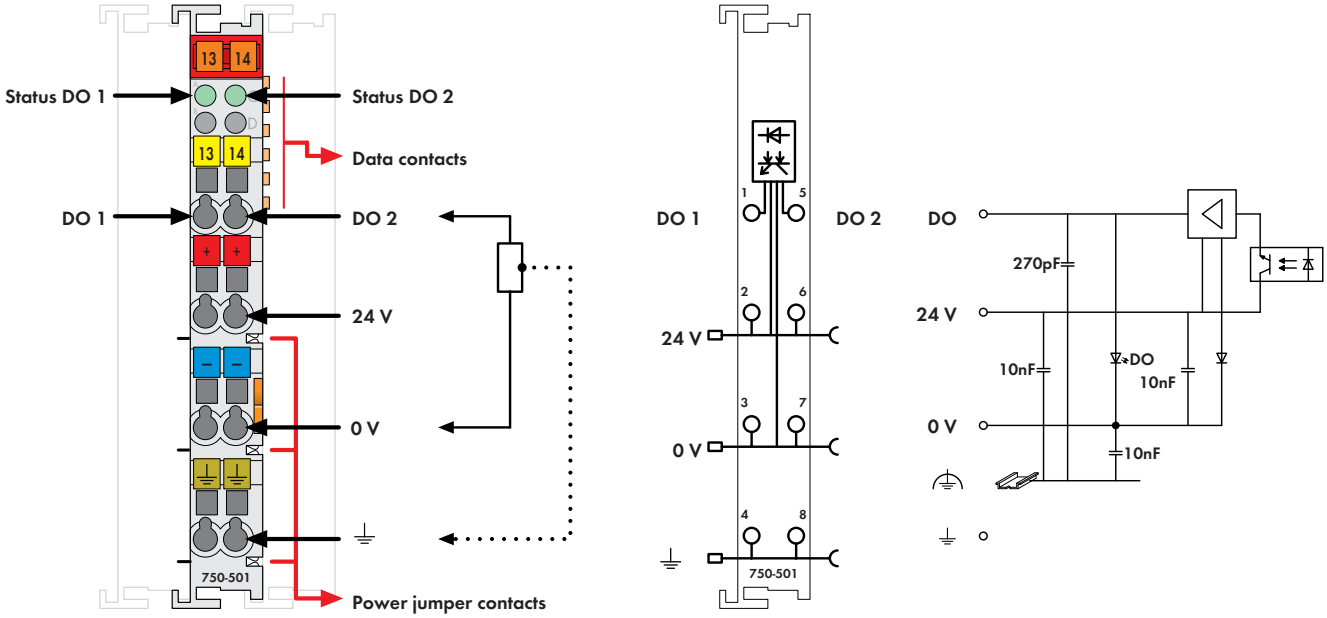


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The connected load is switched via the digital output (relay contacts) from the control system.

All outputs are electronically short-circuit-protected.

The module is a 2-channel, 4-conductor device and actuators with a ground (earth) wire may be directly connected to the module.

Each output is electrically isolated from the bus by use of optocouplers.

Description	Item No.	Pack. Unit
2DO 24V DC 0.5A	**750-501**	10[1]
2DO 24V DC 0.5A/R*	**750-501/000-800**	1
2DO 24V DC 0.5A (without connector)	**753-501**	10[1]

* /R: Interference-free for safety function applications (see manual)

[1] Also available individually

Accessories

	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

No. of outputs	2
Current consumption (internal)	3.5 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Switching frequency (max.)	5 kHz
Output current (max.)	0.5 A
Inductive load switch off energy	
dissipation W (max.)	0.5 J; L max = 2 x W max / I^2
Current consumption typ. (field side)	15 mA / module + charge
Isolation	500 V system/supply
Internal bit width	2 bits in; 2 bits out
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	48.5 g
EMC CE-Immunity to interference	acc. to EN 60000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Digital Output Module 24 V DC

Short-circuit protected; high-side switching

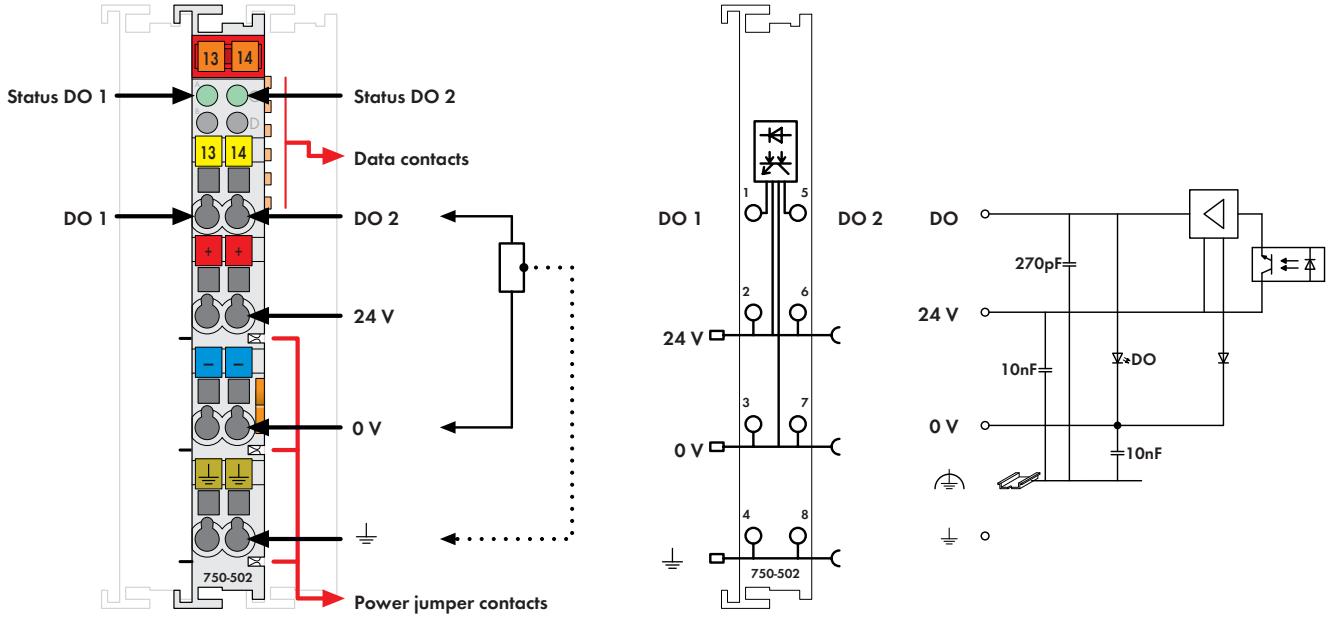


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The connected load is switched via the digital output from the control system.

All outputs are electronically short-circuit-protected.

The module is a 2-channel, 4-conductor device and actuators with a ground (earth) wire may be directly connected to the module.

Each output is electrically isolated from the bus by use of optocouplers.

Description	Item No.	Pack. Unit
2DO 24V DC 2.0A	**750-502**	10[1)]
2DO 24V DC 2.0A/R*	**750-502/000-800**	1
2DO 24V DC 2.0A (without connector)	**753-502**	10[1)]

* /R: Interference-free for safety function applications (see manual)

[1)] Also available individually

Accessories	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

No. of outputs	2
Current consumption (internal)	3.5 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Switching frequency (max.)	2.5 kHz
Output current (max.)	2 A
Short-circuit limitation (typ.) Pwm	35 A (44 A peak)
Inductive load switch off energy dissipation W (max.)	1.7 J; L max = 2 x W max / I^2
Current consumption typ. (field side)	15 mA / module + charge
Isolation	500 V system/supply
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51.5 g
EMC CE-Immunity to interference	acc. to EN 60000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Digital Output Module 24 V DC

Short-circuit protected; high-side switching; with diagnostics

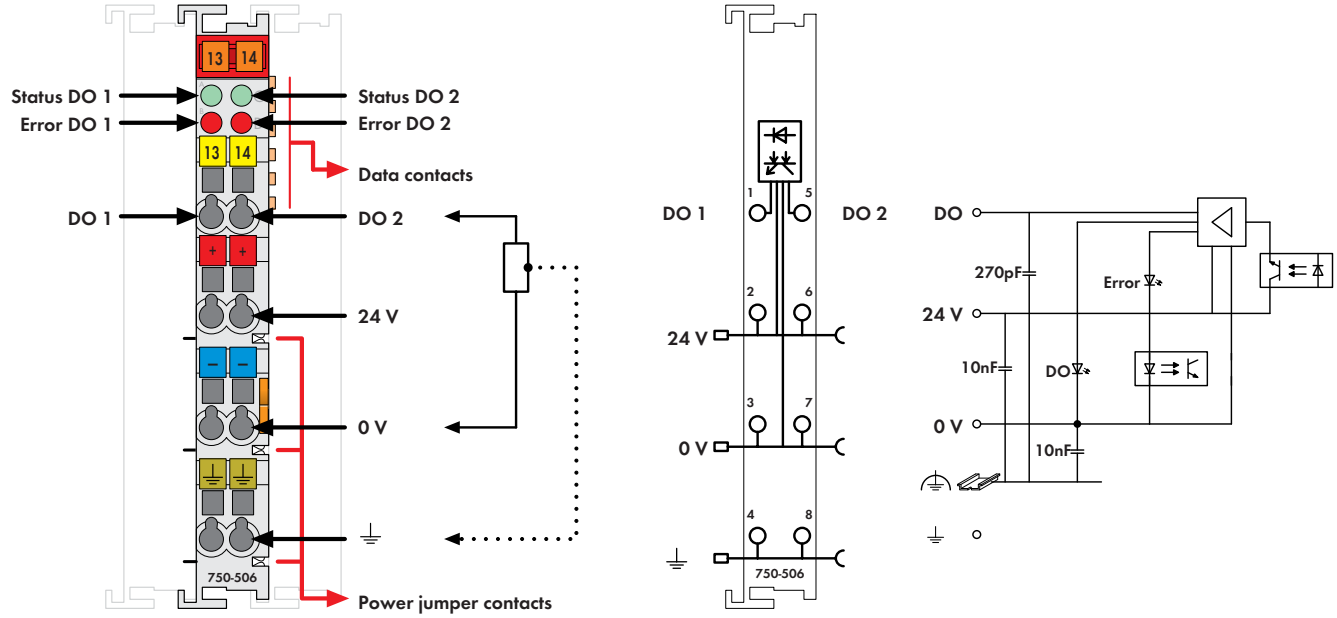


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The connected load is switched via the digital output from the control system.

All outputs are electronically short-circuit-protected.

In addition to the functions that can be fulfilled by the standard output modules, these output modules can recognize a short circuit or an open circuit. The error is visually indicated by error LEDs and a bit is set in the process image.

The module is a 2-channel, 4-conductor device and actuators with a ground (earth) wire may be directly connected to the module.

Each output is electrically isolated from the bus by use of optocouplers.

Description	Item No.	Pack. Unit
2DO 24V DC 0.5A/ diagnostics	**750-506**	10[1]
2DO 24V DC 0.5A/ diagnostics/R*	**750-506/000-800**	1
2DO 24V DC 0.5A/ diagnostics (without connector)	**753-506**	10[1]

* /R: Interference-free for safety function applications (see manual)

[1] Also available individually

Accessories

	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4

Technical Data

No. of outputs	2
Current consumption (internal)	15 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Type of load	resistive, inductive, lamps
Switching frequency (max.)	5 kHz
Reverse voltage protection	no
Output current (max.)	0.5 A
Short-circuit limitation (typ.) Pwm	1.5 A
Open-circuit detection	< 9.5 mA
Diagnostics	Open circuit, overload and short-circuit
Inductive load switch off energy	
dissipation W (max.)	0.2 J; L max = 2 x W max / I^2
Current consumption typ. (field side)	15 mA / module + charge
Isolation	500 V system/supply
Internal bit width	
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	49.5 g
EMC CE-Immunity to interference	acc. to EN 60000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

2-Channel Digital Output Module 24 V DC

Short-circuit protected; high-side switching; with diagnostics

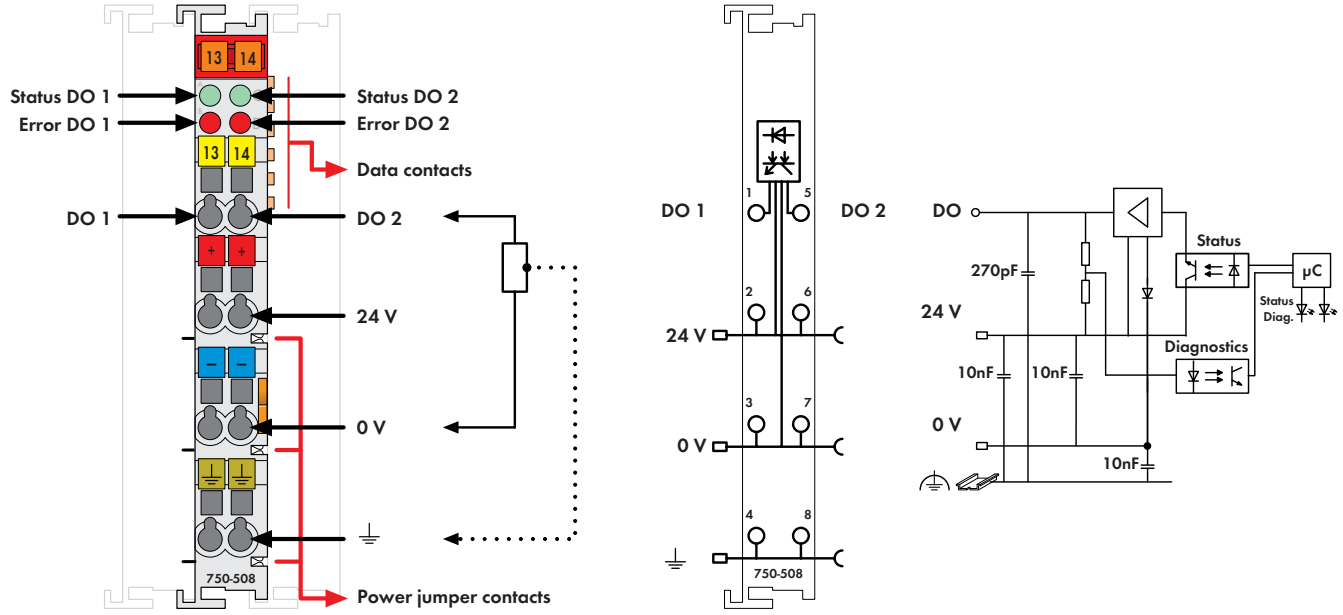


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The connected load is switched via the digital output from the control system.

All outputs are electronically short-circuit-protected.

In addition to the functions that can be fulfilled by the standard output modules, these output modules can recognize a short circuit or an open circuit. The error is visually indicated by error LEDs and a bit is set in the process image.

The module is a 2-channel, 4-conductor device and actuators with a ground (earth) wire may be directly connected to the module.

Each output is electrically isolated from the bus by use of optocouplers.

Description	Item No.	Pack. Unit
2DO 24V DC 2.0A, diagnostics	**750-508**	1
2DO 24V DC 2.0A/ diagnostics/R*	**750-508/000-800**	1
2DO 24V DC 2.0A/ diagnostics (without connector)	**753-508**	1

* /R: Interference-free for safety function applications (see manual)

Accessories

	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

No. of outputs	2
Current consumption (internal)	14 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Switching frequency (max.)	1 kHz
Reverse voltage protection	yes
Output current (max.)	2 A
Short-circuit limitation (typ.) Pwm	15 A / 2 s
Open-circuit detection	< 0.2 mA
Diagnostics	Open circuit, overload and short-circuit
Current consumption typ. (field side)	7 mA / module + charge
Isolation	500 V system/supply
Internal bit width	2 bits in; 2 bits out
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	50 g
EMC CE-Immunity to interference	acc. to EN 60000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel Digital Output Module 24 V DC

Short-circuit protected; high-side switching

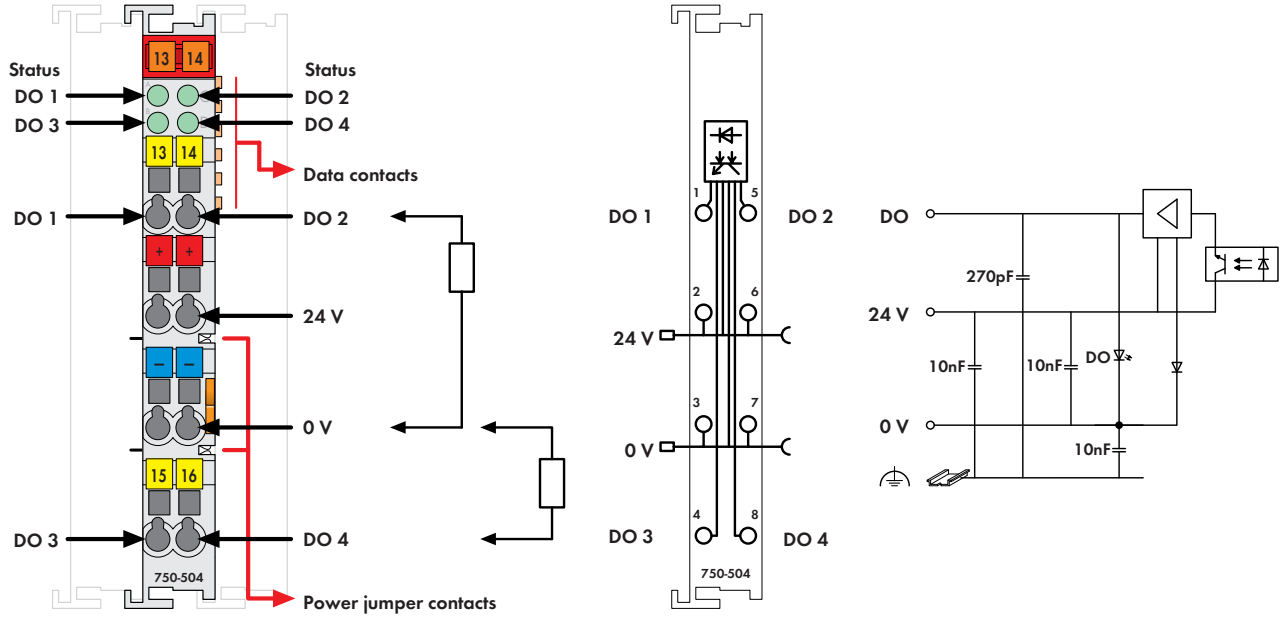


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The connected load is switched via digital output from the control system.

All outputs are electronically short-circuit-protected.

Each output is electrically isolated from the bus by optocouplers.

Description	Item No.	Pack. Unit
4DO 24V DC 0.5A	**750-504**	10[1]
4DO 24V DC 0.5A/T	**750-504/025-000**	1
(Operating temperature -20 °C ... +60 °C)		
4DO 24V DC 0.5A/R*	**750-504/000-800**	1
4DO 24V DC 0.5A/T/R*	**750-504/025-800**	1
(Operating temperature -20 °C ... +60 °C)		
4DO 24V DC 0.5A (without connector)	**753-504**	10[1]

* /R: Interference-free for safety function applications (see manual)

[1] Also available individually

Accessories

	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

No. of outputs	4
Current consumption (internal)	7 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Switching frequency (max.)	1 kHz
Output current (max.)	0.5 A, short-circuit protected
Inductive load switch off energy	
dissipation W (max.)	0.3 J; L max = 2 x W max / I^2
Current consumption typ. (field side)	15 mA / module + charge
Isolation	500 V system/supply
Internal bit width	4 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	49.5 g
EMC CE-Immunity to interference	acc. to EN 60000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel Digital Output Module 24 V DC

2-conductor connection; short-circuit-protected; high-side switching

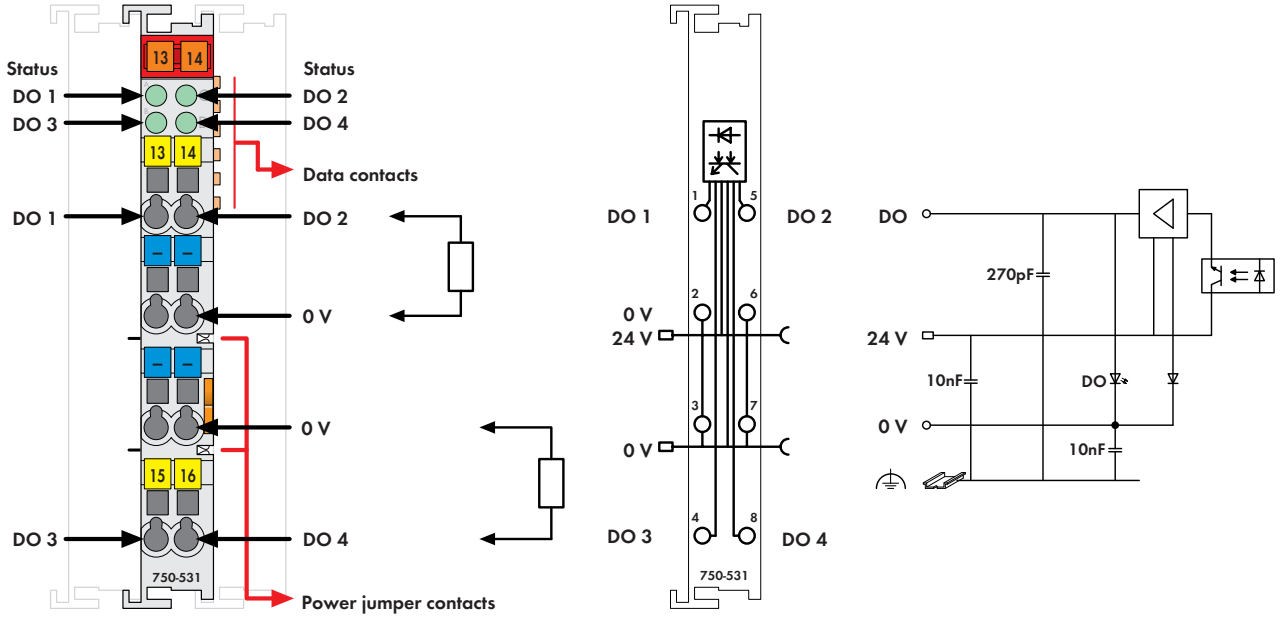


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The connected load is switched via the digital output from the control system.

The module is a 4-output channel, 2-conductor device. Due to its four 0V connections, four actuators may be directly connected to the module.

All outputs are electronically short-circuit-protected.

Each output is electrically isolated from the bus by use of optocouplers.

Description	Item No.	Pack. Unit
4DO 24V DC 0.5A/ 2-conductor	**750-531**	10[1]
4DO 24V DC 0.5A/ 2-conductor/R*	**750-531/000-800**	1
4DO 24V DC 0.5A/ 2-conductor (without connector)	**753-531**	10[1]

* /R: Interference-free for safety function applications (see manual)

[1] Also available individually

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

No. of outputs	4
Max. current consumption (internal)	7 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Switching frequency (max.)	1 kHz
Reverse voltage protection	yes
Output current (max.)	0.5 A short-circuit protected
Inductive load switch off energy dissipation W (max.)	0.3 J; L max = 2 x W max / I^2
Current consumption typ. (field side)	30 mA / module + charge
Isolation	500 V system/supply
Internal bit width	4 bits out
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	48.5 g
EMC CE-Immunity to interference	acc. to EN 60000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel Digital Output Module 24 V DC

Short-circuit protected; low-side switching

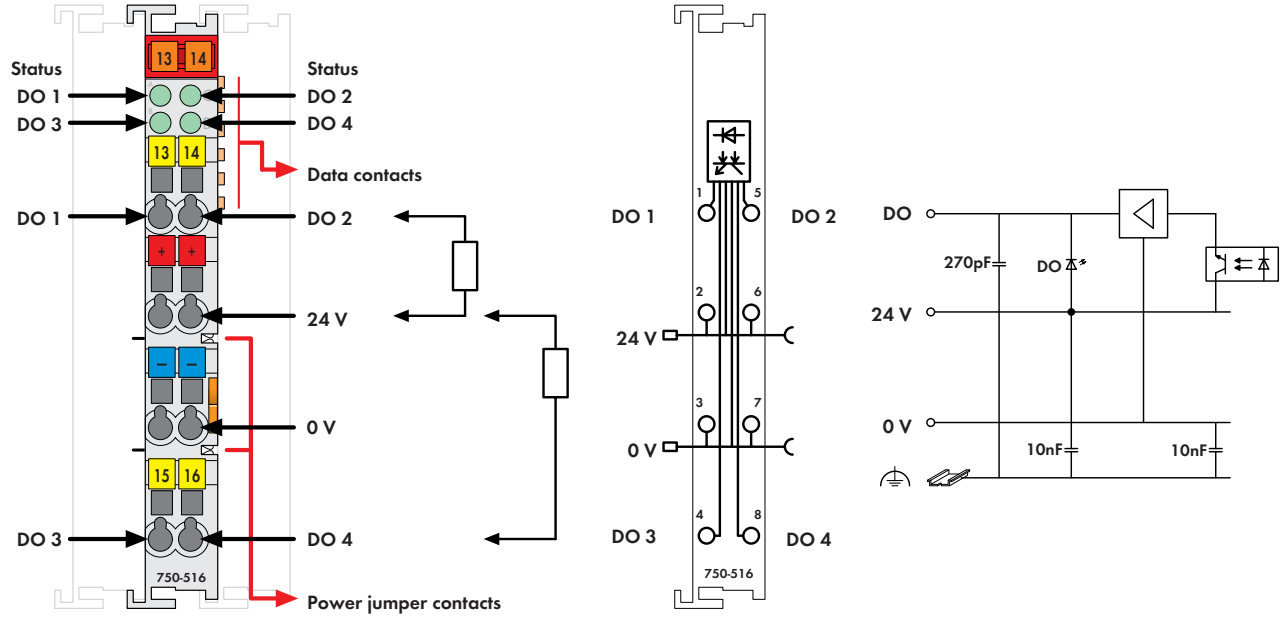


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The connected load is switched via the digital output from the control system.

All outputs are electronically short-circuit-protected.

Each output is electrically isolated from the bus by use of optocouplers.

Description	Item No.	Pack. Unit
4DO 24V DC 0.5A/ low-side switching	**750-516**	1
4DO 24V DC 0.5A/ low-side switching (without connector)	**753-516**	1

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

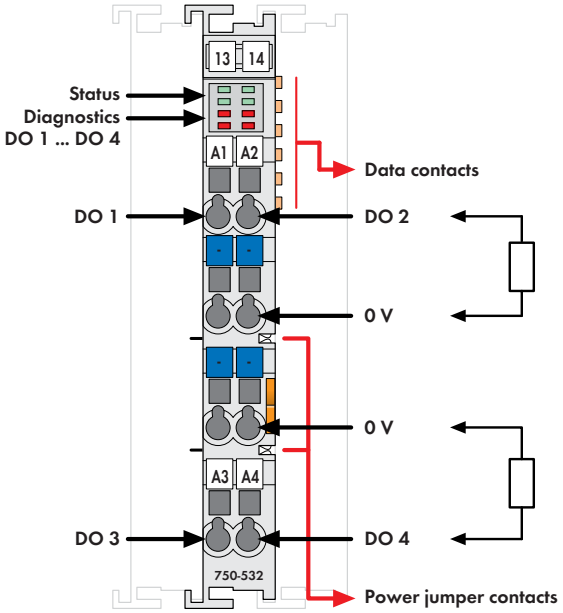
750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
	BR-Ex nA II T4
Shipbuilding	see "Approvals Overview" in section 1

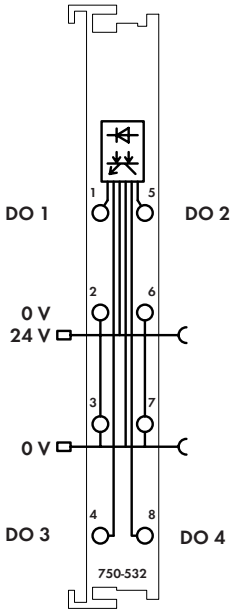
Technical Data

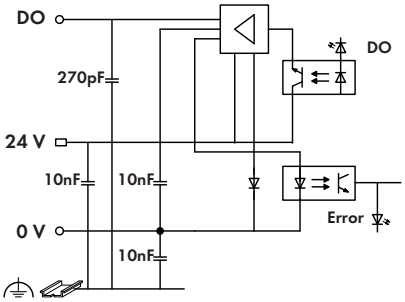
No. of outputs	4
Current consumption (internal)	7 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Switching frequency (max.)	5 kHz
Output current (max.)	0.5 A short-circuit protected
Inductive load switch off energy dissipation W (max.)	0.55 J; L max = 2 x W max / I^2
Current consumption typ. (field side)	30 mA / module + charge
Isolation	500 V system/supply
Internal bit width	4 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	49.5 g
EMC CE-Immunity to interference	acc. to EN 60000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel Digital Output Module 24 V DC

Short-circuit protected; high-side switching; with diagnostics







Delivered without miniature WSB markers

The connected load is switched via the digital output from the control system.

All outputs are electronically short-circuit-protected.

In addition to the functions that can be fulfilled by the standard output modules, these output modules can recognize a short circuit or an open circuit. The error is visually indicated by error LEDs and a bit is set in the process image.

Field and system levels are electrically isolated.

Description	Item No.	Pack. Unit
4DO 24V DC 0.5A, diagnostics	**750-532**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

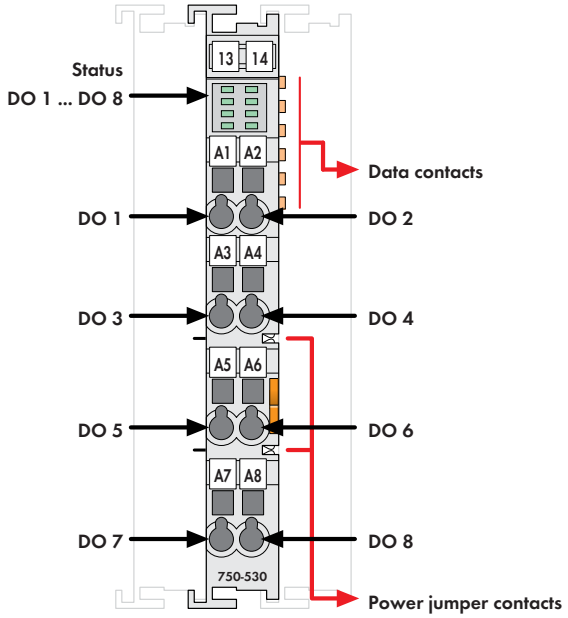
750 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4

Technical Data

No. of outputs	4
Max. current consumption (internal)	10 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Type of load	resistive, inductive, lamps
Switching frequency (max.)	2 kHz
Reverse voltage protection	yes
Output current	0.5 A, short-circuit protected
Short-circuit limitation (typ.) Pwm	6 A
Open-circuit detection	< 0.9 mA
Diagnostics	Open-circuit, overload and short-circuit
Inductive load switch off energy	
dissipation W (max.)	0.125 J; L max = 2 x W max / I^2
Current consumption typ. (field side)	13 mA / module + load
Isolation	500 V system/supply
Internal bit width	4 bits out, 4 bits in (diagnostics)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	48.5 g
EMC CE-Immunity to interference	acc. to EN 60000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)

8-Channel Digital Output Module 24 V DC

Short-circuit protected; high-side switching



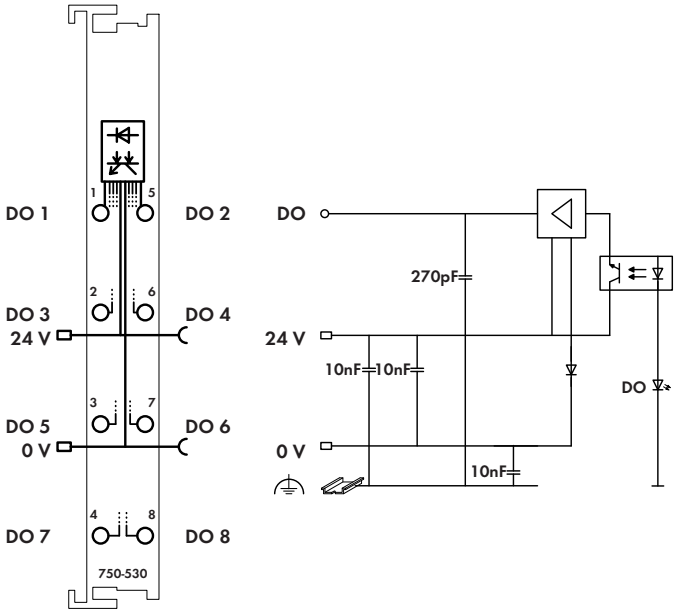


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers 750/753 Series marking see pages 12 ... 13 / 14 ... 15

NOTE: Connection point marking (i.e., 1 ... 8) does not refer to channel assignment

The digital output modules provide 8 channels maintaining a width of only 12mm. The connected load is switched via the digital output from the control system.

All outputs are electronically short-circuit-protected.

Each output is electrically isolated from the bus by use of optocouplers.

Description	Item No.	Pack. Unit
8DO 24V DC 0.5A	**750-530**	10[1]
8DO 24V DC 0.5A/T	**750-530/025-000**	1
(Operating temperature -20 °C ... +60 °C)		
8DO 24V DC 0.5A (without connector)	**753-530**	10[1]

[1] Also available individually

Accessories

	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

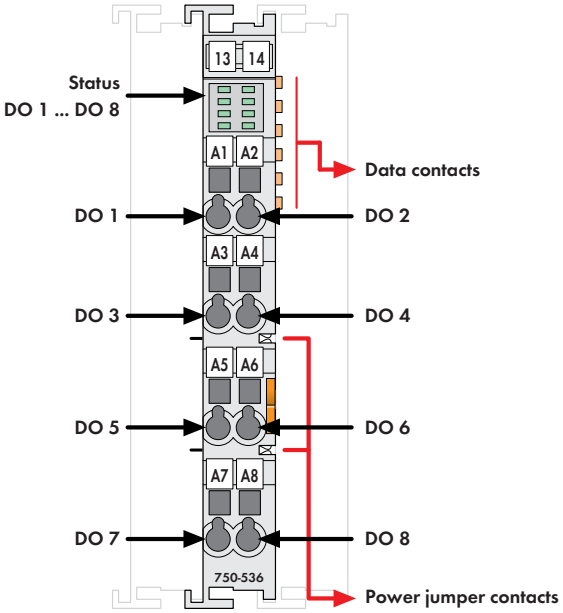
750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
	BR-Ex nA II T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

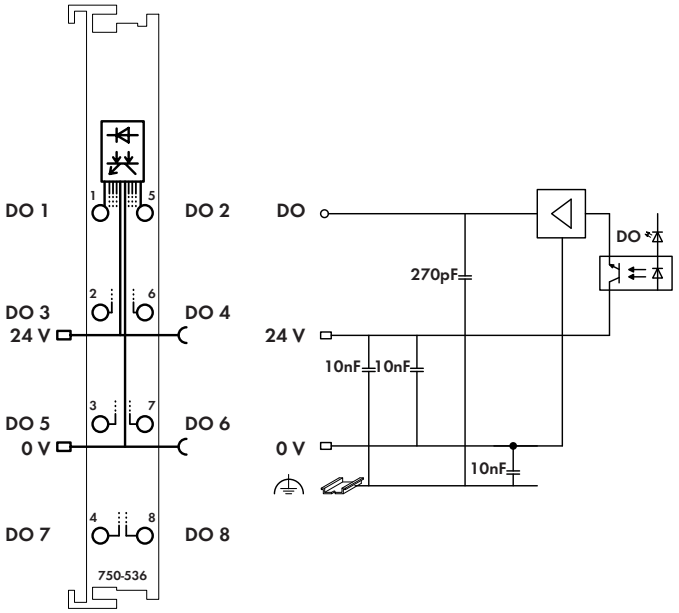
No. of outputs	8
Current consumption (internal)	25 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Switching frequency (max.)	2 kHz
Output current (max.)	0.5 A, short-circuit protected
Inductive load switch off energy	
dissipation W (max.)	0.9 J; L max = 2 x W max / I^2
Current consumption typ. (field side)	15 mA + charge
Isolation	500 V system/supply
Internal bit width	8 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	48.5 g
EMC CE-Immunity to interference	acc. to EN 60000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

8-Channel Digital Output Module 24 V DC

Short-circuit protected; low-side switching



Delivered without miniature WSB markers



NOTE: Connection point marking (i.e., 1 ... 8) does not refer to channel assignment

The digital output modules provide 8 channels maintaining a width of only 12mm.
The connected load is switched via the digital output from the control system.

All outputs are electronically short-circuit-protected.

Field and system levels are electrically isolated.

Description	Item No.	Pack. Unit
8DO 24V DC 0.5A	**750-536**	1
8DO 24V DC 0.5A (without connector)	**753-536**	1

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

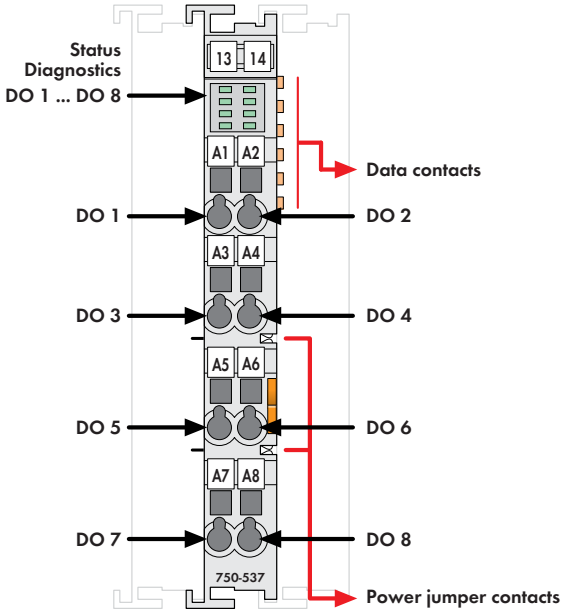
750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

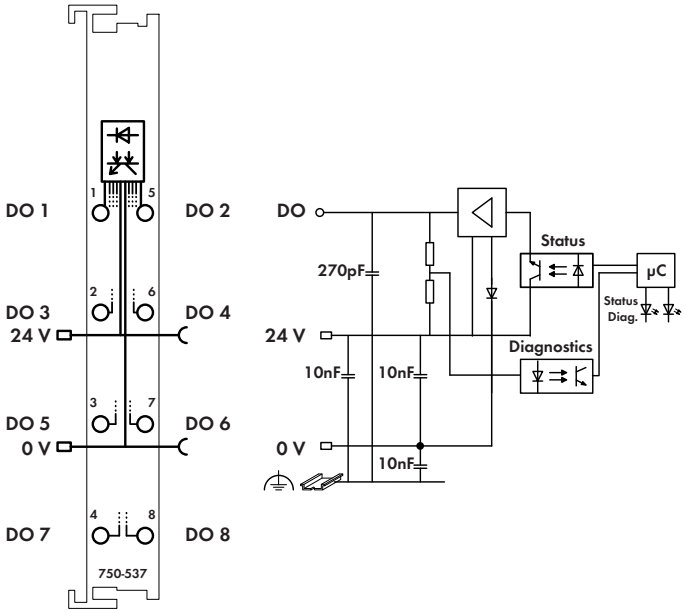
No. of outputs	8
Max. current consumption (internal)	25 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Switching frequency (max.)	2 kHz
Reverse voltage protection	yes
Output current	0.5 A, short-circuit protected
Inductive load switch off energy dissipation W (max.)	0.5 J; L max = 2 x W max / I^2
Current consumption typ. (field side)	12 mA / module + load
Isolation	500 V system/supply
Internal bit width	8 bit out
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	48 g
EMC CE-Immunity to interference	acc. to EN 60000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

8-Channel Digital Output Module 24 V DC

Short-circuit protected; high-side switching; with diagnostics



Delivered without miniature WSB markers



NOTE: Connection point marking (i.e., 1 ... 8) does not refer to channel assignment

The connected load is switched via the digital output from the control system.

All outputs are electronically short-circuit-protected.

In addition to the functions that can be fulfilled by the standard output modules, these output modules can recognize a short circuit or an open circuit. The error is visually indicated by error LEDs and a bit is set in the process image.

The module has eight output channels and eight actuators may be connected to the module.

Field and system levels are electrically isolated.

Description	Item No.	Pack. Unit
8DO 24V DC 0.5A, diagnostics	**750-537**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

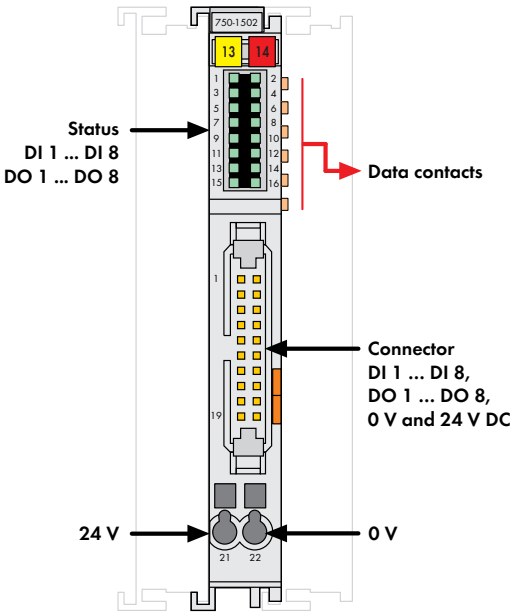
750 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

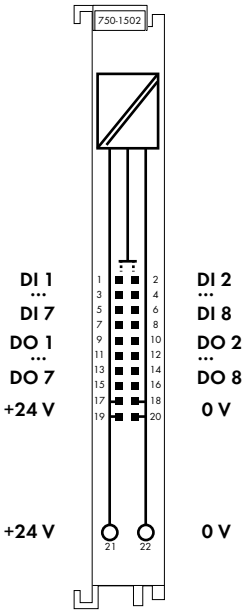
Technical Data

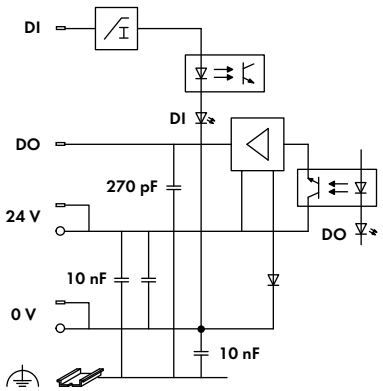
No. of outputs	8
Max. current consumption (internal)	50 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Switching frequency (max.)	1 kHz
Reverse voltage protection	yes
Output current	0.5 A, short-circuit protected
Short-circuit limitation (typ.) Pwm	12 A
Open-circuit detection	< 0.1 mA
Diagnostics	Open-circuit, overload and short-circuit
Inductive load switch off energy dissipation W (max.)	0.1 J; L max = 2 x W max / I^2
Current consumption typ. (field side)	16 mA / module + load
Isolation	500 V system/supply
Internal bit width	8 bits out, 8 bits in (diagnostics)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	48.5 g
EMC CE-Immunity to interference	acc. to EN 60000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

8-Channel Digital Input/Output Module 24 V DC

Ribbon cable, high-side switching







Delivered without miniature WSB markers

The digital input/output module provides 8 inputs and 8 outputs at a width of just 12mm (0.47in).
It receives binary control signals from digital field devices and transmits these signals to connected actuators (e.g., magnetic valves, contactors, transmitters, relays or other electrical loads).
The 750-1502 connects to electronic modules via 20-pole ribbon cable.
The 24V power is fed to the electronic modules via two CAGE CLAMP® terminals.
A green LED indicates the switched status of each channel.
An optocoupler provides electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
8DI 8DO 24V DC 0.5A, ribbon cable	**750-1502**	1
Interference-free for use in safety functions (see manual)		

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	
Cable and interface modules		see pages 308 ... 315	

Approvals

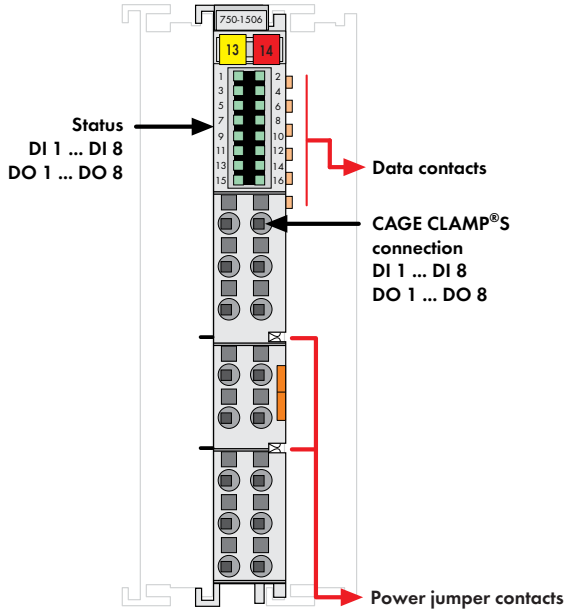
750 Series	
Conformity marking	CE
UL 508	

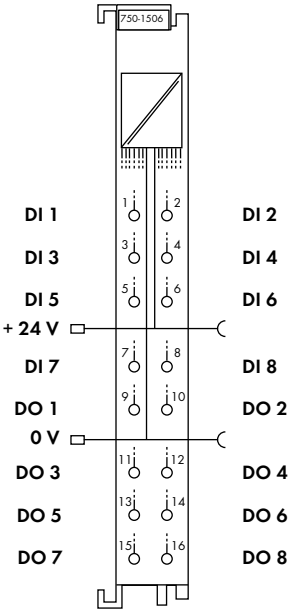
Technical Data

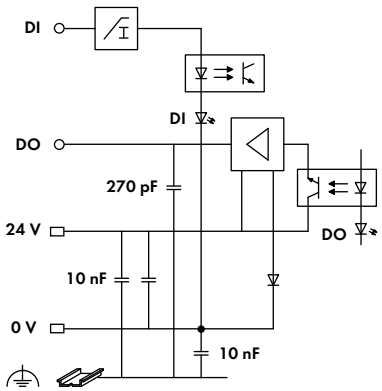
Digital inputs:	
Number of inputs	8
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input filter	3.0 ms
Input current (typ.)	+0.6 mA (at -3 V ... +5 V DC)
	+2.2 mA ... +2.5 mA (at 15 V...+32 V DC)
Digital outputs:	
No. of outputs	8
Type of load	resistive, inductive, lamps
Switching frequency (max.)	1 kHz
Output current (max.)	0.5 A, short-circuit protected
Current consumption typ. (field side)	16 mA
General specifications:	
Voltage supply	24 V DC (-25 % ... +30 %)
Current consumption (internal)	30 mA
Isolation	500 V system/field
Wire connection	20-pole male connector / CAGE CLAMP®
Cross sections CAGE CLAMP®	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	12 x 73 x 100
	Height from upper-edge of DIN 35 rail
Weight	approx. 50 g

8-Channel Digital Input/Output Module 24 V DC

High-side switching







Delivered without miniature WSB markers

The digital input/output module provides 8 inputs and 8 outputs at a width of just 12mm (0.47in).
It receives binary control signals from digital field devices and transmits control signals from the automation device to connected actuators (e.g., magnetic valves, contactors, transmitters, relays or other electrical loads).
CAGE CLAMP®S terminations provide direct insertion of solid conductors.
A green LED indicates the switched status of each channel.
An optocoupler provides electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
8DI 8DO 24V DC 0.5A	**750-1506**	1
Interference-free for use in safety functions (see manual)		

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

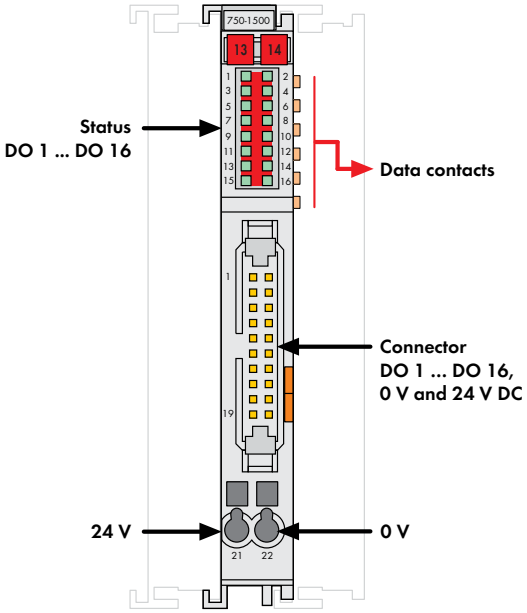
Approvals

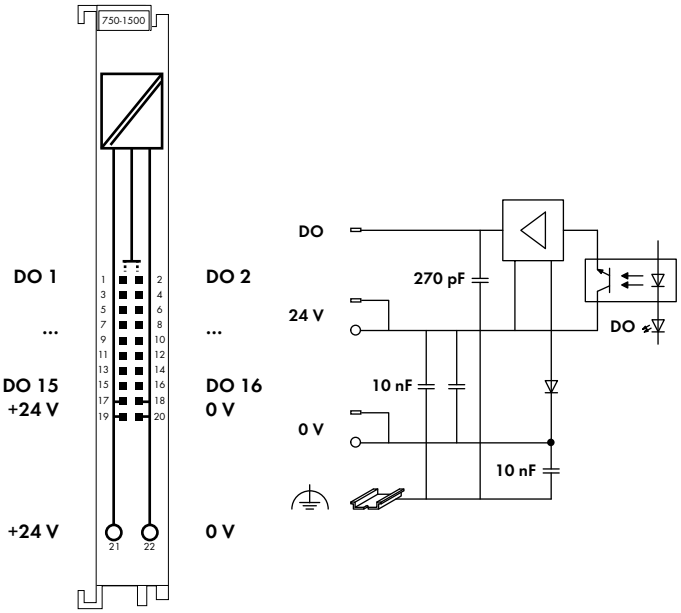
750 Series	
Conformity marking	CE

Technical Data	
Digital inputs:	
Number of inputs	8
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input filter	3.0 ms
Input current (typ.)	+0.6 mA (at -3 V ... +5 V DC)
	+2.2 mA ... +2.5 mA (at 15 V...+32 V DC)
Digital outputs:	
No. of outputs	8
Type of load	resistive, inductive, lamps
Switching frequency (max.)	1 kHz
Output current (max.)	0.5 A, short-circuit protected
Current consumption typ. (field side)	16 mA
General specifications:	
Current consumption (internal)	30 mA
Isolation	500 V system/field
Wire connection	CAGE CLAMP®S
Cross sections	0.08 mm² solid / 0.25 mm²
	fine-stranded ... 1.5 mm² /
	AWG 28 /22 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	50 g

16-Channel Digital Output Module 24 V DC

Ribbon cable, high-side switching





Delivered without miniature WSB markers

The digital output module provides 16 channels at a width of just 12mm (0.47in).
It transmits binary control signals from the automation device to connected actuators (e.g., magnetic valves, contactors, transmitters, relays or other electrical loads).
The 750-1500 connects to electronic modules via 20-pole ribbon cable.
The 24V power is fed to the electronic modules via two CAGE CLAMP® terminals.
A green LED indicates the switched status of each channel.
An optocoupler provides electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
16DO 24V DC 0.5A, ribbon cable	**750-1500**	1
Interference-free for use in safety functions (see manual)		

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	
Cable and interface modules		see pages 308 ... 315	

Approvals

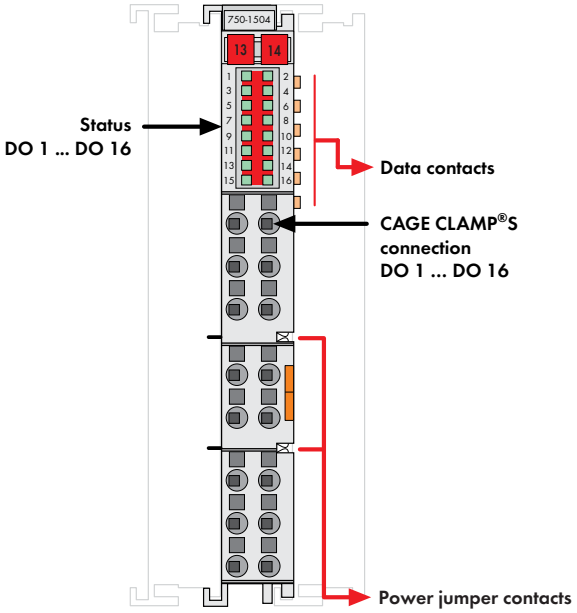
750 Series	
Conformity marking	CE
UL 508	

Technical Data

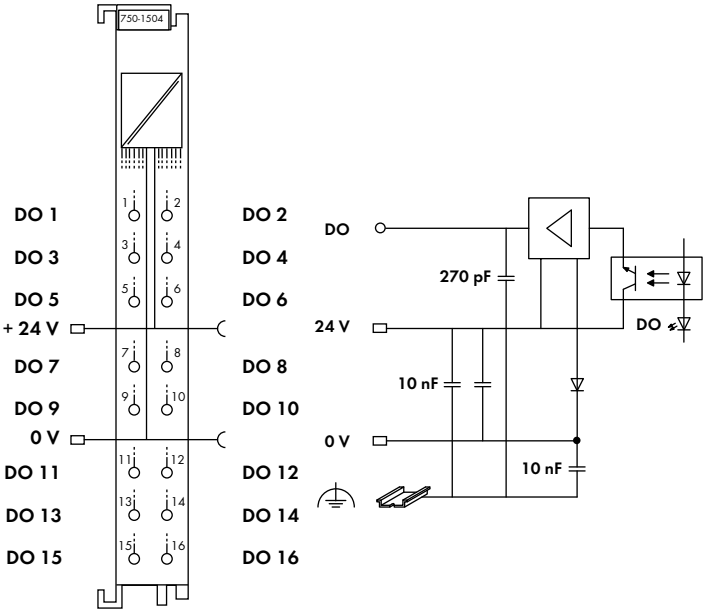
No. of outputs	16
Max. current consumption (internal)	40 mA
Voltage supply	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Switching frequency (max.)	1 kHz
Output current (max.)	0.5 A, short-circuit protected
Current consumption typ. (field side)	29 mA
Isolation	500 V system/field
Wire connection	20-pole male connector / CAGE CLAMP®
Cross sections CAGE CLAMP®	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	12 x 73 x 100
	Height from upper-edge of DIN 35 rail
Weight	50 g

16-Channel Digital Output Module 24 V DC

High-side switching



Delivered without miniature WSB markers



The digital output module provides 16 channels at a width of just 12mm (0.47in).
It transmits binary control signals from the automation device to connected actuators (e.g., magnetic valves, contactors, transmitters, relays or other electrical loads).
CAGE CLAMP®S terminations provide direct insertion of solid conductors.
A green LED indicates the switched status of each channel.
An optocoupler provides electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
16DO 24V DC 0.5A	**750-1504**	1
Interference-free for use in safety functions (see manual)		

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

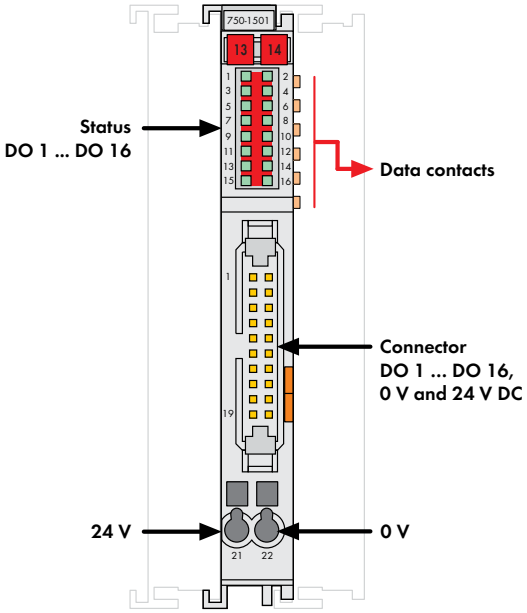
750 Series	
Conformity marking	CE

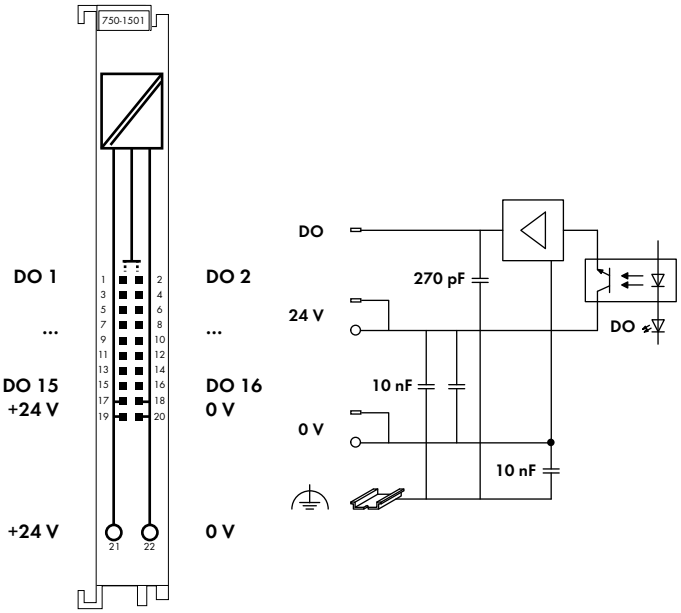
Technical Data

No. of outputs	16
Max. current consumption (internal)	40 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Switching frequency (max.)	1 kHz
Output current (max.)	0.5 A, short-circuit protected
Current consumption typ. (field side)	29 mA
Isolation	500 V system/field
Wire connection	CAGE CLAMP®S
Cross sections	0.08 mm² solid / 0.25 mm² fine-stranded ... 1.5 mm² / AWG 28 /22 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	50 g

16-Channel Digital Output Module 24 V DC

Ribbon cable, low-side switching

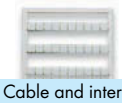




Delivered without miniature WSB markers

The digital output module provides 16 channels at a width of just 12mm (0.47in).
It transmits binary control signals from the automation device to connected actuators (e.g., magnetic valves, contactors, transmitters, relays or other electrical loads).
The 750-1501 connects to electronic modules via 20-pole ribbon cable.
The 24V power is fed to the electronic modules via two CAGE CLAMP® terminals.
A green LED indicates the switched status of each channel.
An optocoupler provides electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
16DO 24V DC 0.5A, ribbon cable, low-side switching	**750-1501**	1
Interference-free for use in safety functions (see manual)		

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	
Cable and interface modules		see pages 308 ... 315	

Approvals

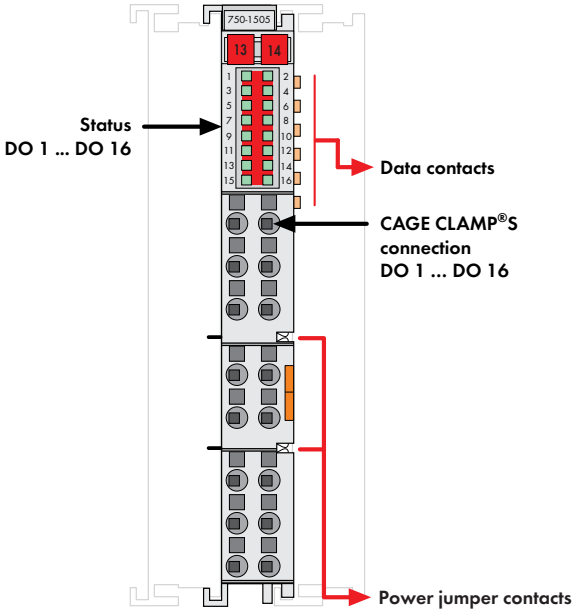
750 Series	
Conformity marking	CE
cULus UL 508	

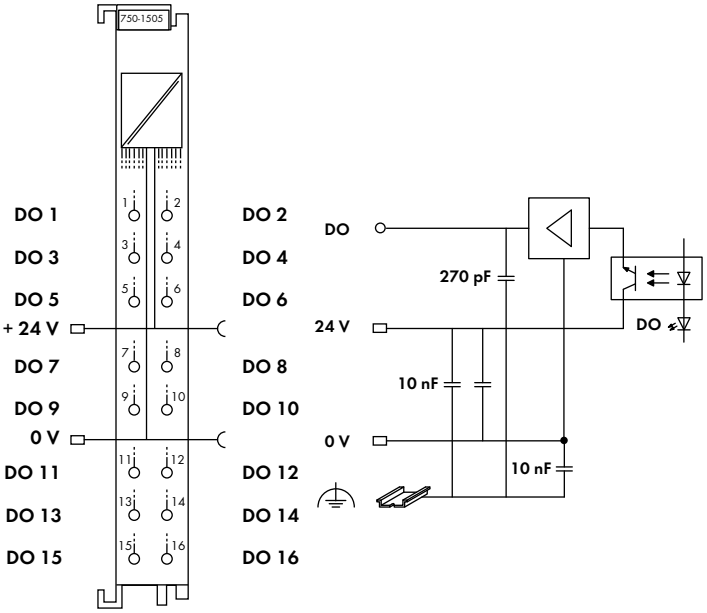
Technical Data

No. of outputs	16
Max. current consumption (internal)	40 mA
Voltage supply	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Switching frequency (max.)	1 kHz
Output current (max.)	0.5 A, short-circuit protected
Current consumption typ. (field side)	11 mA
Isolation	500 V system/field
Wire connection	20-pole male connector / CAGE CLAMP®
Cross sections CAGE CLAMP®	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	12 x 73 x 100
	Height from upper-edge of DIN 35 rail
Weight	50 g

16-Channel Digital Output Module 24 V DC

Low-side switching





Delivered without miniature WSB markers

The digital output module provides 16 channels at a width of just 12mm (0.47in).
It transmits binary control signals from the automation device to connected actuators (e.g., magnetic valves, contactors, transmitters, relays or other electrical loads).
CAGE CLAMP®S terminations provide direct insertion of solid conductors.
A green LED indicates the switched status of each channel.
An optocoupler provides electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
16DO 24VDC 0.5A, low-side switching	**750-1505**	1
Interference-free for use in safety functions (see manual)		

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

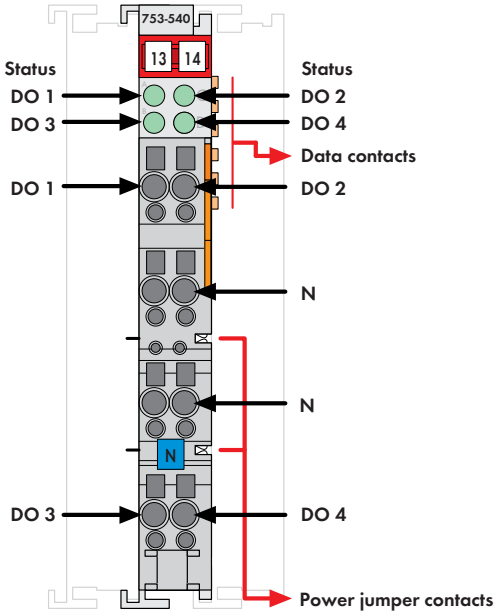
Approvals

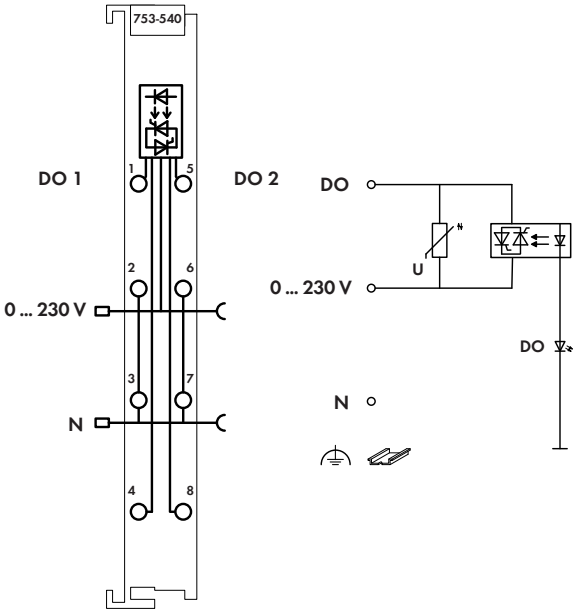
750 Series	
Conformity marking	CE

Technical Data	
No. of outputs	16
Max. current consumption (internal)	40 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Switching frequency (max.)	1 kHz
Output current (max.)	0.5 A, short-circuit protected
Current consumption typ. (field side)	11 mA
Isolation	500 V system/field
Wire connection	CAGE CLAMP®S
Cross sections	0.08 mm² solid / 0.25 mm²
	fine-stranded ... 1.5 mm² /
	AWG 28 /22 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	50 g

4-Channel Digital Output Module 120 (230) V AC

Short-circuit protected; high-side switching





Delivered without miniature WSB markers

The connected load is switched via the digital output from the control system.

The module is a 4-channel device and four actuators may be connected to the module.

The switched status of the outputs is shown by a LED.

Field and system levels are electrically isolated.

Notice:
An additional supply module must be added for operation with 120 (230)VAC.

Description	Item No.	Pack. Unit
4DO AC 120 (230) V 0.25A (without connector)	**753-540**	1

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

753 Series	
Conformity marking	CE
UL 508	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	applied for

Technical Data

No. of outputs	4
Current consumption (internal)	18 mA
Voltage via power jumper contacts	0 V ... 230 V AC (+10 %)
Overvoltage protection	275 V AC varistor
Type of load	resistive, inductive
Short-circuit current	max. 10 A (16 ms)
Responce time/Drop-out time (max.)	10 ms at 50 Hz (zero crossing switch)
ON voltage difference L-DO max.	1.2 V
Output current	0.25 A, short-circuit-protected
Isolation	1.5 kV eff. (field/system)*;
	* 2.5 kV rated surge voltage;
	Overvoltage category III
Internal bit width	4 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	42.5 g
EMC CE-Immunity to interference	acc. to EN 60000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Digital Output Module 230 V AC/DC

with solid state relay 0.3 A

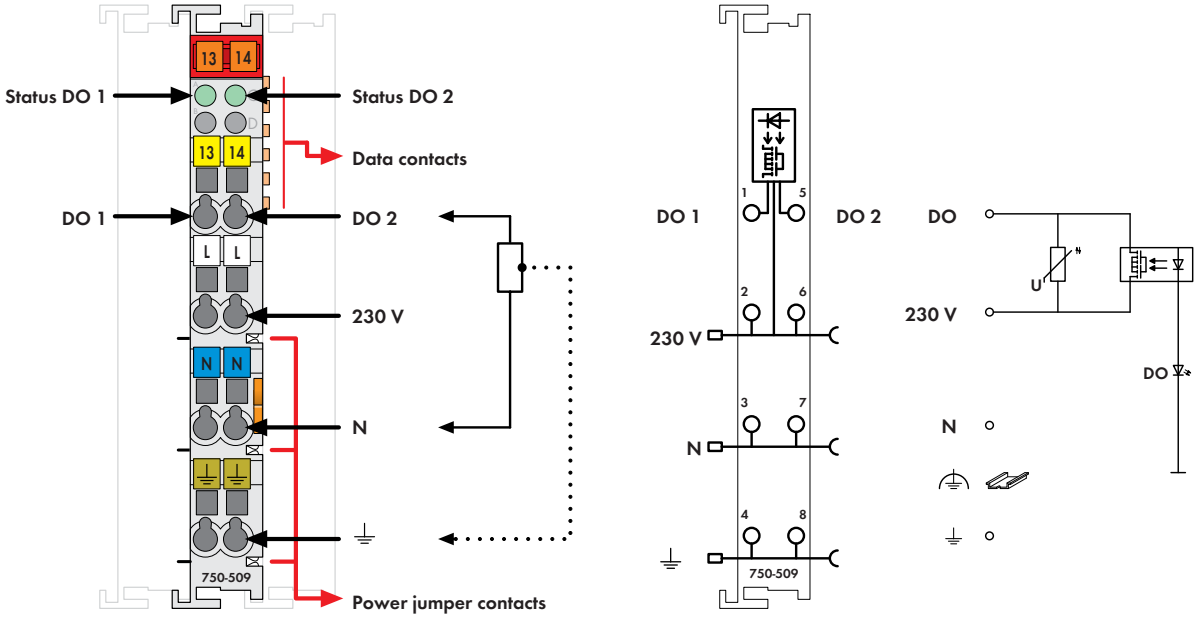


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The connected load is switched via the digital output (SSR) from the control system.

The semiconductor output is electrically isolated from the control side. Note that the power jumper contacts supply both "N" (common point) and switched output voltages.

The switched status of the outputs is shown by a LED.

The module is a 2-channel, 4-conductor device and actuators with a ground (earth) wire may be directly connected to the module.

Notice:
An additional supply module must be added for operation with 230VAC/DC.

Description	Item No.	Pack. Unit
2DO 230V AC 0.3A/SSR	**750-509**	10[1]
2DO 230V AC 0.3A/SSR (without connector)	**753-509**	10[1]

[1] Also available individually

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

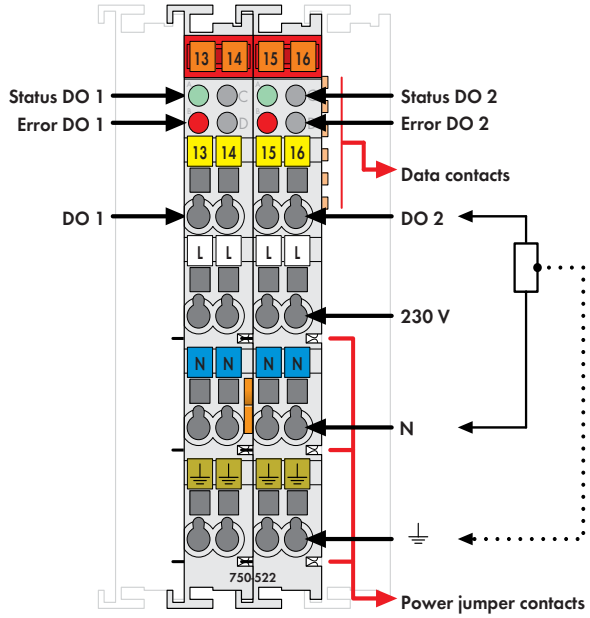
750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

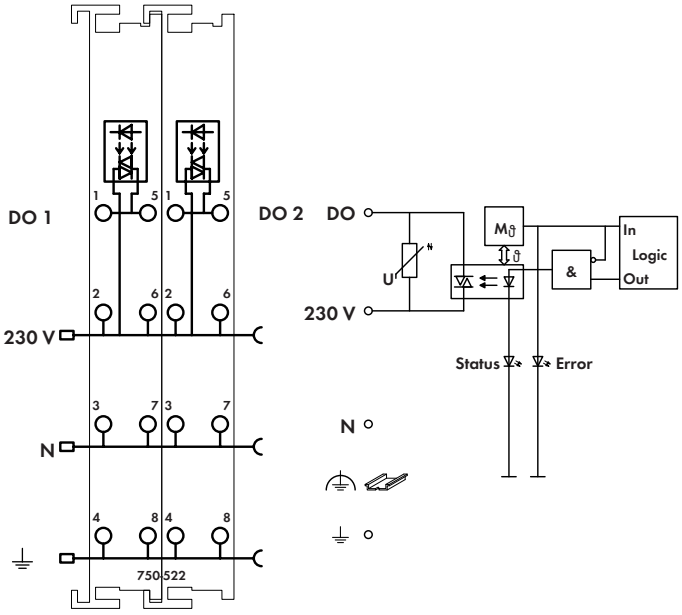
Technical Data

No. of outputs	2
Current consumption (internal)	10 mA
Max. switching voltage	0 V ... 230 V AC/DC
Switching current	300 mA
Peak current	0.5 A (20 s); 1.5 A (0.1 s)
Switching frequency (max.)	5 Hz (24 V 0.3 A DF = 50 %);
	0.5 Hz (230 V 0.3 A DF = 50 %)
Pull-in time (typ.)	4 ms
Pull-in time (max.)	10 ms
Drop-out time (typ.)	0.1 ms
Drop-out time (max.)	3 ms
R ON (typ.)	2.1 Ω
R ON (max.)	3.2 Ω
Overvoltage protection	275 V AC (varistor)
Isolation	1.5 kV eff. (field/system)*;
	* 2.5 kV rated surge voltage;
	Overvoltage category III
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	54.5 g
EMC CE-Immunity to interference	acc. to EN 60000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Digital Output Module 230 V AC

with solid state relay 3.0 A for 30 s





Delivered without miniature WSB markers

The digital output module controls actuators via semiconductor outputs. The bus module receives the control signal via a fieldbus coupler.

The control of the outputs is fully isolated. The outputs are switched at the zero cross. The voltage supply of the outputs is made via the power jumper contacts.

Each output has its own overload protection which is realized via an internal temperature limit. In case of an overload, the bus module switches off the output. After the output connection has cooled down, it triggers the output again. The error bit reports the overload in the process image.

The module is a 2-channel, 4-conductor device and actuators with ground (earth) connection may be directly connected to the module.

Notice:
An additional supply module must be added for operation with 230VAC.

Description	Item No.	Pack. Unit
2DO 230V AC 3.0A/30s/SSR	**750-522**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
	BR-Ex nA II T4

Technical Data

No. of outputs	2 make contacts
Current consumption typ. (internal)	40 mA
Max. switching voltage	35 V ... 230 V AC
Switching current (nom.)	0.5 A per channel
Min. switching current	50 mA
Max. switching current	3 A (< 30 s operating time)
	each channel for a turn-on cycle of 1 hour
Peak current	18 A (100 ms); 30 A (10 ms)
Switching frequency (max.)	50 Hz
Overvoltage protection	275 V AC (varistor)
Operating speed (typ.)	1.65 ms
Operating speed (max.)	15 ms
Leakage current when turned off	< 2.3 mA
Isolation	3 kV system/supply
Internal bit width	2 bits in, 2 bits out
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	115 g
EMC CE-Immunity to interference	acc. to EN 60000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Relay Output Module 125 V AC, 30 V DC

Isolated outputs; 2 changeover contacts

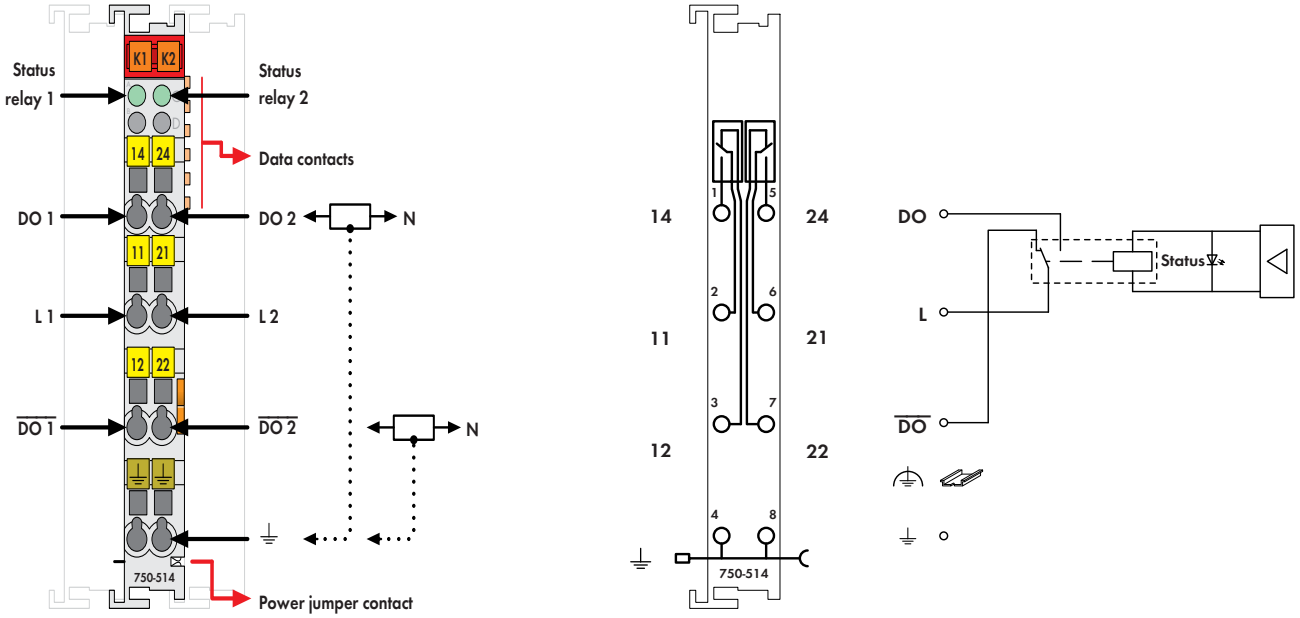


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The connected load is switched via the digital output (relay contacts) from the control system.

The internal system voltage is used to trigger the relay.

The NO contacts are electrically isolated.

The switched status of the relay is shown by a LED.

Actuators with a ground (earth) wire may be directly connected to the module.

Description	Item No.	Pack. Unit
2DO 125V AC 0.5A/ Relay 2CO/ Potential Free	**750-514**	10[1]
2DO 125V AC 0.5A/ Relay 2CO/ Potential Free (without connector)	**753-514**	10[1]

[1] Also available individually

Accessories	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
750 Series	
EN 50021	II 3 G EEx nC II C T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

No. of outputs	2 changeover contacts
Current consumption typ. (internal)	70 mA
Max. switching voltage	125 V AC / 30 V DC
Switching power	62.5 VA / 30 W
Min. switching current	0.01 mA / 10 mV DC
Max. switching current	0.5 A AC / 1 A DC
Switching frequency (max.)	20/min
Pull-in time (max.)	4 ms
Drop-out time (max.)	4 ms
Contact material	Silver alloy, gold-plated
Mechanical life	1 x 10^8 switching operations
Electrical life	1 x 10^5 (0.5 A / 125 V AC)
	2 x 10^5 (1 A / 30 V DC)
Isolation	1.5 kV eff. (field/system)*;
	* 2.5 kV rated surge voltage;
	Overvoltage category III
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	49.5 g
EMC CE-Immunity to interference	acc. to EN 60000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Relay Output Module 230 V AC, 300 V DC

Isolated outputs; 2 changeover contacts

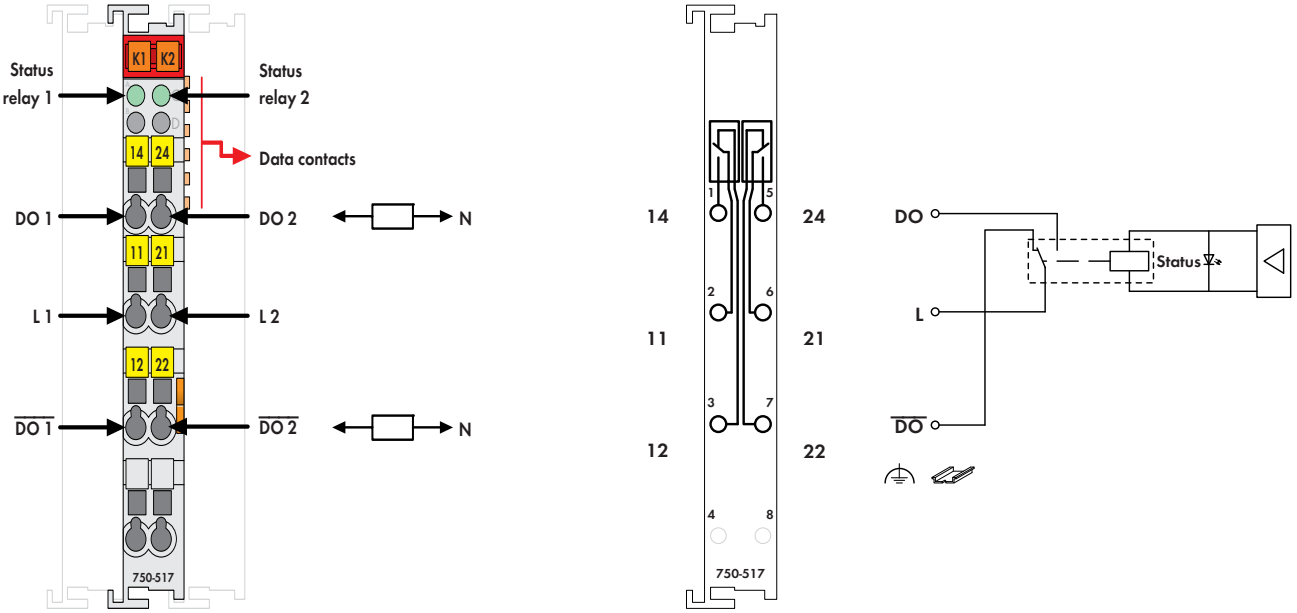


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The connected load is switched via the digital output (relay contacts) from the control system.

The internal system voltage is used to trigger the relay.

The SPDT contacts are electrically isolated.

The switched status of the relay is shown by a LED.

Description	Item No.	Pack. Unit
2DO 230V AC 1.0A/ Relay 2CO/ Potential Free	**750-517**	1
2DO 230V AC 1.0A/ Relay 2CO/ Potential Free (without connector)	**753-517**	1

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
750 Series	
EN 50021	II 3 G EEx nC II C T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

No. of outputs	2 changeover contacts
Max. current consumption (internal)	90 mA
Max. switching voltage	250 V AC / 300 V DC
Min. switching current	100 mA / 12 V DC
Max. switching current	1A AC, 1 A at 40 V DC
	0.15 A at 300 V DC
Switching frequency (max.)	6/min (at nominal load)
Pull-in time (max.)	8 ms
Drop-out time (max.)	4 ms
Contact material	Silver alloy
Mechanical life	5 x 10^6 switching operations
Electrical life	1 x 10^5 switching operations (1 A/250 V AC)
Isolation	1.5 kV eff. (field/system)*;
	* 2.5 kV rated surge voltage;
	Overvoltage category III
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	52.5 g
EMC CE-Immunity to interference	acc. to EN 60000-6-2 (2001)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Relay Output Module 230 V AC, 30 V DC

Non-floating; 2 make contacts

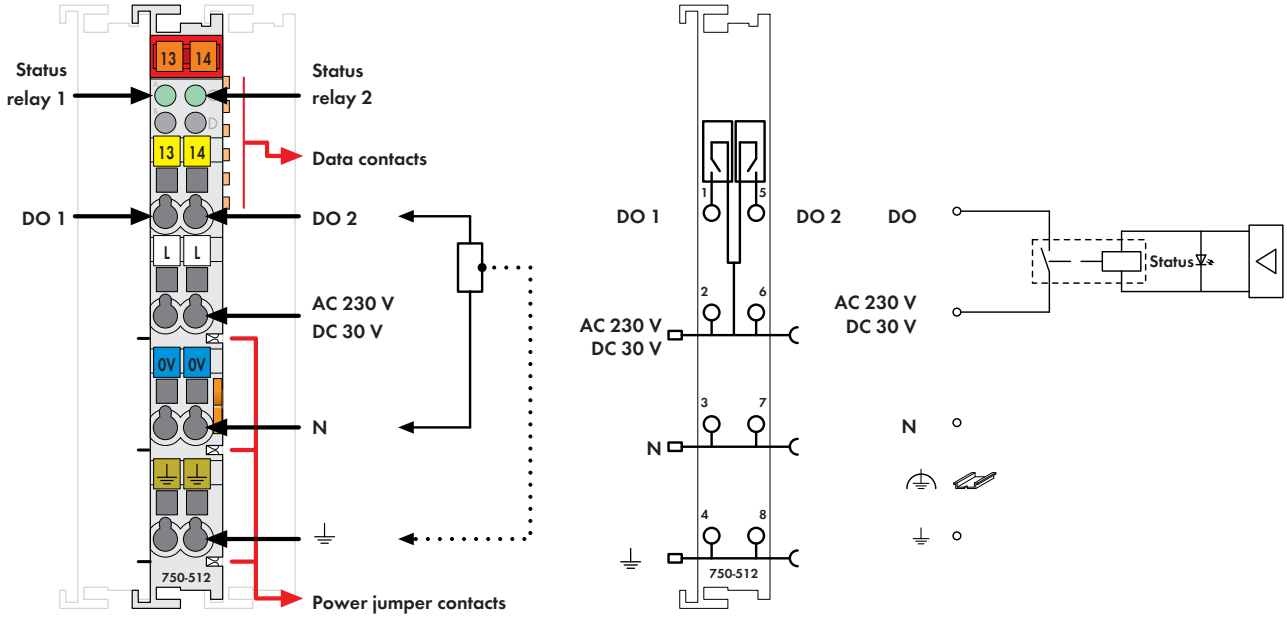


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The connected load is switched via the digital output (relay contacts) from the control system.

The internal system voltage is used to trigger the relays.

Note that the power jumper contacts supply both "N" (common point) and switched output voltages (this may be DC or AC).

The switched status of the relay is shown by a LED.

The module is a 2-channel, 4-conductor device and actuators with a ground (earth) wire may be directly connected to the module.

Notice:
An additional supply module must be added for operation with 250VAC / 30VDC.

Description	Item No.	Pack. Unit
2DO 230V AC 2.0A/ Relay 2NO	**750-512**	10[1]
2DO 230V AC 2.0A/ Relay 2NO (without connector)	**753-512**	10[1]

[1] Also available individually

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	Miniature WSB Quick marking system		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nC IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

No. of outputs	2 make contacts
Max. current consumption (internal)	100 mA
Max. switching voltage	250 V AC / 30 V DC
Switching power	500 VA / 60 W (resistive load)
	cos j max. =0.4; L/R max = 7 ms
Min. switching current	10 mA / 5 V DC
Max. switching current	2 A AC/DC
Switching frequency (max.)	30/min (at nominal load)
Pull-in time (max.)	10 ms
Bounce time (typ.)	1.2 ms
Drop-out time (max.)	10 ms
Contact material	Silver alloy
Mechanical life	2 x 10^7 switching operations
Electrical life	3 x 10^5 switching operations
	(2 A / 250 V AC) or (2 A / 30 V DC)
Isolation	1.5 kV eff. (field/system)*;
	* 2.5 kV rated surge voltage;
	Overvoltage category III
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	54.5 g
EMC CE-Immunity to interference	acc. to EN 60000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Relay Output Module 230 V AC, 30 V DC

Isolated outputs; 2 make contacts

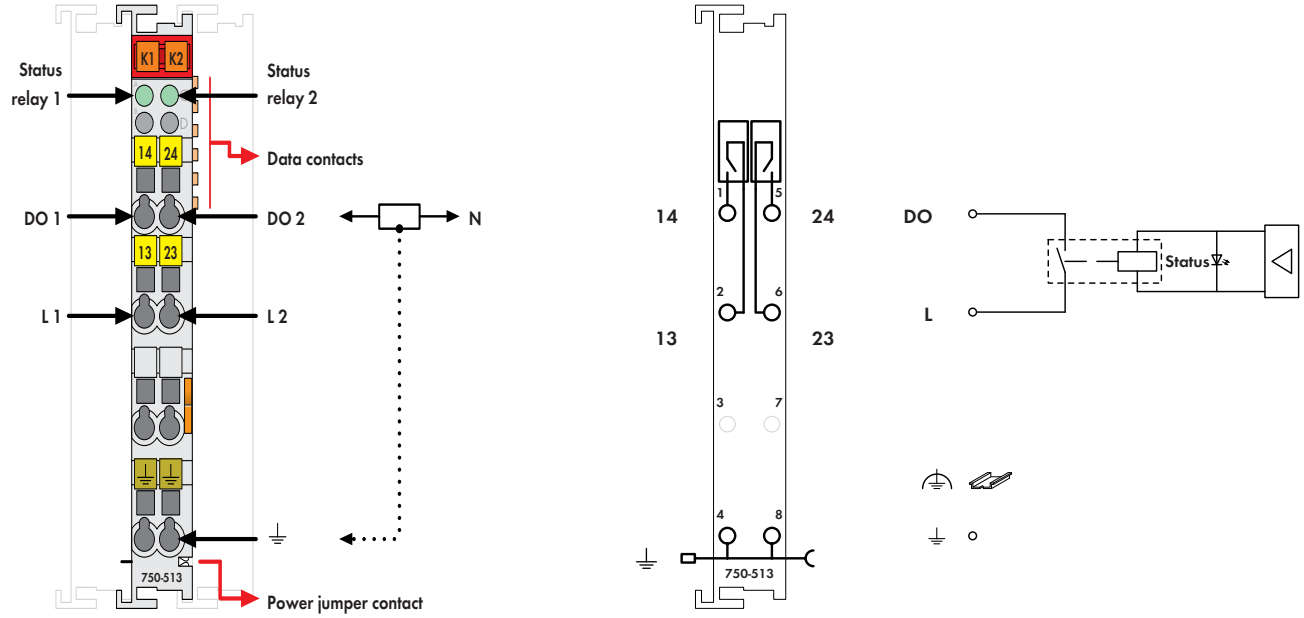


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The connected load is switched via the digital output (relay contacts) from the control system.

The internal system voltage is used to trigger the relay.

The NO contacts are electrically isolated.

The switched status of the relay is shown by a LED.

Actuators with a ground (earth) wire may be directly connected to the module.

Description	Item No.	Pack. Unit
2DO 230V AC 2.0A/ Relay 2NO/ Potential Free	**750-513**	10[1]
2DO 230V AC 2.0A/ Relay 2NO/ Potential Free / without power jumper contacts	**750-513/000-001**	1
2DO 230V AC 2.0A/ Relay 2NO/ Potential Free (without connector)	**753-513**	10[1]

[1] Also available individually

Accessories	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

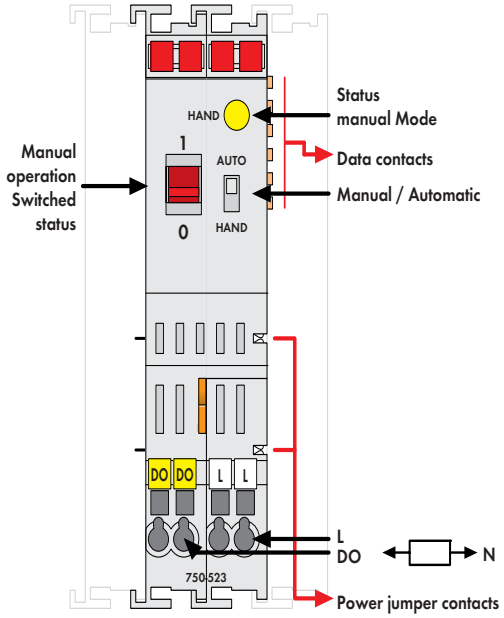
750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nC IIC T4
Shipbuilding	see "Approvals Overview" in section 1

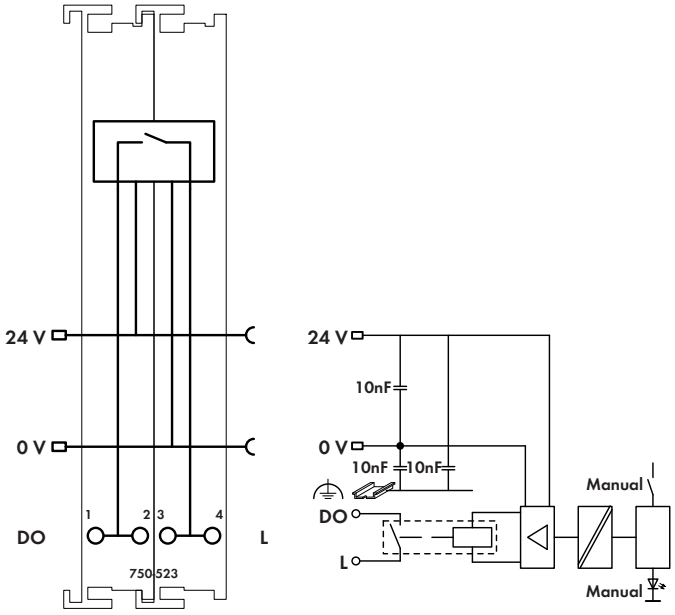
Technical Data

No. of outputs	2 make contacts
Max. current consumption (internal)	100 mA
Max. switching voltage	250 V AC / 30 V DC
Switching power	500 VA / 60 W (resistive load)
	cos j max. =0.4; L/R max = 7 ms
Min. switching current	10 mA / 5 V DC
Max. switching current	2 A AC/DC
Switching frequency (max.)	30/min (at nominal load)
Pull-in time (max.)	10 ms
Bounce time (typ.)	1.2 ms
Drop-out time (max.)	10 ms
Contact material	Silver alloy
Mechanical life	2 x 10^7 switching operations
Electrical life	3 x 10^5 switching operations
	(2 A / 250 V AC) or (2 A / 30 V DC)
Isolation	1.5 kV eff. (field/system)*;
	* 2.5 kV rated surge voltage;
	Overvoltage category III
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	53.5 g
EMC CE-Immunity to interference	acc. to EN 60000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

1-Channel Relay Output Module 230 V AC, 16 A

Isolated output; 1 make contact; bistable; manual operation

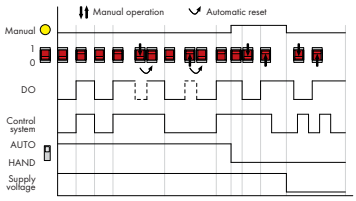




Delivered without miniature WSB markers

A connected actuator or load is switched via the relay output module.
The 24VDC supply is derived from the power jumper contacts to trigger the relays.
The switched status of the relay is shown by the manual switch (1/0).
The operating mode can be selected using the manual /automatic switch.
The mode status is indicated by a LED and via status bits in the process image.
Manual: Coil triggering is interrupted. Operation is only possible via the red manual switch.
Auto: The relay is operated via the control system. Manual status transitions via the manual switch are resetby the control system after less than 500ms.
The manual switch can also be used without 24V supply to switch the output ON.

The relay meets both international standards of IEC and DIN EN 61810 part 1 /VDE 0435 part 201 as well as overload and short circuit requirements of IEC and DIN EN 61036 /61037.



Description	Item No.	Pack. Unit
1DO 230V AC 16A Relay 1a/ Potential Free	**750-523**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 Series	
Conformity marking	CE
UL 508	
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

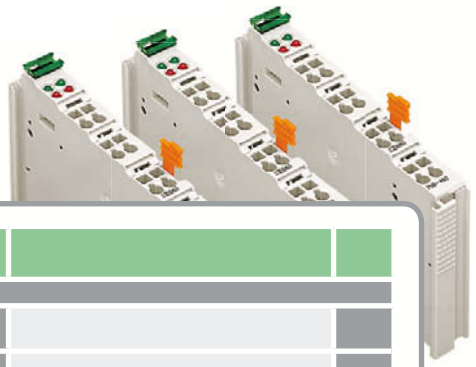
Switchable lamp loads 100000 operations / 30000 operations	
Incandescent lamp	1.25 kW / 2.5 kW
Fluorescent lamp, not compensated	1.2 kW / 2.5 kW
Fluorescent lamp, parallel compensated	650 W / 70 µF / 1.3 kW / 140 µF
Fluorescent lamp, dual circuit	2 x 1.2 kW / 2 x 2.5 kW
Halogen lamp (AC 230 V)	1.2 kW / 2.5 kW
Low voltage halogen lamp with transf.	500 VA / 500 VA
Mercury arc/Sodium discharge lamp, not compensated	1 kW / 2 kW
Mercury arc/Sodium discharge lamp, parallel compensated	1 kW / 70 µF / 2 kW / 140 µF
Dulux lamp, not compensated	800 W / 1.6 kW
Dulux lamp, parallel compensated	560 W / 70 µF / 1.1 kW / 140 µF

Technical Data

No. of outputs	1 make contact
Max. current consumption (internal)	5 mA
Max. switching voltage	440 V AC
Switching power	max. 5 kVA
Max. switching current	16 A AC
Contact material	AgSnO2
Mechanical life	10^6
Current consumption max. (field side)	80 mAs (peak current)
Isolation	1.5 kV eff. (field/system)*;
	* 2.5 kV rated surge voltage;
	Overvoltage category III
Bit width	2 bits in (Manual status, -); 2 bits out (DO, -)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	105 g
EMC CE-Immunity to interference	acc. to EN 50082-2 (1996)
EMC CE-Emission of interference	acc. to EN 50081-1 (1993)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

Modular I/O System Overview

Analog Inputs



Function	2-Channel Analog Input	Page	4-Channel Analog Input	Page		
0 – 20 mA	**750-452 / 753-452** Differential inputs	189	**750-453 / 753-453** Single-ended (S.E.)	193		
	750-465 / 753-465 Single-ended (S.E.)	190				
	750-470 Single-ended (S.E.), short-circuit protec.	191				
	750-472 / 753-472 Single-ended (S.E.), 16 bits	192				
	750-480 / 753-480 Differential measurement inputs	194				
4 – 20 mA	**750-454 / 753-454** Differential inputs	189	**750-455 / 753-455** Single-ended (S.E.)	193		
	750-466 / 753-466 Single-ended (S.E.)	190				
	750-473 Single-ended (S.E.), short-circuit protec.	191				
	750-474 / 753-474 Single-ended (S.E.), 16 bits	192				
	750-492 / 753-492 Differential measurement inputs	195				
	750-482 / 753-482 Single-ended (S.E.), 16 bits, HART	196				
0 – 1 A	**750-475 / 753-475** Differential inputs	197				
0 – 10 V	**750-477 / 753-477** Differential inputs	198	**750-468** Single-ended (S.E.)	200		
	750-467 / 753-467 Single-ended (S.E.)	199	**750-459 / 753-459** Single-ended (S.E.)	202		
	750-478 / 753-478 Single-ended (S.E.), 16 bits	201				
± 10 V	**750-456 / 753-456** Differential inputs	203	**750-457 / 753-457** Single-ended (S.E.)	202		
	750-479 / 753-479 Differential measurement inputs	204				
	750-476 / 753-476 Single-ended (S.E.), 16 bits	201				
0 – 30 V	**750-483 / 753-483** Differential measurement inputs	205				
Modules for RTDs	**750-461 / 753-461** PT100 / RTD / NTC 20kΩ	206	**750-460** PT100 / RTD	207		
			750-464 NTC, Configurable	208		
Thermocouples	**750-469 / 753-469** Sensor types: J, K, B, E, N, R, S, T, U, L	209				
Analog Special Functions	**750-493** 3-Phase Power Measurement Module	211				
	1-Channel Analog Input					
	750-491 Resistor Bridges (Strain Gauge) (DMS)	210				
Ex i Modules	**750-485, Ex i** 4–20 mA, single-ended (S.E.)	274				
	750-484, Ex i 4-20 mA, single-ended (S.E.), HART	276				
	750-481/003-000, Ex i PT100 / RTD	278				
	750-487/003-000, Ex i TC	280				

2-Channel Analog Input Module 0/4-20 mA

Differential inputs

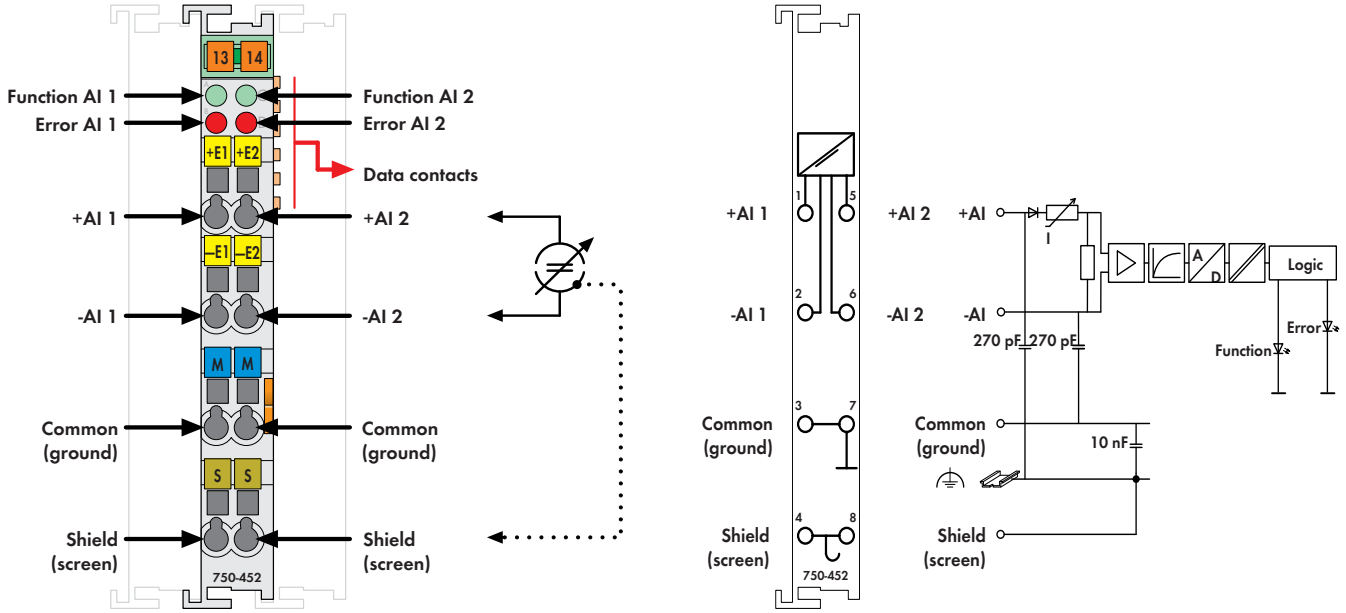


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The analog input module receives signals with standardized values of 0-20mA and 4-20mA.

The input signal is electrically isolated and will be transmitted with a resolution of 12 bits.

The internal system supply (via the data bus contacts) is used for the power supply of the module.

The input channels are differential inputs.

The shield (screen) is directly connected to the DIN rail.

Description	Item No.	Pack. Unit
2AI 0-20mA Diff.	**750-452**	10[1]
2AI 4-20mA Diff.	**750-454**	10[1]
2AI 0-20mA Diff./S5 [2]	**750-452/000-200**	1
2AI 4-20mA Diff./S5 [2]	**750-454/000-200**	1
2AI 4-20mA Diff./T	**750-454/025-000**	1
(Operating temperature -20 °C ... +60 °C)		
2AI 0-20mA Diff. (without connector)	**753-452**	10[1]
2AI 4-20mA Diff. (without connector)	**753-454**	10[1]

[1] Also available individually

[2] Data format for S5 control with FB 251

Accessories	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Number of inputs	2
Voltage supply	via system voltage DC/DC
Current consumption typ. (internal)	70 mA
Common mode voltage (max.)	35 V DC
Signal current	0 mA ... 20 mA (750-452, 753-452)
	4 mA ... 20 mA (750-454, 753-454)
Input resistance	< 220 Ω/ 20 mA
Resolution	12 bits
Conversion time (typ.)	2 ms
Measuring error (25 °C)	< ± 0.2 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Isolation	500 V system/supply
Bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Analog Input Module 0/4-20 mA

Single-ended (S.E.)

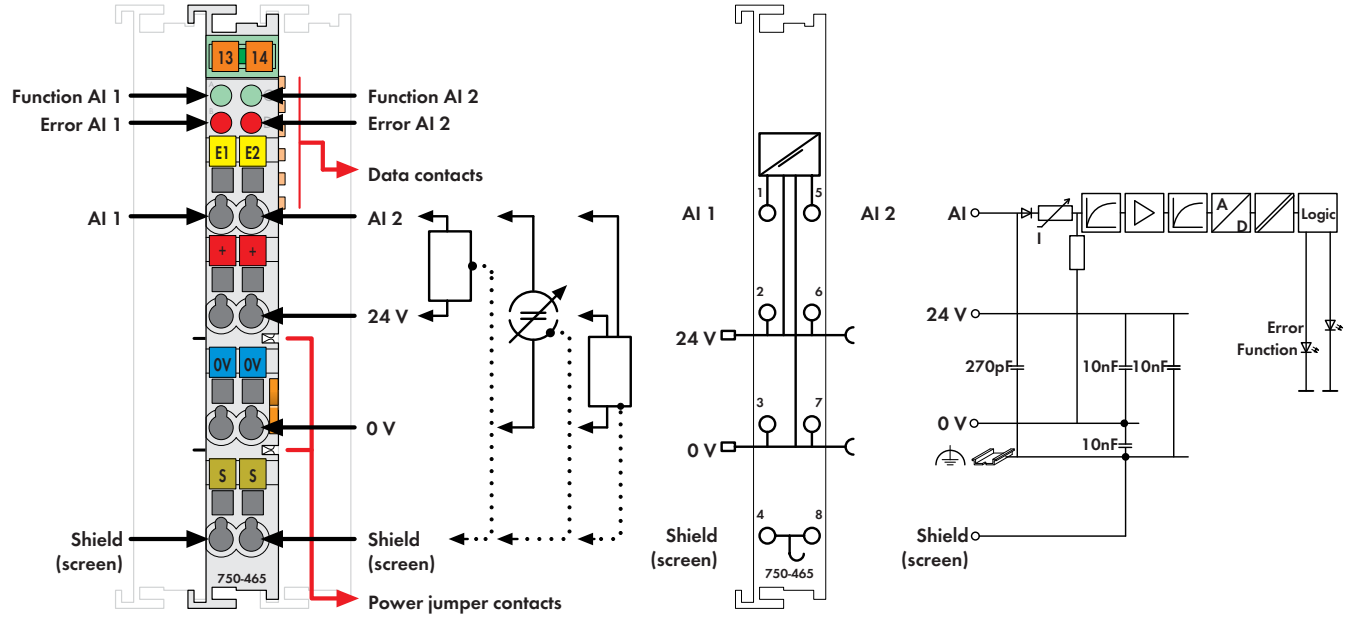


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The analog input module provides power to the field device, receives the transmitted analog signals, and with electrical isolation, transmits them to the fieldbus.

The 24V supply for the field is derived from the power jumper contacts.

The shield (screen) is directly connected to the DIN rail.

This input module can supply the voltage for 2-conductor transducers.

Description	Item No.	Pack. Unit
2AI 0-20mA S.E.	**750-465**	10[1]
2AI 4-20mA S.E.	**750-466**	10[1]
2AI 0-20mA S.E. S5[2]	**750-465/000-200**	1
2AI 0-20mA S.E./T	**750-465/025-000**	1
(Operating temperature -20 °C ... +60 °C)		
2AI 4-20mA S.E. S5 [2]	**750-466/000-200**	1
2AI 4-20mA S.E./T	**750-466/025-000**	1
(Operating temperature -20 °C ... +60 °C)		
2AI 0-20mA S.E. (without connector)	**753-465**	1
2AI 4-20mA S.E. (without connector)	**753-466**	1
[1] Also available individually		
[2] Data format for S5 control with FB 251		

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

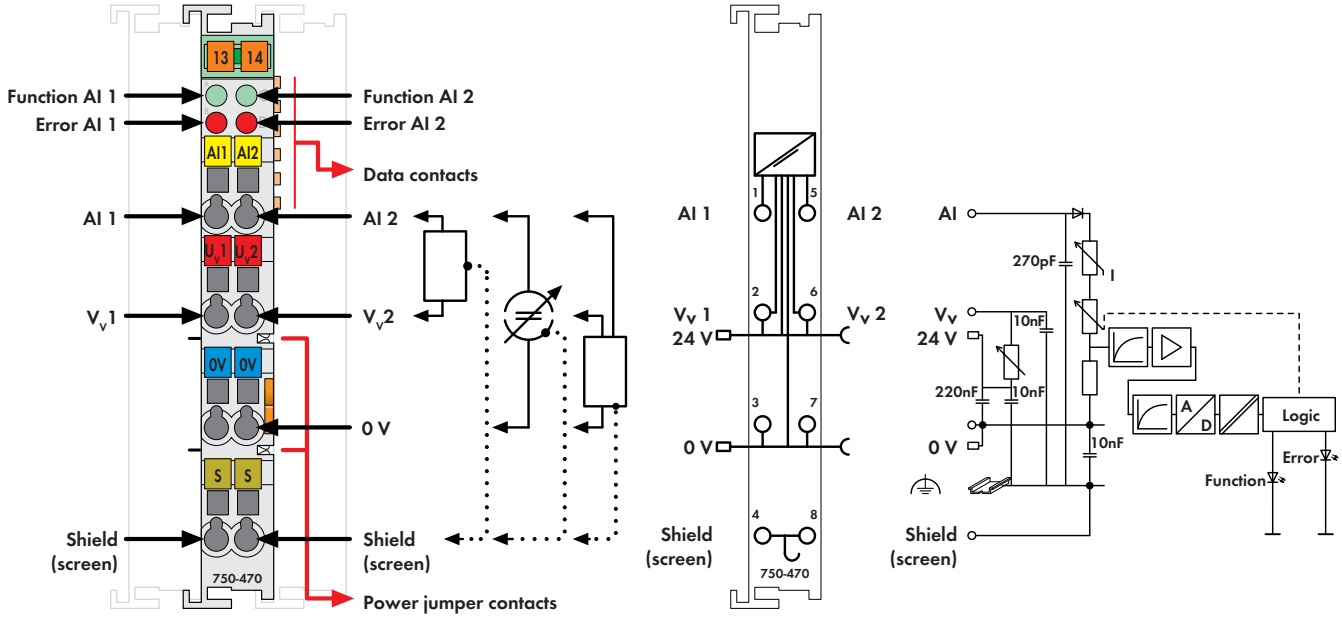
750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4

Technical Data

Number of inputs	2
Voltage supply	via system voltage DC/DC
Current consumption (internal)	75 mA
Input voltage (max.)	10 V
Signal current	0 mA ... 20 mA (750-465, 753-465)
	4 mA ... 20 mA (750-466, 753-466)
Input resistance	< 220 Ω/ 20 mA
Resolution	12 bits
Conversion time (typ.)	2 ms
Measuring error (25 °C)	< ± 0.2 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Isolation	500 V system/supply
Bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	52.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

2-Channel Analog Input Module 0/4-20 mA

Single-ended (S.E.), short-circuit protected



Delivered without miniature WSB markers

The analog input module receives signals with the standardized values 0-20mA. The output signal is electrically isolated and will transmit with a 12-bit resolution. The 24V supply for the field is derived from the power jumper contacts. The shield (screen) is directly connected to the DIN rail. This module can supply the voltage for 2-conductor transducers.
A short-circuit to the power supply is indicated as error/fieldbus failure and a message is sent to the supervisory control.

Description	Item No.	Pack. Unit
2AI 0-20mA, S.E., S. C. Protec.	**750-470**	1
2AI 0-20mA, S.-E., S. C. Protec., 60 Hz	**750-470/005-000**	1
2AI 4-20mA, S.-E., S.C.Protec.	**750-473**	1
2AI 4-20mA, S.-E., S. C. Protec., 60 Hz	**750-473/005-000**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 Series	(Approvals for product variations upon request)
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Number of inputs	2
Voltage supply	via system voltage DC/DC
Current consumption typ. (internal)	100 mA
Signal current	0 mA ... 20 mA (750-470)
	4 mA ... 20 mA (750-473)
Input voltage	non-linear, overload protected
	V = 1.2 V + 100 Ω x I meas.
Input resistance (typ.)	< 160 Ω / 20 mA
Resolution	12 bits
Conversion time (typ.)	80 ms
Measuring error (25 °C)	< ± 0.1 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Isolation	500 V field/system
Bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Input filter	50 Hz (750-470, 750-473)
	60 Hz (750-470/005-000,
	750-473/005-000)
Noise rejection at sampling frequency	< -100 dB
Noise rejection above sampling frequency	< -40 dB
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	55.5 g
EMC marine applications - Immunity to	
interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of	
interference	acc. to Germanischer Lloyd (2003)

2-Channel Analog Input Module 0/4-20 mA

Single-ended (S.E.)

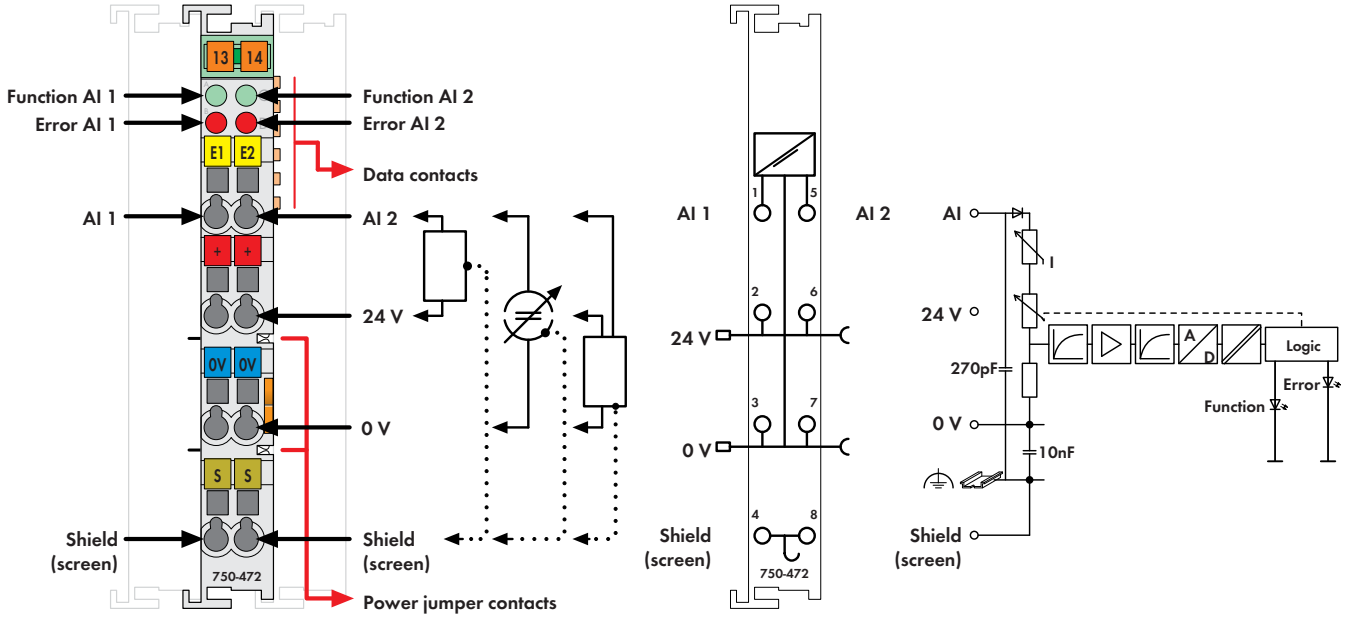


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The analog input module is able to provide power to the field device, to receive the transmitted analog signals, and with electrical isolation, to transmit them to the fieldbus.

The 24V supply for the field is derived from the power jumper contacts.

The shield (screen) is directly connected to the DIN rail.

At approx. 25mA the overload protection switches the measurement input to a high resistance state. Under normal operating conditions it is automatically switched back.

This input module can supply the voltage for 2-conductor transducers.

Description	Item No.	Pack. Unit
2AI 0-20mA 16 Bit S.E.	**750-472**	1
2AI 4-20mA 16 Bit S.E.	**750-474**	1
2AI 0-20mA 16 Bit S.E. S5 [2]	**750-472/000-200**	1
2AI 0-20mA 16 Bit S.E. 60Hz	**750-472/005-000**	1
2AI 4-20mA 16 Bit S.E. S5 [2]	**750-474/000-200**	1
2AI 4-20mA 16 Bit S.E. 60Hz	**750-474/005-000**	1
2AI 0-20mA 16 Bit, S.E. (without connector)	**753-472**	1
2AI 4-20mA 16 Bit, S.E. (without connector)	**753-474**	1

[2] Data format for S5 control with FB 251

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
	BR-Ex nA II T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Number of inputs	2
Voltage supply	via system voltage DC/DC
Current consumption (internal)	75 mA
Input voltage (max.)	24 V
Input voltage	non-linear, overload protected
	V = 1.2 V + 160 Ω x I meas.
Signal current	0 mA ... 20 mA (750-472, 753-472)
	4 mA ... 20 mA (750-474, 753-474)
Input resistance	220 Ω/ 20 mA
Overvoltage protection	30 V polarity reversal protection
Resolution	15 bits
Conversion time (typ.)	80 ms
Input filter	50 Hz
Noise rejection at sampling frequency	< -100 dB
Noise rejection above sampling frequency	< -40 dB
Measuring error (25 °C)	< ± 0.1 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Isolation	500 V system/supply
Bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	55.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel Analog Input Module 0/4-20 mA

Single-ended (S.E.)

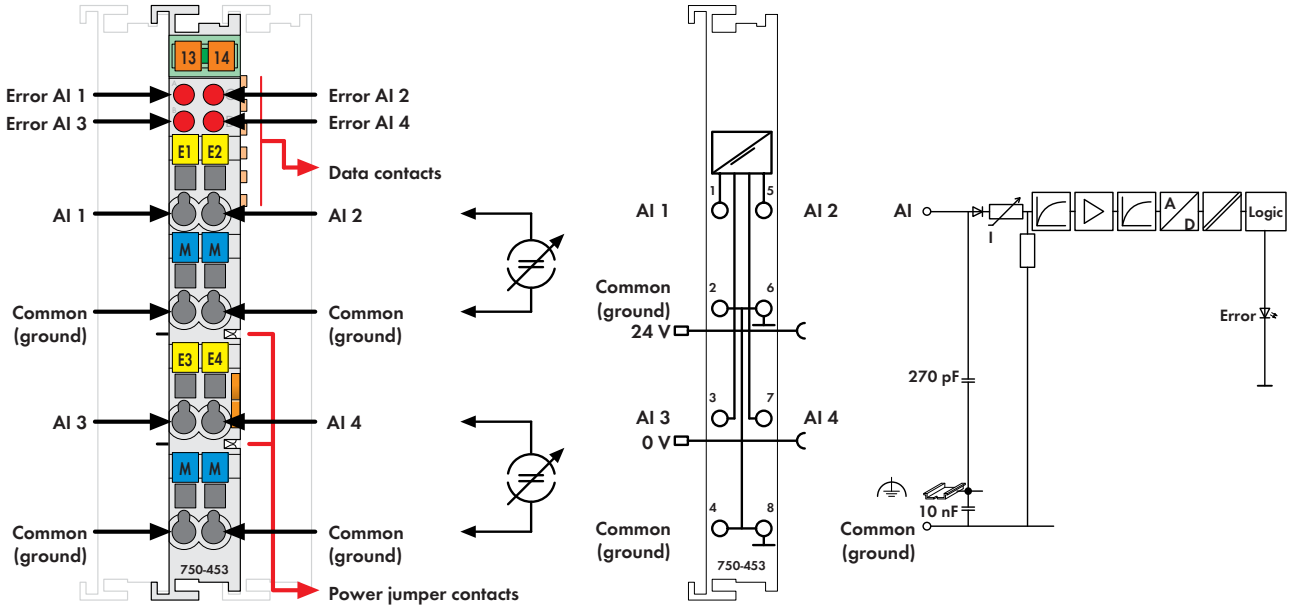


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The analog input module receives signals with standardized values of 0-20mA and 4-20mA.

The input signal is electrically isolated and will be transmitted with a resolution of 12 bits.

The internal system supply is used for the power supply of the module.

The input channels of the module have one common ground potential.

Description	Item No.	Pack. Unit
4AI 0-20mA S.E.	**750-453**	10[1]
4AI 4-20mA S.E.	**750-455**	10[1]
4AI 4-20mA S.E./T	**750-455/025-000**	1
(Operating temperature -20 °C ... +60 °C)		
4AI 0-20mA S.E. (without connector)	**753-453**	10[1]
4AI 4-20mA S.E. (without connector)	**753-455**	10[1]

[1] Also available individually

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Number of inputs	4
Voltage supply	via system voltage DC/DC
Current consumption (internal)	65 mA
Input voltage (max.)	32 V
Signal current	0 mA ... 20 mA (750-453, 753-453)
	4 mA ... 20 mA (750-455, 753-455)
Input resistance	< 100 Ω/ 20 mA
Resolution	12 bits
Conversion time (typ.)	10 ms
Measuring error (25 °C)	< ± 0.2 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Isolation	500 V system/supply
Bit width	4 x 16 bits data
	4 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Analog Input Module 0-20 mA

differential inputs

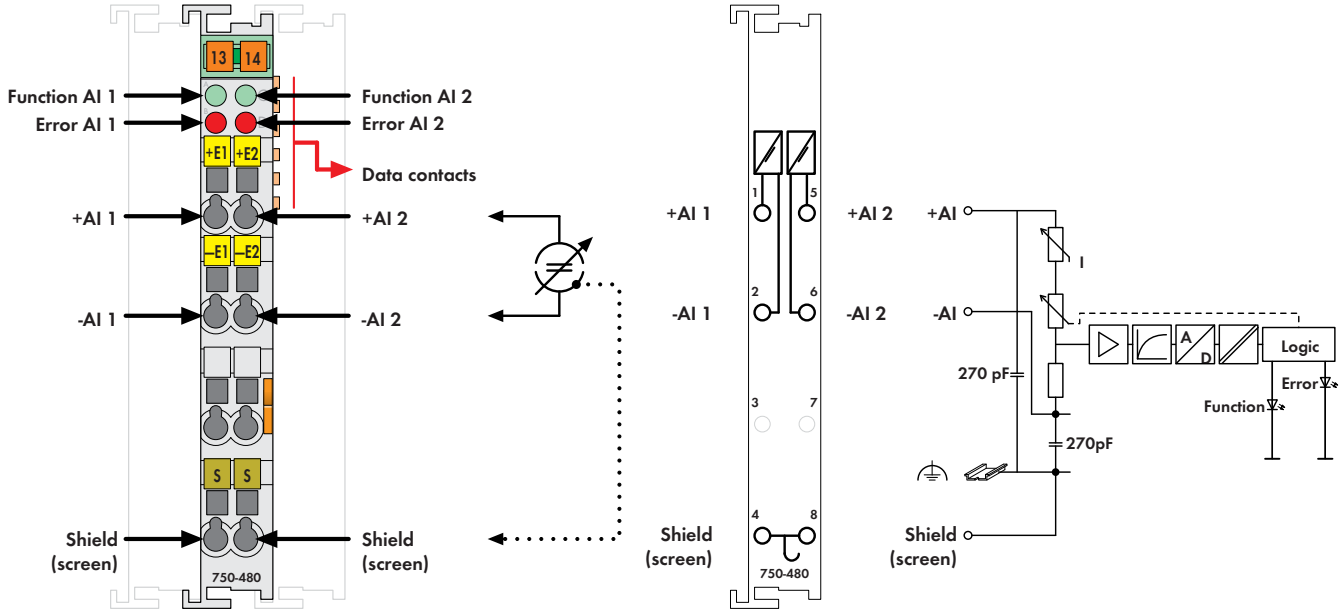


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The analog input module receives differential signals of values 0 - 20mA.
The input signal of each channel is electrically isolated and will be transmitted with a resolution of 13 bits.
The system supply (via the data bus contacts) is used for the power supply of the module.
The shield (screen) is directly connected to the DIN rail.

- Measured-value acquisition: time synchronous (both inputs)
- Overrange / measuring range underflow: status byte and LED
- Method of conversion: SAR (Successive Approximation Register)
- Operating mode: continuously sampling (preset)
- Protection: non-linear limiting

Technical data for the 750-480/000-001 model:

- Measured-value acquisition time synchronous (in connection with synchronized sampling of the slave, 750-303 Fieldbus Coupler (as from version 0101))
- Overrange / measuring range underflow status byte, status bits, measured value and LED (min./max. limiting values can also be set according to customers' specifications)
- Sampling delay (instruction/conversion) < 50µs
- Operating mode triggered

Description	Item No.	Pack. Unit
2AI 0-20mA Differential Input	**750-480**	1
2AI 0-20mA Differential Input Synchronous	**750-480/000-001**	1
Differing technical data see text		
2AI 0-20mA Differential Input (without connector)	**753-480**	1

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
	BR-Ex nA II T4

Technical Data

Number of inputs	2, electrically isolated from each other
Voltage supply	via system voltage DC/DC
Current consumption typ. (internal)	80 mA
Signal current	0 ... 20 mA
Input resistance	< 270 Ω/ 20 mA
Input filter	low pass first order, f_G = 5 kHz
Resolution of the A/D converter	14 bits
Monotonicy without missing codes	yes
Resolution of measured value	13 bits
Value of a LSB (least significant bit)	2.4 µA
Measuring error (25 °C)	< ± 0.05 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Measuring error	≤ 0.4 % over whole temperature range ≤ 0.1 % of upper range value (non-linearity)
Crosstalk attenuation	≥ 80 dB
Sampling time of repetition	1 ms
Sampling delay (module)	1 ms
Sampling delay (channel/channel)	≤ 1 µs
Sampling duration	≤ 5 µs
Admissible continuous overload	30 V
Dielectric strength	DC 500 V channel/channel or channel/system
Bit width	2 x 16 bits data 2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	54.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

2-Channel Analog Input Module 4-20 mA

Isolated differential inputs

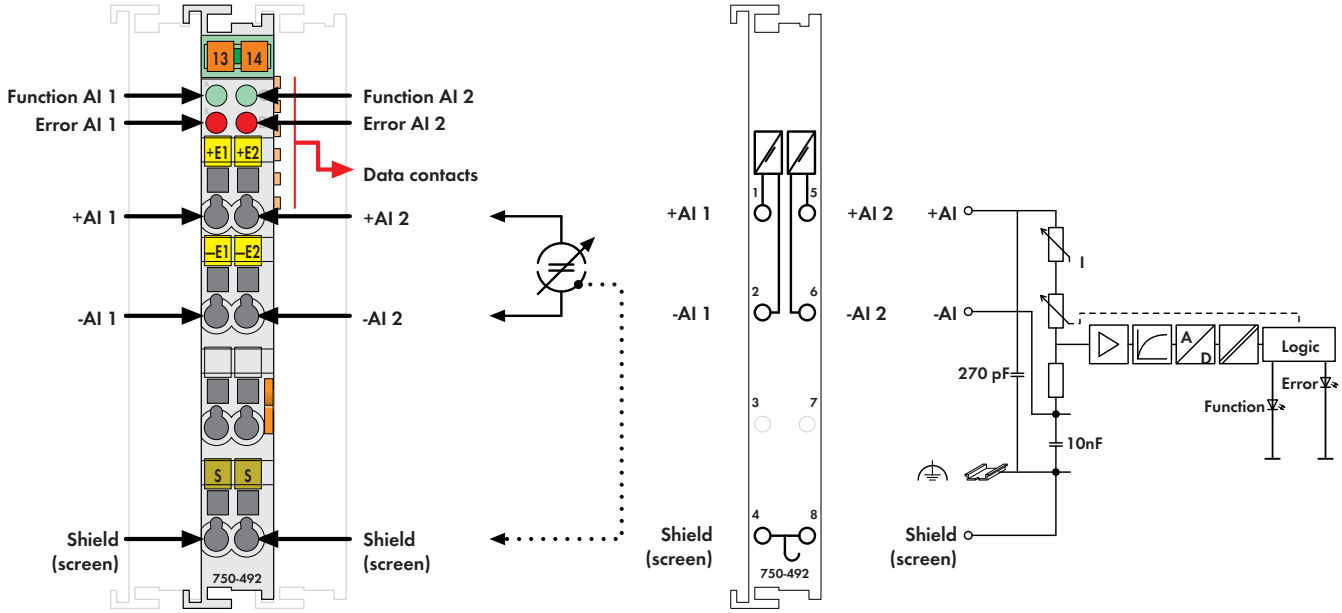


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The analog input module receives differential signals of values 4 - 20mA.

The input signal of each channel is electrically isolated and will be transmitted with a resolution of 13 bits.

The system supply (via the data bus contacts) is used for the power supply of the module.

The shield (screen) is directly connected to the DIN rail.

- Measured-value acquisition: time synchronous (both inputs)
- Overrange / measuring range underflow: status byte and LED
- Method of conversion: SAR (Successive Approximation Register)
- Operating mode: continuously sampling (preset)
- Protection: non-linear limiting

Description	Item No.	Pack. Unit
2AI 4-20mA Differential Input	**750-492**	1
2AI 4-20mA Differential Input (without connector)	**753-492**	1

Accessories

	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
	BR-Ex nA II T4

Technical Data

Number of inputs	2, electrically isolated from each other
Voltage supply	via system voltage DC/DC
Current consumption typ. (internal)	80 mA
Signal current	4 ... 20 mA
Input resistance	< 270 Ω/ 20 mA
Input filter	low pass first order, f_G = 5 kHz
Resolution of the A/D converter	14 bits
Monotonicy without missing codes	yes
Resolution of measured value	13 bits
Value of a LSB (least significant bit)	2.4 µA
Measuring error (25 °C)	< ± 0.05 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Measuring error	< 0.4 % over whole temperature scale
	≤ 0.1 % of upper range value (non-linearity)
Crosstalk attenuation	≥ 80 dB
Sampling time of repetition	1 ms
Sampling delay (module)	1 ms
Sampling delay (channel/channel)	≤ 1 µs
Sampling duration	≤ 5 µs
Admissible continuous overload	30 V
Dielectric strength	DC 500 V channel/channel
	or channel/system
Bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	54 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

2-Channel Analog Input Module 4-20 mA HART

Single-ended (S.E.)

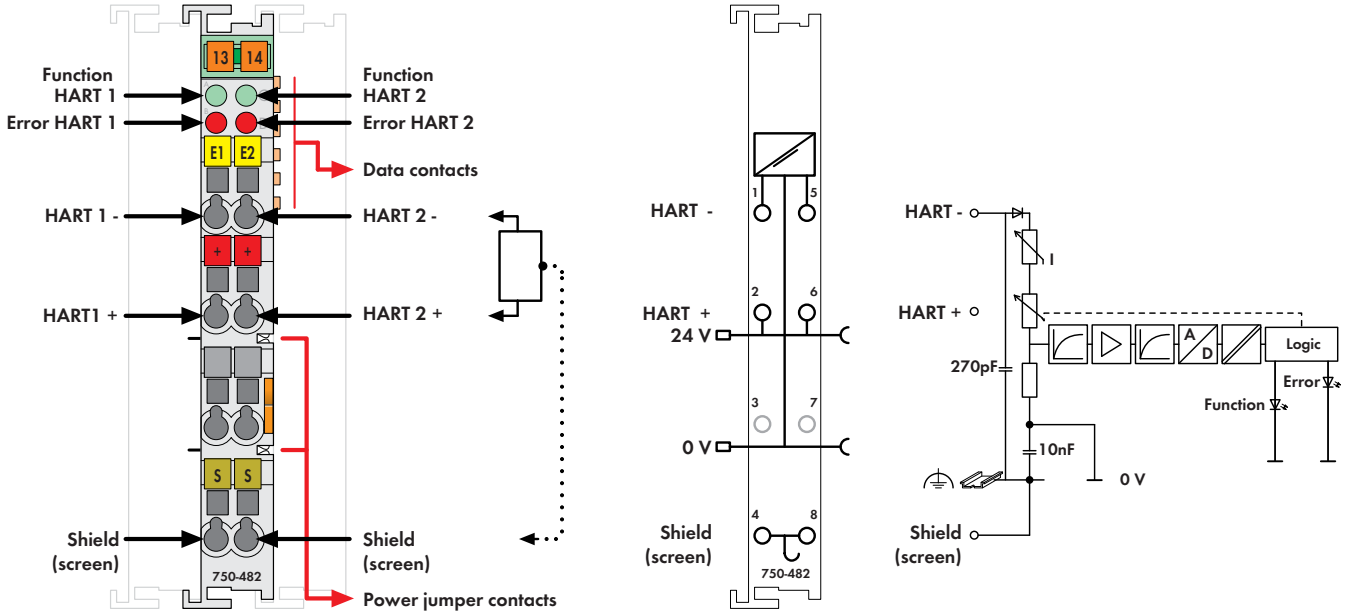


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The analog input module powers the transducers, receives transmitted analog signals, and with electrical isolation, transmits the signals to the fieldbus.

The 24V supply for the field is derived from the module's power jumper contacts. The shield (screen) is directly connected to the DIN rail. At approx. 25mA, the overload protection will switch the measurement input to a high resistance state. Under normal operating conditions it will automatically switch back. This input module can supply the voltage for 2-conductor transducers.

Up to 4 HART secondary variables (PV, SV, TV, QV) per channel can be mapped in the cyclic process image of the coupler or controller (configurable). For HART communication with connected intelligent HART field devices, the HART protocol can be mapped in the cyclic process image of the coupler or controller (configurable).
When using the 750-333 PROFIBUS DP/V1 Coupler and 759-360 PROFIBUS/HART Gateway DTM, FDT routing is possible to the DTM of the connected HART device.

Description	Item No.	Pack. Unit
2AI 4-20mA 16 Bit S.E. HART	**750-482**	1
2AI 4-20mA 12 Bit S.E. HART/T	**750-482/025-000**	1
(Operating temperature -20 °C ... +60 °C)		
2AI 4-20mA 16 Bit S.E. HART (without connector)	**753-482**	1

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	pending

Technical Data

Number of inputs	2
Voltage supply	via system voltage DC/DC
	~10 mA without sensor supply
Current consumption (internal)	< 65 mA
Input voltage (max.)	24 V
Input voltage drop	(I_{meas} < 28 mA): not linear, as protected
	against overload U = 0.9 V + 270 Ω x I meas
Signal current	4 mA ... 20 mA
Line break detection	I meas < 3.10 mA
Short circuit detection	I meas > 22 mA
Overvoltage protection	30 V, reverse polarity protected
Resolution of the A/D converter	12 bits
Conversion time (typ.)	10 ms
Input filter	parametrizable
Measuring error (25 °C)	0.1 % of upper range value (non-linearity)
Temperature coefficient	< ± 0.01 % / K of full scale value
Isolation	500 V system/supply
Bit width	2 x 2 bytes data 2 x 2 bytes data + 2n x 4
	bytes data (n = number of dynamic variables)
	2 x 2 bytes data + 6 bytes mailbox
Diagnostics	Wire break, measuring range overflow
Sensor connection	2-wire
HART devices per channel	1 device (single-drop, no multi-drop)
HART modems per channel	1 modem (no multiplex)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	54 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)

2-Channel Analog Input Module 0-1 A AC/DC

Differential inputs

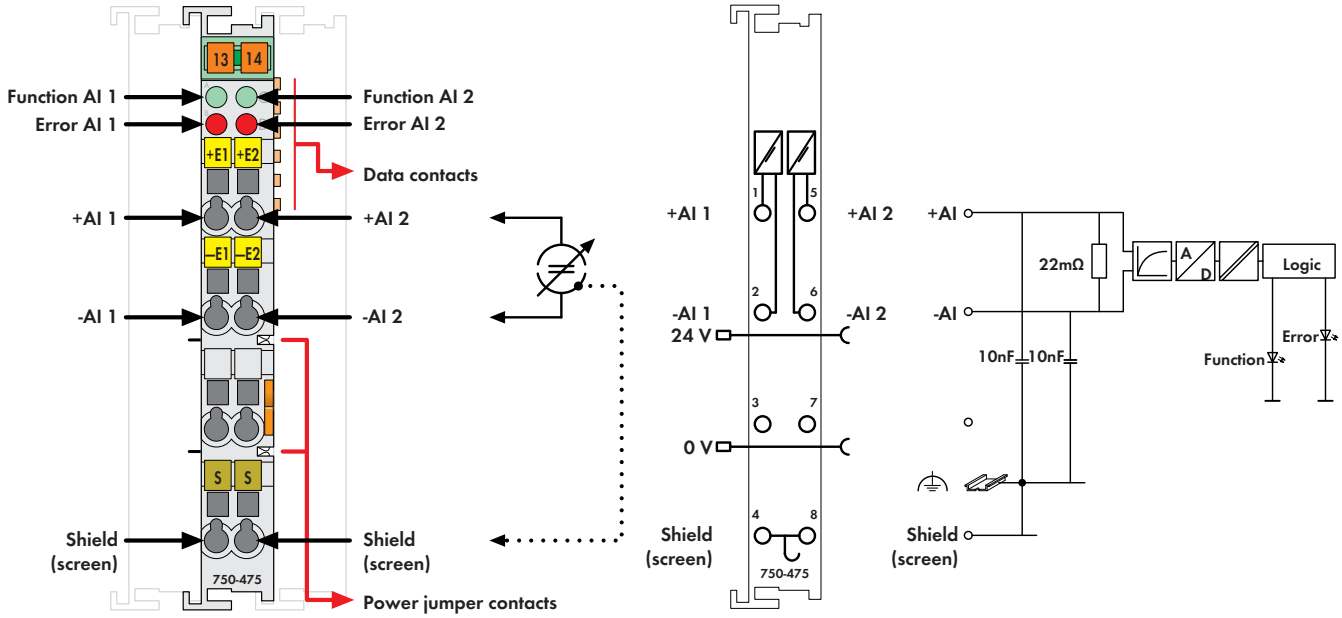


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The analog input module receives AC and DC currents of values 0-1A eff.
The module measures the rms value of the current and displays it with a resolution of 100µA.
The maximum current must not exceed 2A.
The differential inputs are electrically isolated.
The fieldside and internal system are electrically isolated.
The internal system supply (via the data bus contacts) is used for the power supply of the module.
The input channels are differential inputs.
The shield (screen) is directly connected to the DIN rail.

Technical data for the 750-475/020-000 model:
Signal current: 0A ... 6A eff
Process data: 0.0 A is 0x0000; 6.0 A is 0x7FFF
.

Description	Item No.	Pack. Unit
2AI 0-1A AC/DC Differential Input	**750-475**	1
2AI 0-5A AC/DC Differential Input	**750-475/020-000**	1
Differing technical data see text		
2AI 0-1A AC/DC Differential Input (without connector)	**753-475**	1

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
	BR-Ex nA II T4

Technical Data

Number of inputs	2
Voltage supply	via system voltage DC/DC
Current consumption (internal)	80 mA
Signal current	0 A ... 1 A eff. (peak value 2.0 A)
Load impedance	22 mΩ
Resolution	16 bits internal (1 LSB = 100 µA)
Conversion time	200 ms
Measuring error (25 °C)	< ± 0.1 % of the full scale value
Temperature coefficient	< ± 110 ppm / K of the full scale value
Error in complete temperature range	≤ ± 0.6 % of the full scale value
Dielectric strength	500 V DC channel/channel
	or channel/system
Voltage via power jumper contacts	24 V DC
Bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Process data	0.0 A is 0x0000;
	2.0 A DC is 0x4E20
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	47 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 50081-1 (1993)

2-Channel Analog Input Module 0-10 V AC/DC

Differential inputs

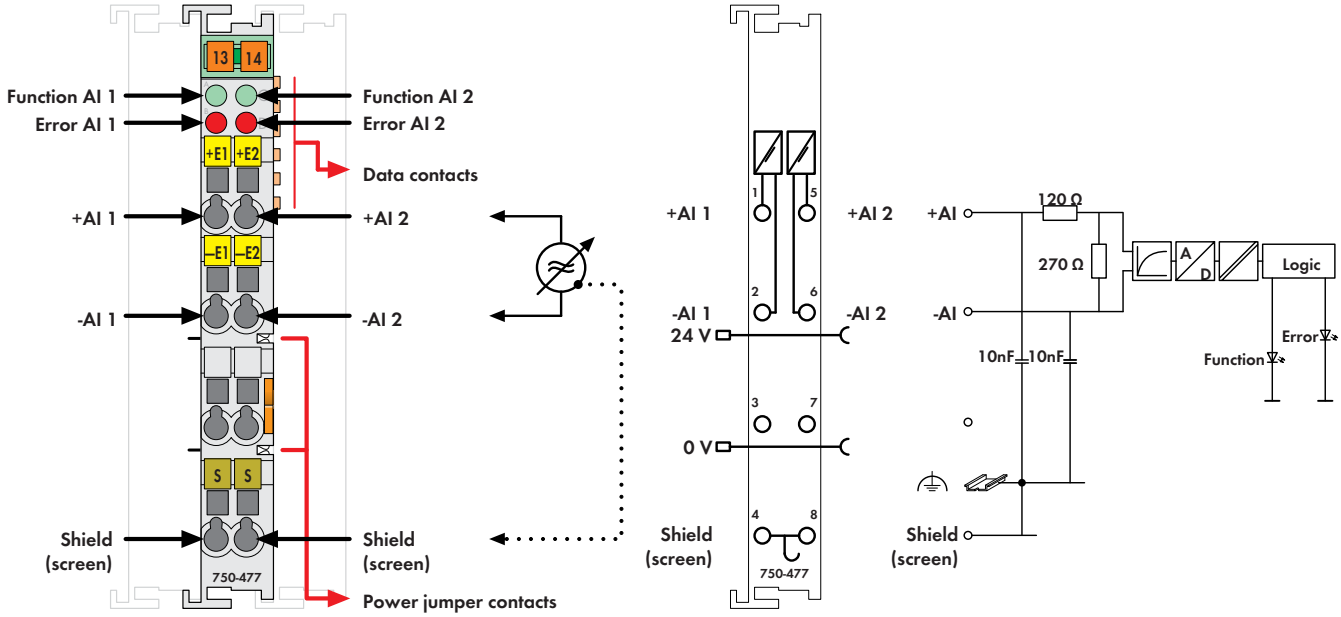


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The analog input module receives AC and DC voltages of values 0-10V eff.

The module measures the rms value of the voltage and displays it with a resolution of 1mV.

The maximum voltage must not exceed 20V.

The differential inputs are electrically isolated.

The fieldside and internal system are electrically isolated.

The system supply (via the data bus contacts) is used for the power supply of the module.

The input channels are differential inputs.

The shield (screen) is directly connected to the DIN rail.

Description	Item No.	Pack. Unit
2AI 0-10V AC/DC Differential Input	**750-477**	1
2AI 0-10V AC/DC Diff. (without connector)	**753-477**	1

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4

Technical Data

Number of inputs	2
Voltage supply	via system voltage DC/DC
Current consumption (internal)	80 mA
Signal voltage	0 V ... 10 V eff. (peak value 20 V)
Internal resistance	120 kΩ
Resolution	16 bits internal (1 LSB = 1 mV)
Conversion time	200 ms
Measuring error (25 °C)	< ± 0.1 % of the full scale value
Temperature coefficient	< ± 110 ppm / K of the full scale value
Error in complete temperature range	≤ ± 0.6 % of the full scale value
Dielectric strength	500 V DC channel/channel
	or channel/system
Voltage via power jumper contacts	24 V DC
Bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Process data	0.0 V is 0x0000;
	20 V DC is 0x4E20
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	47 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 50081-1 (1993)

2-Channel Analog Input Module 0-10 V

Single-ended (S.E.)

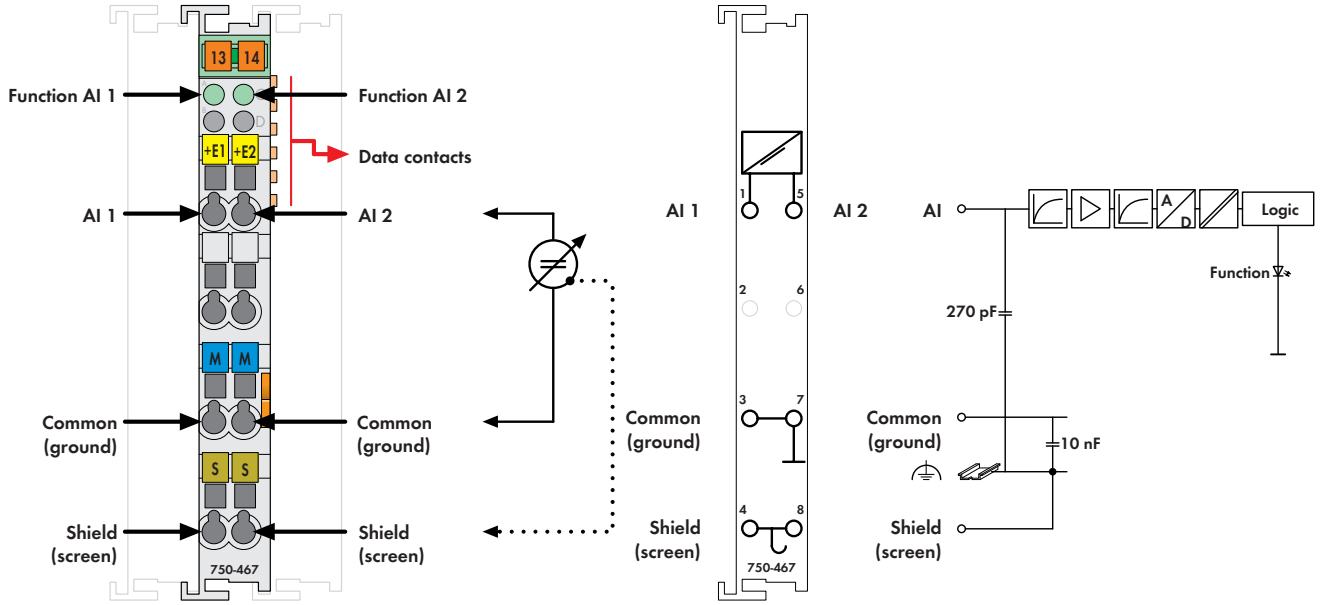


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The analog input module receives signals with the standardized values of 0-10V.

The input signal is electrically isolated and will be transmitted with a resolution of 12 bits.

The internal system supply is used for the power supply of the module.

The input channels of a module have one common ground potential.

The shield (screen) is directly connected to the DIN rail.

Description	Item No.	Pack. Unit
2AI 0-10V DC S.E.	**750-467**	10[1]
2AI 0-10V DC S.E. S5 [2]	**750-467/000-200**	1
2AI 0-10V DC S.E. (without connector)	**753-467**	10[1]

[1] Also available individually
[2] Data format for S5 control with FB 251

Accessories	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

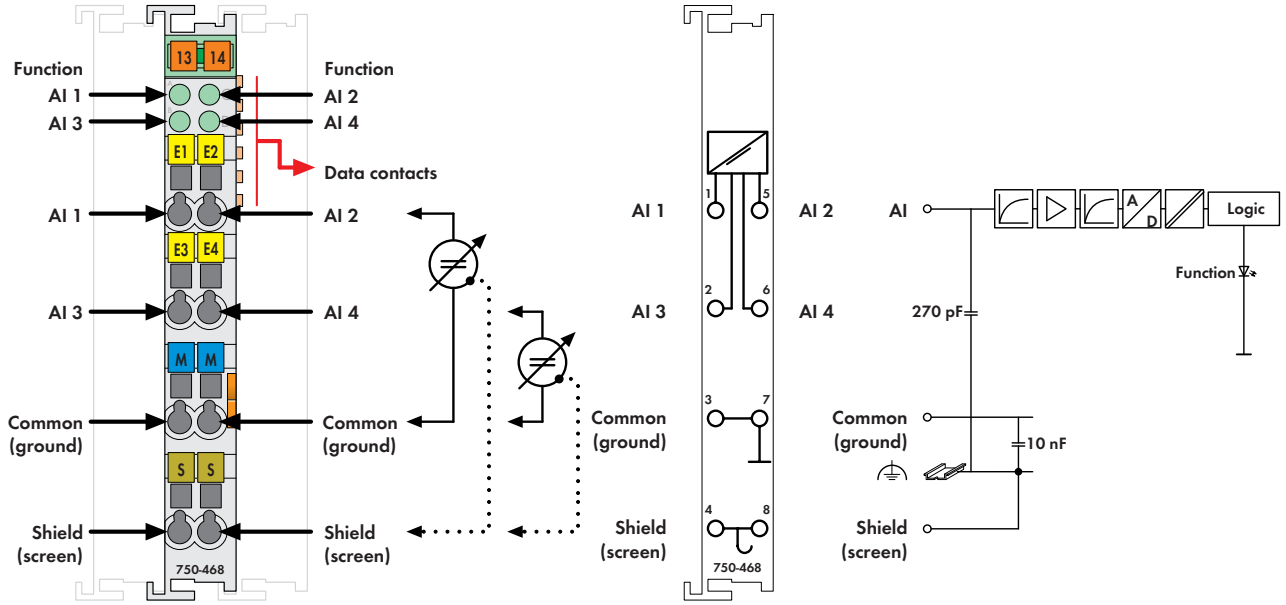
750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4

Technical Data

Number of inputs	2
Voltage supply	via system voltage DC/DC
Current consumption typ. (internal)	60 mA
Input voltage (max.)	35 V
Signal voltage	0 ... 10 V
Internal resistance	130 kΩ
Resolution	12 bits
Conversion time (typ.)	2 ms
Measuring error (25 °C)	≤ ± 0.2 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Isolation	500 V system/supply
Bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

4-Channel Analog Input Module 0-10 V

Single-ended (S.E.)



Delivered without miniature WSB markers

The analog input module receives signals with the standardized values of 0-10V.

The input signal is electrically isolated and will be transmitted with a resolution of 12 bits.

The internal system voltage supply is used for the power supply of the module.

The input channels of a module have one common ground potential.

The shield (screen) is directly connected to the DIN rail.

Description	Item No.	Pack. Unit
4AI 0-10V DC S.E.	**750-468**	1
4AI 0-10V DC S.E. S5 [2]	**750-468/000-200**	1
4AI 0-10V DC S.E./T	**750-468/025-000**	1
(Operating temperature -20 °C ... +60 °C)		

[2] Data format for S5 control with FB 251

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 Series	(Approvals for product variations upon request)
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Number of inputs	4
Voltage supply	via system voltage DC/DC
Current consumption typ. (internal)	60 mA
Input voltage (max.)	35 V
Signal voltage	0 ... 10 V
Internal resistance	133 kΩ
Resolution	12 bits
Conversion time (typ.)	4 ms
Measuring error (25 °C)	≤ ± 0.2 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Isolation	500 V system/supply
Bit width	4 x 16 bits data
	4 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	52.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Analog Input Module ±10 V/0-10 V

Single-ended (S.E.)

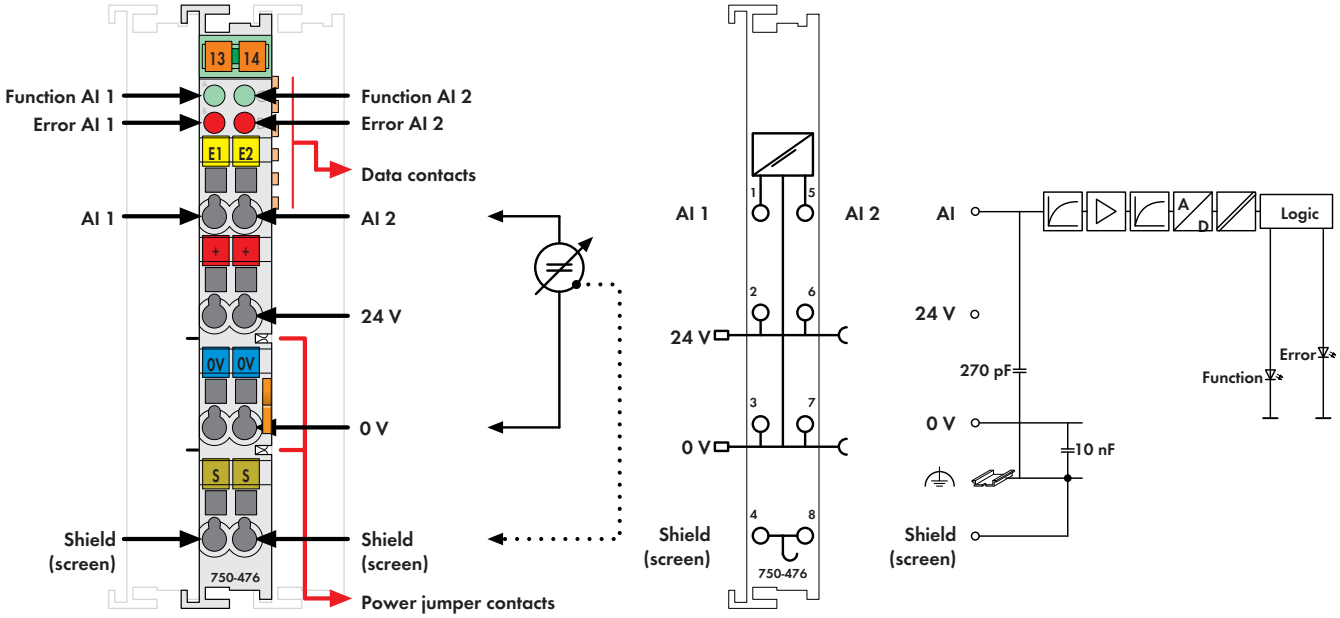


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The analog input module receives signals with the standardized values 0-10V or ± 10V.

The input signal is electrically isolated and will be transmitted with a resolution of 16 bits.

The internal system voltage supply is used for the power supply of the module.

The input channels of a module have one common ground potential.

The 24V supply is derived from the power jumper contacts.

The shield (screen) is directly connected to the DIN rail.

Description	Item No.	Pack. Unit
2AI ±10V DC 16 Bit S.E.	**750-476**	1
2AI 0-10V DC 16 Bit S.E.	**750-478**	1
2AI ±10V DC 16 Bit S.E. (without connector)	**753-476**	1
2AI 0-10V DC 16 Bit S.E. (without connector)	**753-478**	1

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	Miniature WSB Quick marking system		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
	BR-Ex nA II T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Number of inputs	2
Voltage supply	via system voltage DC/DC
Current consumption (internal)	75 mA
Input voltage (max.)	24 V
Signal voltage	± 10 V (750-476, 753-476)
	0 V ... 10 V (750-478, 753-478)
Internal resistance	130 kΩ
Resolution	15 bits + sign bit
Conversion time (typ.)	80 ms
Input filter	50 Hz
Noise rejection at sampling frequency	< -100 dB
Noise rejection above sampling frequency	< -40 dB
Measuring error (25 °C)	≤ ± 0.1 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Isolation	500 V system/supply
Bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	54.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel Analog Input Module ±10 V/0-10 V

Single-ended (S.E.)

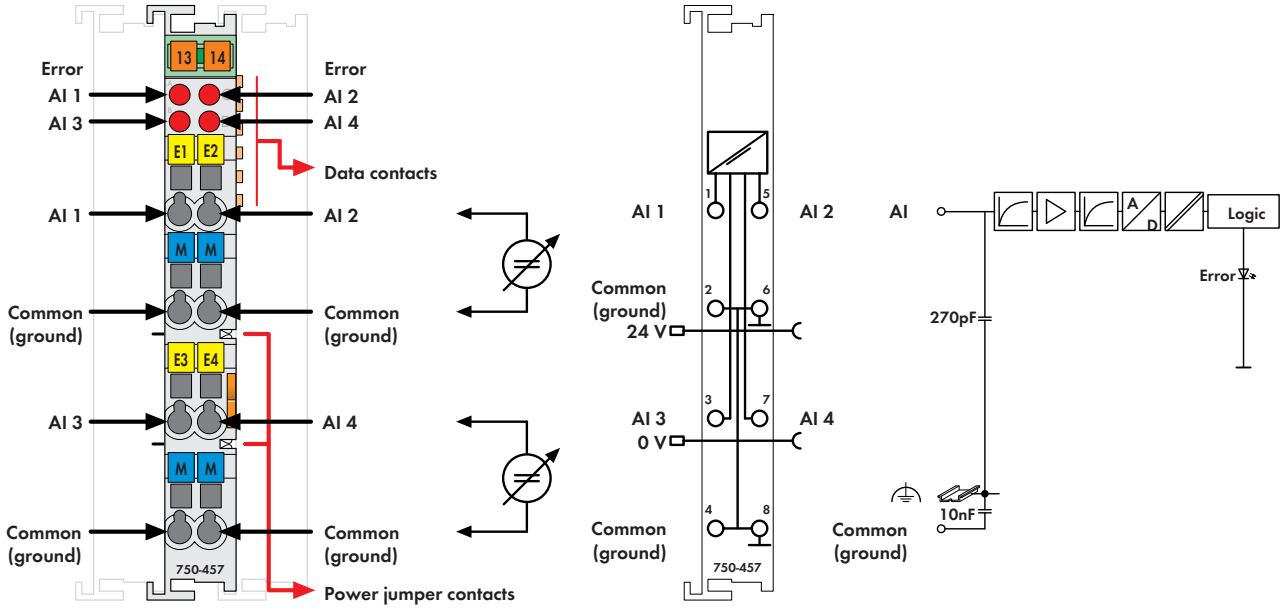


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The analog input module receives signals with the standardized values ±10V and 0-10V.

The input signal is electrically isolated and will be transmitted with a resolution of 12 bits.

The internal system supply is used for the power supply of the module.

The input channels of a module have one common ground potential.

Description	Item No.	Pack. Unit
4AI ±10V DC S.E.	**750-457**	10[1]
4AI ±10V DC S.E./T	**750-457/025-000**	1
(Operating temperature -20 °C ... +60 °C)		
4AI 0-10V DC S.E.	**750-459**	10[1]
4AI ±10V DC S.E. (without connector)	**753-457**	10[1]
4AI 0-10V DC S.E. (without connector)	**753-459**	10[1]

[1] Also available individually

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Number of inputs	4
Voltage supply	via system voltage DC/DC
Current consumption (internal)	65 mA
Input voltage (max.)	± 40 V
Signal voltage	± 10 V (750-457, 753-457)
	0 V ... 10 V (750-459, 753-459)
Input resistance	> 100 kΩ
Resolution	12 bits
Conversion time (typ.)	10 ms
Measuring error (25 °C)	< ± 0.2 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Isolation	500 V system/supply
Bit width	4 x 16 bits data
	4 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Analog Input Module ±10 V

Differential inputs

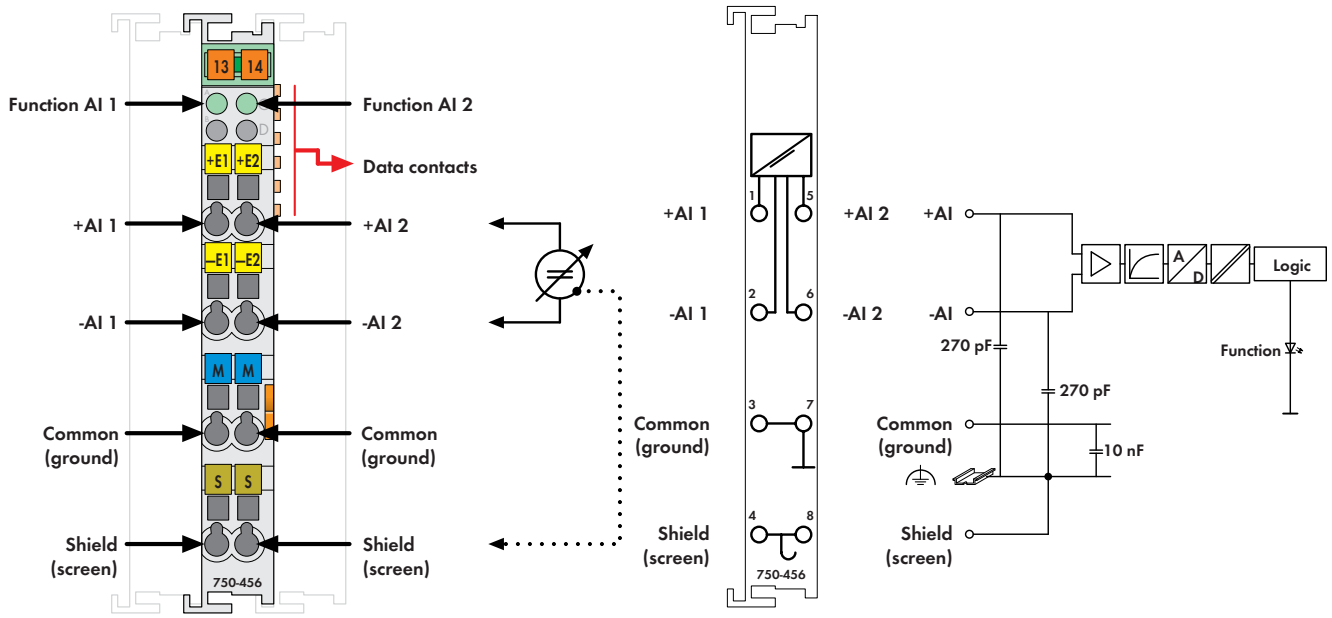


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

This analog input module receives signals with standardized values of ±10V.

The input signal is electrically isolated and will transmitt with a resolution of 12 bits.

The internal system supply (via the data bus contacts) is used for the power supply of the module.

The input channels are differential inputs.

The shield (screen) is directly connected to the DIN rail.

Description	Item No.	Pack. Unit
2AI ±10V DC	**750-456**	10[1]
2AI ±10V DC S5 [2]	**750-456/000-200**	1
2AI ±10V DC (without connector)	**753-456**	10[1]

[1] Also available individually
[2] Data format for S5 control with FB 251

Accessories	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Number of inputs	2
Voltage supply	via system voltage DC/DC
Current consumption typ. (internal)	80 mA
Common mode voltage (max.)	35 V
Signal voltage	± 10 V
Internal resistance	typ. 570 kΩ
Resolution	12 bits
Conversion time (typ.)	2 ms
Measuring error (25 °C)	< ± 0.2 % of the full scale value
Temperature coefficient	< ± 0.015 % / K of the full scale value
Isolation	500 V system/supply
Bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	53.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Analog Input Module ±10 V

Differential measurement input

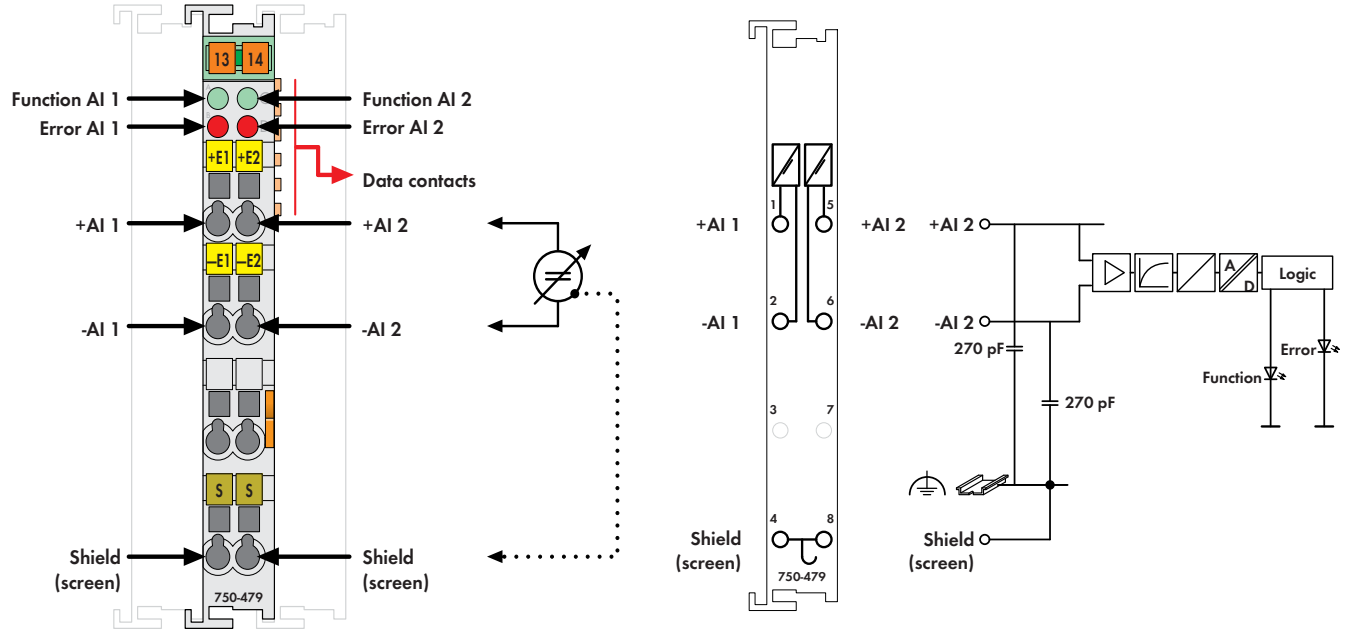


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The analog input module receives differential signals of values ± 10VDC.
The input signal of each channel is electrically isolated and will be transmitted with a resolution of 13 bits.
The system supply (via the data bus contacts) is used for the power supply of the module.
The shield (screen) is directly connected to the DIN rail.

- Measured-value acquisition: time synchronous (both inputs)
- Overrange / measuring range underflow: status byte and LED
- Method of conversion: SAR (Successive Approximation Register)
- Operating mode: continuously sampling (preset)
- Protection: RC circuit

Technical data for the 750-479/000-001 model:

- Measured-value acquisition time synchronous (in connection with synchronized sampling of the slave, 750-303 Fieldbus Coupler (as from version 0101))
- Overrange / measuring range underflow status byte, status bits, measured value and LED (min./max. limiting values can also be set according to customers' specifications)
- Sampling delay (instruction/conversion) < 50µs
- Operating mode triggered

Description	Item No.	Pack. Unit
2AI ±10V DC Diff. Measur. Inp.	**750-479**	1
2AI ±10V DC Differential Input Synchronous	**750-479/000-001**	1
Differing technical data see text		
2AI ±10V DC Differential Input (without connector)	**753-479**	1

Accessories		Item No.	Pack. Unit
	**753 Series**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals	
750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
	BR-Ex nA II T4
Shipbuilding	see Approvals Overview in section 1

Technical Data	
Number of inputs	2, electrically isolated from each other
Voltage supply	via system voltage DC/DC
Current consumption (internal)	100 mA
Signal voltage	± 10 V
Internal resistance	1 MΩ
Input filter	low pass first order, f_G = 5 kHz
Resolution of the A/D converter	14 bits
Monotonicy without missing codes	yes
Resolution of measured value	13 bits + sign bit
Value of a LSB (least significant bit)	1.2 mV
Measuring error (25 °C)	≤ ± 0.05 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Measuring error	≤ 0.4 % over whole temperature scale
	≤ 0.1 % of upper range value (non-linearity)
Crosstalk attenuation	≥ 80 dB
Sampling time of repetition	1 ms
Sampling delay (module)	1 ms
Sampling delay (channel/channel)	≤ 1 µs
Sampling duration	≤ 5 µs
Admissible continuous overload	60 V
Dielectric strength	500 V DC channel/channel or channel/system
Bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in; 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	54.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine app. - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine app. - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Analog Input Module 0-30 V

Differential measurement input

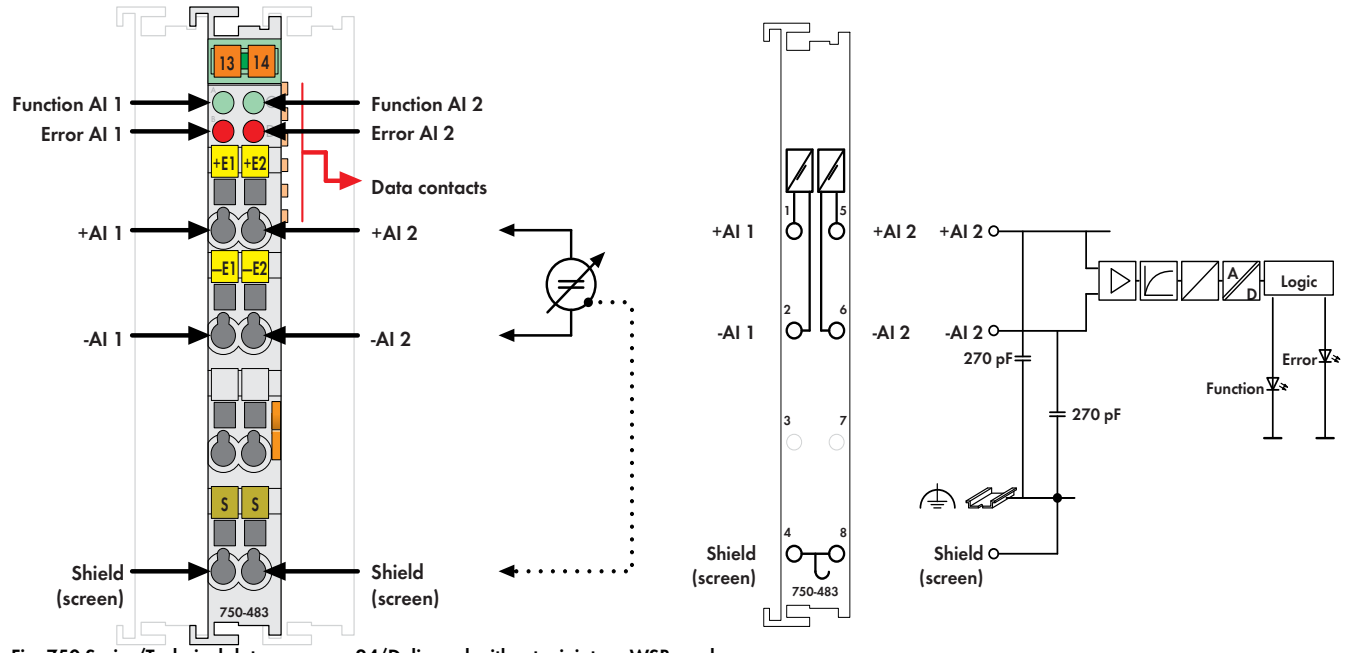


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The analog input module receives differential signals of values ± 10VDC or 0-30V.

The input signal of each channel is electrically isolated and will be transmitted with a resolution of 14 bits.

The internal system supply (via the data bus contacts) is used for the power supply of the module.

The shield (screen) is directly connected to the DIN rail.

- Measured-value acquisition: time synchronous (both inputs)
- Overrange / measuring range underflow: status byte and LED
- Method of conversion: SAR (Successive Approximation Register)
- Operating mode: continuously sampling (preset)
- Protection: RC circuit

Description	Item No.	Pack. Unit
2AI 0-30V DC Diff. Measur. Inp.	**750-483**	1
2AI 0-30V DC Diff. Measur. Inp. (without connector)	**753-483**	1

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Number of inputs	2, electrically isolated from each other
Voltage supply	via system voltage DC/DC
Current consumption typ. (internal)	80 mA
Signal voltage	0 V ... 30 V
Internal resistance	1 MΩ
Input filter	low pass first order, f_G = 5 kHz
Resolution of the A/D converter	14 bits
Monotonicity without missing codes	yes
Resolution of measured value	14 bits
Value of a LSB (least significant bit)	1.8 mV
Measuring error (25 °C)	≤ ± 0.05 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Measuring error	≤ 0.4 % over whole temperature scale
	≤ 0.1 % of upper range value (non-linearity)
Crosstalk attenuation	≥ 80 dB
Sampling time of repetition	1 ms
Sampling delay (module)	1 ms
Sampling delay (channel/channel)	≤ 1 µs
Sampling duration	≤ 5 µs
Admissible continuous overload	60 V
Dielectric strength	500 V DC channel/channel or channel/system
Bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in; 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	55 g
EMC CE-Immunity to interference	acc. to EN 50082-2 (1996)
EMC CE-Emission of interference	acc. to EN 50081-1 (1993)
EMC marine app. - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine app. - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Analog Input Module for RTDs

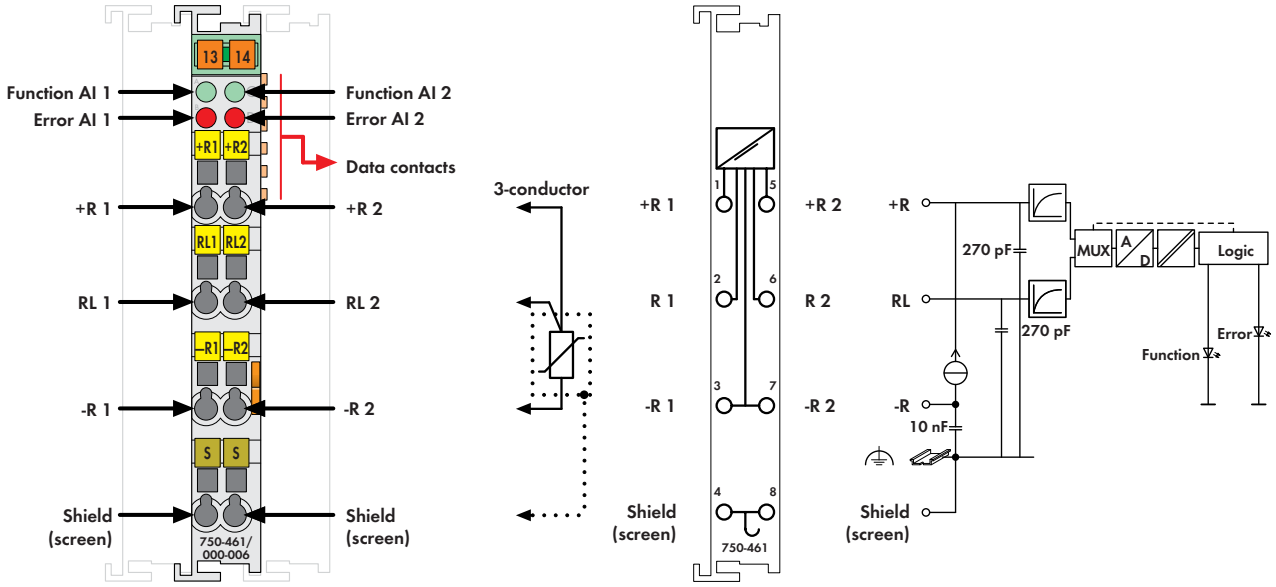


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The RTD (resistive temperature device) input module directly connects Pt or Ni resistance sensors.
The connection of 2- or 3-conductor sensors is possible.
The module automatically linearizes the entire temperature range.
A sensor error is indicated via red LED.
A green LED indicates readiness for operation and error-free communication with the buscoupler.
The shield (screen) is directly connected to the DIN rail.

All listed sensor types are supported by the configurable variation.
Set-up via WAGO-I/O-CHECK 2 software.

Other variations are available upon request:
Pt 100; Pt 200; Pt 500; Pt 1000; temperature range -200 °C ... + 850 °C;
Ni 100; Ni 100; temperature range -60 °C ... +250 °C and resistance measuring.

Technical data for the 750-461/020-000 model:
- Current consumption max (internal): 65 mA
- Sensor types: NTC 20 kOhm
- Temperature range: -30 °C ... +130 °C
- Measuring error: 0.5 K ... 3.0 K (dependent on temperature)
- Temperature coefficient: < +/- 0.002 %/K of full scale value
- Measured current typ.: 0.05 mA at 25 °C

Description	Item No.	Pack. Unit
2AI Pt 100/RTD	**750-461**	10[1]
2AI Pt 1000/RTD	**750-461/000-003**	1
2AI Pt 100/RTD S5 [2]	**750-461/000-200**	1
2AI Pt 100/free configurable	**750-461/003-000**	1
2AI Ni 100/RTD	**750-461/000-004**	1
2AI Ni 1000 TK6180/ RTD	**750-461/000-005**	1
2AI Ni 1000 TK5000/ RT	**750-461/000-009**	1
2AI Resistance Measur. 10R-1k2	**750-461/000-002**	1
2AI Resistance Measur. 10R-5k0	**750-461/000-007**	1
2AI NTC 20k	**750-461/020-000**	1
Differing technical data see text		
2AI Pt 100/RTD/T	**750-461/025-000**	1
(Operating temperature -20 °C ... +60 °C)		
2AI Pt 100/RTD (without connector)	**753-461**	10[1]
[1] Also available individually		
[2] Data format for S5 control with FB 251		

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	Miniature WSB Quick marking system		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

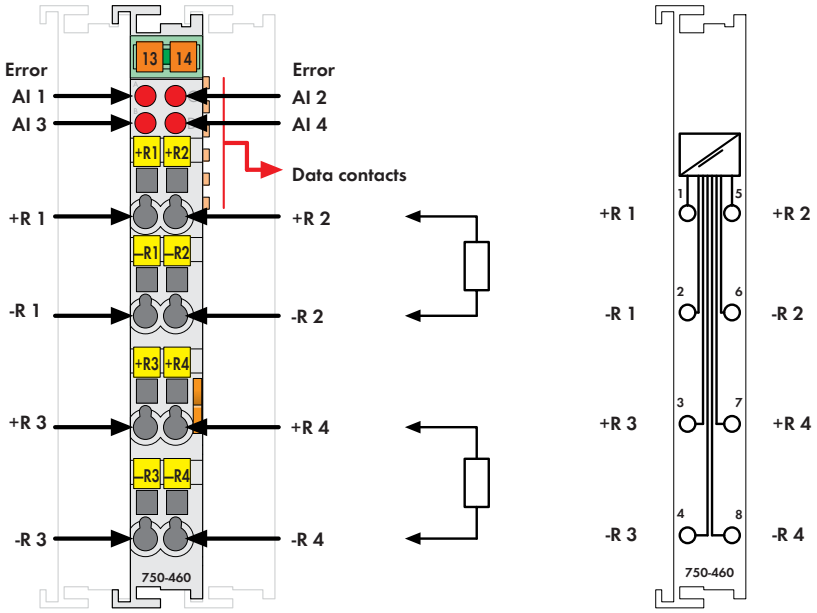
Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Number of inputs	2
Voltage supply	via system voltage DC/DC
Current consumption typ. (internal)	80 mA
Sensor types	Pt 100 (basic variation), optional variations available for Pt 200, Pt 500, Pt 1000, Ni 100, Ni 120, Ni 1000, resistance measuring
Sensor connection	3-wire connection (factory preset) or 2-wire
Temperature range	-200 °C ... + 850 °C (Pt)
	-60 °C ... +250 °C (Ni)
Resolution (over entire range)	0.1 °C
Conversion time	320 ms (per channel)
Response time (max.)	4 s
Measuring error (25°C)	< ± 0.2 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Isolation	500 V system/supply
Measuring current (typ.)	0.5 mA
Bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	52.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel Analog Input Module for RTDs



Delivered without miniature WSB markers

The RTD (resistive temperature device) input module allows the direct connection of Pt or Ni resistance sensors.

Only 2-conductor sensors can be connected.

The module automatically linearizes the entire temperature range.
A sensor error is indicated by a red LED.

Description	Item No.	Pack. Unit
4AI Pt 100/RTD	**750-460**	10[1]
4AI Pt 1000/RTD	**750-460/000-003**	1
4AI Ni 1000 TK6180/ RTD	**750-460/000-005**	1

[1] Also available individually

Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

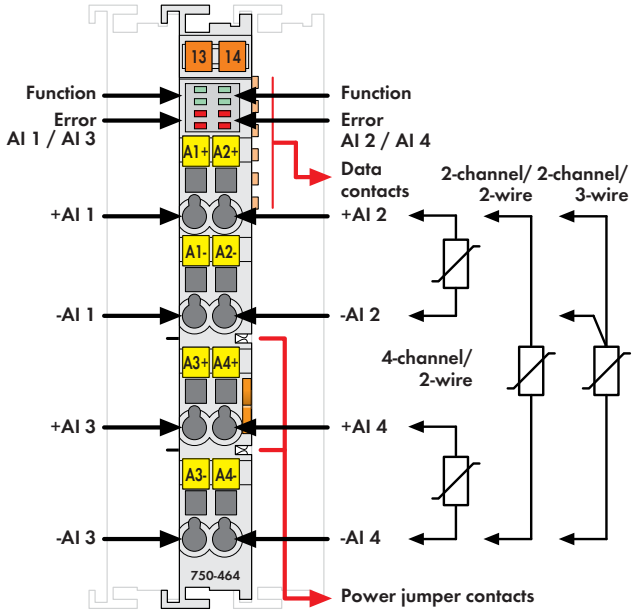
Approvals

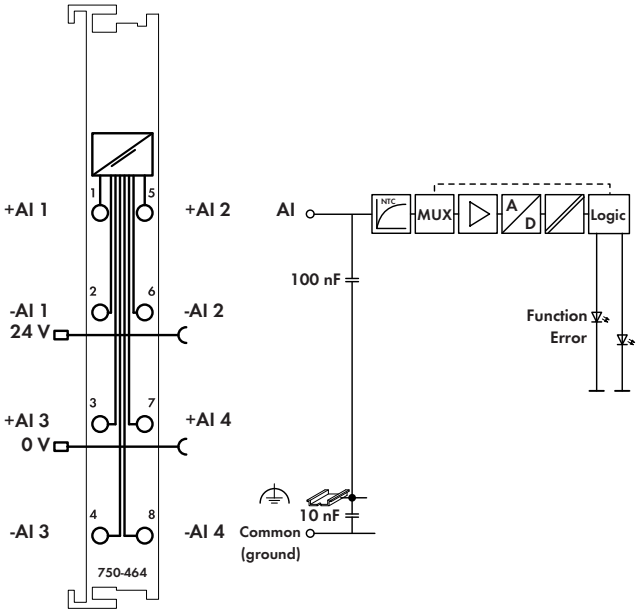
750 Series	
Conformity marking	CE
UL 508	

Technical Data

Number of inputs	4
Voltage supply	via system voltage DC/DC
Max. current consumption (internal)	65 mA
Sensor types	Pt 100 (basic variation), optional variations available for Pt 1000 and Ni 1000
Sensor connection	2-wire connection
Temperature range	-200 °C ... + 850 °C (Pt) -60 °C ... +250 °C (Ni)
Resolution (over entire range)	0.1 °C
Conversion time	250 ms
Measuring error (25 °C)	< ± 0.2 °C of the full scale value
Temperature coefficient	< ± 0.01 % / K of full scale value
Isolation	500 V system/supply
Measuring current (typ.)	0.5 mA
Bit width	4 x 16 bits data 4 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	51.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

2-/4-Channel Analog Input Module for RTDs





Delivered without miniature WSB markers

The RTD (resistive temperature device) input module directly connects Pt or Ni resistance sensors and potentiometers.
It can operate as a 2-channel (2- and 3-conductor technology) or 4-channel (2-conductor technology) module.
The module automatically linearizes the entire temperature range.
A sensor error is indicated by a red LED.
The module can be configured via WAGO-I/O-CHECK or GSD.
Multiple setting options and high accuracy stand out.

The 750-464/020-000 version may connect NTC sensors.

Technical data for the 750-464/020-000 model:
- Number of inputs: 4
- Sensor types: NTC 10 kOhm, NTC 20 kOhm
- Sensor connection: 2-conductor
- Temperature range: -30 °C ... +120 °C
- Measuring error: ≤ 2 K over the entire temperature range

Description	Item No.	Pack. Unit
2/4 AI RTD, configurable	**750-464**	1
4 AI NTC, configurable	**750-464/020-000**	1
Differing technical data see text		

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 Series	
Conformity marking	CE
UL 508	pending

Technical Data

Number of inputs	2 / 4 (default setting)
Voltage supply	via system voltage DC/DC
Current consumption typ. (internal)	50 mA
Sensor types	Pt 100 (default setting), Pt 200, Pt 500, Pt 1000, Ni 100, Ni 120, Ni 1000, Potentiometer, 10 Ohm ... 1.2 kOhm, 10 Ohm ... 5 kOhm
Sensor connection	2-conductor (default setting), 3-conductor (2-channel operation)
Temperature range	-200 °C ... +850 °C (Pt 100), -60 °C ... +300 °C (Ni 100, Ni 1000), -60 °C ... +250 °C (Ni 1000 TK5000), -80 °C ... +260 °C (Ni 120)
Resolution (over entire range)	0.1 °C
Conversion time	≤ 320 ms (per channel)
Response time (max.)	4 s
Measuring error (25 °C)	≤ 1 K in the entire temp. range, ≤ 0.5 K in the restricted temp. range
Temperature coefficient	≤ 20 ppm/K
Isolation	500 V system/supply
Measuring current (typ.)	≤ 350 µA
Bit width	4 (2) x 16 bits data, 4 (2) x 8 bits control/status (option)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	49 g
EMC CE-Immunity to interference	acc. to EN 61000-6-1 (2007), EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)

2-Channel Analog Input Module for Thermocouples

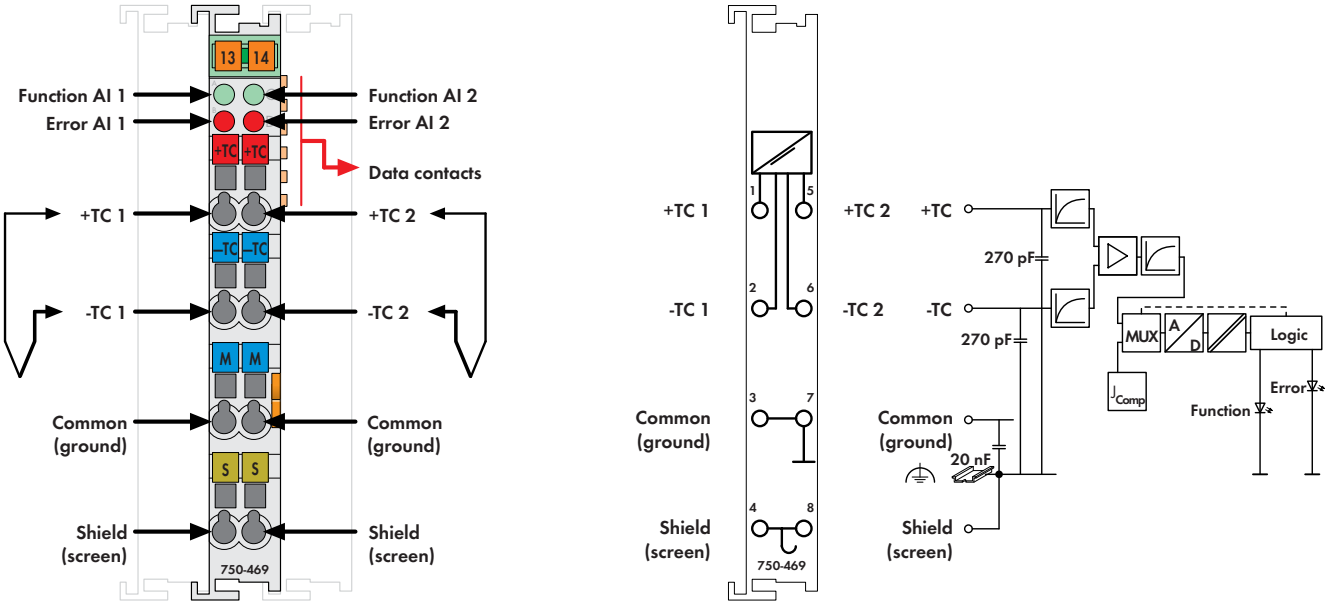


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The thermocouple input module allows the direct connection of two thermocouples.
The module automatically linearizes the entire temperature range.
Cold junction compensation is utilized to compensate for the clamping unit offset voltage over the 0-55 °C operating range.
A line break is indicated by a red LED. A green LED indicates readiness for operation and trouble-free communication with the buscoupler.
The shield (screen) is directly connected to the DIN rail.

- -100 °C ... +1370 °C; type K
- -50 °C ... +1700 °C; type S
- -100 °C ... +400 °C; type T
- -100 °C ... +1200 °C; type J
- -100 °C ... +1000 °C; type E
- -100 °C ... +900 °C; type L

All listed sensor types are supported by the configurable variation.
Set-up using the WAGO-I/O-Check 2 software.
Other variations are available upon request:
600 °C ... +1800 °C; type B, -100 °C ... +1300 °C; type N,
0 °C ... +1700 °C; type R, -25 °C ... +600 °C; type U, -120 mV ... +120 mV.

Description	Item No.	Pack. Unit
2AI Thermocouple/K/Diagn.	**750-469**	1
2AI Thermocouple/S/Diagn.	**750-469/000-001**	1
2AI Thermocouple/T/Diagn.	**750-469/000-002**	1
2AI ±120mV Diagn.	**750-469/000-003**	1
2AI Thermocouple/J/Diagn.	**750-469/000-006**	1
2AI Thermocouple/E/Diagn.	**750-469/000-008**	1
2AI Thermocouple/L/Diagn.	**750-469/000-012**	1
2AI Thermocouple/K/Diagn./S5 [1]	**750-469/000-200**	1
2AI Thermocouple/J/Diagn./S5 [1]	**750-469/000-206**	1
2AI Thermocouple/Free Config.	**750-469/003-000**	1
2AI Thermocouple/K/Diagn. (without connector)	**753-469**	1

[2] Data format for S5 control with FB 251

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

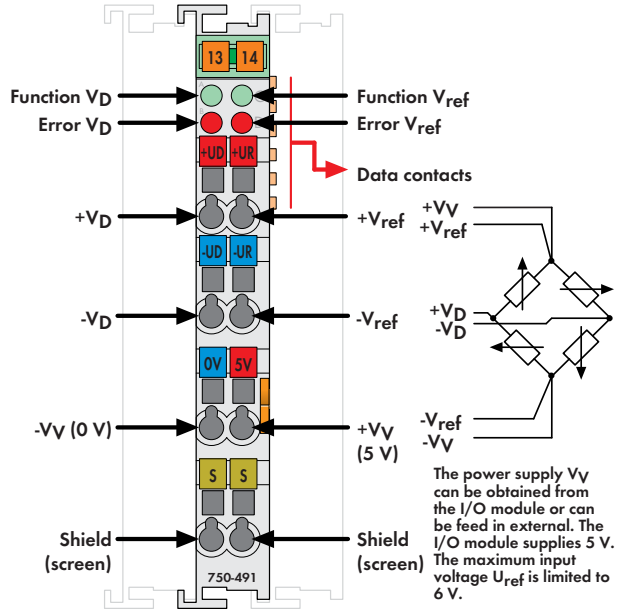
Approvals

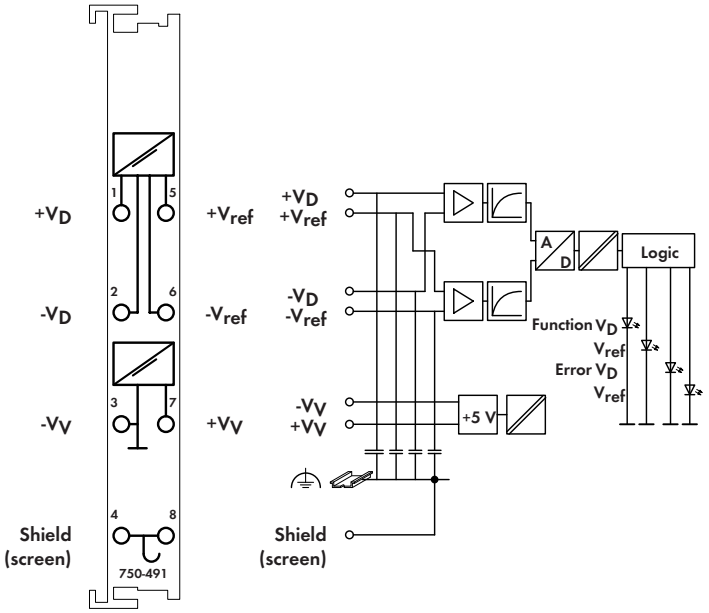
750 and 753 Series	
Conformity marking	CE
UL 508	
Ex UL ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
Ex EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Number of inputs	2
Voltage supply	via system voltage DC/DC
Max. current consumption (internal)	65 mA
Sensor types	Type K; -100 °C ... +1370 °C (basic variation), optional variations available for type J, B, E, N, R, S, T, U and L
Internal resistance	1 MΩ
Cold junction compensation	at each pair of terminal blocks
Resolution (over entire range)	0.1 °C
Conversion time	320 ms (both channels)
Measuring error (25 °C)	< ± 6 K
	(volt. input < ± 2 K, cold junct. < ± 4 K)
Temperature coefficient	< ± 0.2 K/K
Isolation	500 V system/supply
Bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	53.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

1-Channel Analog Input Module for Resistor Bridges (Strain Gauge)





Delivered without miniature WSB markers

The analog input module enables the direct connection of a resistor measurement bridge. The bridge voltage V_D and supply voltage V_{ref} of the bridge are digitized with a resolution of 16 bits.

The input channels for the resistor bridge are available as two 16 bit values for further processing. The result of measurement can be calculated by the formula: Measured value = V_D/V_{ref}.

Field and system levels are electrically isolated.

Description	Item No.	Pack. Unit
1AI DMS	**750-491**	1
1AI DMS / 125ms	**750-491/000-001**	1
Conversion time 125 ms, Filter 200 Hz		

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

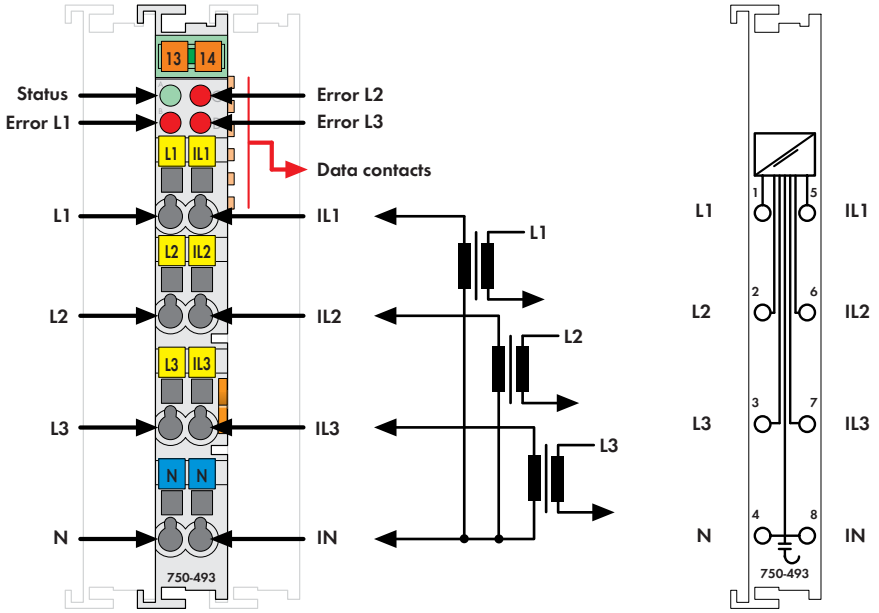
Approvals

750 Series	
Conformity marking	CE

Technical Data

Number of inputs	2, for one resistor bridge
Voltage supply	via system voltage DC/DC
Current consumption typ. (internal)	65 mA
Signal voltage V_D	-15 mV ... +15 mV
Signal voltage V_{ref}	+2 V ... +6 V
Internal resistance	> 200 kΩ (V_{ref}), > 1 MΩ (V_D)
Voltage supply Vv	5 V DC, 20 mA
Resolution	16 bits
Conversion time	500 ms
Measuring error	V_D: ± 30 µV; V_{ref}: ± 10 mV
Filter	50 Hz
Isolation	500 V system/supply
Bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	53 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

3-Phase Power Measurement Module



Delivered without miniature WSB markers

The 750-493 3-Phase Power Measurement Module measures the electrical data in a 3-phase supply network. The voltage is measured via network connection to L1, L2, L3 and N. The current of the three phases is fed to IL1, IL2, IL3 and IN via current transformers.
The 3-phase power measurement module transmits the root mean square values into the process image without requiring high computing power from the controller. For each phase, the effective power (P), the energy consumption (W) and the power factor (cos φ) are calculated by the 3-phase power measurement module using the root mean square values of all measured voltages (V) and currents (I).

For example, both the apparent power (S) and phase shift angle (φ) can be easily derived from these values. Therefore, the 3-phase power measurement module provides a comprehensive network analysis via the fieldbus. By means of values such as voltage, current, effective and apparent power consumption or load condition, the operator can regulate the supply to a drive or machine in the best possible way and protect the installation from damage/failure.

Description	Item No.	Pack. Unit
3-Phase Power Measurement Module (1 A)	**750-493**	1
3-Phase Power Measurement Module (5 A)	**750-493/000-001**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 Series	
Conformity marking	CE

Technical Data

Number of inputs	6 (3 voltage inputs, 3 current inputs)
Measuring voltage (max.)	500 VAC 3~
Input resistance voltage path (typ.)	500 kΩ
Measuring current (max.)	1 A (750-493)
	5 A (750-493/000-001)
Input resistance current path (typ.)	33 mΩ (750-493)
	6.8 mΩ (750-493/000-001)
Resolution	16 bits
Frequency range with activated DC filter	10 Hz ... 500 Hz
Frequency range with deactivated DC	0 Hz ... 500 Hz
Max. operating frequency	approx. 2 kHz
Signal form	any (in consideration of the frequency
	range and max. operating frequency)
Measuring error for current and voltage	0.5 % (of the upper range value)
Measuring procedure	True RMS with 64,000 samples/s
Measuring cycle time	configurable, preset at 50 ms per
	measured value
Measured values	Effective power, energy, power factor (cos φ)
Voltage supply	via system voltage internal bus (5 V)
Current consumption (internal)	115 mA
Isolation	1500 V system/supply
Bit width	2 x 48 bits data
	2 x 24 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	48.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)

Modular I/O System Overview

Analog Outputs

Function	2-Channel Analog Output	Page	4-Channel Analog Output	Page		
0 – 20 mA	750-552 / 753-552	213	750-553	215		
4 – 20 mA	750-554 / 753-554	213	750-555	215		
0/4 – 20 mA	750-563	214				
0 – 10 V	750-550 / 753-550	216	750-559 / 753-559	218		
	750-560 10 bits, 100 mW, 24 V	219				
± 10 V	750-556 / 753-556	216	750-557 / 753-557	218		
0 V/± 10 V	750-562	217				
Ex i Modules	750-585, Ex i 0–20 mA	282				

2-Channel Analog Output Module 0/4-20 mA

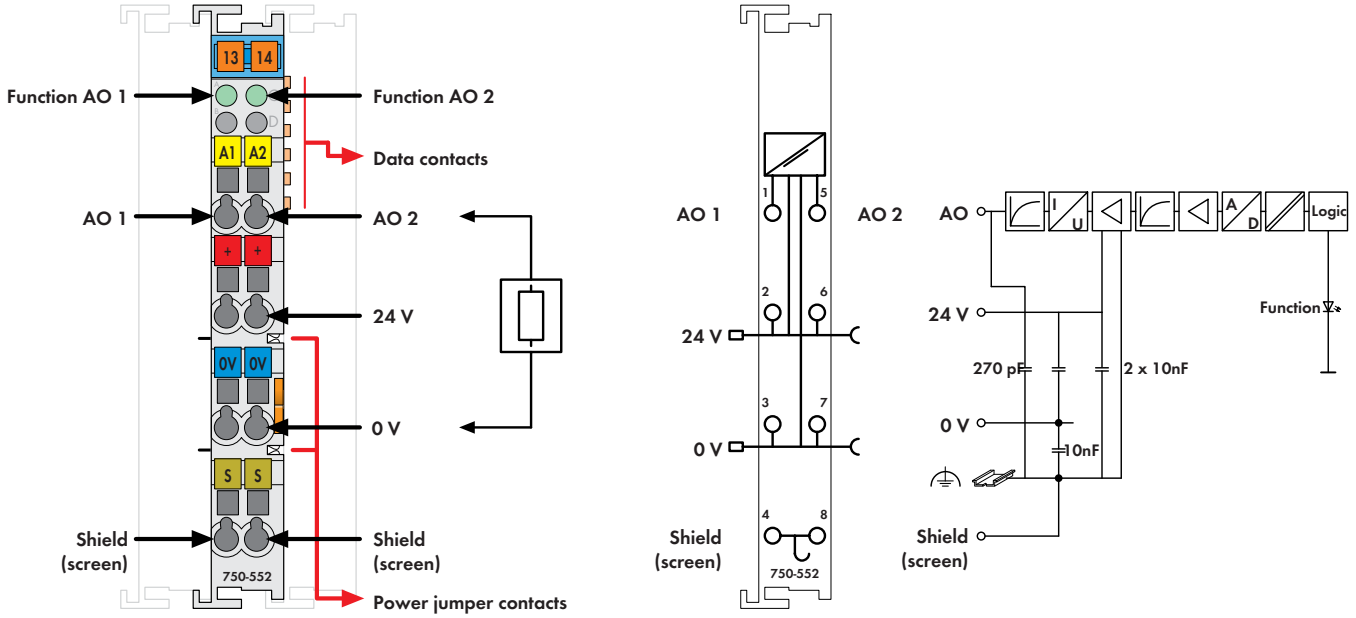


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The analog output module creates a standardized signal of 0-20mA or 4-20mA.

The output signal is electrically isolated and will transmit with a 12-bit resolution.

"Current" analog output modules use power derived from the field side (loop powered).

Description	Item No.	Pack. Unit
2AO 0-20mA	**750-552**	10[1]
2AO 4-20mA	**750-554**	10[1]
2AO 0-20mA/S5 [2]	**750-552/000-200**	1
2AO 0-20mA/T	**750-552/025-000**	1
(Operating temperature -20 °C ... +60 °C)		
2AO 4-20mA/S5 [2]	**750-554/000-200**	1
2AO 4-20mA/T	**750-554/025-000**	
(Operating temperature -20 °C ... +60 °C)		
2AO 0-20mA (without connector)	**753-552**	10[1]
2AO 4-20mA (without connector)	**753-554**	10[1]
[1] Also available individually		
[2] Data format for S5 control with FB 251		

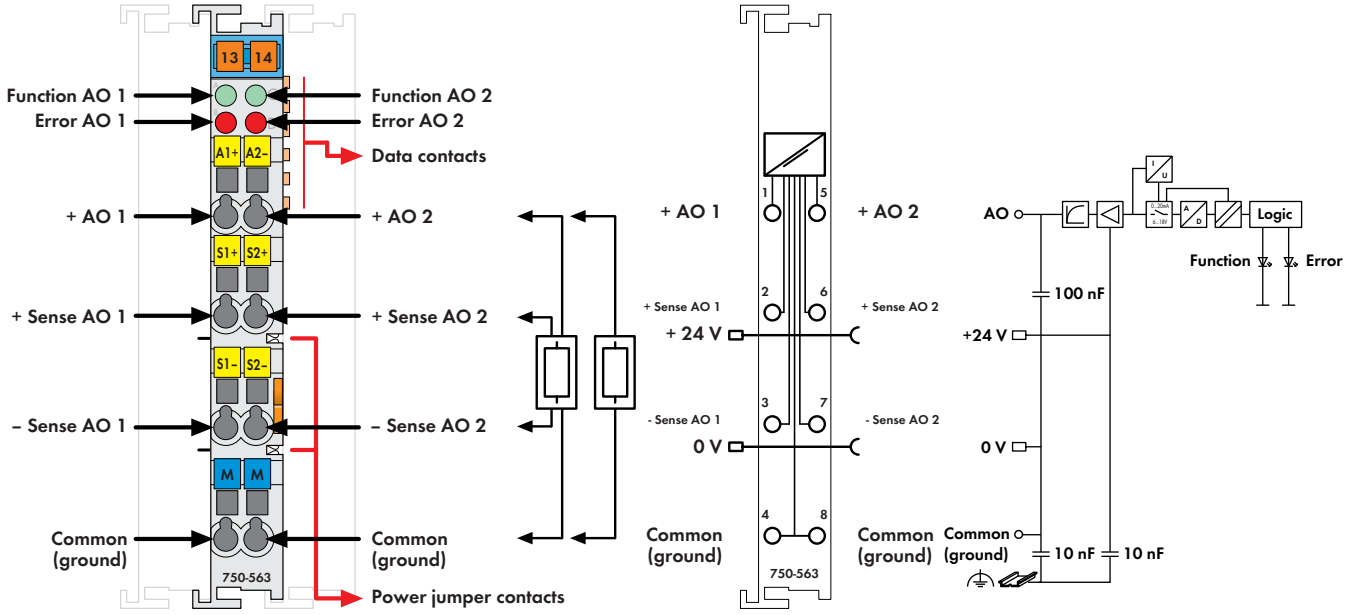
Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals	
750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data	
No. of outputs	2
Current consumption typ. (internal)	70 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Signal current	0 mA ... 20 mA (750-552, 753-552)
	4 mA ... 20 mA (750-554, 753-554)
Load impedance	< 600 Ω
Linearity	± 10 µA
Resolution	12 bits
Conversion time	approx. 2 ms
Measuring error (25 °C)	< ± 0.1 % of the full scale value
Temperature coefficient	< ± 0.01 % /K of the full scale value
	(750-552, 753-552)
	< ± 0,015 % /K of the full scale value
	(750-554, 753-554)
Isolation	500 V system/supply
Bit width	2 x 16 bits data
	2 x 8 bits control/status (option)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	53.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Analog Output Module, 0/4 ... 20 mA / 6 ... 18 V DC

16 bits, configurable



Delivered without miniature WSB markers

The 750-563 Analog Output Module generates output currents ranging from 0/4 to 20mA or output voltages in the range from 6 to 18V for the field. Output areas can be configured via WAGO-I/O-CHECK or GSD files.
The module has two short circuit-proof output channels and enables direct connection of two 2-wire actuators to AO 1 and ground or AO 2 and ground. The output of the signals occurs via AO 1 or AO 2. In addition, the sense lines from 4-wire actuators can be connected to -Sense AO1 and +Sense AO1 or -Sense AO2 and +Sense AO2.
Both output channels have a common ground potential.
The output signal is electrically isolated and transmitted with a resolution of 16 bits.
Both the internal system and the field side supply power the module.

Description	Item No.	Pack. Unit
2 AO 0/4-20mA / 6-18V DC 16 Bit	**750-563**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

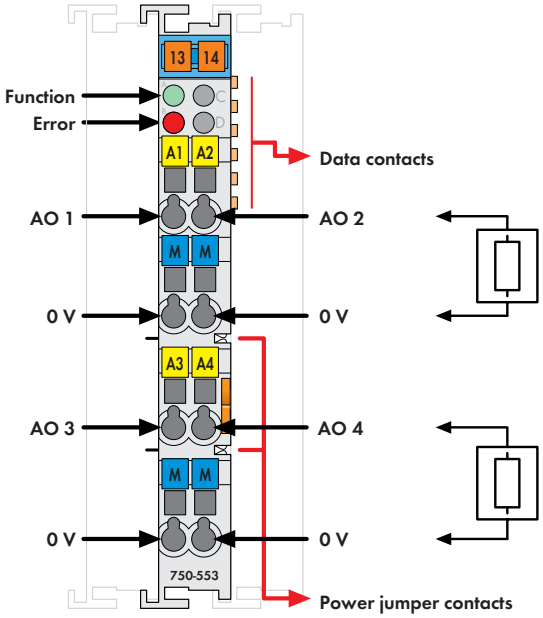
Approvals

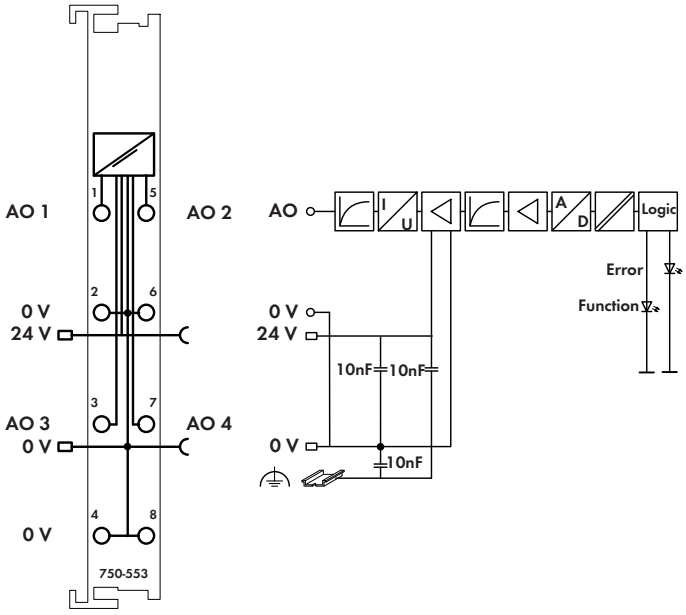
750 Series	
Conformity marking	CE
UL 508	

Technical Data

No. of outputs	2
Current consumption (internal)	80 mA ... 110 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Output voltage	6 V ... 18 V (switchable)
Output current	0/4 mA ... 20 mA (switchable)
Load impedance	> 1.8 kΩ (voltage output)
	< 500 Ω (current output)
Resolution	16 bits
Conversion time (typ.)	5 ms
Recovery time (typ.)	< 300 µs
Measuring error (25 °C)	< ± 0.05 % of the scale end value
Temperature coefficient	< ± 100 ppm
Isolation	500 V system/supply
Bit width	2 x 16 bits data
	2 x 8 bits control/status (option)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	53.5 g
EMC CE-Immunity to interference	acc. to EN 61131-2 (2003)
EMC CE-Emission of interference	acc. to EN 61131-2 (2003)

4-Channel Analog Output Module 0/4-20 mA





Delivered without miniature WSB markers

The analog output module creates a standardized signal of 0-20mA or 4-20mA.

The output signal is electrically isolated and will be transmitted with a resolution of 12 bits.

"Current" analog output modules use power derived from the field side (loop powered).

The output channels have one common ground potential.

Description	Item No.	Pack. Unit
4AO 0-20mA	**750-553**	1
4AO 4-20mA	**750-555**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

No. of outputs	4
Current consumption typ. (internal)	60 mA
Voltage supply	via system voltage DC/DC
Signal current	0 mA ... 20 mA (750-553)
	4 mA ... 20 mA (750-555)
Load impedance	either 0 ... 300 Ω or 300 ... 600 Ω
	(use same range of impedance
	for all loads!)
Resolution	12 bits
Conversion time (typ.)	10 ms
Recovery time (typ.)	100 ms
Measuring error (25 °C)	< ± 0.1 % of the full scale value
Temperature coefficient	< ± 0.01 % /K of the full scale value
Isolation	500 V system/supply
Bit width	4 x 16 bits data
	4 x 8 bits control/status (option)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	53.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Analog Output Module 0-10 V/±10V

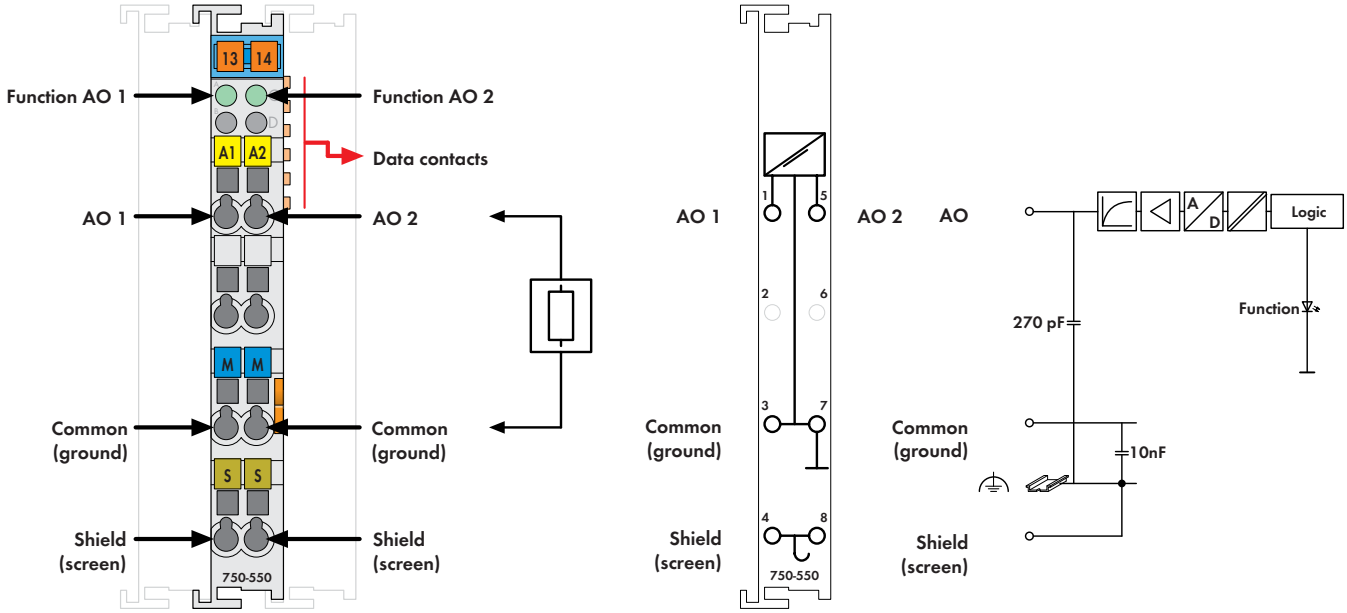


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The analog output module creates a standardized signal of 0-10V or ±10V.

The output signal is electrically isolated and will be transmitted with a resolution of 12 bits.

Outputs are short circuit protected.

The internal system supply is used for the power supply of the module.

The output channels have one common ground potential.

Description	Item No.	Pack. Unit
2AO 0-10V DC	**750-550**	10[1]
2AO ± 10V DC	**750-556**	10[1]
2AO 0-10V DC/S5 [2]	**750-550/000-200**	1
2AO ±10V DC/S5 [2]	**750-556/000-200**	1
2AO 0-10V DC (without connector)	**753-550**	10[1]
2AO ±10V DC (without connector)	**753-556**	10[1]

[1] Also available individually

[2] Data format for S5 control with FB 251

Accessories	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

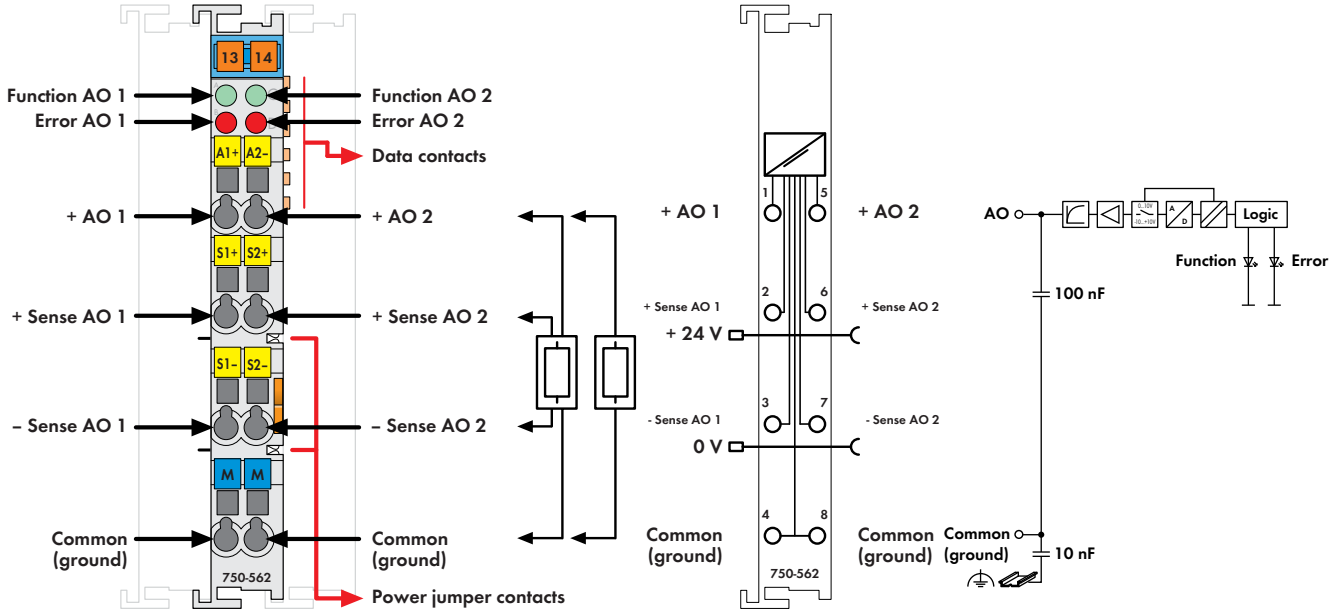
750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

No. of outputs	2
Current consumption (internal)	65 mA
Voltage supply	via system voltage DC/DC
Signal voltage	0 V ... 10 V (750-550, 753-550)
	±10 V (750-556, 753-556)
Load impedance	> 5 kΩ
Linearity	±10 mV
Resolution	12 bits
Conversion time	approx. 2 ms
Recovery time (typ.)	300 µs
Measuring error (25 °C)	< ± 0.1 % of the full scale value
Temperature coefficient	< ± 0.01 % /K of the full scale value
Isolation	500 V system/supply
Bit width	2 x 16 bits data
	2 x 8 bits control/status (option)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	50.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Analog Output Module, 0 ... 10 V / -10 ... +10 V DC

16 bits, configurable



Delivered without miniature WSB markers

The 750-562 Analog Output Module generates output voltages ranging from 0-10V or ±10V for the field.
Output areas can be configured via WAGO-I/O-CHECK or GSD files.
The module has two short circuit-proof output channels and enables the direct connection of two 2-wire actuators to AO 1 and ground or AO 2 and ground.
The output of the signals occurs via AO 1 or AO 2. In addition, the sense lines from 4-wire actuators can be connected to -Sense AO1 and +Sense AO1 or -Sense AO2 and +Sense AO2.
Both output channels have a common ground potential.
The output signal is electrically isolated and transmitted with a resolution of 16 bits.
The internal system supply powers the module.

The field power supply is only forwarded to the downstream I/O modules.

Description	Item No.	Pack. Unit
2 AO 0/+-10V DC 16 Bit	**750-562**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 Series	
Conformity marking	CE
UL 508	

Technical Data

No. of outputs	2
Current consumption (internal)	80 mA ... 170 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Signal voltage	0 V ... 10 V (switchable)
	-10 V ... +10 V (switchable)
Load impedance	> 5 kΩ
Resolution	16 bits
Conversion time (typ.)	5 ms
Recovery time (typ.)	< 300 µs
Measuring error (25 °C)	< ± 0.05 % of the scale end value
Temperature coefficient	< ± 100 ppm
Isolation	500 V system/supply
Bit width	2 x 16 bits data
	2 x 8 bits control/status (option)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	53.5 g
EMC CE-Immunity to interference	acc. to EN 61131-2 (2003)
EMC CE-Emission of interference	acc. to EN 61131-2 (2003)

4-Channel Analog Output Module ±10 V/0-10 V

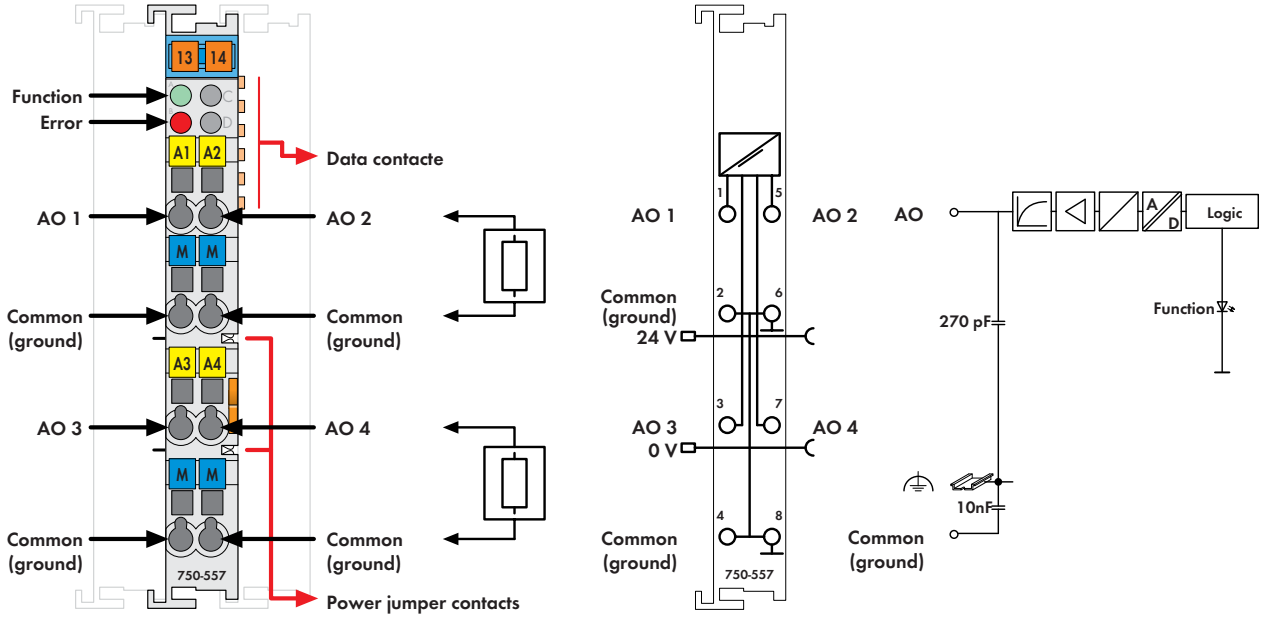


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The analog output module creates a standardized signal of ±10V or 0-10V.

The output signal is electrically isolated and will be transmitted with a resolution of 12 bits.

The system voltage supply is used for the power supply of the module.

The output channels of the module have one common potential.

Description	Item No.	Pack. Unit
4AO ± 10V DC	**750-557**	10[1]
4AO 0-10V DC	**750-559**	10[1]
4AO 0-10V DC/T	**750-559/025-000**	1
(Operating temperature -20 °C ... +60 °C)		
4AO ±10V DC (without connector)	**753-557**	10[1]
4AO 0-10V DC (without connector)	**753-559**	10[1]

[1] Also available individually

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

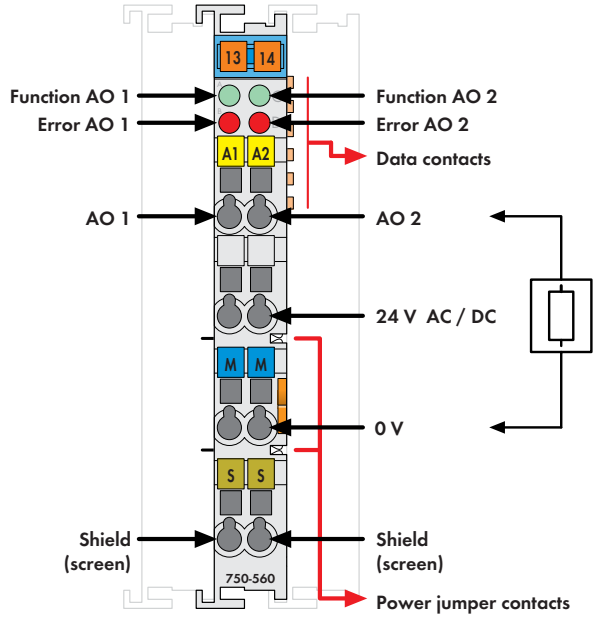
750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

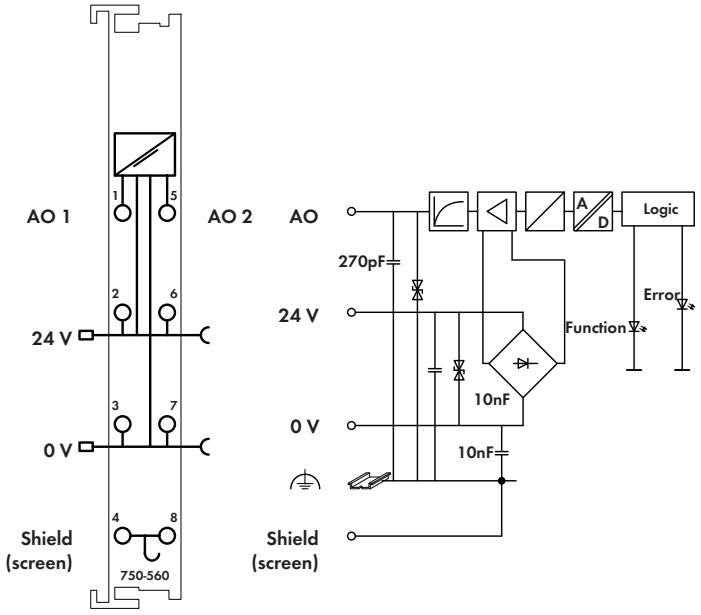
Technical Data

No. of outputs	4
Max. current consumption (internal)	125 mA
Voltage supply	via system voltage DC/DC
Signal voltage	±10 V (750-557, 753-557)
	0 V ... 10 V (750-559, 753-559)
Load impedance	> 5 kΩ
Resolution	12 bits
Conversion time (typ.)	10 ms
Recovery time (typ.)	100 ms
Measuring error (25 °C)	< ± 0.1 % of the full scale value
Temperature coefficient	< ± 0.01 % /K of the full scale value
Isolation	500 V system/supply
Bit width	4 x 16 bits data
	4 x 8 bits control/status (option)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	53.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Analog Output Module 0-10 V

10 bits, 10 mA





Delivered without miniature WSB markers

The analog output module creates a standardized signal of 0-10V.

The output signal is electrically isolated and will transmit with a 8-bit resolution.

Outputs are short circuit protected.

Each channel is equipped with a LED to indicate short-circuits or overloads ≥ 15mA.

The shield (screen) is directly connected to the DIN rail.

Both the internal system and field side supply are used to power the module.

The output channels have one common ground potential.

The analog outputs and the 24V supply have one common ground potential so that actuators such as servo drives can be connected using a 3-conductor cable.

Description	Item No.	Pack. Unit
2AO 0-10 V DC 10 Bit 10mA 24V	**750-560**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 Series

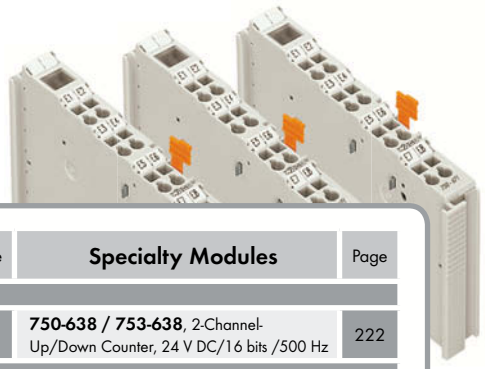
Conformity marking CE

Technical Data

No. of outputs	2
Current consumption (internal)	16 mA
Voltage via power jumper contacts	24 V AC/DC
Signal voltage	0 V ... 10 V
Load impedance	≥ 1 kΩ
Resolution	10 bits
Conversion time	approx. 10 ms
Measuring error (25 °C)	< ± 0.2 % of the full scale value
Temperature coefficient	< ± 0.02 % /K of the full scale value
Isolation	500 V system/supply
Bit width	2 x 16 bits data
	2 x 8 bits control/status (option)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	53.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 50081-1 (1993)

Modular I/O System Overview

Specialty Modules



Function	Specialty Modules	Page	Specialty Modules	Page
Counter Modules	**750-404 / 753-404** Up/Down Counter, 24 V DC, 100 kHz	221	**750-638 / 753-638**, 2-Channel-Up/Down Counter, 24 V DC/16 bits /500 Hz	222
Pulse Width Module	**750-511**, 2-Channel Pulse Width Module, 24 V DC, short-circuit protec., pos. switch.	223		
Distance and Angle Measurement Modules	**750-630** SSI Transmitter Interface	224	**750-631/000-004** Incremental Encoder Interface	225
	750-637, Incremental Encoder Interface	226	**750-635 / 753-635** Digital Impulse Interface	227
Serial Interface	**750-650 / 753-650** Serial Interface RS-232 C	228	**750-653 / 753-653** Serial Interface RS-485	229
	750-651 TTY Interface 20 mA Current Loop	230	**750-654** Data Exchange Module	231
	750-652 Serial Interface RS-232 C/RS-485	232		
KNX/EIB/TP1 Module	**753-646** KNX/EIB/TP1 Module	234		
DALI/DSI Master Module	**750-641** DALI/DSI Master Module	235		
RF Modules	**750-642** EnOcean Radio Receiver Module	236	**750-644** Bluetooth® RF-Transceiver	237
MP-Bus Master Module	**750-643** MP-Bus Master Module	238		
RTC Module	**750-640** RTC Module, Real-Time Clock	239		
AS-Interface Master Module	**750-655** AS-Interface Master	240		
IO-Link Master Module	**750-657** IO-Link Master	242		
Vibration Monitoring	**750-645**, 2-Channel Vibration Velocity/ Bearing Condition Monitoring VIB I/O	244		
Stepper Modules	**750-670** Stepper Controller RS-422, 24 V, 20 mA	246	**750-671** Stepper Controller 24 V, 1.5 A	247
	750-672 Stepper Controller 70 V, 7.5 A, 6 IN, 2 OUT	248	**750-673** Servo Stepper Controller 70 V, 7.5 A, 6 IN, 2 OUT	250
DC-Drive Controller	**750-636** DC-Drive Controller, 24 V, 5 A	252		
PROFIsafe Modules	**750-661/000-002** ; **753-661/000-002** PROFIsafe V2, 4 FDI 24 V	256	**750-662/000-002 ; 753-662/000-002** PROFIsafe V2, 8 FDI 24 V	257
	750-667/000-002 ; **753-667/000-002** PROFIsafe V2, 4 FDI/4 FDO 24 V/2 A	258	**750-660/000-001**, PROFIsafe, 8 FDI 24 V	259
	750-665/000-001, PROFIsafe, 4 FDO 0.5 A, 4 FDI 24 V	260		

Up/Down Counter 24 V DC, 100 kHz

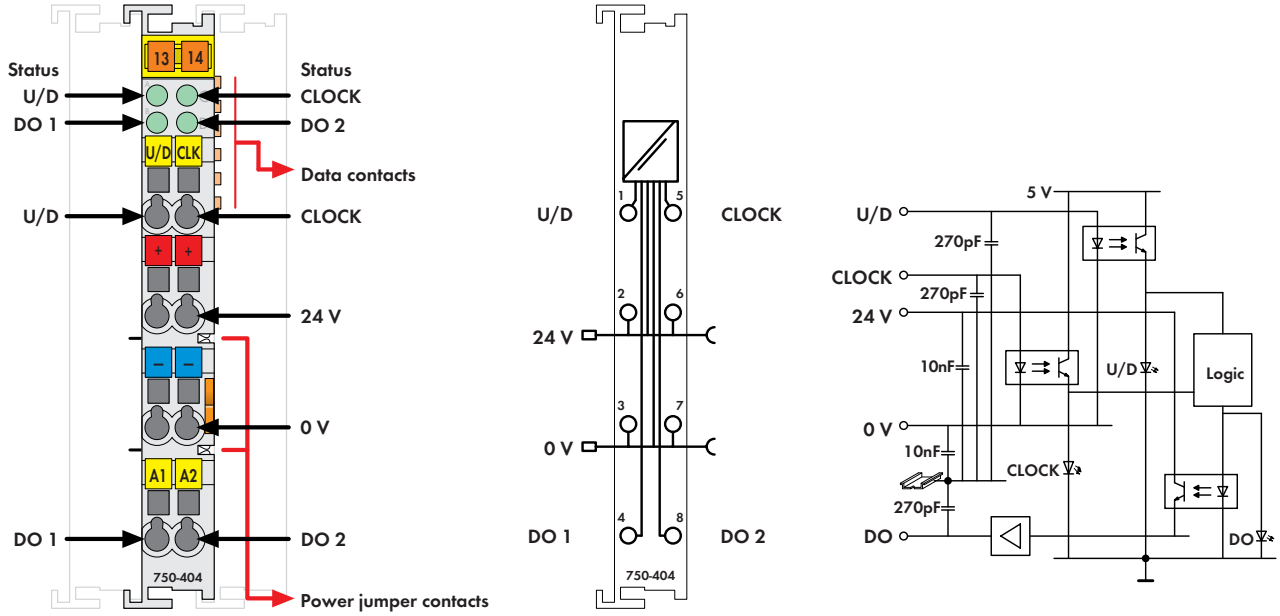


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The up/down counter is capable of counting binary pulses of 24VDC and then transmits the data to the fieldbus.

The U/D input allows either Up or Down counting.

Digital outputs DO 1 and DO 2 can be set using the control byte.

The counter can be set or reset with the control byte.

A counter lock-out is also possible.

Differing technical data 750-404/000-003
- Measuring error < ± 0.2 % (measuring range 0.1 Hz ... 10 kHz)
- Measuring error < ± 1.5 % (measuring range 0.1 Hz ... 100 kHz)

Differing technical data 750-404/000-005
- Switching rate max. : 5 kHz
- Counter depth: 2 x 16 bits
- Internal bit width: 2 x 16 bits data

Description	Item No.	Pack. Unit
Up/Down Counter/100 kHz	**750-404**	1
Up Counter/Enable Input	**750-404/000-001**	1
Counter with enable input (Gate), U/D input serves as Gate input		
Peak Time Counter	**750-404/000-002**	1
Frequency Counter 0.1 Hz - 100 kHz	**750-404/000-003**	1
Frequency measurement, U/D input serves as Gate input		
Up/Down Counter/Switch Output	**750-404/000-004**	1
Counter with digital outputs (output switches depending on the count of the counter)		
2 Up Counter/16 Bit / 5 kHz	**750-404/000-005**	1
U/D input serves as Clock input of the 2nd counter		
Up/Down Counter, 100 Hz (without connector)	**753-404**	1

Accessories	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

No. of outputs	2
No. of counters	1
Current consumption (internal)	70 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Output current	0.5 A short-circuit protected
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Switching frequency (max.)	100 kHz
Input current (typ.)	5 mA
Counter depth	32 bits
Isolation	500 V system/supply
Internal bit width	32 bits data
	8 bits control/status
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	60 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Up/Down Counter 24 V DC, 500 Hz

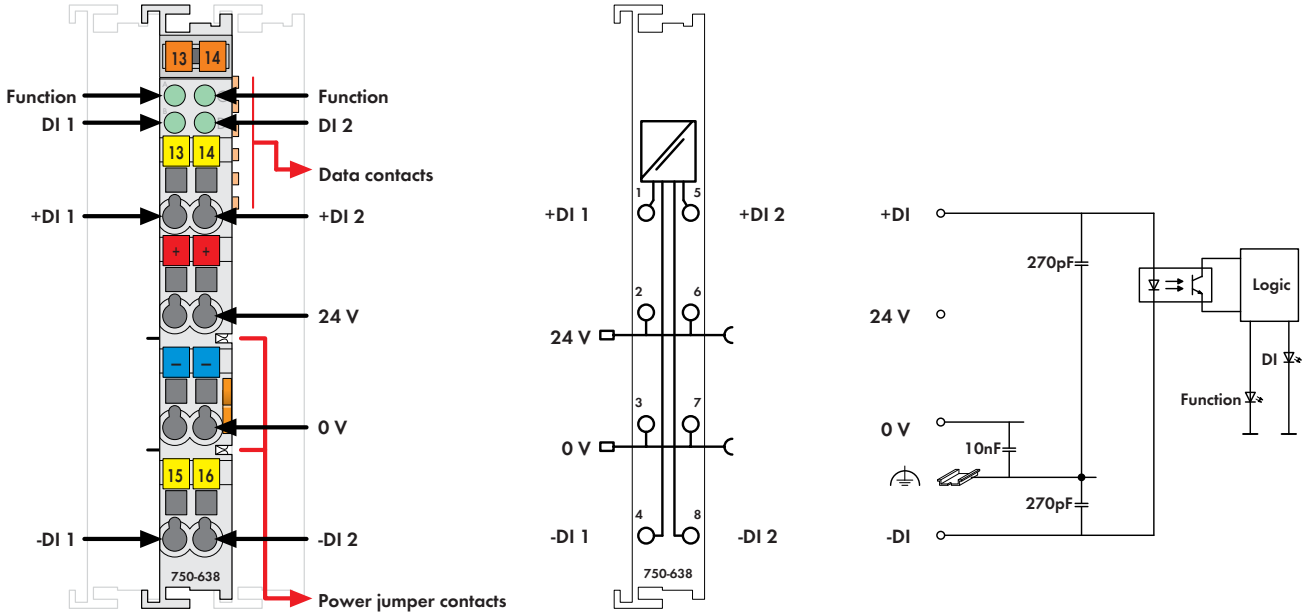


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The up/down counter has two counters that allow independent counting of 24VDC binary pulses. The data is then transmitted to the control via the fieldbus.

The counters can be set or reset with the control bytes. A counter lock-out is also possible.

The control bytes also determine the direction of counting.

Description	Item No.	Pack. Unit
2-Channel Up/Down Counter, 500 Hz	**750-638**	1
2-Channel Up/Down Counter, 500 Hz/T (Operating temperature -20 °C ... +60 °C)	**750-638/025-000**	
2-Channel Up / Down Counter, 500 Hz (without connector)	**753-638**	1

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

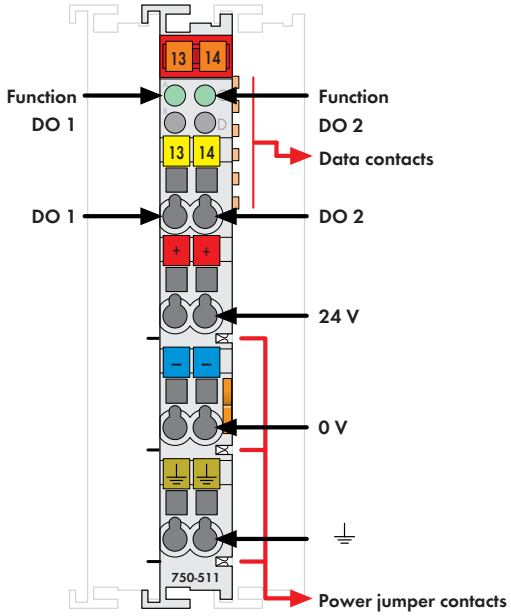
Approvals

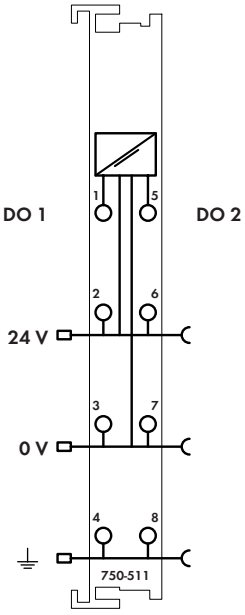
750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
	BR-Ex nA II T4

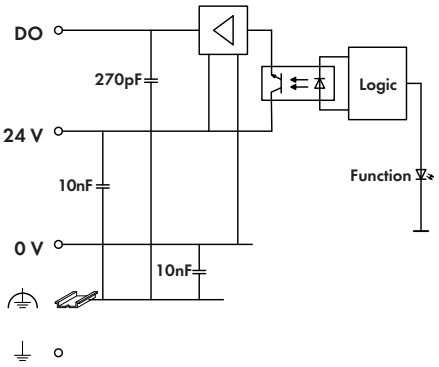
Technical Data

No. of counters	2
Current consumption typ. (internal)	10 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Signal voltage (0)	-3 V ... +5 V DC (acc. to EN 61131 type 1)
Signal voltage (1)	15 V ... 30 V DC (acc. to EN 61131 type 1)
Common mode voltage (max.)	500 V DC
Minimum pulse width (0, 1)	1 ms
Input filter	0.2 ms
Sensor connection	differential
Switching frequency (max.)	500 Hz
Counter depth	16 bits
Isolation	500 V system/supply
Current consumption typ. (field side)	8 mA
Internal bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	58 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

2-Channel Pulse Width Output Module 24 V DC







Delivered without miniature WSB markers

This output module is able to modulate an output with a resolution of 16 bits, with a constant frequency. The field side is electrically isolated from the bus system.

It can also be configured to modulate frequency with a constant duty cycle. Frequency and pulse width cannot be modulated simultaneously.

Outputs are short-circuit-protected.

Actuators with a ground (earth) wire may be directly connected to the module.

Description	Item No.	Pack. Unit
2DO 24V DC 0.1A/Pulse Width	**750-511**	1
2DO 24V DC 0.1A/Frequency/2kHz	**750-511/000-001**	1
Frequency counter, pulse frequency/pulse duty factor 2 Hz ... 2 kHz / 50 %		
2DO 24V DC 0.1A/Pulse Width/100Hz	**750-511/000-002**	1
Pulse frequency 100 Hz		

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

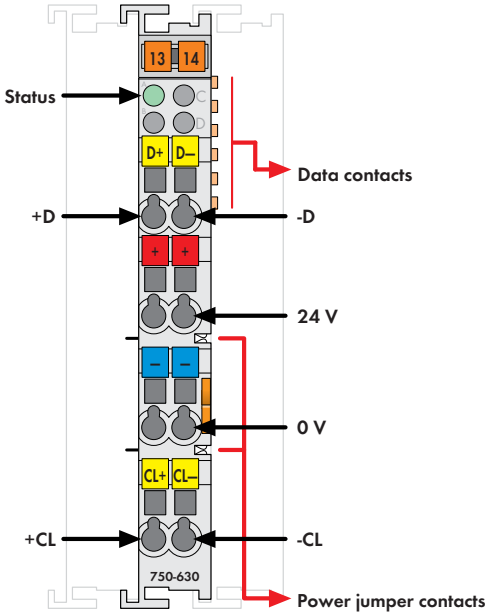
Approvals

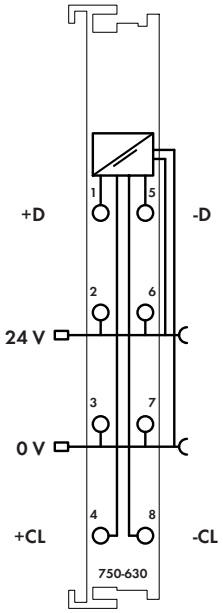
750 Series	(Approvals for product variations upon request)
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4

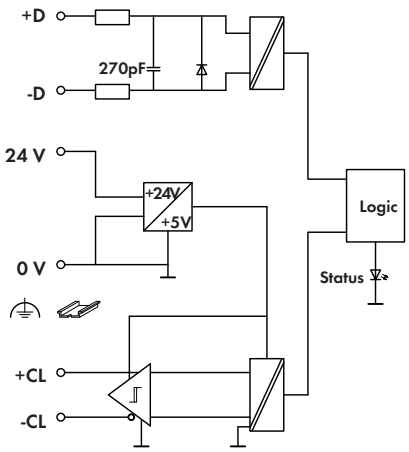
Technical Data

No. of outputs	2
Current consumption (internal)	70 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Output current	0.1 A short-circuit protected
Type of load	resistive, inductive
Pulse frequency	250 Hz
Pulse duty factor	0 % ... 100 %
Resolution	10 bits
Isolation	500 V system/supply
Current consumption typ. (field side)	15 mA
Internal bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	53.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

SSI Transmitter Interface







Delivered without miniature WSB markers

This module is an SSI interface for the direct connection to an SSI transmitter (for encoder devices, etc.).

After the interface has given a clock pulse to the sensor, the interface reads the incoming data and transmits it directly in the form of a data word into the process image of the PLC or PC. It is possible to factory adjust different operating modes, transfer frequencies and bit widths by means of the control register.

The power supply for the transmitter is derived internally from the power jumper contacts.

Description	Item No.	Pack. Unit
SSI/ 24Bit/ 125kHz/ Gray	**750-630**	4[1]
SSI/ 24Bit/ 125kHz/ Bin	**750-630/000-001**	1
SSI/ 24Bit/ 250kHz/ Bin	**750-630/000-002**	1
SSI/ 24Bit/ 125kHz/ Gray/ Status	**750-630/000-004**	1
SSI/ 15Bit/ 125kHz/ Gray/ Status	**750-630/000-005**	1
SSI/ 24Bit/ 250kHz/ Gray	**750-630/000-006**	1
SSI/ 24Bit/ 83kHz/ Gray/ Status	**750-630/000-007**	1
SSI/ 25Bit/ 125kHz/ Gray	**750-630/000-008**	1
SSI/ 13Bit/ 250kHz/ Bin	**750-630/000-009**	1
SSI/ 25Bit/ 125kHz/ Bin	**750-630/000-011**	1
SSI/ 13Bit/ 125kHz/ Gray	**750-630/000-012**	1
SSI/ 29Bit/ 125kHz/ Bin	**750-630/000-013**	1
SSI/ Configurable	**750-630/003-000**	1

[1] Also available individually

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

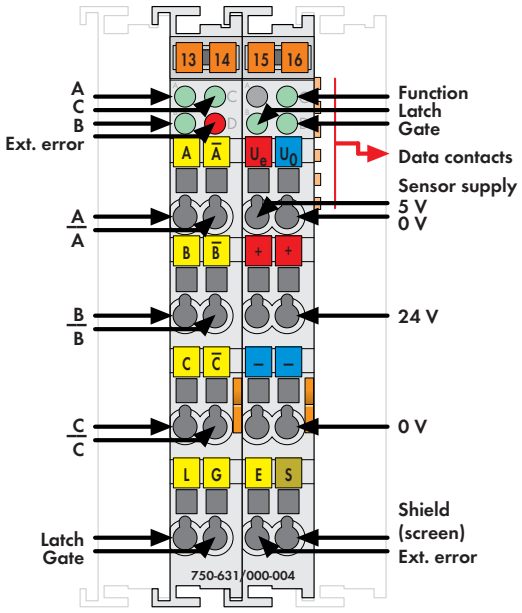
Approvals

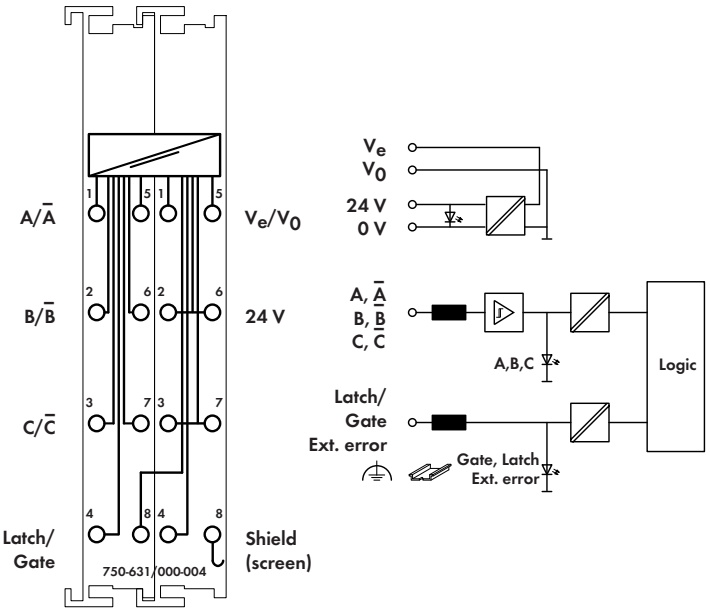
750 Series	(Approvals for product variations upon request)
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 50021	II 3 G EEx nA II T4

Technical Data

Sensor connection	In + D, -D / Out + Cl, - Cl
Current consumption typ. (internal)	85 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Sensor supply	24 V DC via power jumper contacts
Baud rate	125 kHz (max. 1 MHz)
serial input	32 bits (bit width)
Signal output	differential signal (RS 422)
Signal input	differential signal (RS 422)
Code	Graycode
Isolation	500 V system/supply
Internal bit width	1 x 32 bits
	1 x 8 bits control/status (option)
	(24 bits data, 8 bits reserved)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	46.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

Incremental Encoder Interface





Delivered without miniature WSB markers

This module is an interface for the connection of any incremental encoder (with line driver outputs).
A 16-bit counter with quadrature encoder interface as well as a 16-bit latch for the zero impulse can be read, set, or enabled. The count of the counter will be transmitted fast and interference-free over the fieldbus to the PC, PLC, or NC.
A counter lock-out is possible using input G.
The module must be powered using an external 24VDC power supply. It is then possible to supply the encoder with 24VDC, or alternatively with 5VDC derived internally from the terminations (V_e/V_0).
The shield (screen) is directly connected to the carrier rail.

Description	Item No.	Pack. Unit
Incremental Encoder Interface RS-422	**750-631/000-004**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

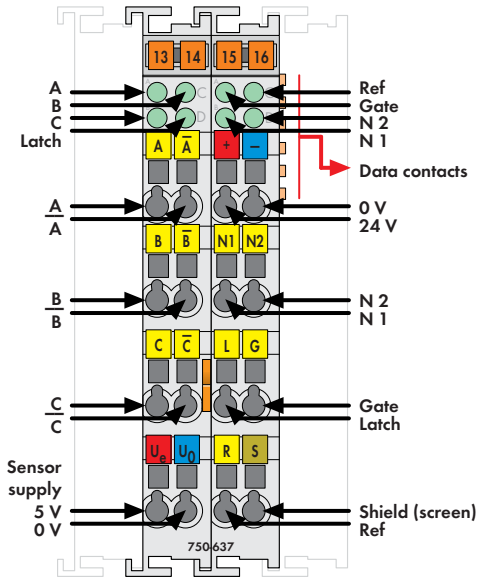
Approvals

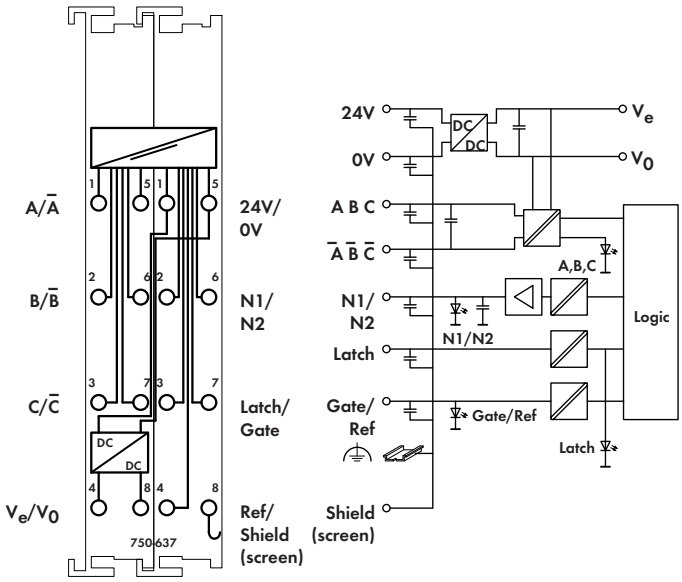
750 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 50021	II 3 G EEx nA II T4

Technical Data

Sensor connection	A, Ā, B, B̄, C, C̄
Current consumption (internal)	50 mA
Counter	16 bits binary
Max. operating frequency	1000 kHz
Quadrature decoder	4-fold report
Zero impulse latch	16 bits
Commands	read, set, enable
Voltage supply	24 V DC (-15 % ... +20 %)
Current consumption (typ.)	6 mA without sensor
Operating voltage of sensor	5 V DC
Sensor max. output current	200 mA
Signal voltage (0)	V_{ABC} = 0 V, $V_{\overline{ABC}}$ = 5 V
	Latch, Gate ≤ 5.0 V
	Ext. error V ≥ 5.0 V or input open
Signal voltage (1)	V_{ABC} = 5 V, $V_{\overline{ABC}}$ = 0 V
	Latch, Gate ≥ 15.0 V
	Ext. error V < 0.5 V
Isolation	500 V system/supply
Internal bit width	1 x 32 bits data
	1 x 8 bits control/status
	1 x 8 bits reserved
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	106.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

Incremental Encoder Interface





Delivered without miniature WSB markers

This module is an interface for any incremental encoder with a RS-422 connection.

A counter with quadrature decoder as well as a latch for the zero impulse can be read or enabled by the control. The control can set the counter or transmit the counter value to the Latch. As an alternative this can also be done using input “C” or “Latch”.

The frequency data is automatically acquired and can also be transmitted to the control.

A counter lock-out is possible using input G. Input “Ref” can be used to activate the initial point “C” function.

The outputs N1 and N2 indicate whether the counter value is within a defined range of values. The range can be adjusted.

The module must be powered using an external 24VDC power supply. It is then possible to supply the encoder with 24VDC, or alternatively with 5VDC derived internally from the terminations (Ve/V0).

The shield (screen) is directly connected to the carrier rail.

Description	Item No.	Pack. Unit
Incremental Encoder Interface	**750-637**	2[1]
Incremental Encoder Interface 24 V/32 Bit differential	**750-637/000-001**	1
Incremental Encoder Interface 24 V/32 Bit single ended	**750-637/000-002**	1
Incremental Encoder Interface 24 V/32 Bit single ended/cam outputs	**750-637/000-004**	1

[1] Also available individually

Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

750 Series	(Approvals for product variations upon request)
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
	BR-Ex nA II T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Sensor connection	A, Ā, B, B̄, C, C̄
Current consumption (internal)	110 mA
Counter	32 bits binary
Max. operating frequency	250 kHz
Quadrature decoder	4-fold report
Zero impulse latch	32 bits
Commands	read, set, enable
Voltage supply	24 V DC (-15 % ... +20 %)
Current consumption (typ.)	35 mA without load
Operating voltage of sensor	5 V DC
Sensor max. output current	300 mA
Internal bit width	1 x 32 bits data
	1 x 8 bits control/status
Digital outputs (N1, N2)	
Output voltage	24 V DC
Output current (max.)	0.5 A short-circuit protected
Digital inputs (Latch, Gate, Ref)	
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input current (typ.)	Latch 5 mA, Gate 7 mA, Ref. 7 mA
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	100 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

Digital Impulse Interface

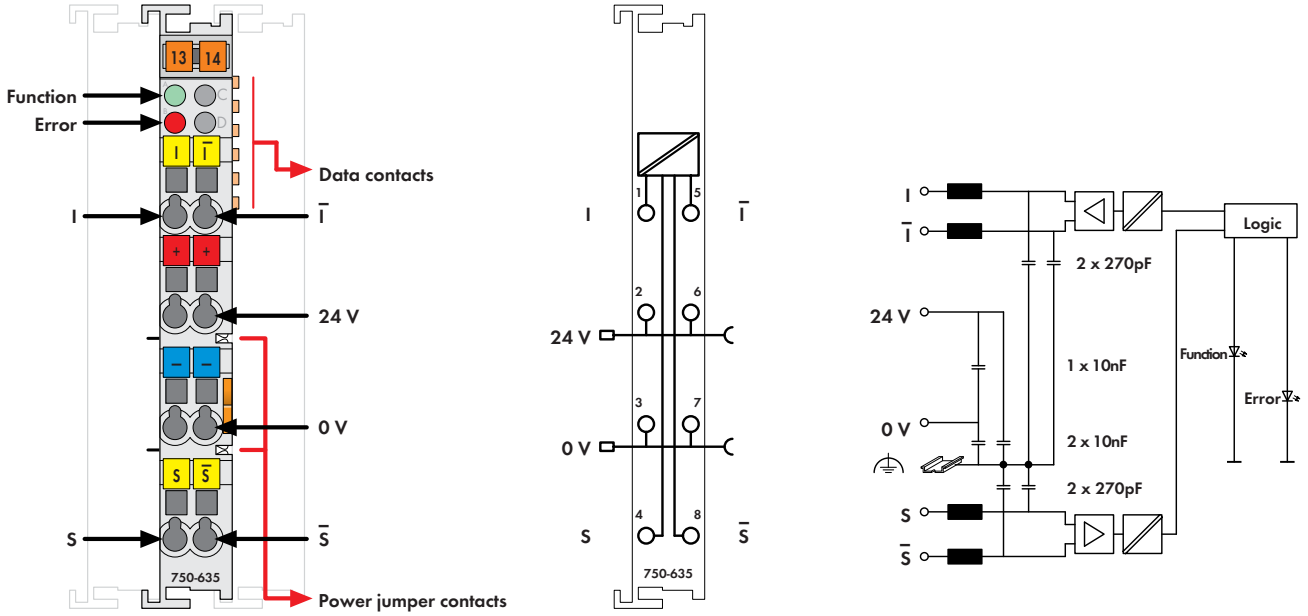


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The digital impulse interface is designed for the connection of magnetostrictive distance measurement sensors with a start/stop interface. After receiving a read pulse, these sensors deliver a time-delayed reply impulse. The time delay is proportional to the sensor distance.

Each sensor may have up to four position transmitters (permanent magnets). Their position data can be accessed serially by the control. The position data is stored in the process image of the fieldbus coupler as a 24-bit value.

The parameterization of the ultrasonic speed and the transmission points is done via the control byte. The parameters can be changed during operation.

The transmission of the impulses is done with RS-422 differential drivers which guarantees trouble-free data transmission.

Distance sensors with the following features can be used: Start/Stop interface with RS-422 differential signals, sensor supply 24V, manufacturer: e.g. Balluff

Description	Item No.	Pack. Unit
Digital Impulse Interface	**750-635**	1
Digital Impulse Interface (without connector)	**753-635**	1

Accessories

	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
	BR-Ex nA II T4

Technical Data

Sensor connection	Start/Stop; Init; Vv; ground connection of the shield via the housing of the sensor
Number of inputs	1
Current consumption (internal)	45 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Data transmission	RS 422
Signal output	differential signal (RS-422)
Signal input	differential signal (RS-422)
Resolution	1 µm
Hysteresis	depends on the distance sensor
Update time	2 ms
Distance sensor length	≤ 4 m
Line length (max.)	500 m
Isolation	500 V system/supply
Internal bit width	1 x 24 bits data
	1 x 8 bits control/status
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

Serial Interface RS-232 C

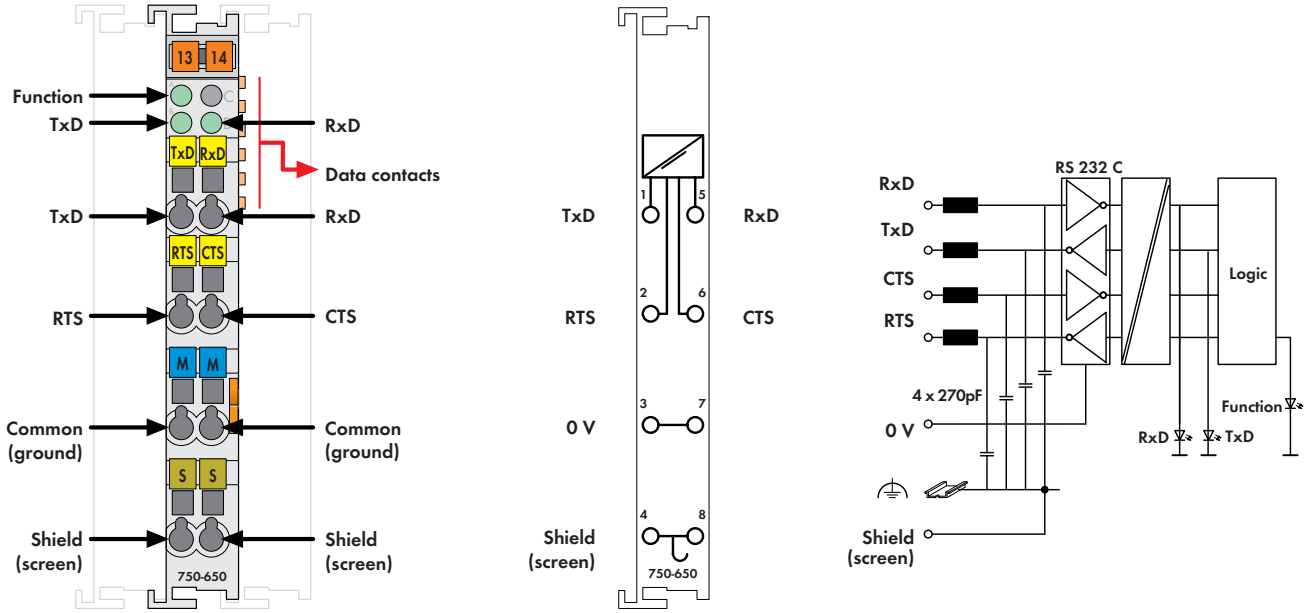


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

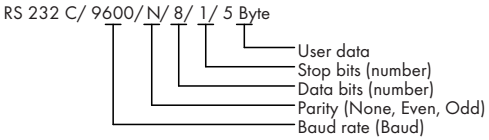
This interface allows the connection of any device which is equipped with a RS-232 C serial interface.

The interface works in accordance with the TIA/EIA-232-F, CCITT V.28/DIN 66259-1 standard.

The connected device may directly communicate over the fieldbus coupler with the control unit. The active communication channel works independently of the higher-level fieldbus system and allows full duplex operationup to 19200baud.

The RS-232 C interface guarantees high interference immunity because of the electrically isolated signals.

The shield (screen) is directly connected to the carrier rail.



Description	Item No.	Pack. Unit
RS-232 C/ 9600/ N/ 8/ 1	**750-650**	1
RS-232 C/ 9600/ N/ 8/ 1/ 5 bytes	**750-650/000-001**	1
RS-232 C/ 9600/ E/ 7/ 2	**750-650/000-002**	1
RS-232 C/ 4800/ E/ 7/ 1	**750-650/000-004**	1
RS-232 C/ 9600/ E/ 8/ 1	**750-650/000-006**	1
RS-232 C/ 2400/ E/ 8/ 1	**750-650/000-009**	1
RS-232 C/ 19200/ N/ 8/ 1	**750-650/000-010**	1
RS-232 C/ 19200/ E/ 8/ 1	**750-650/000-011**	1
RS-232 C/ 2400/ N/ 8/ 1	**750-650/000-012**	1
RS-232 C/ 4800/ E/ 7/ 2	**750-650/000-013**	1
RS-232 C/ 2400/ E/ 7/ 2	**750-650/000-014**	1
RS-232 C/ 4800/ E/ 8/ 1	**750-650/000-015**	1
RS-232 C/ 9600/ O/ 7/ 2/ 5 bytes	**750-650/000-016**	1
RS-232 C/ Configurable	**750-650/003-000**	1
RS-232 C Interface (without connector)	**753-650**	1

Accessories	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Transmission channels	1 TxD / 1 RxD, full duplex
Baud rate	9600 baud (factory preset)
	1200 ... 19200 baud
Bit skew	< 3 %
RS-232 line length (max.)	15 m
Buffer	128 bytes in/16 bytes out
Max. current consumption (internal)	55 mA
Voltage supply	via system voltage DC/DC
Isolation	500 V system/supply
Internal bit width	1 x 24 bits in/out (3 bytes user data)
	1 x 8 bits control/status
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

Serial Interface RS-485

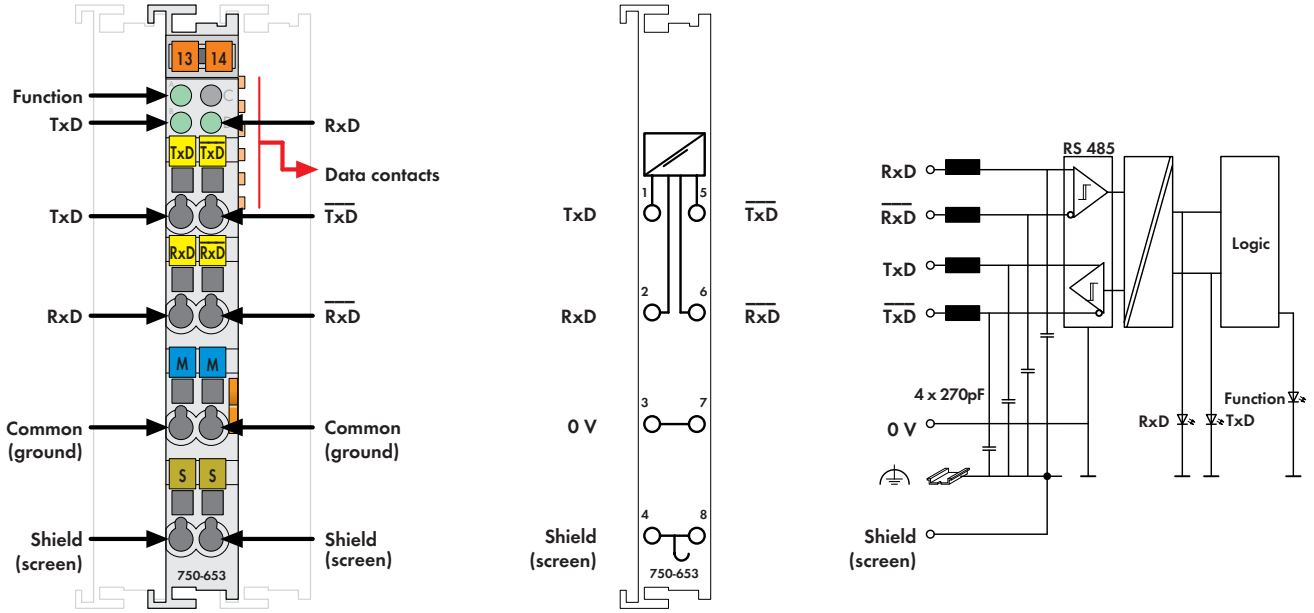


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

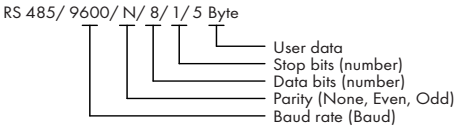
This interface allows the connection of any device which is equipped with a RS-485 serial interface.

The interface works inaccordance with the TIA/EIA-485-A, DIN 66259 standard.

The connected device may communicate over the fieldbus coupler with the control unit directly. The active communication channel works independently of the higher-level fieldbus system and allows full duplex operation up to 19200 baud.

The RS-485 interface guarantees high interference immunity because of the electrically isolated signals.

The shield (screen) is directly connected to the carrier rail.



Description	Item No.	Pack. Unit
RS-485/ 9600/ N/ 8/ 1	**750-653**	1
RS-485/ 9600/ E/ 7/ 2	**750-653/000-001**	1
RS-485/ 9600/ E/ 8/ 1	**750-653/000-002**	1
RS-485/ 19200/ N/ 8/ 1/ 5 bytes	**750-653/000-006**	1
RS-485/ 2400/ N/ 8/ 1	**750-653/000-007**	1
RS-485 / configurable	**750-653/003-000**	1
RS-485 / Configurable/T	**750-653/025-000**	1
(Operating temperature -20 °C ... +60 °C)		
RS-485/ 9600/N/8/1/5 bytes/T	**750-653/025-018**	1
(Operating temperature -20 °C ... +60 °C)		
RS-485/ 9600/ N/ 8/ 1 (without connector)	**753-653**	1

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

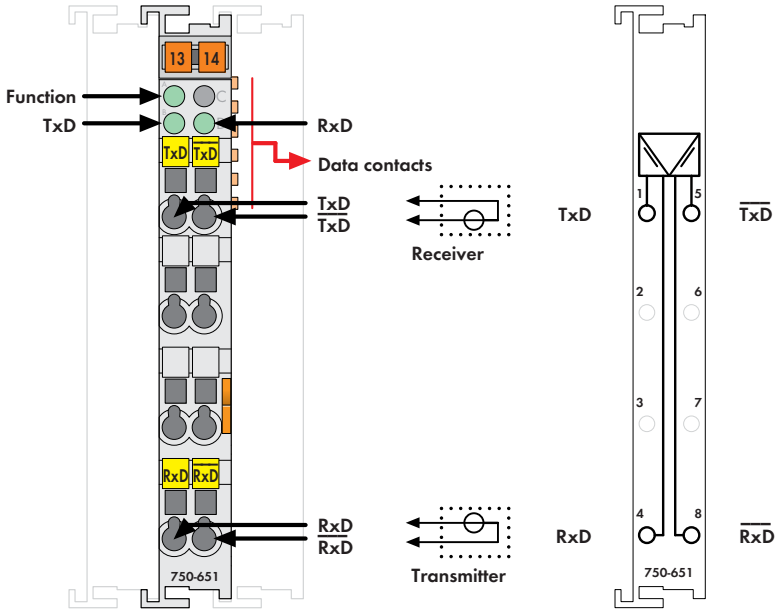
Approvals

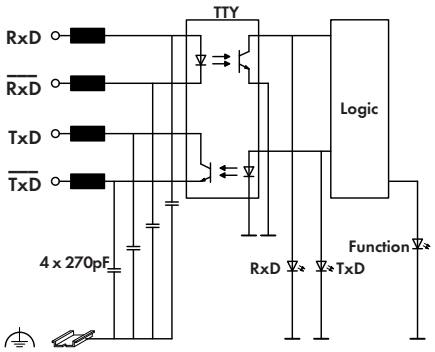
750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	(Approvals for product variations upon request)
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Transmission channels	1 TxD / 1 RxD, full duplex
Baud rate	9600 baud (factory preset)
	1200 ... 19200 baud
Bit transfer	ISO 8482 / DIN 66259 - 4
Line length	approx. 1000 m twisted pair
Buffer	128 bytes in/16 bytes out
Current consumption (internal)	65 mA
Voltage supply	via system voltage DC/DC
Isolation	500 V system/supply
Internal bit width	1 x 24 bits in/out (3 bytes user data)
	1 x 8 bits control/status
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51.7 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

TTY Interface - 20 mA Current Loop





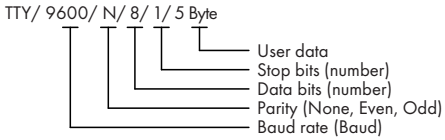
Delivered without miniature WSB markers

This interface allows the connection of devices which are equipped with a 20mA current interface.

The interface is working in active, semi-active or passive operation mode. The module communicates with the control unit over the fieldbus coupler.

The active communication channel works independently of the higher-level fieldbus system and allows full duplex operation up to 19200 baud.

The TTY interface guarantees high interference immunity because of the electrical isolation and the driven loop current.



Description	Item No.	Pack. Unit
TTY/ 9600/ N/ 8/ 1	**750-651**	1
TTY/ 9600/ N/ 8/ 1/ 5 bytes	**750-651/000-001**	1
TTY/ 9600/ E/ 8/ 1	**750-651/000-002**	1
TTY/ 1200/ N/ 8/ 1	**750-651/000-003**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

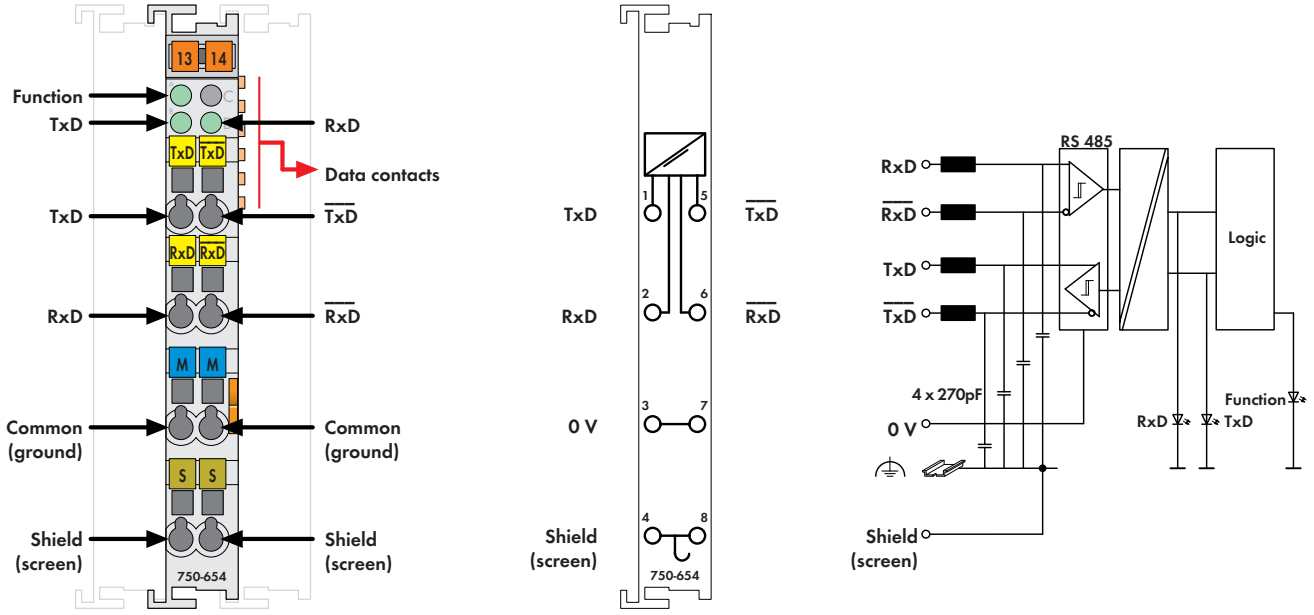
Approvals

750 Series	(Approvals for product variations upon request)
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 50021	II 3 G EEx nA II T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Transmission channels	1 TxD / 1 RxD, full duplex
Baud rate	9600 baud (factory preset)
	1200 ... 19200 baud
Bit transfer	2 x 20 mA
Load impedance	< 500 Ω
Line length	approx. 1000 m twisted pair
Buffer	128 bytes in/16 bytes out
Current consumption (internal)	55 mA
Voltage supply	via system voltage DC/DC
Isolation	500 V system/supply
Internal bit width	1 x 24 bits in/out (3 bytes user data)
	1 x 8 bits control/status
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	48.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

Data Exchange Module



Delivered without miniature WSB markers

The data exchange module allows the exchange of data between different fieldbus systems.

Two modules are a communication pair that is connected by means of two twisted wire pairs. Each module is part of a fieldbus node.

The data exchange is done in full duplex operation, independent of the fieldbus system used. The data of the output process image of the fieldbus coupler is transmitted to the communication partner. This module then transmits the data to the input process image of its fieldbus coupler and vice versa.

Factory preset transmission is 32 bits of input data and 32 bits of output data. Data transfer time for 32 bits of I/O is about 5ms.

The LED "function" indicates a data exchange with the buscoupler. The status of the data transmission is indicated by the TxD and RxD LEDs.

Description	Item No.	Pack. Unit
Data Exchange Module	**750-654**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

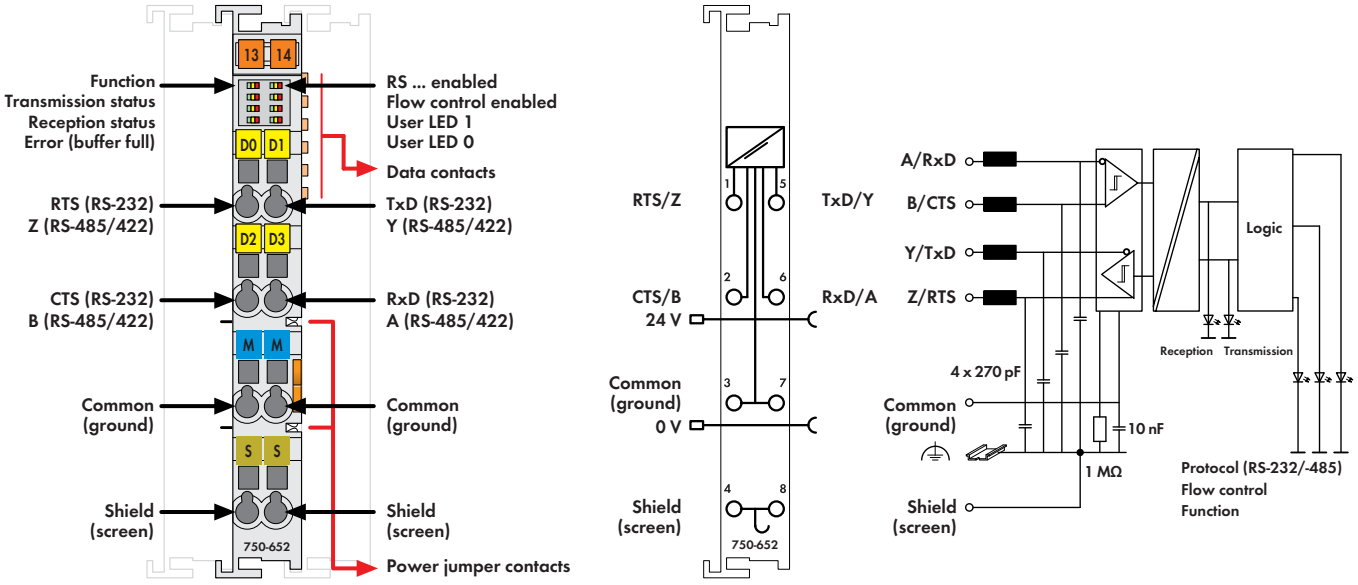
750 Series	
Conformity marking	CE
UL 508	
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Transmission channels	1 TxD / 1 RxD, full duplex
Baud rate	62500 baud (8 N 1)
Bit transfer	via 2 twisted pair with differential signals
Line impedance	120 Ω
Line length	approx. 1000 m twisted pair
Current consumption (internal)	65 mA
Voltage supply	via system voltage DC/DC
Isolation	500 V system/supply
Internal bit width	1 x 32 bits in/out
	1 x 8 bits control/status
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	55 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

Serial Interface RS-232 C / RS-485

Configurable



Delivered without miniature WSB markers

The serial interface module connects RS-485/422 or RS-232 C interface devices to the WAGO-I/O-SYSTEM 750. It also provides gateways between the serial interface and the fieldbus systems supported by the WAGO-I/O-SYSTEM 750. No higher protocol level is required by the module. Communication is completely transparent to the fieldbus master, which provides a wide range of applications for the serial interface module. If required, communication protocols can be configured via fieldbus master.
The 2560-byte input buffer provides for high data transmission rates. At lower transmission rates, the data received in lower priority tasks is evaluated without data loss.
The 512-byte output buffer provides fast transmission of larger data strings.

The module can be configured via WAGO-I/O-CHECK or GSD files. Flexible baud rate and data width selection enable easy adaptation to applications.

Description	Item No.	Pack. Unit
RS-232 C / RS-485 configurable	**750-652**	1

Accessories	Item No.	Pack. Unit
WAGO-I/O-CHECK 2	**759-302**	1
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

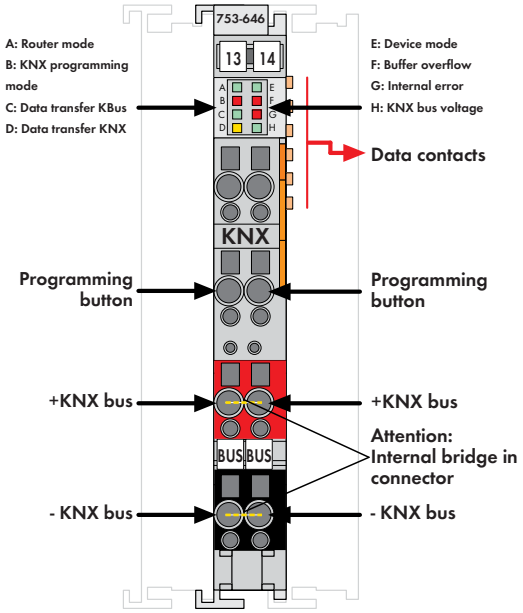
Approvals

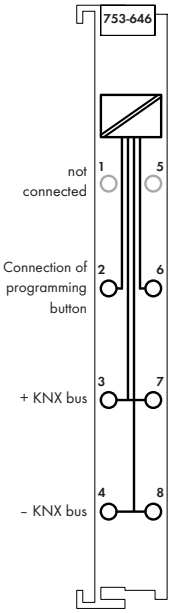
750 Series	
Conformity marking	CE

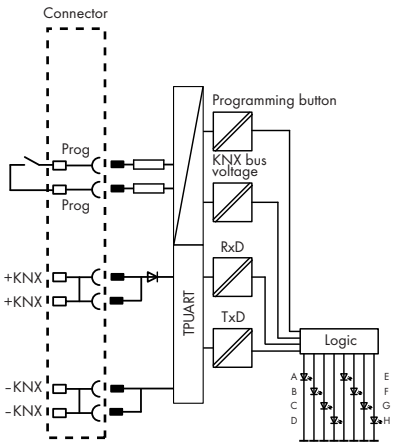
Technical Data

Transmission channels	1 TxD / 1 RxD, full duplex, half duplex 7 or 8 bit data, 1 or 2 stop bit
Baud rate	9,600 baud (default setting) 300 baud ... 115,200 baud
Bit transfer	ISO 8482 / DIN 66259 - 4
Line length	RS-485/-422: max. approx. 1000 m twisted pair, RS-232 C: max. 15 m
Buffer	2560 bytes in / 512 bytes out
Current consumption (internal)	65 mA
Voltage supply	via system voltage DC/DC
Isolation	500 V system/supply
Internal bit width	1 x 46/1 x 22/1 x 6 bytes in/out (parametrizable), 2 bytes control/status
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	60 g

KNX/EIB/TP1 Module







Delivered without miniature WSB markers

The 753-646 KNX/EIB/TP1 I/O Module serves to connect a KNX/EIB/TP1 network. The module supports two different functions:

1. Device mode: With this module, all programmable controllers (*1) that are relevant for building automation can be connected to a KNX/TP1 network. In a KNX network, the module appears as a standard KNX device and is linked using the ETS 3 Professional commissioning tool. The module supports a maximum of 253 communication objects with any DPTs, 254 group addresses and 254 associations. The application is programmed using WAGO-I/O-PRO CAA. An ETS3 plugin, which is included in the WAGO product database, is required so that the data from the application program can be allocated to the group addresses.

*1: See www.wago.com: Documentation → WAGO I/O System 753 → Specialty Modules → KNX/EIB/TP1 Module → Device Mode

2. Router mode: When the 750-849 Series KNXnet/IP Controller is connected to the first 753-646 Series KNX/EIB/TP1 Module, the device can be operated as a KNXnet/IP router. The module is switched to router mode automatically.
An application program is not required for operation in router mode. Additional modules that are connected to a KNXnet/IP controller are addressed in device mode by the application.

The 753 Series connector with internally bridged contacts (3/7 and 4/8) is part of the delivery.
Both an external KNX voltage supply and ETS 3.0 Professional are required to operate the KNX/EIB/TP1 I/O module.

Description	Item No.	Pack. Unit
KNX/EIB/TP1 Module	**753-646**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	
WAGO ETS3 plug-in (included in WAGO ETS3 product database)			
Download: www.wago.com: Service → Downloads → Gebäudeautomation → ETS3 → Produktdatenbank			

Approvals

753 Series	
Conformity marking	CE
KNX certified	KNX
Shipbuilding	see "Approvals Overview" in section 1
	Shield connection of the bus line is required for GL-complaint installation.

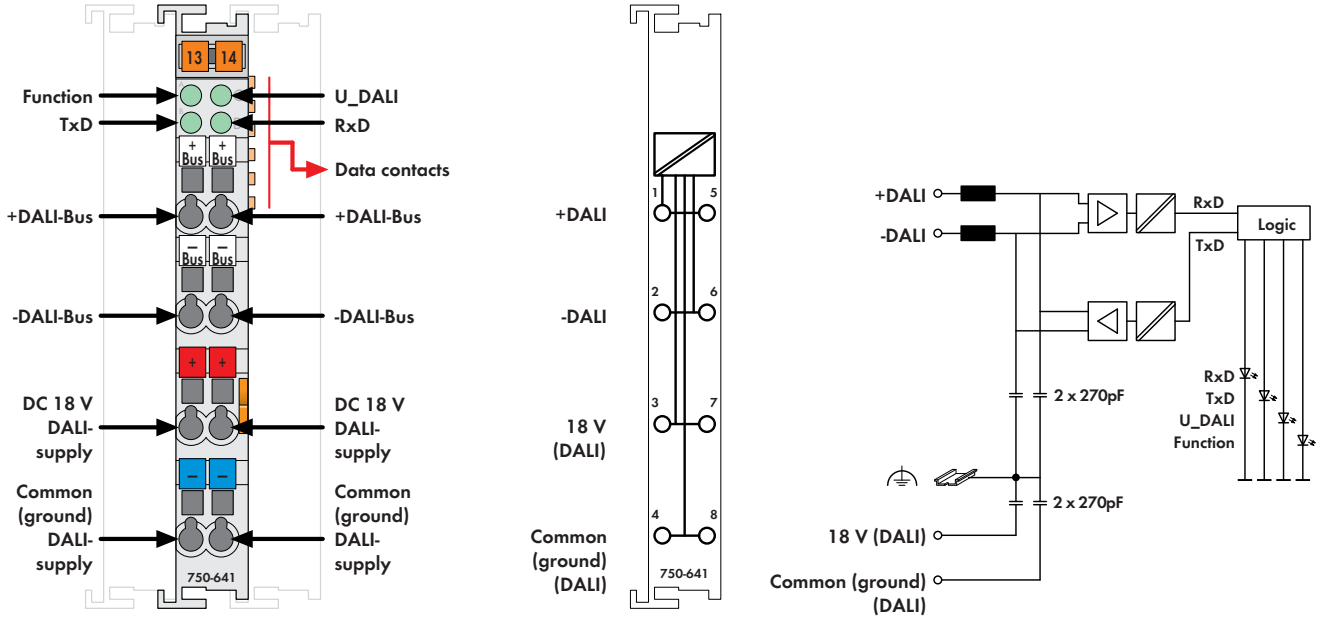
Technical Data

Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	52.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)
EMC marine app. - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine app. - Emission of interference	acc. to Germanischer Lloyd (2003)

Technical Data

KNX/TP1 bus specification	1.0
Voltage supply (KNX)	via KNX power supply unit
Current consumption (KNX)	5 mA
Baud rate (KNX)	9.6 kbaud
Programming	using WAGO-I/O-PRO CAA (device mode)
Commissioning (KNX side)	with ETS3 plugin; programming button-bridge 2/6
Diagnostic information	via FbKNX_Master_646 function block (device mode)
Fault behavior	via FbKNX_Master_646 function block (device mode)
Voltage supply (internal)	via system voltage DC/DC
Current consumption (internal)	max. 25 mA
Isolation	2.5 kV rms
Internal bit width	24 bytes
Programming button	Bridge 2/6
Device mode:	
Number of communication objects	253
Number of group addresses	254
Number of associations	254
Supported DPTs	All (*acc. to KNX Specification 03_07_02 Data Point Types V 1.0)
Router mode:	
Can be used as	
- Line coupler	yes
- Area coupler	yes
- KNX interface	yes

DALI/DSI Master Module



Delivered without miniature WSB markers

The DALI standard (IEC 60929), a protocol accross the manufacturers, aims to ensure the interoperability of electronic ballasts in lighting applications. This new standard is substitute for the 1-10V dimmer interface.
The DALI/DSI Master for the WAGO-I/O-SYSTEM 750 is a 12mm wide I/O module that fits all controllers of the 750 Series.
A DALI Master can control up to 64 slaves. Each slave can be assigned to 16 individual groups and 16 individual settings.
Any combinations of DALI controls with other groups are possible with the WAGO-I/O-SYSTEM 750. Several DALI Masters can be connected to a single fieldbus node. The maximum number of modules within a controller depends on the memory requirements of the application.
The software WAGO-I/O-PRO 32 is used to program the fieldbus nodes. WAGO supports simple application programming with pre-programmed function blocks for DALI.

The 288-895 DC/DC Converter is required to supply the DALI Master. The DC/DC converter delivers up to 400mA and can supply 3 DALI lines each with up to 130mA (see also "DALI/DSI Master Module" manual in section 1.1.1.7.3 "DALI Bus Line"). The DSI Master is a proprietary interface which was developed by the TRIDONIC ATCO company. Just like the DALI Master, electronic ballasts can be digitally controlled by the DSI Master. However, compared to the DALI Master, the slaves of the DSI module cannot be addressed individually and no feedback signals can be sent to the Master. The maximum number of slaves controlled by the module is limited to 100 devices per line (100 devices * 2mA = 200mA). Just as for the DALI Master, the 288-895 DC/DC Converter is required to supply the DSI Master.

Description	Item No.	Pack. Unit
DALI/DSI Master Module	**750-641**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

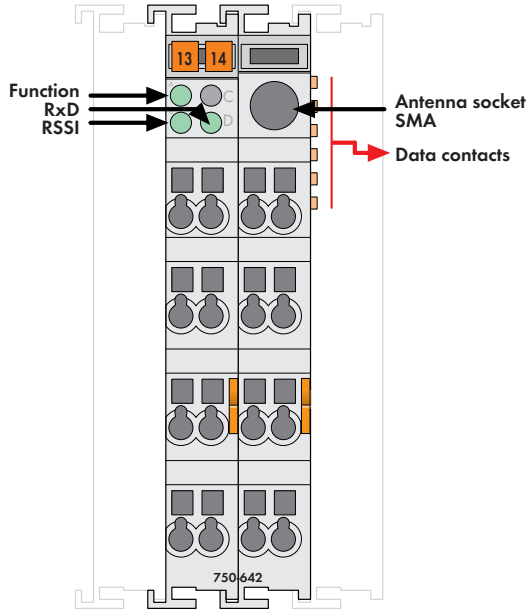
Approvals

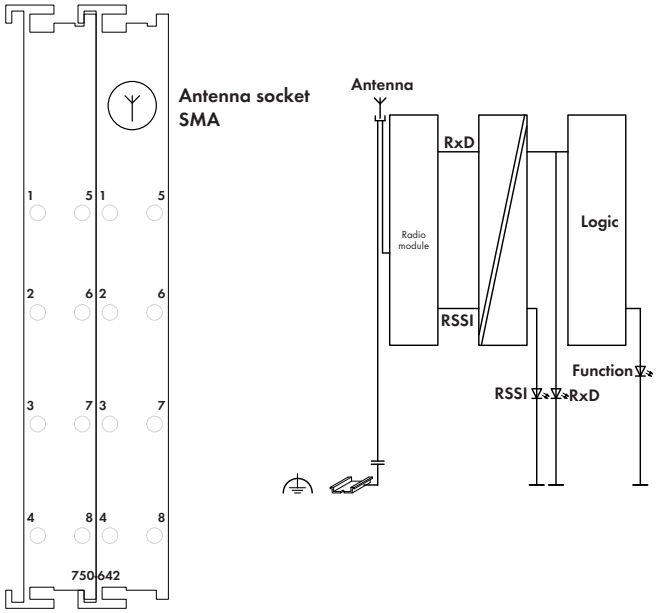
750 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

DALI specification	DIN IEC 60929 (VDE 0712 Part 23)
	Only in conjunction with 288-895
	DC/DC Converter
DSI specification	TRIDONIC ATCO SPECIFICATION 2.0
Number of slaves (DALI)	64
Number of slaves (DSI)	100
Max. current output (DALI/DSI)	200 mA
Voltage supply (DALI/DSI)	18 V via 288-895 DC/DC Converter
Transmission channel	1
Current consumption (internal)	30 mA
Voltage supply	via internal system supply
Isolation	1500 V DC DALI-bus/K-bus
Internal bit width	1 byte control/status, 5 byte data
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	52.2 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005) *
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007) *
	* Only in conjunction with 288-895
	DC/DC Converter
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

Radio Receiver Module





Delivered without miniature WSB markers

The 750-642 I/O Module receives radio telegrams from maintenance-free, battery-less and cable-less switches and sensors based on EnOcean radio technology.
The module can be used with any controller of the WAGO-I/O-SYSTEM 750. Preprogrammed function blocks make integration easy.
The energy required for switch or sensor operation is produced by converting one type of energy (heat, solar or mechanical energy) into usable electrical energy. The radiated energy from the transmitter modules is around one million times smaller than mobile phones. Almost any number of sensors is possible. However, the maximum number is around 100 transmitters per module, due to the increasing density of switches/sensors.

Four billion code numbers provide for clear transmitter/receiver assignment. Repeated, time-shifted transmission of the radio telegrams, at very short transmission times, results in a high level of protection against external interferences.
The maximum transmission range is approx. 300 meters in open field. Depending on the building materials used and on the spatial geometry, the range may be reduced to typically 30 meters (see manual for more information). The LED (RSSI) indicates a sufficient input level.
An SMA socket which is integrated into the housing allows the connection of anexternal antenna. The 758-910 External Antenna has a magnetic stand and a 2.5m long coax cable with SMA plug (available as an accessory).

Description		Item No.	Pack. Unit
Radio Receiver Module		**750-642**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	
External antenna	with magnetic stand	**758-910**	1

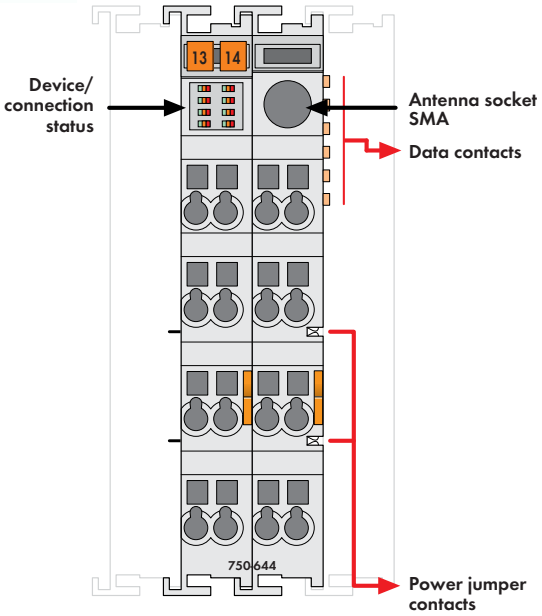
Approvals

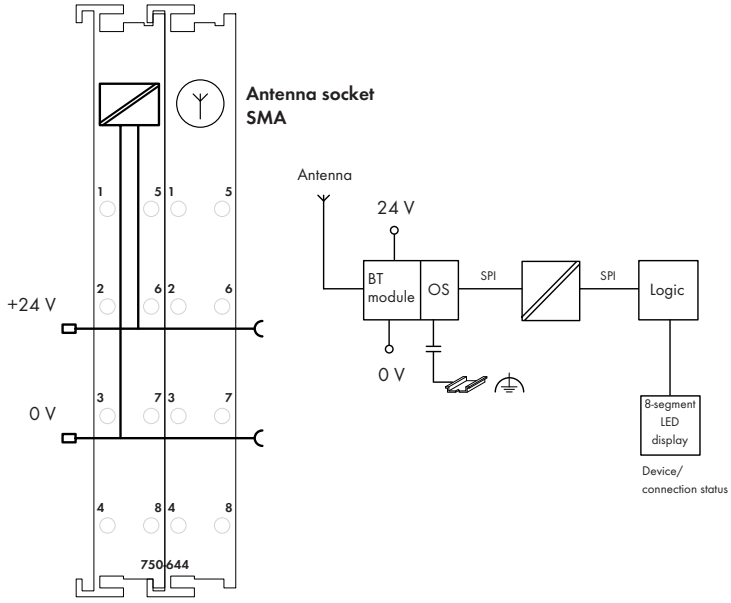
750 Series	
Conformity marking	CE
Conformity marking RTTE	www.wago.com
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nL IIC T4

Technical Data

Frequency band	868.3 MHz
Range	300 m in open field
	(typ. in buildings see manual)
Transmission protocol (radio telegram)	EnOcean
Current consumption (internal)	80 mA
Voltage supply	via system voltage DC/DC
Isolation	500 V antenna connection/system
Internal bit width	1 x 24 bits in/out (3 bytes user data)
	1 x 8 bits control/status
Wire connection	SMA socket
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	24 x 64* x 100
	* + excess length of the SMA socket
	approx. 6.5 mm
Weight	80 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)

Bluetooth/RF Transceiver





Delivered without miniature WSB markers

The 750-644 I/O Module permits the wireless exchange of process data with up to seven other devices via Bluetooth 2.0 radio technology. Interoperability with Bluetooth devices is made non-proprietary via PAN and SPP Bluetooth profiles. A special profile for time-sensitive applications is also available.

Reliable connections over distances of up to 1000m are possible using the WAGO 758-912 external antenna.

The module's extended diagnostic functions include cyclic and acyclic state information. For quick on-site diagnostics, main information on operational status and radio connection is also displayed via 8 LEDs.

The I/O module can be operated with all standard fieldbus couplers/controllers from the WAGO-I/O-SYSTEM 750. Module configuration is performed locally via WAGO-I/O-CHECK.

Description		Item No.	Pack. Unit
Bluetooth/RF Transceiver		**750-644**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	
External antenna	WLAN/Bluetooth 2.4 GHz	**758-912**	1

Approvals

Conformity marking	CE
FC	FCC approval (This device complies with part 15 of FCC rules)
Bluetooth	Bluetooth® approval
cULus UL 508	

Technical Data

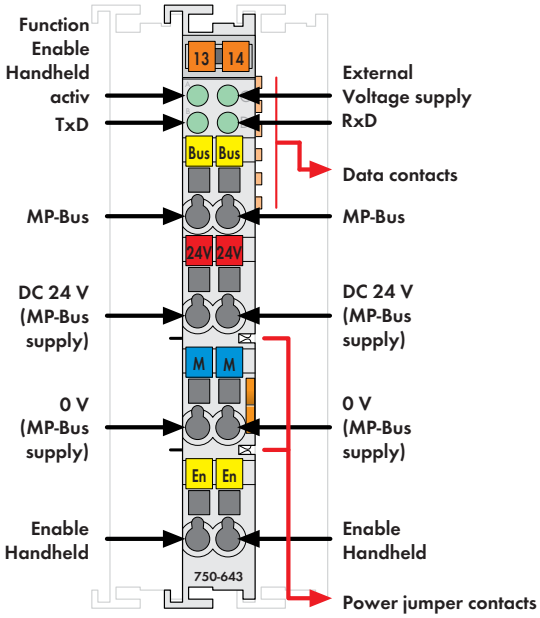
Dimensions (mm) W x H x L	24 x 64* x 100 * + excess length of the SMA socket approx. 6.5 mm
Weight	85 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005), EN 61131-2 (2003)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007), EN 61131-2 (2003)

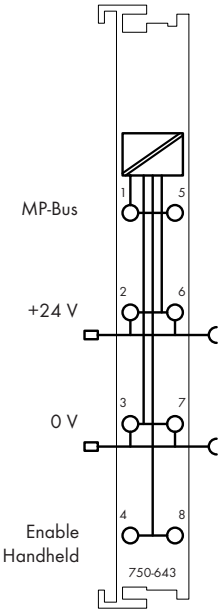
Technical Data

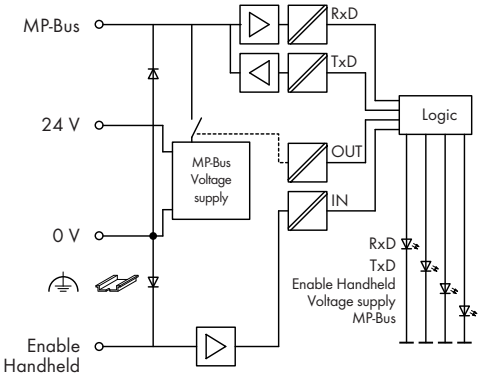
Radio technology	Bluetooth® 2.0 + EDR
Topology	Piconet (1 master, max. 7 slaves)
Coexistence	AFH and adaptive transmission power
Profiles	SPP, PAN
Operating modes	Communication mode with ad-hoc profile for high connectivity and real-time profile for time-critical applications, as well as configuration mode
Frequency band	2402-2480 MHz (license-free ISM band)
Transmitter power	up to 20 dBm (Bluetooth® Class 1)
Receiver sensitivity	-94 dBm
Range	max. 1000 m in open field, 100 m in buildings (using a WAGO external antenna, item no. 758-912)
Voltage supply (Bluetooth)	via 24 V DC field supply
Voltage supply (internal)	via system voltage DC/DC
Current consumption (Bluetooth)	approx. 8 mA, max. 35 mA
Current consumption (internal)	approx. 20 mA
Isolation	500 V antenna/system
Internal bit width	12, 24, 48 bytes configurable; incl. 1 byte control/status
Diagnostics (via visual indicator)	Device status, connection status 1)
Diagnostics (via process image)	Device status, connection status 1), time monitoring
Configuration	WAGO-I/O-CHECK and WAGO-I/O-PRO CAA

1) Quality of radio connection, signal strength, interference

MP-Bus Master Module







Delivered without miniature WSB markers

The 750-643 I/O Module acts as a master for the MP-Bus (Multi Point Bus of the Swiss company Belimo) and allows the bus to be integrated into a higher level bus network such as ETHERNET or LonWorks. The MP-Bus serves to control HVAC actuators like dampers, regulator valves or VAV air volume control. Another product series with MP-Bus connection is FLS (window ventilation system) from Belimo.Devices that are equipped with an MP-Bus connection, e.g. the Belimo MFT actuator series, can communicate with a higher level control via bus cable.

The actuators have connections for active and passive sensors (temperature, humidity, ON/OFF switch) and hence can also be accessed via MP-Bus. An MP Bus Master, i.e. the WAGO I/O module, can manage up to 8 slaves (actuators) + 8 sensors (1 sensor per slave) via a common bus cable which reduces the wiring of sensors and actuators considerably (cable lengths of MP-Bus cables see Belimo documentation). In order to parameterize the Belimo actuators, the I/O module can be connected to a Belimo parameterization tool (handheld control unit or Belimo PC tool). For this purpose use the "Enable Handheld" contact. If an external parameterization tool (or 24V) is connected, the module switches off the MP-Bus supply.

Description	Item No.	Pack. Unit
MP Bus Master module	**750-643**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

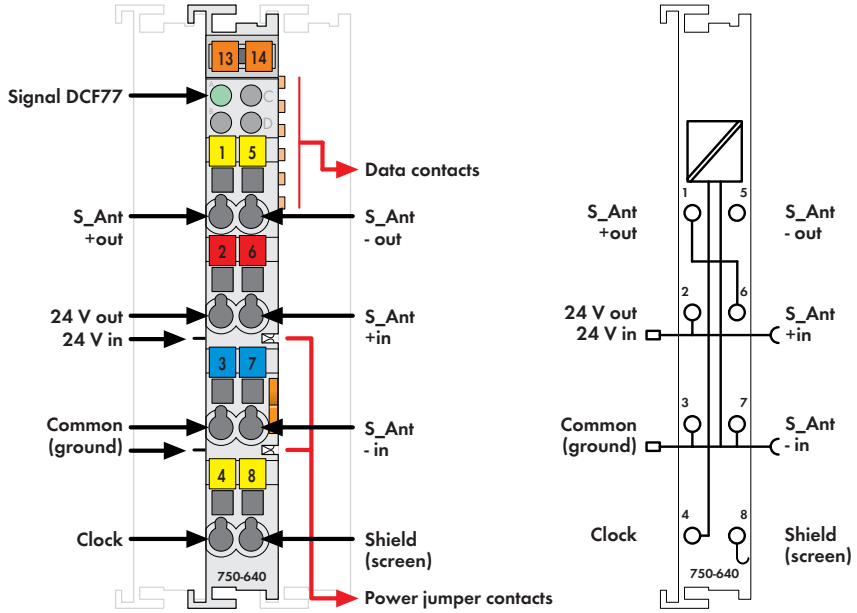
Approvals

750 Series	
Conformity marking	CE
UL 508	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	pending

Technical Data

MP Bus specifications	PP/MP specifications V1.21 from Belimo (Valid since 1.10.2002)
No. of slaves	max. 8
Voltage supply (MP-Bus)	24 V DC
Current consumption (MP-Bus)	25 mA without motor current (for MP-Bus) if the motors are supplied via the MP-Bus module, all motor currents must be added
Current consumption (internal)	15 mA
Voltage supply	via system voltage DC/DC
Isolation	500 V eff MP-bus/system
Internal bit width	1 byte C/S, 7 byte data
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	52.3 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2002)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2004)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003) in preparation
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003) in preparation

RTC Module



Delivered without miniature WSB markers

The 750-640 RTC Module provides the higher-level control system with the actual time.

The time is buffered and continues to run in the event of a power failure. When an external antenna is connected, the clock can be set using the time signal from CDF77, WWVB, or MSF.

By default the module is set to receive DCF77 signals.

The antenna can be supplied directly via the module.

Connecting an external antenna to operate the RTC module is not absolutely necessary.

With its 32 channels, the integrated time switch clock function makes it easier for the control unit to process time-triggered actions.

The module also counts the power-on time of the 32 channels.

Description	Item No.	Pack. Unit
RTC module	**750-640**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

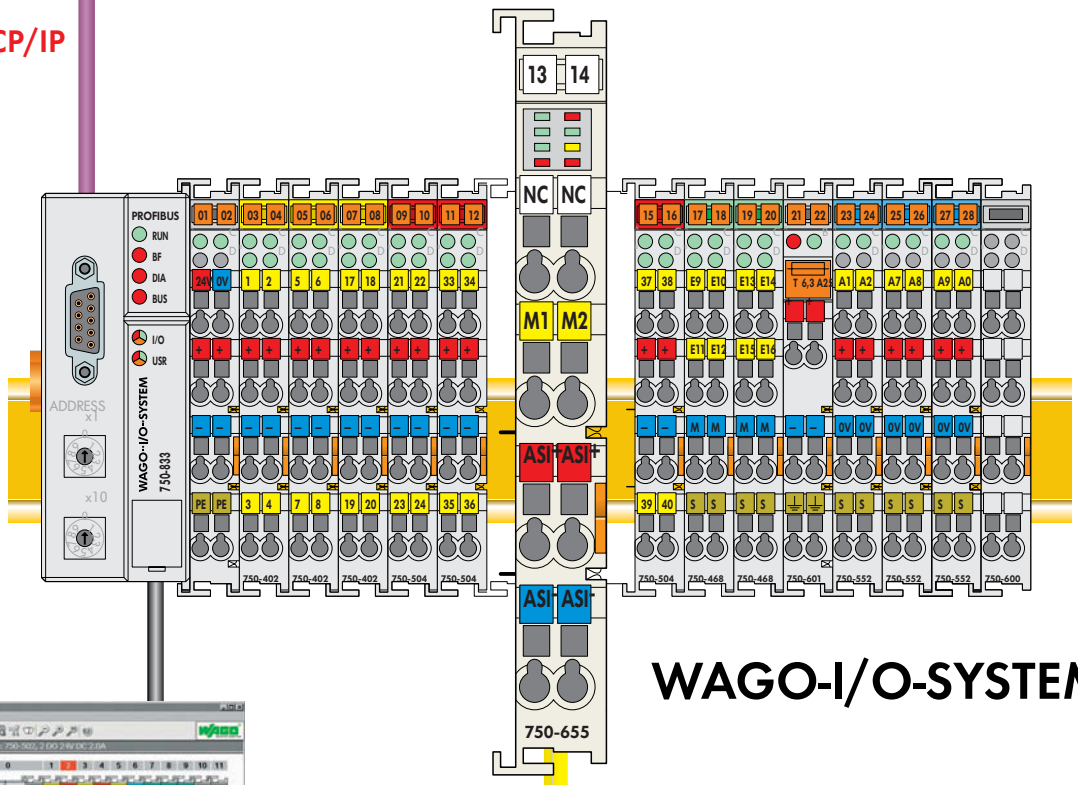
750 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4

Technical Data

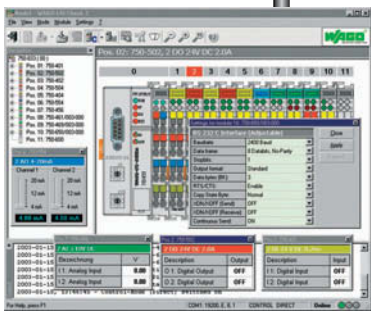
Current consumption (internal)	< 20 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Clock	
Accuracy (+25 °C)	< 1 min/month
Accuracy (+10 °C ... +40 °C)	< 2 min/month
Accuracy (-25 °C ... +85 °C)	< 7 min/month
Drift	< 2 min/year
Buffer length	> 6 days
Clock Timer	
Number of channels	32
Switching points	32 (per 32 channels on/off)
Signal voltage (0)	-24 V ... +1 V
Signal voltage (1)	3 V ... 24 V
Open-circuit voltage	4 V DC
Input filter	10 ms
Input current (typ.)	< 5 mA (at 24 V)
	< 1 mA (at 5 V)
Supply $S_{ant, in}$	5 V ... 24 V DC
Isolation	500 V system/supply
Current consumption typ. (field side)	11 mA + load
Internal bit width	1 x 40 bits data (in/out)
	(5 bytes user data)
	1 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	52 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)

PROFIBUS
ETHERNET TCP/IP
DeviceNet
CANopen

PROFIBUS DP



WAGO-I/O-SYSTEM



Configuration via WAGO-I/O-CHECK for example

AS-INTERFACE

IP 20

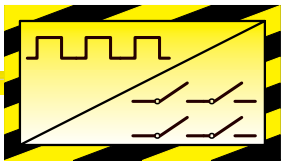
DI DO

Slaves Digital Input/ Digital Output

IP 67

AI AO

Slaves Analog Input/ Analog Output



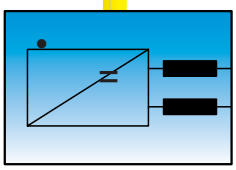
Safety at Work Monitor

M

Motor Connections

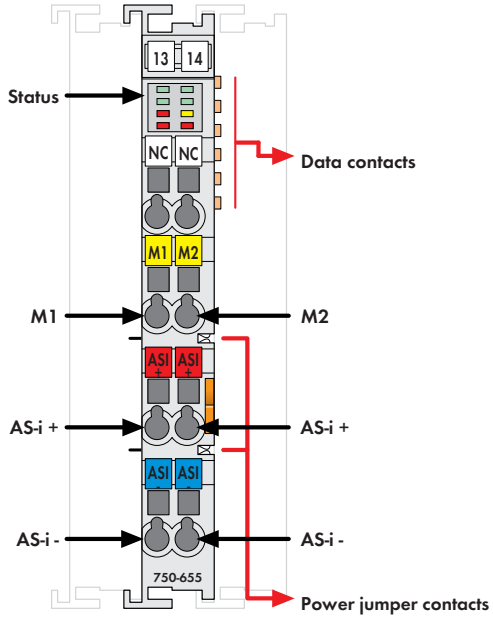
DI DI

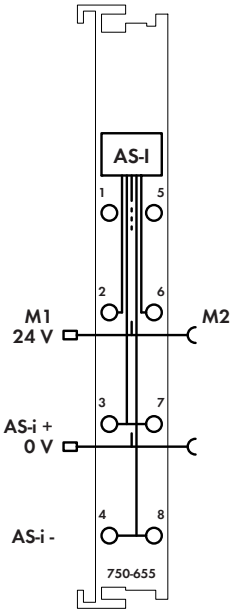
Safety at Work Slave

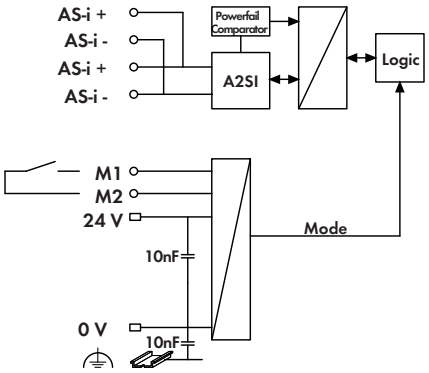


AS-Interface Power Supply Unit

WAGO AS-Interface Master







Delivered without miniature WSB markers

The 750-655 AS-Interface Master Module connects AS-Interface systems to a higher level fieldbus.
The module acts as a Master for the AS-Interface and as a slave for the fieldbus.
The AS-Interface Master modules 750-655 already fulfil the new AS-I Specification 2.1.
This means:

- up to 62 AS-Interface slaves can be connected per AS-I line,
- the transfer of analog signals is integrated in the Masters and
- all further functions of the new specification such as the diagnosis of the AS-I peripheral fault are implemented.

The AS-I functions are provided both cyclically and acyclically via the fieldbus.

In the cyclic data transfer optionally up to 32 bytes I/O data are transfered for the binary data of one AS-I line. Furthermore, analog signals and all further commands of the new AS-I specification can be transferred in a management channel via the fieldbus.
Diagnostics, which go far beyond the AS-I specifications facilitate the simple detection of the occasionally occuring configuration errors and irritations towards the AS-I communication. So in case of an error the down time of machines can be minimized or you can initiate preventive maintenance.
LEDs indicate the operating status and the trouble-free internal bus communication as well as the status of the signal transmission.

The AS-Interface Master is supported by the following couplers/controllers:
750-301, -303, -333, -343, -833, -342, -341, -842, -841, -337, -347, -348, -837, -306, -346, -806, -819 or 758-870. Versions upon request.

Description	Item No.	Pack. Unit
AS-Interface Master (M3) V.2.1	**750-655**	1
AS-Interface Master (M3) V.2.1 (without connector)	**753-655**	

Accessories

	Item No.	Pack. Unit
753 Series Connectors	**753-110**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

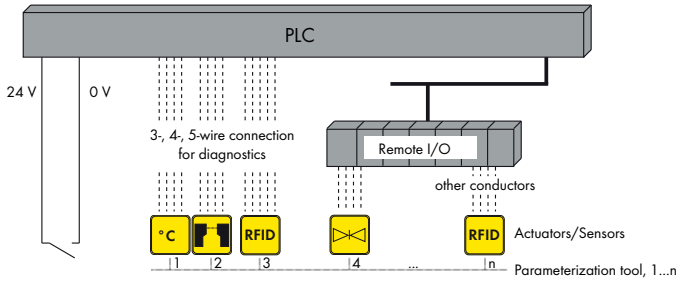
750 and 753 Series	
Conformity marking	CE
AS-Interface certificate	ZU 50601
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

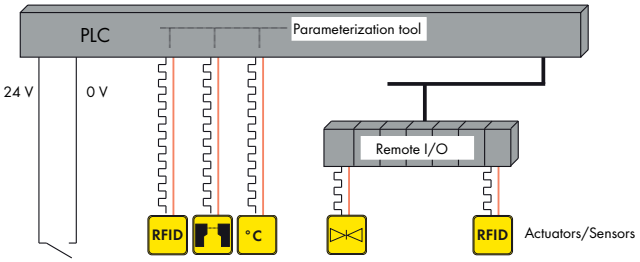
Technical Data

AS-I specification	2.1
No. of slaves	up to 62
Current consumption (AS-I)	40 mA
Voltage supply (AS-I)	26.5 V ... 31.6 V
Max. length of AS-I cable	100 m (300 m through repeater)
Cycle time AS-I	0.3 ms ... 10 ms, depending on the number of slaves
Configuration	via process image, WAGO-I/O-CHECK (as from version 2.1)
Transmission channel	1
Max. current consumption (internal)	55 mA
Voltage supply	via system voltage DC / DC
Isolation	500 V system/supply/AS-I
Bit width	max. 12 ... 48 bytes, configurable including 1 byte control/status
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	56 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel IO-Link Master

Automation right up to the last meter ...
Increasingly complex products, manufacturing flexibility and high demands on quality assurance require intelligent, configurable and programmable sensors. IO-Link streamlines required, varying interfaces for connecting to a control system and tooling to fulfill these demands.
A 3-wire connection can communicate process data (as single bits, bytes and data blocks for input and output data). It also communicates acyclic data (for identification, configuration, parameterization and diagnostics) with up to 230.4 kbaud to both sensors and actuators..
The functions and performance data are defined in device description files for master and device; these are easy to customize via WAGO-I/O-CHECK.
If a device must be replaced, the configuration and parameterization can be automatically restored without maintenance personnel.
Project design, installation and operation are simplified!

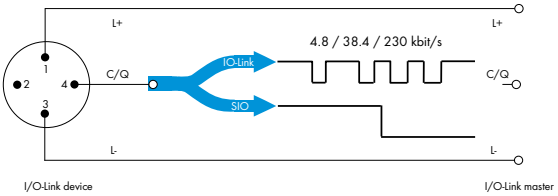




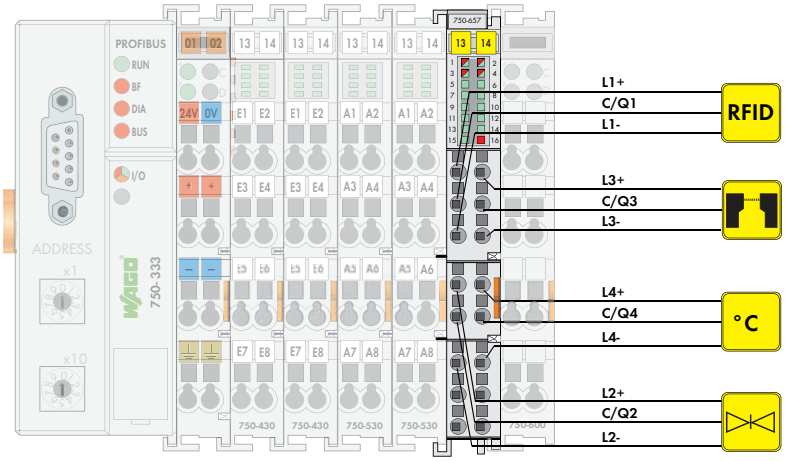
Complex sensors often require different interfaces for binary or analog process value transmission, as well as for configuration and parameter setting. This requires different proprietary configuration tools.

IO-Link simplifies use sensor and actuator functionalities via:
- standardized IO Device Description (IODD) files,
- device profiles,
- communication.

Combined with customized tooling, this makes different cable types and time-consuming control system integration.

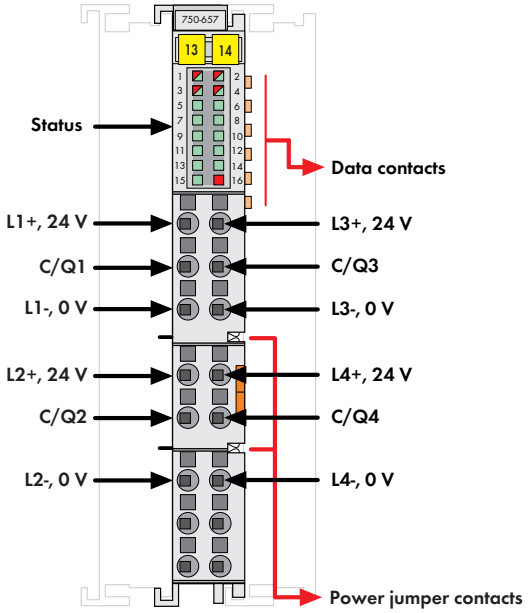


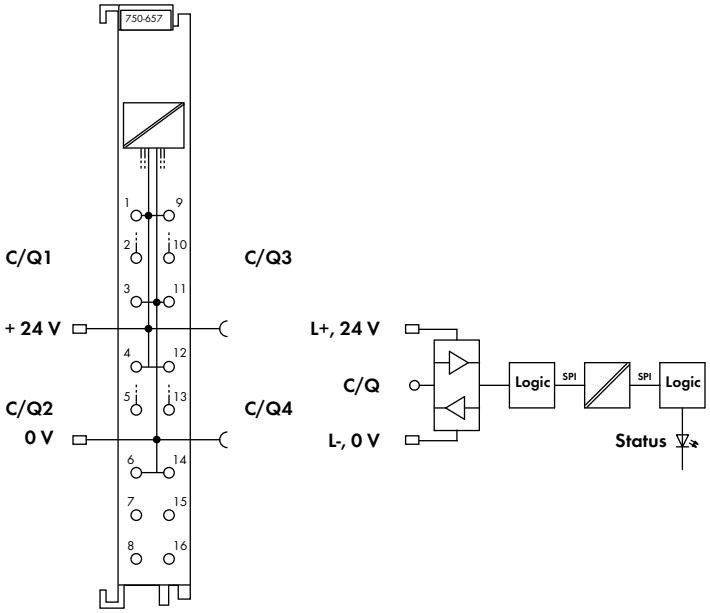
IO-Link features:
1. Cyclic process data:
   1-bit to maximum 32-byte input and output data
2. Point-to-point connection
3. Acyclic data:
   Addressing via index (0...32k) and subindex (0...255)
4. Events (errors, warnings and messages; 2-byte code)



Four different IO-Link devices, or even digital standard sensors/actuators, can connect to the WAGO 750-657 IO-Link Master simultaneously. The module has 3 connections for each of the 4 channels although it is just 12mm (0.47in) wide. This provides cost-effective and convenient connection of sensors and actuators, by eliminating extensive wiring and time-consuming integration.

4-Channel IO-Link Master





Delivered without miniature WSB markers

Automation right up to the last meter ...
Increasingly complex products, manufacturing flexibility and high demands on quality assurance require intelligent, configurable and programmable sensors. IO-Link streamlines required, varying interfaces for connecting to a control system and tooling to fulfill these demands. A 3-wire connection can communicate process data (as single bits, bytes and data blocks for input and output data). It also communicates acyclic data (for identification, configuration, parameterization and diagnostics) with up to 230.4 kbaud to both sensors and actuators.

The functions and performance data are defined in device description files for master and device; these are easy to customize via WAGO-I/O-CHECK. If a device must be replaced, the configuration and parameterization can be automatically restored without maintenance personnel. Project design, installation and operation are simplified!

Description	Item No.	Pack. Unit
4-Channel IO-Link Master	**750-657**	1

Accessories		Item No.	Pack. Unit
WAGO-I/O-CHECK 2		**759-302**	1
GSD files	Download: www.wago.com		
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 Series	
Conformity marking	CE
UL 508	pending
Shipbuilding	pending

Technical Data

Number of IO-Link ports	4
Voltage supply	5 V system voltage via internal data bus,
	24 V via power jumper contacts
Voltage via power jumper contacts	24 V DC
	(20.4 V ... 28.8 V; -15% ... +20%)
Current consumption typ. (internal)	100 mA
Connection type	Physics 2 (3-wire)
Transmission modes	4.8 kbaud (COM 1),
	28.4 kbaud (COM 2),
	230.4 kbaud (COM 3)
Line length (max.)	20 m
Internal bit width	4-24 bytes, configurable
Wire connection	CAGE CLAMP®S
Cross sections	0.08 mm² solid / 0.25 mm²
	fine-stranded ... 1.5 mm² /
	AWG 28 /22 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	55 g
EMC CE-Immunity to interference	acc. to EN 61000-6-1 (2007),
	EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (01.2007),
	EN 61000-6-4 (2007)

Condition Monitoring

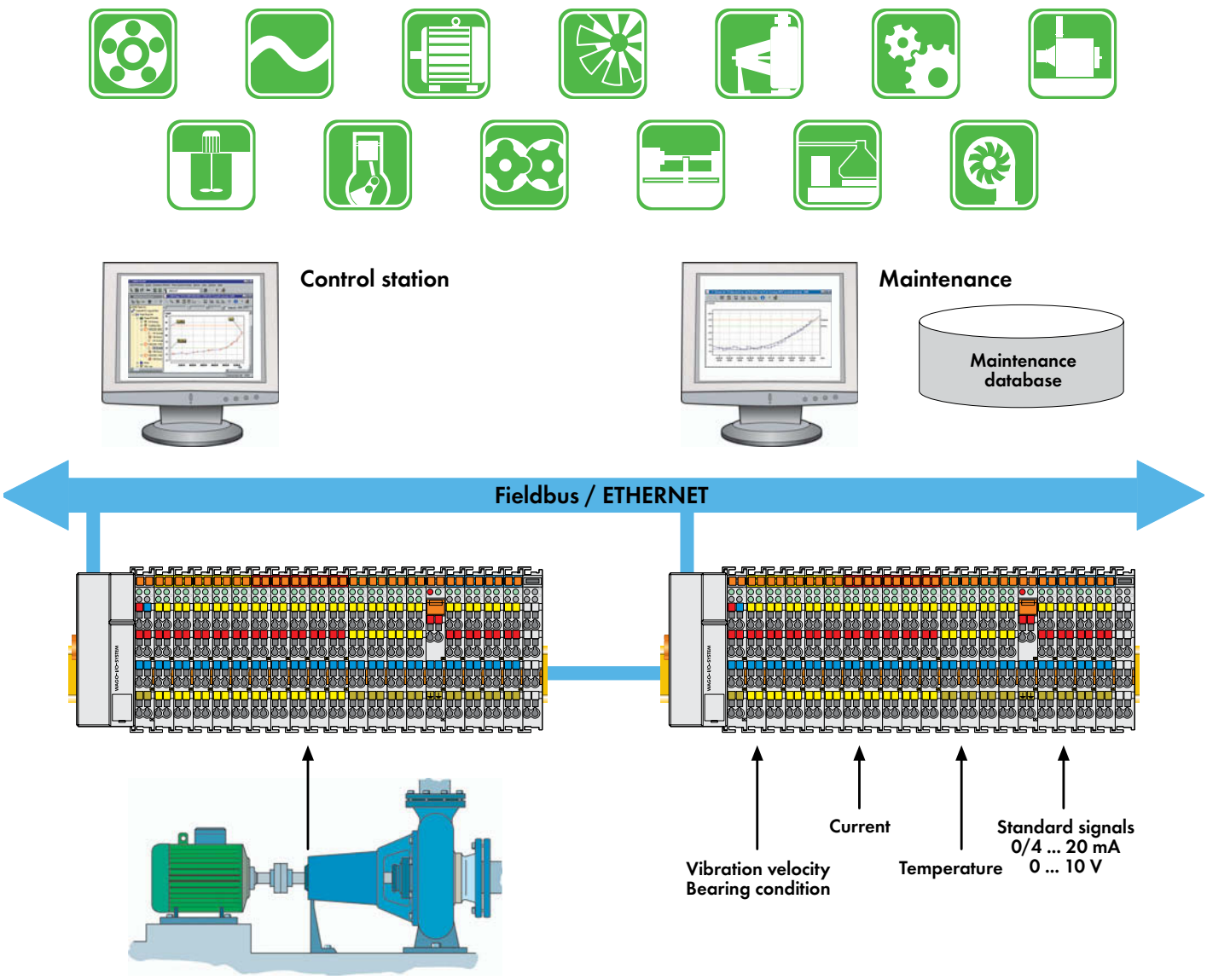
Growing cost pressure in global competition forces companies to use existing cost reduction potential and to boost efficiency to an increasing extent. Concerning service and maintenance, this implies provision of guaranteed trouble-free production processes, to avoid unplanned machine downtime and to use machine life to full capacity.

In order to achieve these goals, it is vital to implement online conditioning monitoring systems: errors can be diagnosed in time, maintenance measures can be scheduled optimally and unexpected machine breakdowns can be avoided.

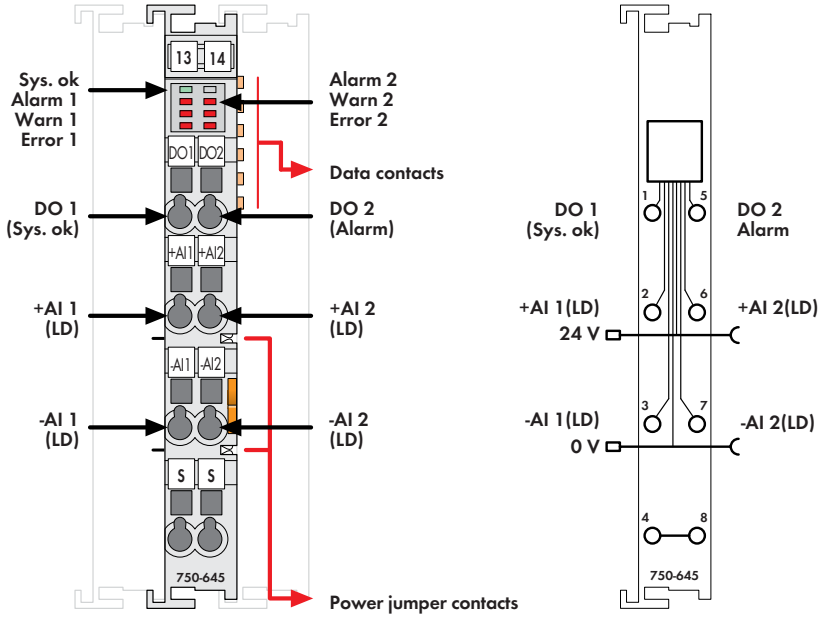
Consistent machine health monitoring via fieldbus thus allows prognostic analysis and reaction before damage occurs.

WAGO offers I/O modules for use with the WAGO-I/O-SYSTEM that receive and process parameters such as current, temperature, standard signals or machine vibration.

Typical application areas are in standard machines like electric motors, ventilators, pumps, air conditioning systems, etc.



2-Channel Vibration Velocity/Bearing Condition Monitoring VIB I/O



Delivered without miniature WSB markers

The VIB I/O module is used for online monitoring of machine vibration.
The module collects the two most important parameters for machine condition analysis: Vibration velocity and shock pulse.
Vibration velocity is a measure of the energy of the machine vibration and thus a good indicator of the vibration force which affects the machine.
ISO 10816-3 gives guidelines for evaluation. The actual value of the measured vibration velocity is divided into four different quality categories.
Evaluation of the bearing condition is based on high frequency shock pulses.
Shock pulses are short pulses that are induced by mechanical damage to the rolling element or the contact surface.

The measured shock pulses are divided into three different categories that describe the bearing condition: “good”, “restricted”, “bad”. Registration and evaluation of the measurement results in a trend curve which allows detection of damage at an early stage.
The use of a special Tandem-Piezo sensor allows measurement of machine vibration and high frequency shock pulses at the same time.

Description	Item No.	Pack. Unit
2AI/2DO VIB VRMS/SPM Multi	**750-645**	1

Accessories	Item No.	Pack. Unit
Tandem-Piezo sensor	**750-925**	1
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

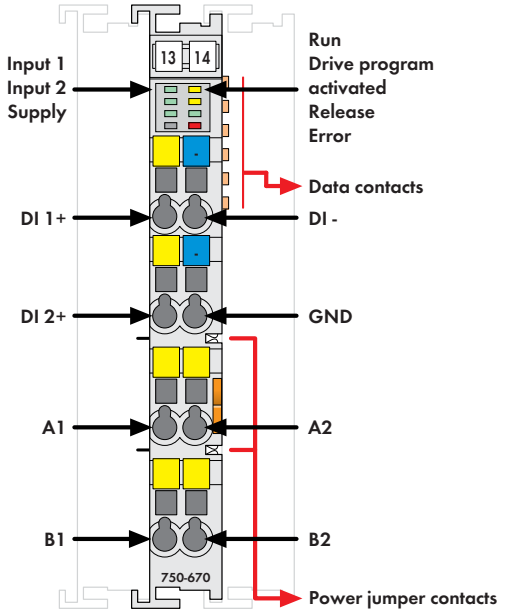
Approvals

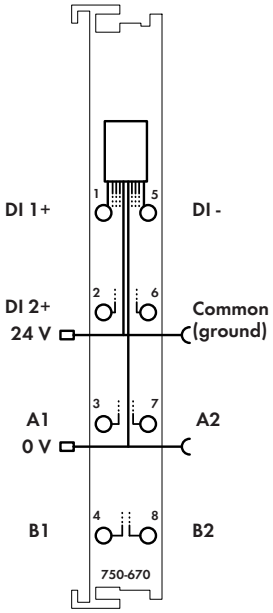
750 Series	
Conformity marking	CE
UL 508	

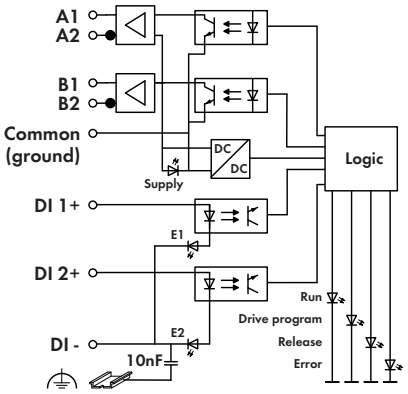
Technical Data

Sensor inputs	+AI1, -AI1, +AI2, -AI2
Number of inputs	2
Input ranges	
Vibration velocity	0 ... 100 mm/s
Shock pulse	-10 ... +80 db_{SV}
No. of outputs	2 (Alarm and System ok)
Configuration	Alarm and warning threshold via process image and I/O Check
Outputs	24 V DC 0.5 A short-circuit protected
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Isolation	500 V system/supply
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	52 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2001)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2001)

Stepper Controller RS-422 / 24 V / 20 mA







Delivered without miniature WSB markers

The 750-670 is an intelligent stepper controller designed to control various power drivers with pulse/direction interface or incremental encoder input.
Both RS-422 and 24V or 20mA interfaces are available.
Due to the high output frequency, stepper output stages with smooth microstepping resolution can be used.
In addition, the module can be used as high precision frequency or pulse width modulator.
Two configurable inputs for start/stop, end-stop, reference, jog/tip, etc., can be directly processed by the internal software without any delay.
Flexible functions such as positioning with various acceleration ramps, command tables, camshaft, auto reference and other event-driven characteristics provide for a wide range of applications.

The programmer's interface is the same for all WAGO stepper controller modules.
Additional operating modes:
- Pulse width modulation
- Frequency generator
- Single-Shot mode

Description	Item No.	Pack. Unit
Stepper controller RS-422 / 24 V / 20 mA	**750-670**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

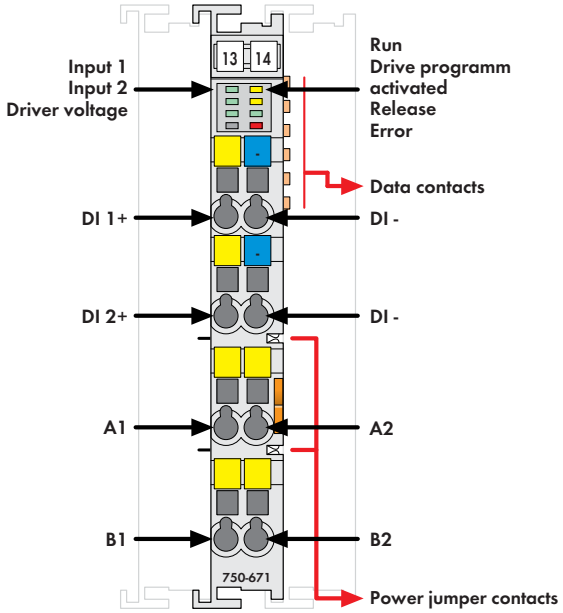
Approvals

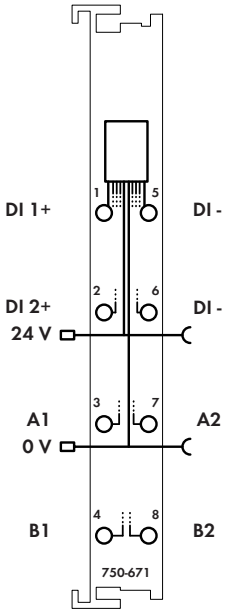
750 Series	
Conformity marking	CE
UL 508	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
ANSI/ISA 12.12.01	pending

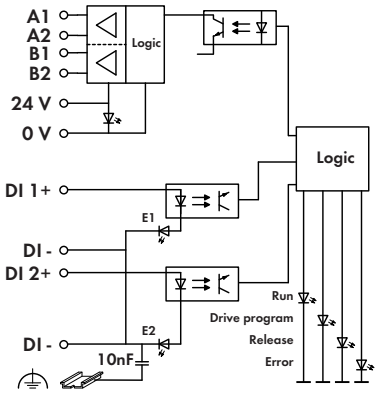
Technical Data

Outputs	
No. of outputs	1 channel (2 differential outputs A1, A2, B1, B2)
Signal voltage	5 V DC internal, 5 V ... 24 V DC external
Type of load	RS 422, TTL, optocoupler
Output current (max.)	30 mA short-circuit protected
Output frequency	200 µHz ... 500 kHz
Pulse duty factor	50 % (in stepper motor mode)
Inputs	
Number of inputs	2 (DI 1, DI 2)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	100 µs, software filter can be installed
Input current (typ.)	2.8 mA
Module	
Operation modes	Individual positioning, reference run, jog, tip, instruction tables, PWM
Functions	Positioning (absolute/relative), flying setpoint change, rotary axis, etc.
Resolution	
Distance	23 bits + sign bit
Speed	15 bits + 16 bit prescaler
Acceleration	15 bits + 16 bit prescaler
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Isolation	500 V system/supply
Internal bit width	12 byte inputs/outputs
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in / 12 mm
Weight	48.2 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2001)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2001)

Stepper Controller 24 V / 1.5 A







Delivered without miniature WSB markers

The 750-671 is an intelligent stepper controller with on-board power driver designed to control 2-phase stepper motors up to 24V/1.5A.
The 64 times microstepping prevents step losses due to resonance in the acceleration phases and spares the mechanical parts.
Adjustable current limits for stop, acceleration and constant speed help minimizing motor power dissipation.
Two configurable inputs for start/stop, end-stop, reference, jog/tip, etc., are directly processed by the internal software without any delay.
Flexible functions such as positioning with various acceleration ramps, command tables, camshaft, auto reference and other event-driven characteristics provide for a wide range of applications.

The programmer's interface is the same for all WAGO stepper controller modules.

Description	Item No.	Pack. Unit
Stepper controller 24 V/1.5 A	**750-671**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

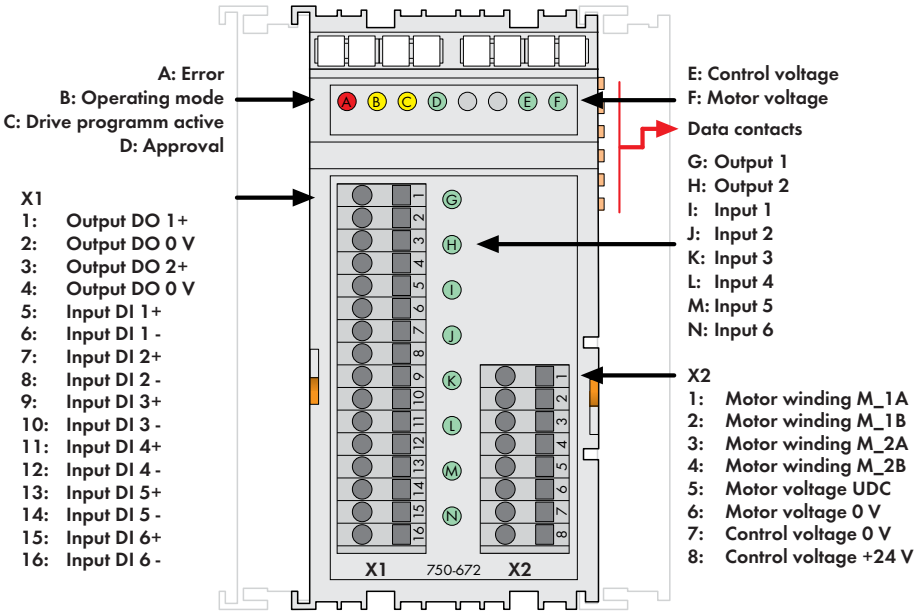
Approvals

750 Series	
Conformity marking	CE
UL 508	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
ANSI/ISA 12.12.01	pending

Technical Data

Outputs	
No. of outputs	1 stepper motor (2 phases/bipolar)
Max. stepper frequency	7812 Hz at 64 microstepping internal
Output current (max.)	up to 2 x 1.5 A peak value; 1 A eff.
Inputs	
Number of inputs	2 (DI 1, DI 2)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	100 µs, software filter can be installed
Input current (typ.)	2.8 mA
Module	
Operation modes	Individual positioning, reference run, jog, tip, instruction tables
Functions	Positioning (absolute/relative), flying setpoint change, rotary axis, etc.
Resolution	
Distance	23 bits + sign bit
Speed	15 bits + 16 bit prescaler
Acceleration	15 bits + 16 bit prescaler
Microstepping	64 steps
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Voltage supply	via system voltage DC/DC
Isolation	500 V system/supply
Internal bit width	12 byte inputs/outputs
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	56 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2001)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2001)

Stepper Controller 70 V / 7.5 A 6IN, 2OUT



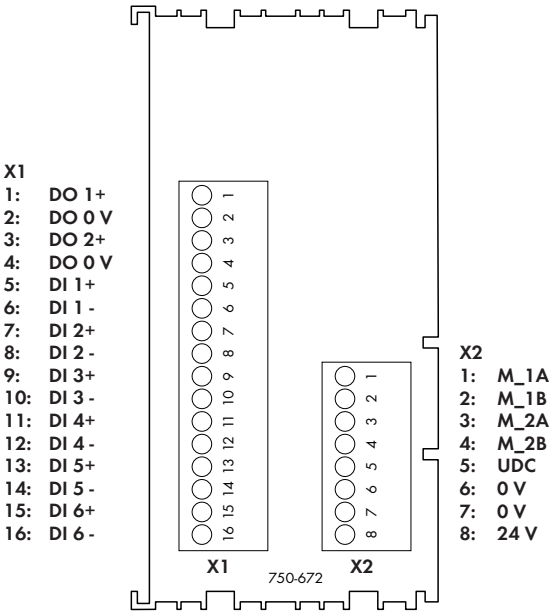
The 750-672 is an intelligent stepper controller with on-board power driver designed to control 2-phase stepper motors up to 70V/7.5A. The 64 times microstepping prevents step losses due to resonance in the acceleration phases and prevents excessive wear on mechanical parts. Adjustable current limits for stop, acceleration and constant speed help minimize motor power dissipation. Six configurable inputs for start/stop, end-stop, reference, jog/tip, etc., can be directly processed by the internal software without delay. Two outputs can be linked with internal functions or used freely.

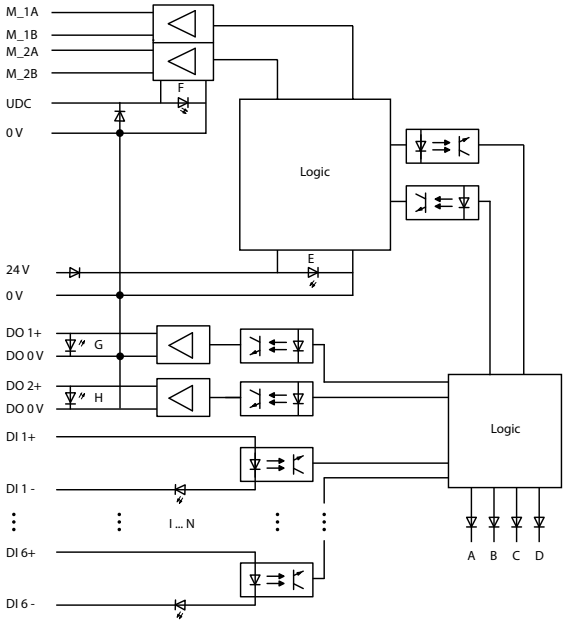
Flexible functions such as positioning with various acceleration ramps, command tables, camshaft, auto reference and other event-driven characteristics suit a wide range of applications. The programmer's interface is the same for all WAGO stepper controller modules.

Description	Item No.	Pack. Unit
Stepper Controller 70 V / 7.5 A 6IN, 2OUT	**750-672**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Technical Data	
Voltage supply	**Control voltage**:
	24 V DC (-25 % ... +30 %),
	Closed current 120 mA + 2 x 0.5 A (DO1,
	DO2, load-dependent);
	Motor voltage:
	Nominal value 55 V DC,
	Absolute upper limit: 71.5 V,
	Absolute lower limit: 18 V,
	Closed current typ. = 5 mA,
	Protection via external fuse 5 A
Protection	Short circuit monitoring of motor
	connections: Winding short circuit and
	short circuit to 0 V and 24 V;
	24 V supply: Reverse voltage protection;
	Motor supply: Reverse voltage protection
	via external fuse
Isolation	500 V system/supply
Voltage supply (internal)	via internal data bus and control voltage
Current consumption typ. (internal)	70 mA
Internal bit width	12-byte inputs/outputs
Configuration	via PLC and WAGO-I/O-CHECK
	(configuration tool)





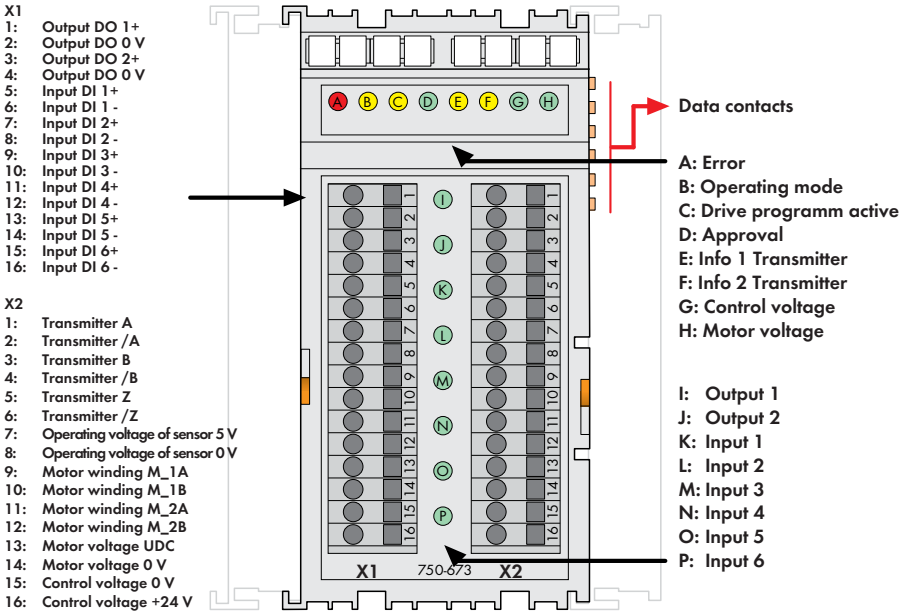
Technical Data

Inputs	
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
	Electrical isolation from each other and
	from all other voltage potentials on the
	module
Input filter	100 µs, software filter can be installed
Input current (typ.)	2.8 mA
Outputs	
No. of outputs	2 (DO1, DO2)
Output current	0.5 A, short-circuit protected
Switching frequency (max.)	5 Hz,
	inductive load to IEC947-5-1, DC13
Type of load	Resistive load,
	inductive load (max. 2H),
	lamps
Function	Inputs (preset):
	DI 1: Drive stop,
	DI 2: Reference input,
	DI 3: Jog switch in positive direction,
	DI 4: Jog switch in negative direction,
	DI 5: Limit switch in positive direction,
	DI 6: Limit switch in negative direction,
	Outputs (preset):
	DO 1: Target reached,
	DO 2: Error,
	Inputs and outputs can be freely
	reconfigured.
Motor connection	
No. of outputs	1 stepper motor (2 phases)
Output current (max.)	2 x 7.5 A temporary;
	derating starting at 50 °C;
	2 x 5.0 A nominal current;
	derating starting at 50 °C
Max. stepper frequency	7812 Hz full step
Diagnostics	Short circuit or ground fault overcurrent,
	overtemperature, supply voltage
	monitoring, motor wire break
Resolution	64 microsteps per full step
Cable length	30 m
	shielded cable

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 1.5 mm² / AWG 28 ... 14
	AWG 12 /14: THHN, THWN
Stripped lengths	5 ... 6 mm / 0.22 in
Dimensions (mm) W x H x L	51 x 70 x 100
	Height from upper-edge of DIN 35 rail
Weight	56 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27/29
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)

Servo Stepper Controller 55 V / 7.5 A 6IN, 2OUT



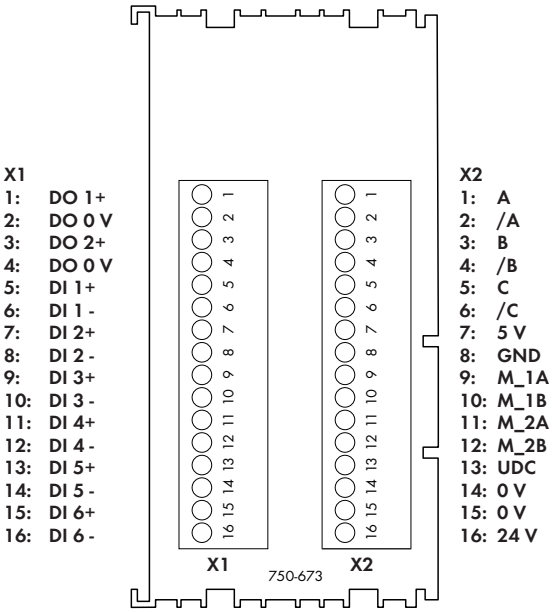
TThe 750-673 is an intelligent servo stepper controller with on-board power driver and incremental encoder evaluation to control 2-phase stepper motors up to 70V/7.5A. The 64 times microstepping prevents step losses due to resonance in the acceleration phases and prevents excessive wear on mechanical parts. The controller features vector control that, together with the incremental encoder, contributes to a dynamic rotational speed characteristic with high efficiency. Six configurable inputs for start/stop, end-stop, reference, jog/tip, etc., can be directly processed by the internal software without delay. Two outputs can be linked with internal functions or used freely.

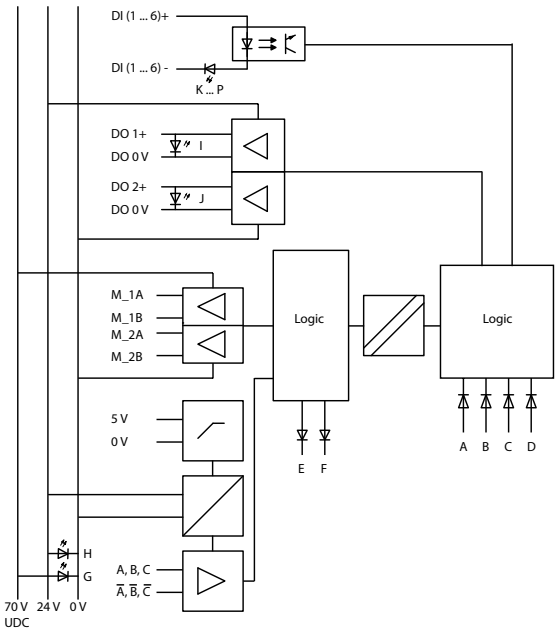
Flexible functions such as positioning with various acceleration ramps, command tables, camshaft, auto reference and other event-driven characteristics suit a wide range of applications. The programmer's interface is the same for all WAGO stepper controller modules.

Description	Item No.	Pack. Unit
Servo Stepper Controller 55 V / 7.5 A 6IN, 2OUT	**750-673**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Technical Data	
Voltage supply	**Control voltage**:
	24 V DC (-25 % ... +30 %),
	Closed current 120 mA + 2 x 0.5 A (DO1,
	DO2, load-dependent) + approx. 100 mA
	(encoder);
	Motor voltage:
	Nominal value 55 V DC,
	Absolute upper limit: 71.5 V,
	Absolute lower limit: 18 V,
	Closed current typ. = 5 mA,
	Protection via external fuse 5 A
Protection	Short circuit monitoring of motor
	connections: Winding short circuit and
	short circuit to 0 V and 24 V;
	24 V supply: Reverse voltage protection;
	Motor supply: Reverse voltage protection
	via external fuse
Isolation	500 V system/supply
Voltage supply (internal)	via internal data bus and control voltage
Current consumption typ. (internal)	70 mA
Internal bit width	12-byte inputs/outputs
Configuration	via PLC and WAGO-I/O-CHECK
	(configuration tool)





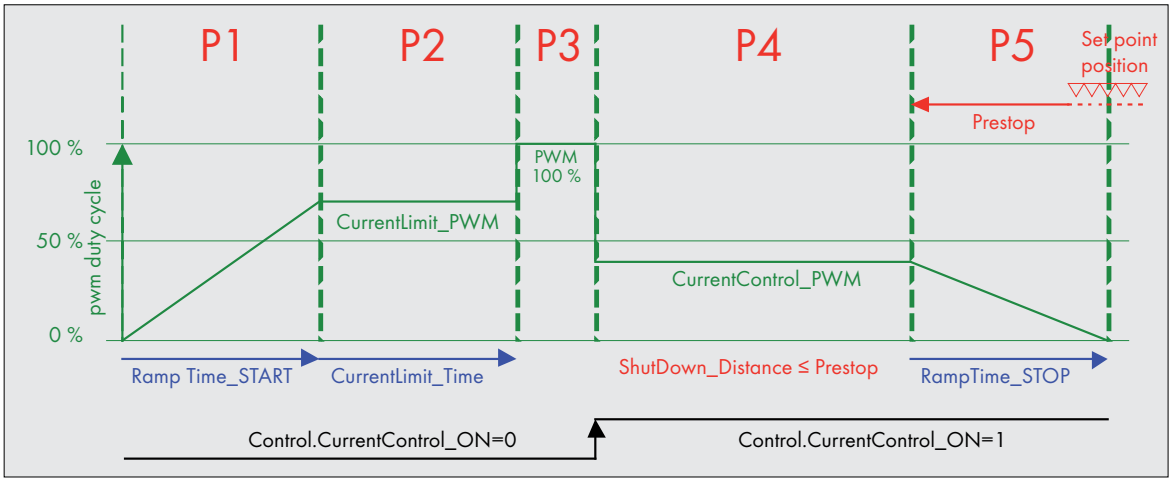
Technical Data

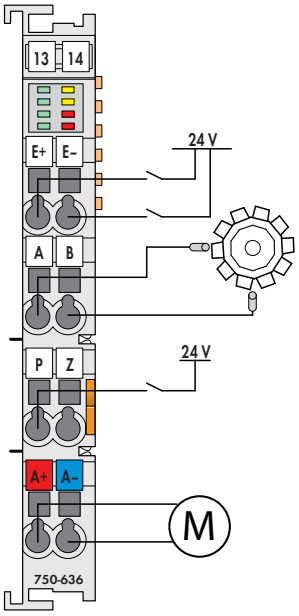
Inputs	
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
	Electrical isolation from each other and
	from all other voltage potentials on the
	module
Input filter	100 µs, software filter can be installed
Input current (typ.)	2.8 mA
Outputs	
No. of outputs	2 (DO1, DO2)
Output current	0.5 A, short-circuit protected
Switching frequency (max.)	5 Hz,
	inductive load to IEC947-5-1, DC13
Type of load	Resistive load,
	inductive load (max. 2H),
	lamps
Function	Inputs (preset):
	DI 1: Drive stop,
	DI 2: Reference input,
	DI 3: Jog switch in positive direction,
	DI 4: Jog switch in negative direction,
	DI 5: Limit switch in positive direction,
	DI 6: Limit switch in negative direction,
	Outputs (preset):
	DO 1: Target reached,
	DO 2: Error,
	Inputs and outputs can be freely
	reconfigured.
Motor connection	
No. of outputs	1 stepper motor (2 phases)
Output current (max.)	2 x 7.5 A temporary;
	derating starting at 50 °C;
	2 x 5.0 A nominal current;
	derating starting at 50 °C
Max. stepper frequency	7812 Hz full step
Diagnostics	Short circuit or ground fault overcurrent,
	overtemperature, supply voltage
	monitoring, motor wire break, wrong
	rotational direction incremental encoder -
	motor
Resolution	64 microsteps per full step

Technical Data

Cable length	30 m
	shielded cable
Incremental encoder	
Sensor connection	A, /A, B, /B, C, /C
Signal voltage	Compatible with RS-485/RS-422, common
	GND with motor voltage and control
	voltage
Sensor frequency	1 MHz
Terminating resistor	internal 120 Ω
Sensor supply	5 V DC, 300 mA short-circuit protected
Quadrature decoder	4-fold report
Counter	32 bits binary
Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 1.5 mm² / AWG 28 ... 14
	AWG 12 /14: THHN, THWN
Stripped lengths	5 ... 6 mm / 0.22 in
Dimensions (mm) W x H x L	51 x 70 x 100
	Height from upper-edge of DIN 35 rail
Weight	56 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27/29
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)

DC Drive Controller 750-636 24V/5A



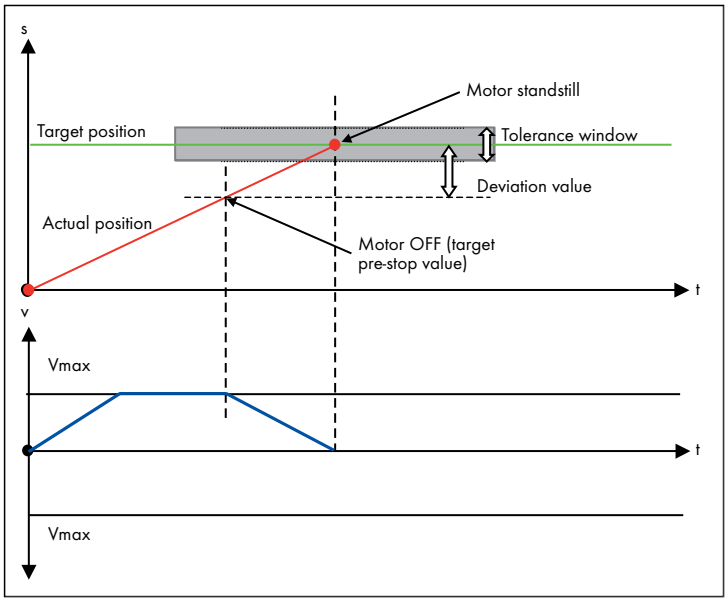


Features:

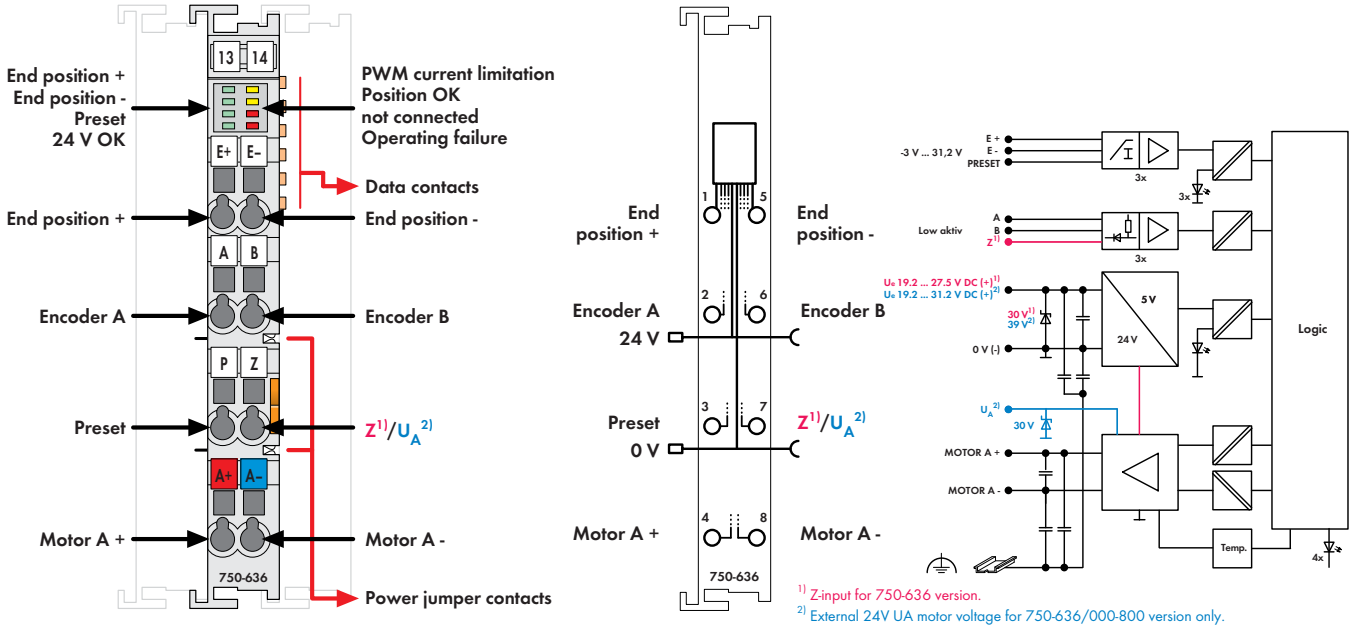
- Control of collector-based 24V/5A motors using 12mm/0.47in wide modules
- 5V/24V incremental encoder input
- Inputs for limit switch and preset (setting of reference point)
- Forward/backward run
- Inrush current up to 15A/500ms, temporary >30A
- Adaptive switch-off optimization (pre-stop distance)
- Adjustable soft start and stop
- Quick stop via coil short-circuit
- Current reduction (slow run) via PWM control
- Gear backlash compensation
- 32-bit position values
- Output stage monitoring via current and temperature monitoring (with pre-warning)
- PWM control and incremental encoder may be used independently
    - Power control for 24V loads
    - Incremental encoder module

Application area:

- ▸ Control and set-up functions for:
    - ▷ Width adjustments
    - ▷ Roller pressure
    - ▷ Pusher default setting
- ▸ Metering
- ▸ Vans



DC Drive Controller 24 V / 5 A



1) Z-input for 750-636 version.
2) External 24V UA motor voltage for 750-636/000-800 version only.

Delivered without miniature WSB markers

This module is a 1-channel intelligent positioning controller for 24VDC motors up to 5A with incremental position feeback. Three 24V inputs record the limit switches and a preset signal. An incremental encoder interface evaluates the signals from the position transmitter and determines actual value.
If required, the positioning optimizes the pre-stop position depending on direction and takes backlash compensation into account.
Bi-directional control of the DC motor is done via short-circuit proof and temperature-monitored H-bridge. Both switched operation and soft-start/stop or current reduction are possible through PWM control.

The field-side 24V supply voltage (20-28VDC) from the power contacts, which is monitored for undervoltage/overvoltage events, is looped through to adjacent modules.

Description	Item No.	Pack. Unit
DC Drive Controller 24V/5A	**750-636**	1
DC-Drive Controller 24V/5A/R*	**750-636/000-800**	1
DC Drive Controller 24V/5A/T	**750-636/025-000**	1
(Operating temperature -20 °C ... +60 °C)		

* /R: Interference-free for safety function applications (see manual)

Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

750 Series	
Conformity marking	CE

Technical Data

Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	50 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)

Technical Data

Outputs	
No. of outputs	1 channel
Motor current	5 A rated current at 33% ED,
	15 A / 500 ms
Motor connection	A+, A-, H-bridge output;
	short-circuit protected
PWM frequency (typ.)	20 kHz
Inputs	
Digital inputs (E+, E-, Preset)	Type1 acc. to IEC61131;
	high-side switching
Input current (typ.)	2.7 mA at 24 V
Encoder connection	A, B, Zero low-side switching;
	5 V ... 24 V DC / open collector
Signal voltage (0)	-3 V ... +1.5 V DC
Signal voltage (1)	2.4 V ... 30 V DC
Input current (typ.)	-3.2 mA at +0.3 V; 0 mA at >+5 V
Max. operating frequency	50 kHz
Quadrature decoder	1-fold, 2-fold, 4-fold report
Module	
Current consumption typ. (KBUS)	55 mA
Current consumption typ. (field side)	
750-636:	12 mA + load
750-636/000-800:	10 mA (fieldside) and 2 mA + load (motor)
Supply voltage	
750-636:	19.2 V ... 27.5 V DC
750-636/000-800:	19.2 V ... 27.5 V DC (V_A)
750-636/000-800:	19.2 V ... 31.2 V DC (fieldside)
Isolation	500 V system/supply
Data width process image	32 bits set/actual value;
	16 bits control or status

Safe I/O for PROFIBUS and PROFINET with the WAGO-I/O-SYSTEM 750/753

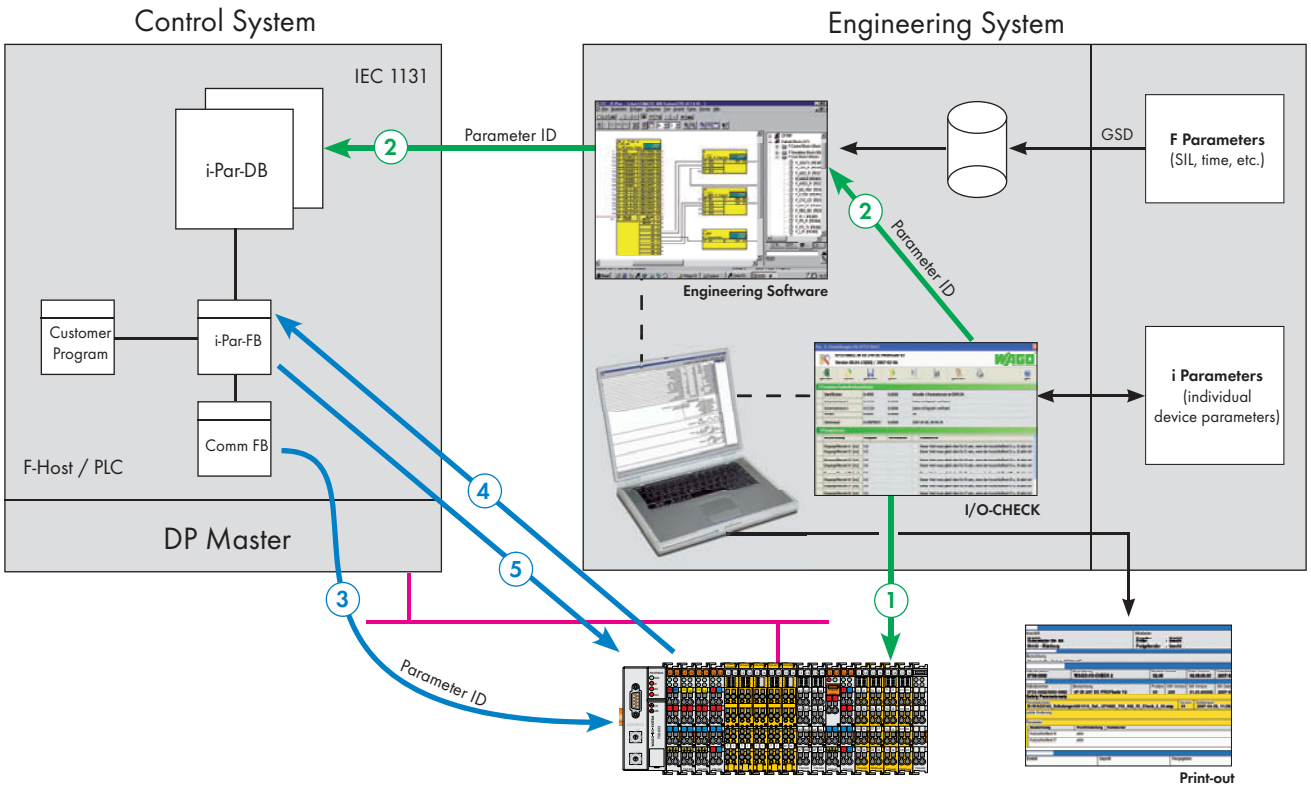
The WAGO-I/O-SYSTEM 750/753 PROFIsafe modules are safe digital inputs and outputs in accordance with IEC 61508.
They are designed for use with PROFIBUS using the PROFIsafe protocol. Additionally, the safe modules do not require major modifications to existing 750 Series nodes for use. PROFIsafe is a protocol for safe communication, and is certified in accordance with IEC 61784-3-3.
Both safety and non-safety I/O modules can co-exist on the same node, allowing safety sensors and actuators to be monitored and controlled locally.
Logic operations are performed using a fail-safe PLC with PROFIBUS or PROFINET interface as based on the PROFIsafe safety protocol.
Evaluation of the input data, as well as the output of the safe status signals via output modules, are controlled by the fail-safe PLC/control.
The modules are configured via GSD file in accordance with GSD specification V4.

This makes it possible to implement safety applications up to:
- CAT. 4 in accordance with EN 954-1
- CAT. 4 and PLe according to EN 13849
- SIL 3 based on EN 62061

The functionality of the 753 Series modules can be adjusted via safety parameters.
The following I/O have been approved for use with the modules:
- 750-333 and 750-343 PROFIBUS Couplers
- 750-833 PROFIBUS Controller
- 750-340 and 750-370 PROFINET Couplers

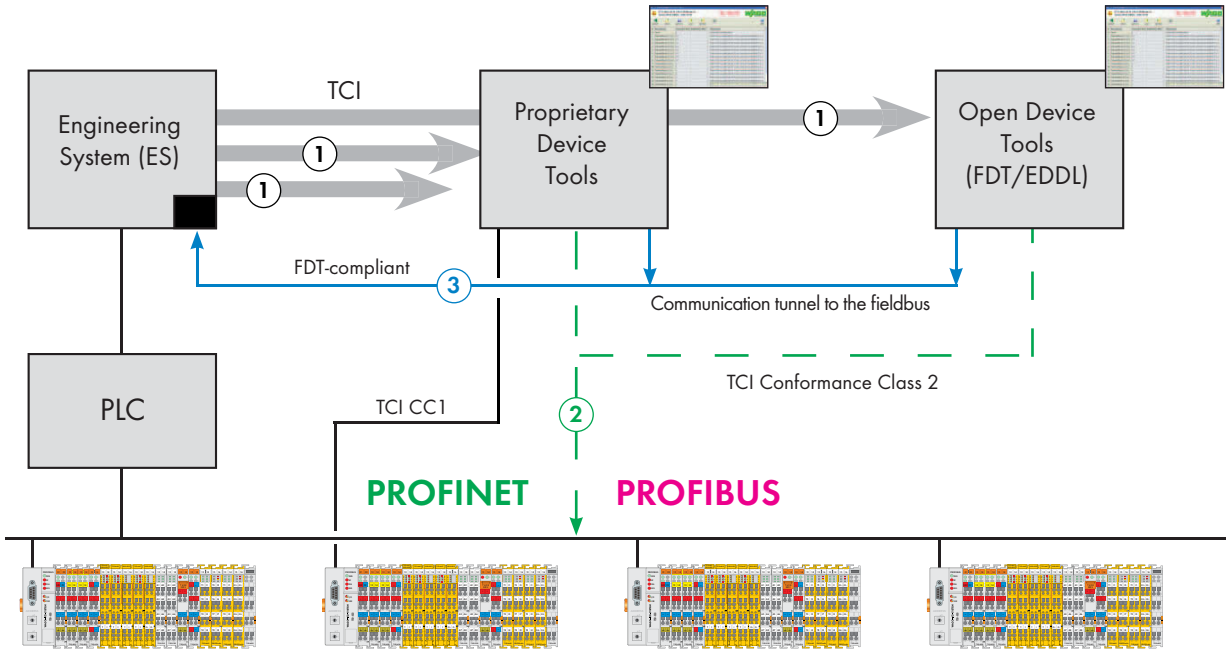
The required firmware version and assembly guidelines can be found in the product manual for each device.

Safety Configuration



1. Selection and download of safety parameters into the safe module using I/O-CHECK.
2. Transmission of the parameter ID (i-Par-CRC) from I/O-CHECK into the engineering tool (Drag and Drop) and into the control unit.
3. Compensation of parameter set by comparing the i-Par-CRC for both the controller and module via safe module.
4. Load the i-Par-DB with the module parameters if compensation (point 3) is OK, but the i-Par-DB has no parameter ID or a different one (i-Par-DBs initialization).
5. Load the module with the i-Par-DB parameter if the compensation (point 3) has failed and the i-Par-DB has the same parameter ID as the parameter ID transmitted by I/O-CHECK on step 2.

Integration of I/O-CHECK for Safety Configuration into Engineering Tool



1. The device tool is accessed via TCI interface and transmitted to the selected device.
2. The data is exchanged with the device via system interface (TCI CC1) or via fieldbus (TCI CC2).
3. Device Tool and Device communication is performed via FDT-compliant communication interface of the EngineeringSystem and then via individual standard fieldbus processes.

4-Channel Digital Input Module PROFIsafe V2.0

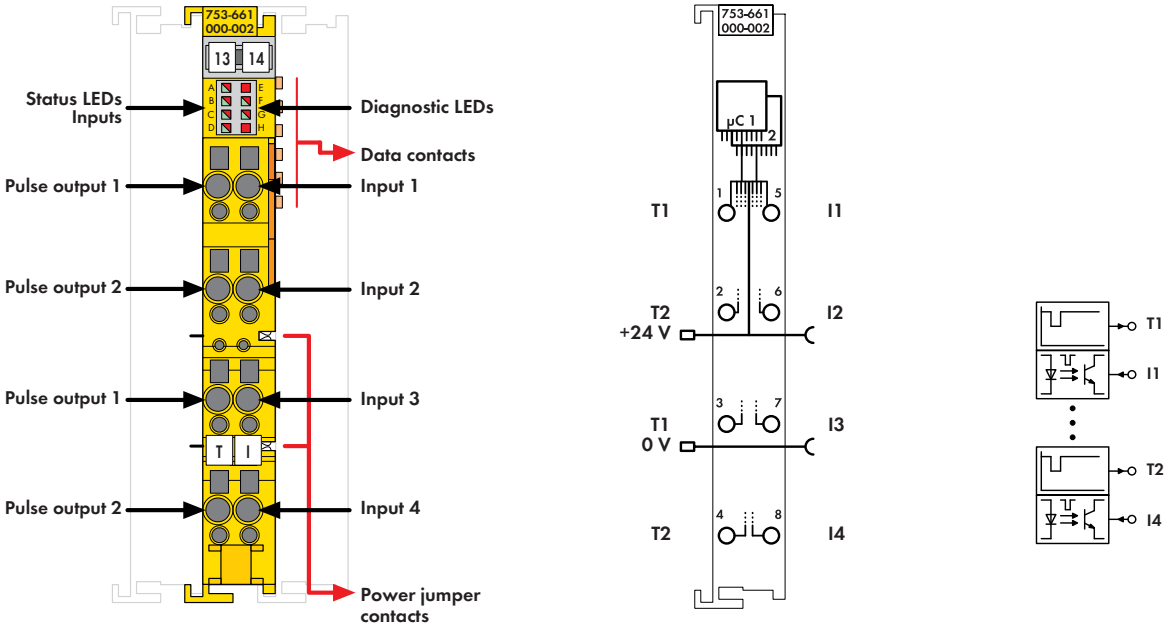


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The 753-661/000-002 PROFIsafe Input Module can connect to potential-free emergency stop buttons with contacts, safety interlock switches, operating mode switches, safety sensors and semiconductor outputs. The module provides 4 clock- sensitive inputs (I1-I4) that are fed by 2 differently clocked outputs (T1-T2).
The clock outputs are short-circuit proof. The inputs and outputs are continuously monitored for cross circuits and voltage supply from separate sources.
Additional safety relevant parameters (e.g. test pulse lengths, discrepancy and filter times) can be configured via WAGO-I/O-CHECK. A bi-color LED for each of the 4 input channels indicates the signal state. Additional LEDs indicate internal or external errors. The PROFIsafe address can be set using the DIP switch located on the side of the module, or via WAGO-I/O-CHECK.

The module supports both the PROFIsafe V1.3 (PROFIBUS) and V2.0 (PROFIBUS,PROFINET) protocols.
Each output is electrically isolated from the bus by optocouplers.
Any module configuration is possible when designing the fieldbus node.

To protect the module against surge voltages (acc. to IEC 6100-4-5), the 750-626 Filter Module or an external surge filter must be used to filter the 24V supply voltage.

Reference the product manual for further information.

Description	Item No.	Pack. Unit
4FDI 24V PROFIsafe V2 (without connector)	**753-661/000-002**	1
4FDI 24V PROFIsafe V2	**750-661/000-002**	1

Accessories

	Item No.	Pack. Unit
753 Series connector	**753-120**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Standards and Approvals

750 and 753 Series	
Safety standards	IEC 61508, parts 1-7, 1998 and 2000;
	IEC 62061;
	EN 954-1;
	pr EN ISO 13849-1:2005
Conformity marking	CE

Technical Data

Inputs	
Sensor inputs	I1 ... I4; clock sensitive to T1 ... T2
	Type 1 acc. to IEC61131
Input current (typ.)	2.2 mA
Input frequency (max.)	4 Hz
General Specifications	
Achievable safety classes	Cat. 4, SIL 3, PL e
Voltage supply	5 V system voltage via internal bus
	24 V via power jumper contacts
Voltage via power jumper contacts	24 V DC
	(20.4 V ... 28.8 V, -15% ... +20%)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2001)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2001)

8-Channel Digital Input Module PROFIsafe V2.0

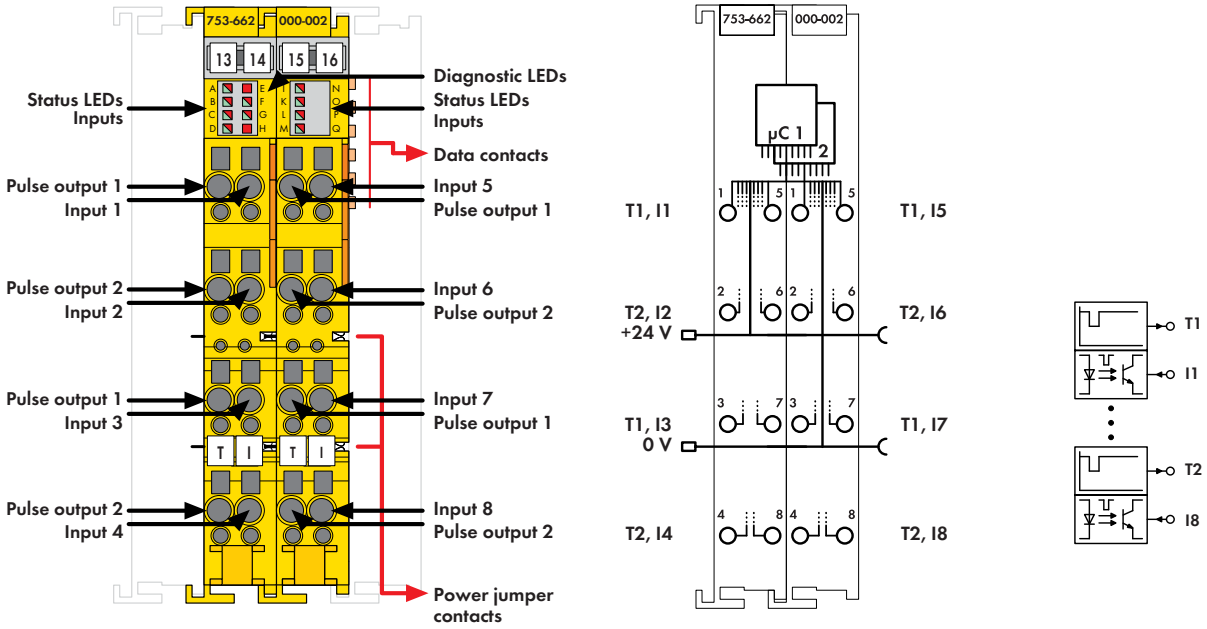


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The 753-662/000-002 PROFIsafe Input Module can connect with potential-free emergency stop buttons with contacts, safety interlock switches, operating mode switches, safety sensors as well as semiconductor outputs. The module provides 8 clock-sensitive inputs (I1-I8) that are fed by 2 differently clocked outputs (T1-T2). The clock outputs are short-circuit proof. The inputs and outputs are constantly monitored for cross circuits and voltage supply from separate sources. Both these faults and additional safety relevant parameters (e.g. test pulse lengths, discrepancy and filter times) can be configured via WAGO-I/O-CHECK.
A bi-color LED for each of the 8 input channels indicates the signal state; additional LEDs indicate internal or external errors. The PROFIsafe address can be set using the DIP switch located on the side of the module, or via WAGO-I/O-CHECK.

The module supports both PROFIsafe V1.3 (PROFIBUS) and V2.0 (PROFIBUS, PROFINET) protocols.
Each output is electrically isolated from the bus by optocouplers. Any module configuration is possible when designing the fieldbus node.

To protect the module against surge voltages (acc. to IEC 6100-4-5), the 750-626 Filter Module or an external surge filter must be used to filter the 24V supply voltage.

Reference the product manual for further information.

Description	Item No.	Pack. Unit
8FDI 24V PROFIsafe V2 (without connector)	**753-662/000-002**	1
8FDI 24V PROFIsafe V2	**750-662/000-002**	1

Accessories		Item No.	Pack. Unit
	**753 Series connector**	**753-120**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Standards and Approvals

750 and 753 Series	
Safety standards	IEC 61508, parts 1-7, 1998 and 2000;
	IEC 62061;
	EN 954-1;
	pr EN ISO 13849-1:2005
Conformity marking	CE
UL 508	

Technical Data

Inputs	
Sensor inputs	I1 ... I8; clock sensitive to T1 ... T2
	Type 1 acc. to IEC61131
Input current (typ.)	2.2 mA
Input frequency (max.)	4 Hz
General Specifications	
Achievable safety classes	Cat. 4, SIL 3, PL e
Voltage supply	5 V system voltage via internal bus
	24 V via power jumper contacts
Voltage via power jumper contacts	24 V DC
	(20.4 V ... 28.8 V, -15% ... +20%)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	50 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

4/4-Channel Digital Input and Output Module PROFIsafe V2.0

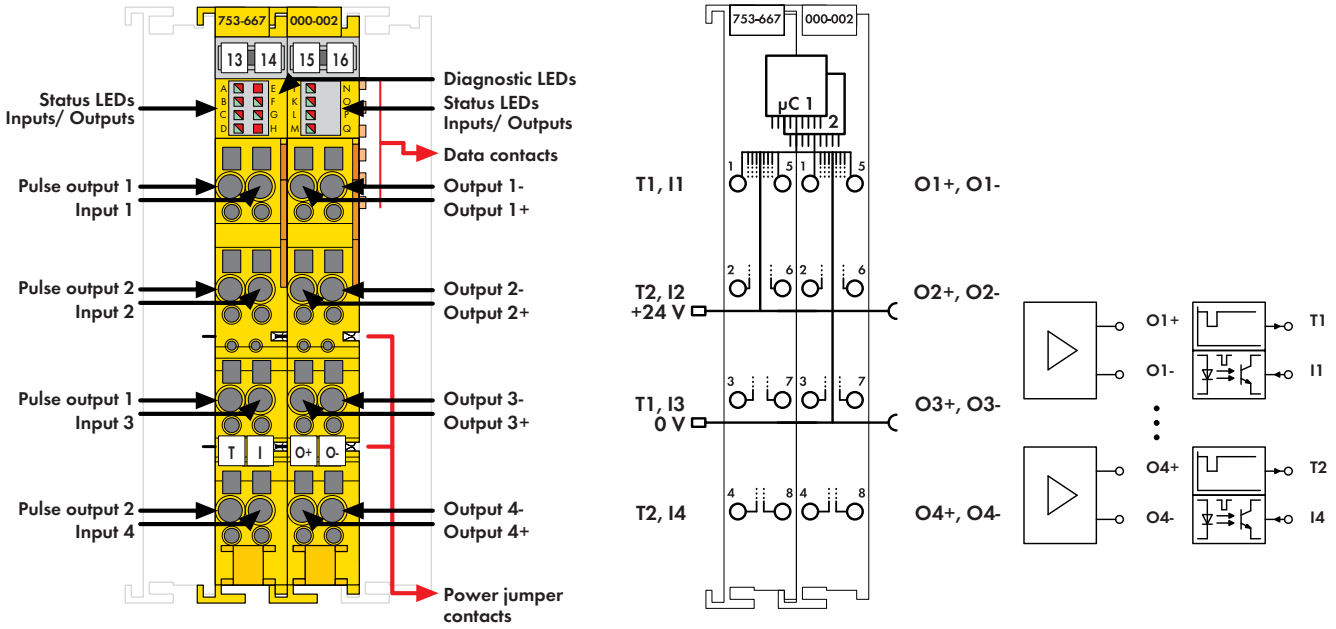


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The 753-667/000-002 Module has 4 power outputs (O1-O4) as well as 4 clock sensitive inputs (I1-I4). The sensors can be supplied directly with 24V or fed by 2 differently clocked outputs (T1-T2). The inputs can connect to potential-free emergency stop buttons with contacts, safety interlock switches, operating mode switches and other safety sensors or semiconductor outputs (e.g. light barriers, PLC outputs). The power outputs switch both DC13 resistive and inductive loads with up to a 2A-rated current without an additional external circuit.
The module monitors: short-circuits, cross circuits and 24V voltage supply from separate sources. Both the monitoring and additional safety relevant parameters (e.g. test pulse lengths, discrepancy and filter times) can be configured via WAGO-I/O-CHECK.

The bi-color LEDs on the module monitor the status of inputs and outputs, internal/external errors, PROFIsafe status and configuration.
The PROFIsafe address can be set using the DIP switch on the side of the module, or via WAGO-I/O-CHECK.
The module supports both the PROFIsafe V1.3 (PROFIBUS) and V2.0 (PROFIBUS, PROFINET) protocols.
Any input module configuration is possible when designing the fieldbus node.

To protect the module against surge voltages (overvoltage protection acc. to IEC 6100-4-5), the 750-626 Filter Module or an external surge filter must be used to filter the 24V supply voltage.
Reference the product manual for further information.

Description	Item No.	Pack. Unit
4FDI/4FDO 24V/2A PROFIsafe V2 (without connector)	**753-667/000-002**	1
4FDI/4FDO 24V/2A PROFIsafe V2	**750-667/000-002**	1

Accessories

	Item No.	Pack. Unit
753 Series connector	**753-120**	25
Coding elements	**753-150**	100
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

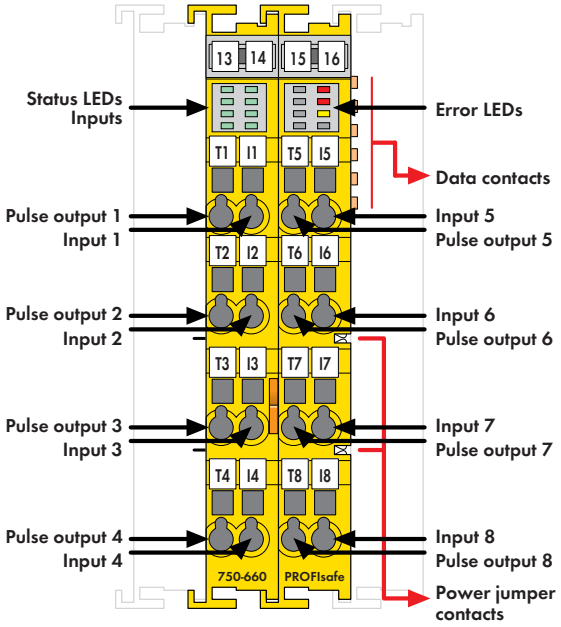
Standards and Approvals

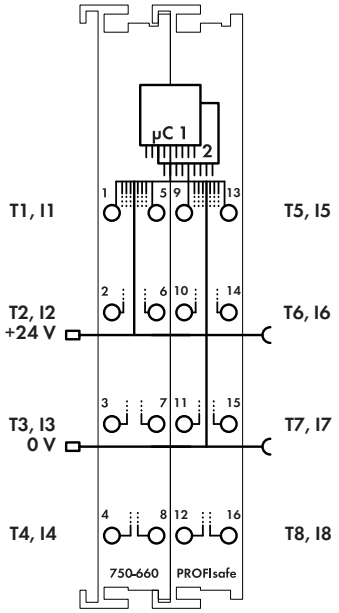
750 and 753 Series	
Safety standards	IEC 61508, parts 1-7, 1998 and 2000;
	IEC 62061;
	EN 954-1;
	pr EN ISO 13849-1:2005
Conformity marking	CE
cULus UL 508	

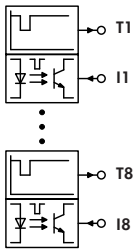
Technical Data

Inputs	
Sensor inputs	I1 ... I4; clock sensitive to T1 ... T2
	Type 1 acc. to IEC61131
Input current (typ.)	2.2 mA
Input frequency (max.)	4 Hz
Outputs	
Power outputs	O1 ... O4; power outputs for actuators
Output current (per channel)	max. 2 A
Total output current	max. 4 A
Switching frequency (max.)	resistive load = 50 Hz;
	inductive load = 0.1 Hz
Capacitive load for each channel	O1 ... O4; 2 nF
Test pulse length	0 ms ... 500 ms
General Specifications	
Achievable safety classes	Cat. 4, SIL 3, PL e
Voltage supply	5 V system voltage via internal bus
	24 V via power jumper contacts
Voltage via power jumper contacts	24 V DC
	(20.4 V ... 28.8 V, -15% ... +20%)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

8-Channel Digital Input Module PROFIsafe V1.3







Delivered without miniature WSB markers

Emergency stop buttons, limit indicators, or other safe-contact sensors may be connected to the 750-660/000-001 PROFIsafe Input Module.
The module has 8 pulse inputs (I1 ... I8) that are supplied by 8 different pulse outputs (T1 ... T8).
The pulse outputs are short circuit proof. The inputs are constantly monitored for short circuits and supply voltage from separate sources.
A green LED for each of the 8 input channels indicates the signal state, 2 red LEDs indicate internal or external errors.
The address switch at the side of the module is used to set the PROFIsafe address.
The fieldside and internal system are electrically isolated.

Any configuration of the input modules is possible when designing the fieldbus node. Grouping of module types is not necessary.
A fieldbus node comprised of PROFIsafe devices must be supplied by a filtered power supply (PELV/SELV power supply unit).
Reference the product manual for further information.

Description	Item No.	Pack. Unit
8FDI 24V DC PROFIsafe V1.3	**750-660/000-001**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

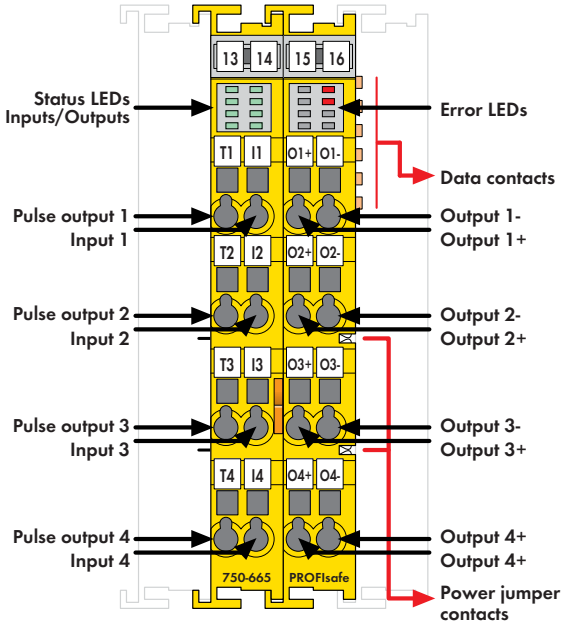
Standards and Approvals

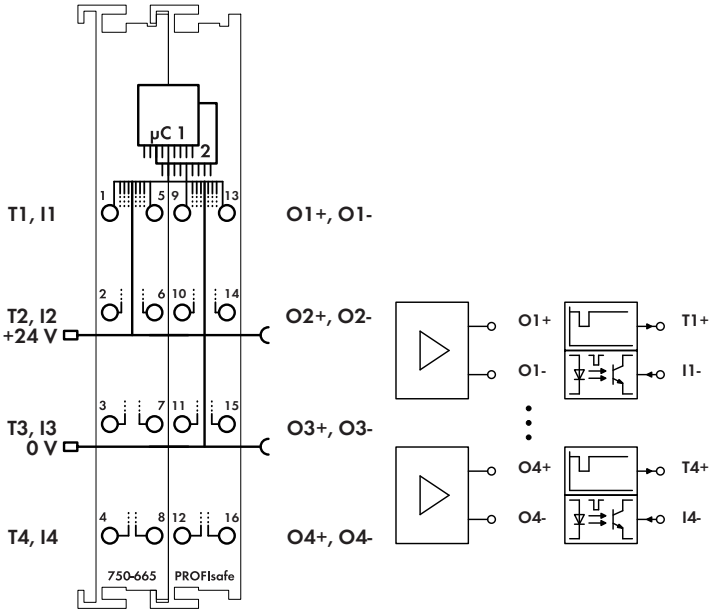
750 Series	
Basic standard safety applications	IEC 61508, EN 954-1
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4

Technical Data

Inputs	I1 ... I8; pulse inputs
Achievable safety classes	8 x Cat. 2/SIL 2 or 4 x Cat. 4/SIL 3
Outputs	T1 ... T8: 8 pulse outputs, short circuit proof
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC
Response times (min ... max)	t_{on} (H->L) = 13 ms ... 71 ms
	t_{off} (H->L) = 13 ms ... 26 ms
	plus 2 x runtime internal bus
	plus 2 x runtime coupler - PLC
	plus runtime PLC
Proof test interval	10
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	97 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

4-Channel Digital Input and Output Module PROFIsafe V1.3





Delivered without miniature WSB markers

The 750-665/000-001 PROFIsafe Input and Output Module has 4 power outputs (O1 ... O4) and 4 pulse inputs (I1 ... I4) that are supplied by 4 different pulse outputs (T1 ... T4). The pulse outputs are short circuit proof. The inputs are constantly monitored for short circuits and supply voltage from separate sources. A green LED for each of the 4 input and the 4 output channels indicates the signal state, 2 red LEDs indicate internal or external errors. The address switch at the side of the module is used to set the PROFIsafe address. The fieldside and internal system are electrically isolated.Any configuration of the modules is possible when designing the fieldbus node. Grouping of module types is not necessary.
Reference the product manual for further information.

Description	Item No.	Pack. Unit
4FDO 0.5A, 4FDI 24V DC PROFIsafe V1.3	**750-665/000-001**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Standards and Approvals

750 Series	
Basic standard safety applications	IEC 61508, EN 954-1
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA nL IIC T4

Technical Data

Inputs	I1 ... I4; pulse inputs (T1 ... T4)
Achievable safety classes	4 x Cat. 2/SIL 2 or 2 x Cat. 4/SIL 3
Outputs	O1 ... O4: outputs for actuators
Achievable safety classes	4 x Cat. 2/SIL 2 or 2 x Cat. 4/SIL 3
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC
Reactance (max.)	capacitive reactance 2 nF;
	category DC 13
Response times (min ... max) Inputs	t_{on} (H->L) = 13 ms ... 71 ms
	t_{off} (H->L) = 13 ms ... 26 ms
	plus 2 x runtime internal bus
	plus 2 x runtime coupler - PLC
	plus runtime PLC
Response times (max.) Outputs	t_{on} (H->L) = 13 ms
	t_{off} (H->L) = 13 ms
	plus 2 x runtime internal bus
	plus 2 x runtime coupler - PLC
	plus runtime PLC
Swiching frequency $_{max.}$	
resistive load	5 Hz
inductive load acc. to IEC947-5-1,	0.1 Hz, 5 Hz with free-wheeling diodes
Proof test interval	10
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	98 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

Fieldbus Technology for Use in Hazardous Areas (Gas, Dust and Mining)

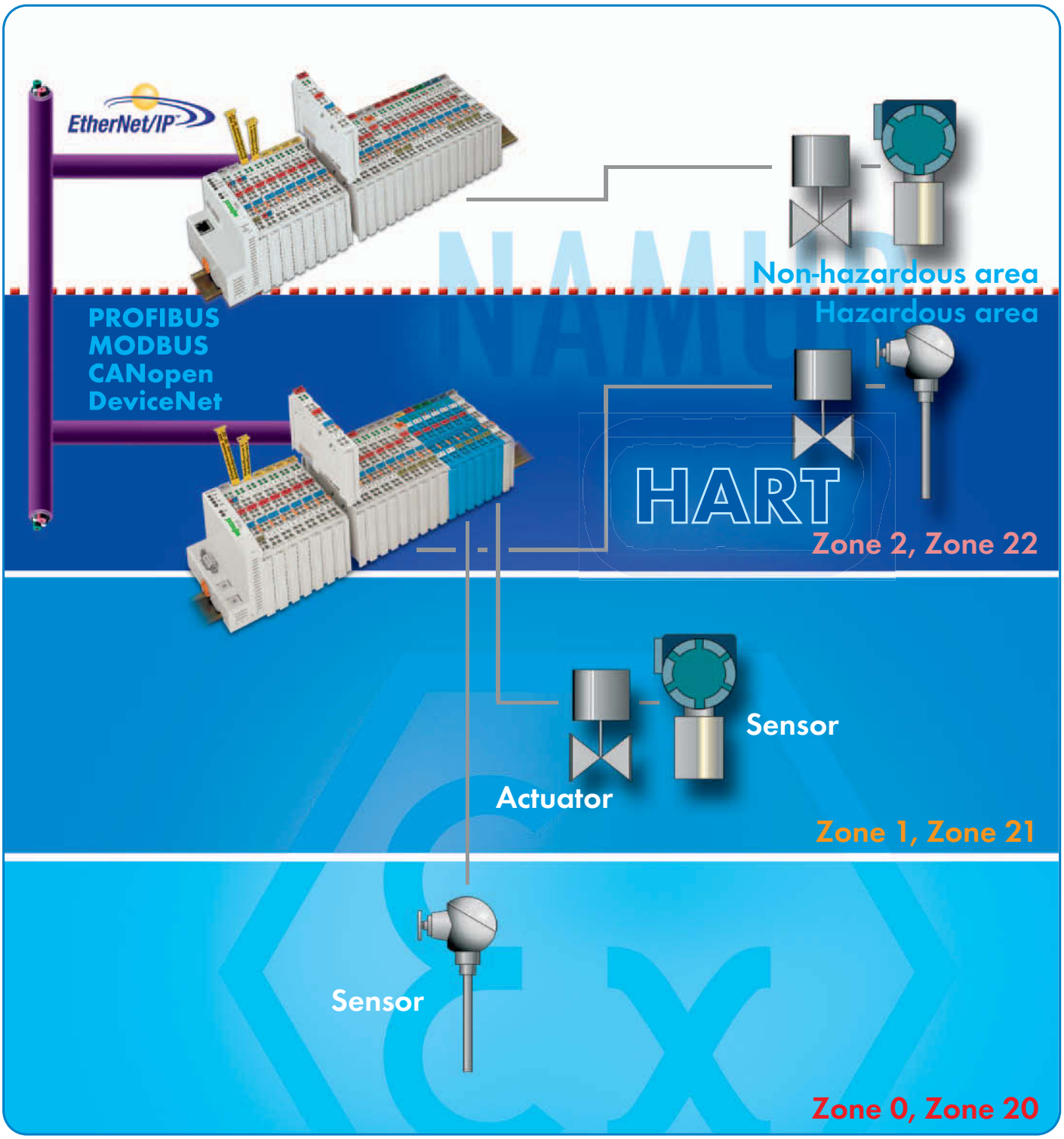
Today's development shows that many chemical or petrochemical companies have production plants, production and process automation machines in operation which use gas-air or dust-air mixtures which can be explosive. For this reason, the electrical components used in such plants and systems must not pose a risk of explosion resulting in injury to persons or damage to property. The WAGO-I/O-SYSTEM 750 is designed for use in both hazardous and non-hazardous environments.

Using the fieldbus technology in hazardous environments can be time consuming and cost intensive and is only made possible in a limited way.

When used in hazardous areas of Zone 2, the WAGO-I/O-SYSTEM 750 offers a safe, easy and economical connection to the sensors and actuators of Zones 0 and 1. The Ex i I/O modules were specially developed for this purpose. They build up an intrinsically safe section, which can be integrated into a standard fieldbus node, offering all the advantages of a state-of-the-art fieldbus technology (e.g., fieldbus independency, flexibility, modularity, programmability, reliability, cost effectiveness).

The WAGO-I/O-SYSTEM 750 is also approved for mining applications.

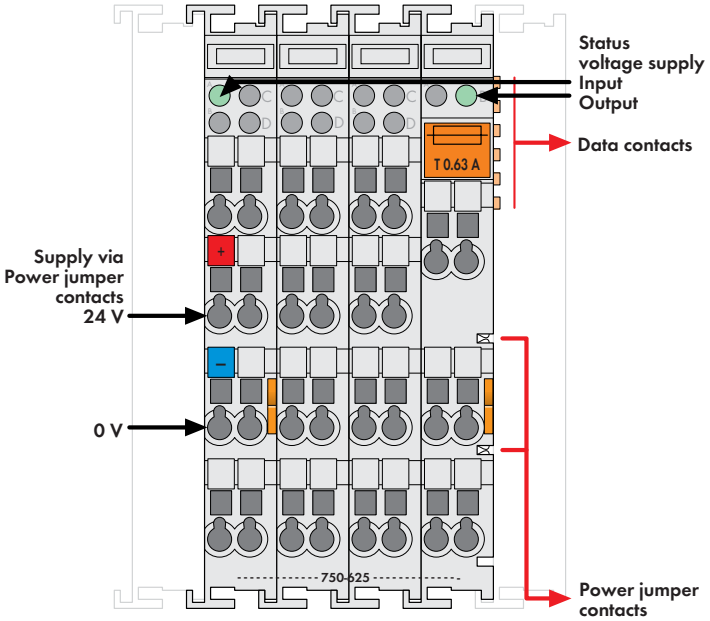
Additional information at www.wago.com:
Fieldbus Technology for Use in Hazardous Areas



Item Designation of Intrinsically Safe I/O Modules		Mining	Gas	Dust
750-625	24V DC Power Supply Ex i	I (M2) [Ex ia] I,	II 3 G Ex nA II T4,	II 3 D Ex tD A22 IP6X T135°C
750-606	24VDC 1.0A power supply Ex i	pending		
750-435	1DI NAMUR Ex i	I (M2) [Ex ia] I,	II 3 (1) G Ex nA [ia] IIC T4,	II 3 (1) D Ex tD [iaD] A22 IP6X T135°C
750-438	2DI NAMUR Ex i	I (M2) [Ex ia] I,	II 3 (1) G Ex nA [ia] IIC T4,	II 3 (1) D Ex tD [iaD] A22 IP6X T135°C
750-535	2DO 24V DC Ex i	I (M2) [Ex ib] I,	II 3 (2) G Ex nA [ib] IIC T4,	II 3 (2) D Ex tD [ibD] A22 IP6X T135°C
750-485	2AI 4-20mA Ex i	I (M2) [Ex ib] I,	II 3 (2) G Ex nA [ib] IIC T4,	II 3 (2) D Ex tD [ibD] A22 IP6X T135°C
750-484	2AI 4-20 mA S.E. HART Ex i	pending		
750-481/003-000	2AI RTD Ex i	I (M2) [Ex ia] I,	II 3 (1) G Ex nA [ia] IIC T4,	II 3 (1) D Ex tD [iaD] A22 IP6X T135°C
750-487/003-000	2AI TC Ex i	pending		
750-585	2AO 0-20mA Ex i	I (M2) [Ex ib] I,	II 3 (2) G Ex nA [ib] IIC T4,	II 3 (2) D Ex tD [ibD] A22 IP6X T135°C

Supply Module 24 V DC Ex i

with fuse carrier



Delivered without miniature WSB markers

This supply module provides power for the intrinsically safe I/O modules 750-435, -438, -481/003-000, -485, -535 and -585.
Furthermore, the module separates the intrinsically safe and non-intrinsically safe section of the node.
Maximum supply current available to all connected modules is 500mA.
Should higher currents be necessary, intermediate supply modules must be added in the assembly.

In this case, four 750-616 Separation Modules must be placed between the intrinsically safe sections.
This module is fuse-protected. The fuse can be inserted or changed by pulling out the fuse carrier.

Indicators:
- Green LED (supply voltage input/output)

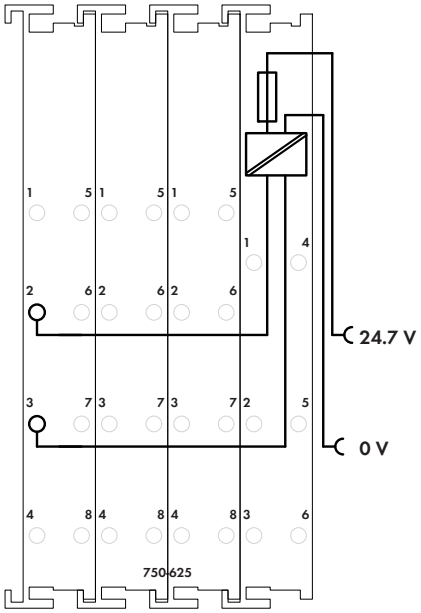
Input and output side are electrically isolated from each other.

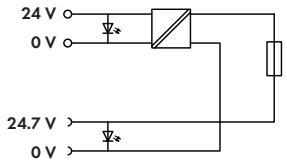
Note:
General information (e.g., installation regulations) on explosion protection is available in the WAGO-I/O-SYSTEM 750 manuals!

Description	Item No.	Pack. Unit
24V DC Power Supply Ex i	**750-625**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Technical Data	
Max. nominal output voltage via power jumper contacts	24 V DC
Current via power jumper contacts (max.)	0.5 A DC
Input voltage	20.4 V ... 28.8 V DC
Power consumption P (max.)	18 W
Power loss P_V	5.5 W
Fuse	5 x 20; T 630 mA; melting integral
	≤ 5.1 A²S





Technical Data

Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	48 mm
Weight	192.2 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

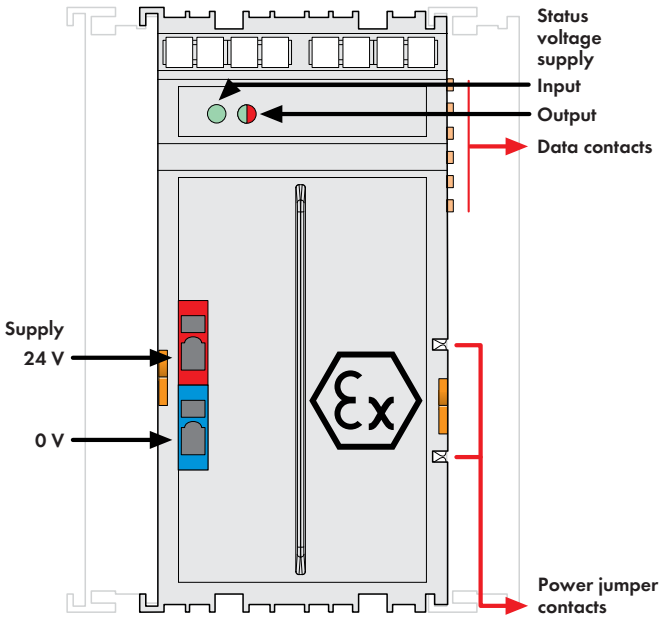
Explosion Protection

Ex directive	EN 60079-0:2006, EN 60079-11:2007, EN 60079-15:2005, EN 61241-0:2006, EN 61241-1:2004, EN 61241-11:2006
Safety data	Input: V_M = 253 V; Output : V_0 = 27.3 V

Standards, Guidelines and Approvals

EC EMC guideline	2004/108/EG
EC low voltage guideline	2006/95/EG
Conformity marking	CE
TÜV 07 ATEX 554086 X	I (M2) [Ex ia] I, II 3 G Ex nA II T4, II 3 D Ex tD A22 IP6X T135°C
TUN 09.0001X	[Ex ia] I, Ex nA II T4, Ex tD A22 IP6X T135°C
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
UL 508	
Shipbuilding	see "Approvals Overview" in section 1

Supply Module 24 V DC, 1.0 A Ex i



Delivered without miniature WSB markers

This supply module provides power to all intrinsically safe 750 Series Ex i modules. This module also monitors the power supply to the downstream Ex i segment and separates the intrinsically safe from the non-intrinsically safe section of the WAGO-I/O-SYSTEM 750. Input and output sides are electrically isolated from each other. Maximum supply current available to all connected modules is 1.0A. When configuring the system, it must be ensured that this total current is not exceeded. In the event of a short circuit or overload, electronic monitoring switches off the output voltage. After eliminating the fault, the output voltage is reactivated within approx. 10 sec.

NOTE:
If, due to load conditions, more than one supply module is required per station, four separation modules (750-616) must be placed between the intrinsically safe sections.

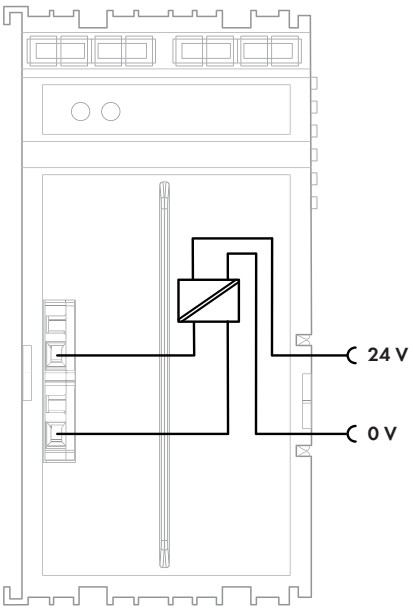
LED indicators:
- LED green (input voltage)
- LED green/red (output voltage available/not available)

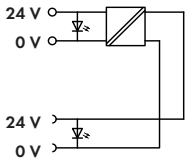
Note:
General information (e.g., installation regulations) on explosion protection is available in the WAGO-I/O-SYSTEM 750 manuals!

Description	Item No.	Pack. Unit
24VDC 1.0A power supply Ex i	**750-606**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Technical Data	
Max. nominal output voltage via power jumper contacts	24 V DC
Current via power jumper contacts (max.)	1 A DC
Input voltage	20.4 V ... 28.8 V DC
Power consumption P (max.)	30 W
Power loss P_V	< 5 W
Fuse	electronic
Bit width	2 bits (input voltage failure, fuse triggered)





Technical Data

Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 1.5 mm² / AWG 28 ... 16
Stripped lengths	8 ... 9 mm / 0.33 in
Width	48 mm
Weight	48.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

Explosion Protection

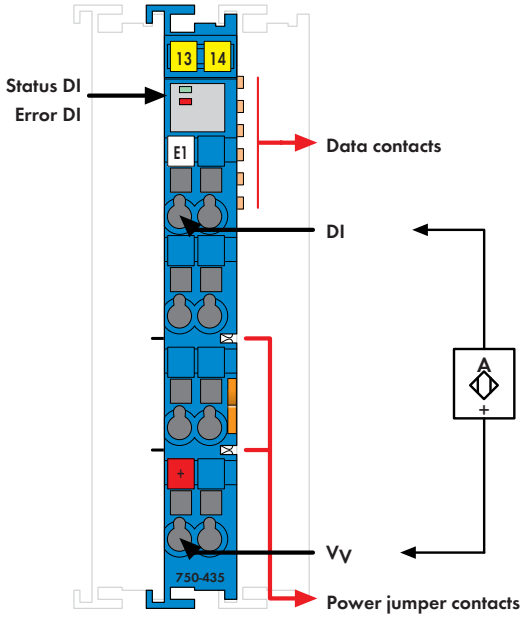
Ex directive	EN 61241-0, EN 61241-1, EN 61241-11, EN 60079-0, EN 60079-11, EN 60079-15
Safety data	Input: V_M = on request; Output: V_0 = on request

Standards, Guidelines and Approvals

EC EMC guideline	2004/108/EG
EC low voltage guideline	2006/95/EG
Conformity marking	CE
TÜV approval	pending
TUN approval	pending

1-Channel Digital Input Module NAMUR, Ex i

Proximity switch acc. to DIN EN 50227



Delivered without miniature WSB markers

The digital input module receives the binary signals from sensors operating in hazardous environments of Zones 0 and 1.
Namur sensors, optocouplers, mechanical contacts (in conjunction with resistance coupling module, available as an accessory) or other actuating elements can be connected by means of approved intrinsically safe devices.
The WAGO-I/O-SYSTEM 750 has to be installed in Zone 2 or in non-hazardous environments.
Each sensor is supplied with a short-circuit-protected 8.2V supply.

Indicators:
Green LED (signal on)
- Red LED (short circuit, wire breakage)

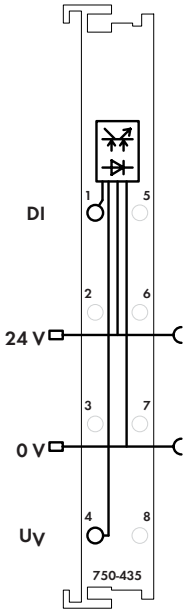
An optocoupler is used for electrical isolation between the bus and the field side.

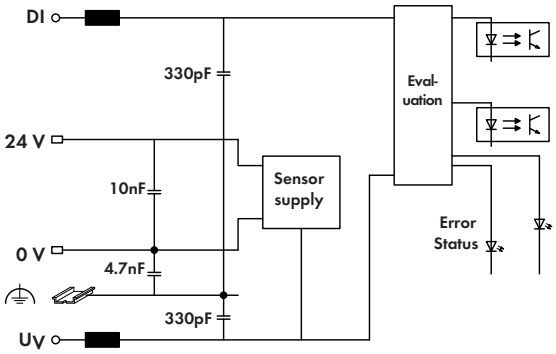
Note:
Only use the digital input module in connection with the 24VDC Ex i Supply Module (note the power supply instructions on page 23)!
General information (e.g., installation regulations) on explosion protection is available in the WAGO-I/O-SYSTEM 750 manuals!

Description	Item No.	Pack. Unit
1DI NAMUR Ex i	**750-435**	1

Accessories		Item No.	Pack. Unit
Resistance coupling module		**288-936**	15
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Technical Data	
Number of inputs	1
Current consumption typ. (internal)	2.5 mA
Voltage via power jumper contacts	Supply via 24 V DC Ex i supply module
Sensor supply V_v	8.2 V DC
Signal current (0)	≤ 1.2 mA
Signal current (1)	≥ 2.1 mA
Input filter	3.0 ms
Switching hysteresis	0.2 mA
Open-circuit voltage	8.2 V DC
Input resistance	1 kΩ
Input pulse duration	≥ 5 ms
Input pulse separation	≥ 3 ms
Short-circuit current	≤ 8,2 mA
Short circuit monitoring	> 6,4 mA
Line break monitoring	< 0.2 mA
Current consumption typ. (field side)	13 mA + load
Power consumption P (max.)	0.5 W
Power loss P_v	0.5 W
Isolation	375 V system/supply
Bit width	2 bits; 1 bit input;
	1 bit error (short circuit/open circuit)





Technical Data

Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	44.3 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

Explosion Protection

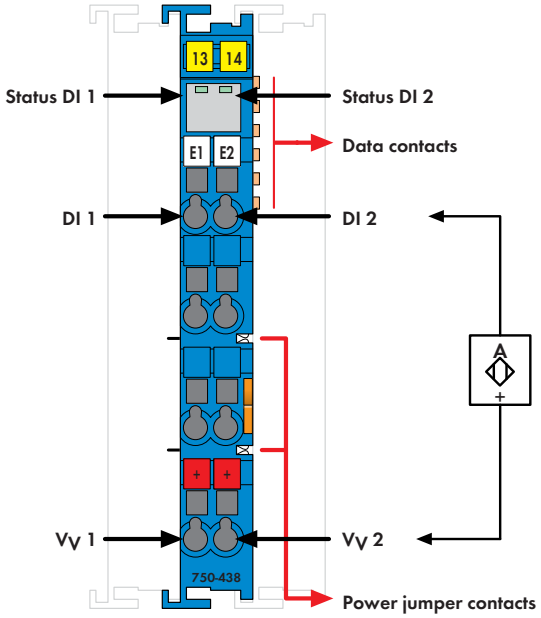
Ex directive	EN 60079-0:2006, EN 60079-11:2007, EN 60079-15:2005, EN 61241-0:2006, EN 61241-1:2004, EN 61241-11:2006
Electric circuit, safety relevant data	V_0 = 12 V ; I_0 = 16 mA; P_0 = 48 mW; Characteristic: Linear
Intrinsically safe Ex ia IIC	L_0 = 180 mH; C_0 = 1.4 µF
Intrinsically safe Ex ia IIB	L_0 = 560 mH; C_0 = 9 µF
Intrisically safe Ex ia I	L_0 = 1 H; C_0 = 35 µF
	without consideration of the simultaneousness; with consideration of the simultaneousness see manual

Standards, Guidelines and Approvals

EC EMC guideline	2004/108/EG
EC low voltage guideline	2006/95/EG
Conformity marking	CE
TÜV 07 ATEX 554086 X	I (M2) [Ex ia] I, II 3 (1) G Ex nA [ia] IIC T4, II 3 (1) D Ex tD [iaD] A22 IP6X T135°C
TUN 09.0001X	[Ex ia] I, Ex nA [ia] IIC T4, Ex tD [iaD] A22 IP6X T135°C
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
UL 508	
Shipbuilding	see "Approvals Overview" in section 1

2-Channel Digital Input Module NAMUR, Ex i

Proximity sensor acc. to DIN EN 50227



Delivered without miniature WSB markers

The digital input module receives the binary signals from sensors operating in hazardous environments of Zones 0 and 1.
Namur sensors, optocouplers, mechanical contacts or other actuating elements can be connected by means of approved intrinsically safe devices.
The WAGO-I/O-SYSTEM 750 has to be installed in Zone 2 or in non-hazardous environments.
Each sensor is supplied with a short-circuit-protected 8.2V supply.

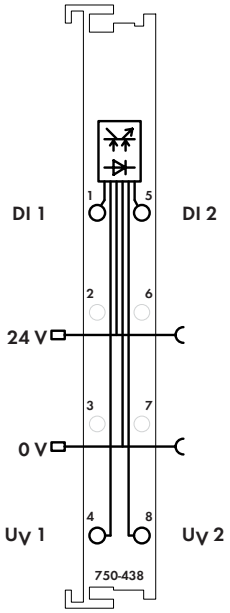
Indicators: Green LED (signal on /off)
An optocoupler is used for electrical isolation between the bus and the field side.

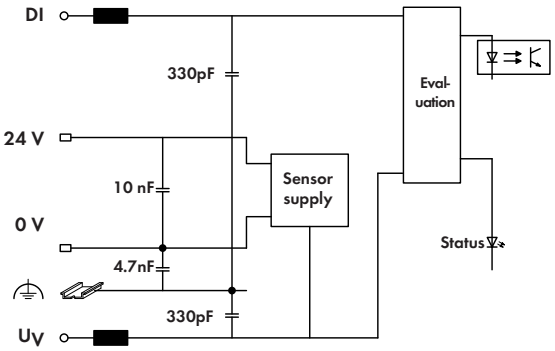
Note:
Only use the digital input module in connection with the 24VDC Ex i Supply Module (note the power supply instructions on page 23)!
General information (e.g., installation regulations) on explosion protection is available in the WAGO-I/O-SYSTEM 750 manuals!

Description	Item No.	Pack. Unit
2DI NAMUR Ex i	**750-438**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Technical Data	
Number of inputs	2
Current consumption typ. (internal)	2.5 mA
Voltage via power jumper contacts	Supply via 24 V DC Ex i supply module
Sensor supply V_v	8.2 V DC
Signal current (0)	≤ 1.2 mA
Signal current (1)	≥ 2.1 mA
Input filter	3.0 ms
Switching hysteresis	0.2 mA
Open-circuit voltage	8.2 V DC
Input resistance	1 kΩ
Input pulse duration	≥ 5 ms
Input pulse separation	≥ 3 ms
Short-circuit current	≤ 8,2 mA
Current consumption typ. (field side)	16 mA + load
Power consumption P (max.)	0.4 W
Power loss P_v	0.4 W
Isolation (peak value)	375 V system/supply
Bit width	2 bits (status)





Technical Data

Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	46.9 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

Explosion Protection

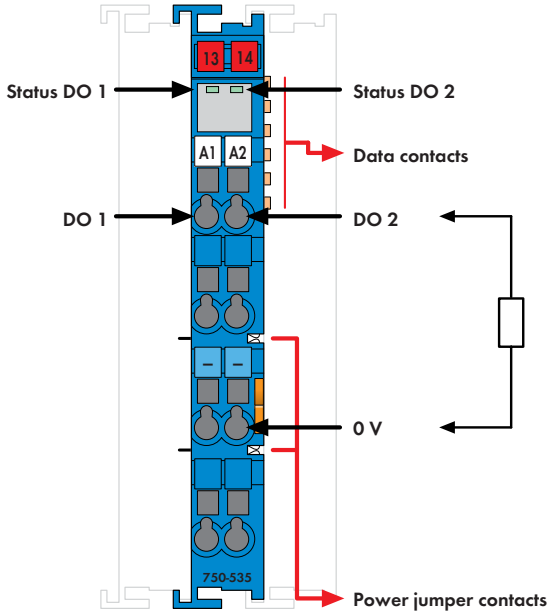
Ex directive	EN 60079-0:2006, EN 60079-11:2007, EN 60079-15:2005, EN 61241-0:2006, EN 61241-1:2004, EN 61241-11:2006
Electric circuit, safety relevant data	V_0 = 12 V ; I_0 = 13.5 mA; P_0 = 40.5 mW; Characteristic: Linear
Intrinsically safe Ex ia IIC	L_0 = 190 mH; C_0 = 1.4 µF
Intrinsically safe Ex ia IIB	L_0 = 600 mH; C_0 = 9 µF
Intrisically safe Ex ia I	L_0 = 1 H; C_0 = 35 µF
	without consideration of the simultaneousness; with consideration of the simultaneousness see manual

Standards, Guidelines and Approvals

EC EMC guideline	2004/108/EG
EC low voltage guideline	2006/95/EG
Conformity marking	CE
TÜV 07 ATEX 554086 X	I (M2) [Ex ia] I, II 3 (1) G Ex nA [ia] IIC T4, II 3 (1) D Ex tD [iaD] A22 IP6X T135°C
TUN 09.0001X	[Ex ia] I, Ex nA [ia] IIC T4, Ex tD [iaD] A22 IP6X T135°C
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
UL 508	
Shipbuilding	see "Approvals Overview" in section 1

2-Channel Digital Output Module 24 V DC, Ex i

Short-circuit protected; PNP-positive switching



Delivered without miniature WSB markers

The digital output module directly controls 2 actuators operating in hazardous environments of Zone 1,
such as intrinsically safe magnetic valves.
The WAGO-I/O-SYSTEM 750 has to be installed in Zone 2 or in non-hazardous environments.
All outputs are electronically short-circuit-protected.

Indicators:
- Green LED (output status)

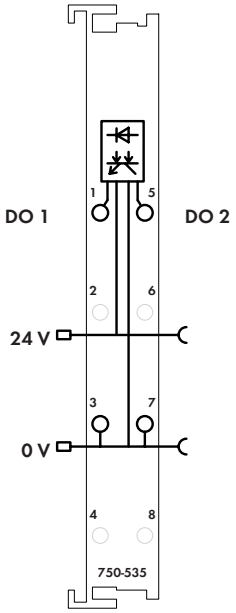
Each output is electrically isolated from the bus by use of optocouplers.

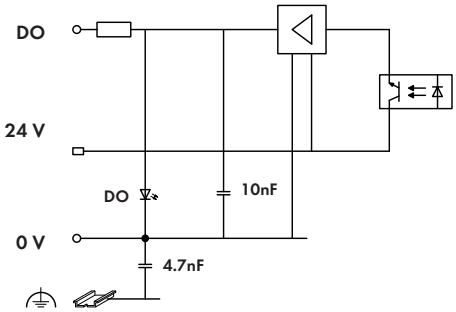
Note:
Only use the digital output module in connection with the 24VDC Ex i Supply Module (note the power supply instructions on page 23)!
General information (e.g., installation regulations) on explosion protection is available in the WAGO-I/O-SYSTEM 750 manuals!

Description	Item No.	Pack. Unit
2DO 24V DC Ex i	**750-535**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Technical Data	
No. of outputs	2
Current consumption typ. (internal)	7 mA
Voltage via power jumper contacts	Supply via 24 V DC Ex i supply module
Type of load	resistive, inductive, lamps
Max. switching frequency	1 kHz
Output data	24 V DC, Ri = 285 Ω
Current consumption typ. (field side)	8.5 mA / module + load
Power consumption P (max.)	2.1 W (with an output current of 40 mA)
Power loss P_V	1.1 W (with an output current of 40 mA)
Isolation	375 V system/supply
Bit width	2 bits (status)





Technical Data

Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	48.4 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

Explosion Protection

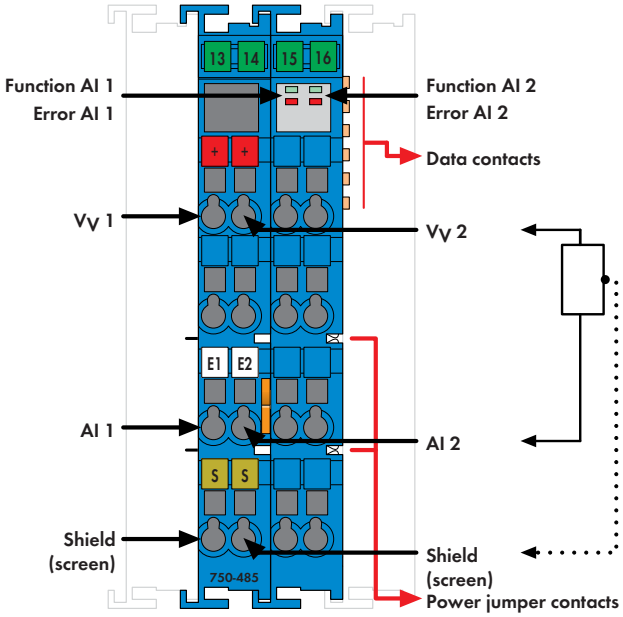
Ex directive	EN 60079-0:2006, EN 60079-11:2007, EN 60079-15:2005, EN 61241-0:2006, EN 61241-1:2004, EN 61241-11:2006
Electric circuit, safety relevant data	V_0 = 27.3 V ; I_0 = 106 mA; P_0 = 723 mW; Characteristic: Linear
Intrinsically safe Ex ib IIC	L_0 = 3 mH; C_0 = 88 nF
Intrinsically safe Ex ib IIB	L_0 = 12 mH; C_0 = 680 nF
Reaktanzen Ex ib I	L_0 = 20 mH; C_0 = 3.6 µF
	without consideration of the simultaneousness; with consideration of the simultaneousness see manual

Standards, Guidelines and Approvals

EC EMC guideline	2004/108/EG
EC low voltage guideline	2006/95/EG
Conformity marking	CE
TÜV 07 ATEX 554086 X	I (M2) [Ex ib] I, II 3 (2) G Ex nA [ib] IIC T4, II 3 (2) D Ex tD [ibD] A22 IP6X T135°C
TUN 09.0001X	[Ex ib] I, Ex nA [ib] IIC T4, Ex tD [ibD] A22 IP6X T135°C
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
UL 508	
Shipbuilding	see "Approvals Overview" in section 1

2-Channel Analog Input Module 4-20 mA, Ex i

Single-ended (S.E.)



Delivered without miniature WSB markers

The analog input module provides the power to the intrinsically safe transducers located in the hazardous area of Zone 1 and processes their analog signals.
The WAGO-I/O-SYSTEM 750 has to be installed in Zone 2 or in non-hazardous environments.
The 24V supply is derived from the power jumper contacts.
The transmitter supply is non-inherently electronically short-circuit-protected.
The shield (screen) is directly connected to the DIN rail.

Indicators:
- Green LED (signal on/off)
- Red LED (wire breakage, measuring range overflow/underflow)

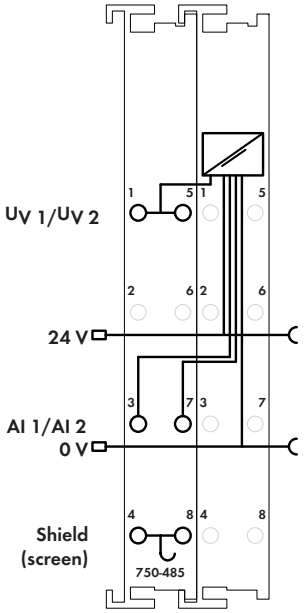
Each output is electrically isolated from the bus by use of optocouplers.

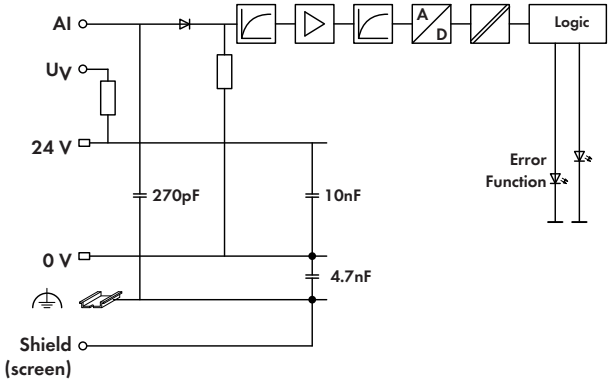
Note:
Only use the analog input module in connection with the 24VDC Ex i Supply Module (note the power supply instructions on page 23)!
General information (e.g., installation regulations) on explosion protection is available in the WAGO-I/O-SYSTEM 750 manuals!

Description	Item No.	Pack. Unit
2AI 4-20mA Ex i	**750-485**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Technical Data	
Number of inputs	2
Current consumption typ. (internal)	31 mA
Voltage via power jumper contacts	Supply via 24 V DC Ex i supply module
Transmitter supply	V_V = 16 V at 20 mA
Signal current	4 ... 20 mA
Input resistance	< 100 Ω
Resolution	12 bits
Conversion time	< 2 ms
Measuring error (25 °C)	< ± 0.2 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Current consumption typ. (field side)	11 mA + load
Power consumption P (max.)	1.3 W
Power loss P_V	0.75 W
Isolation	375 V system/supply
Bit width	2 x 16 bits data
	2 x 8 bits control / status (optional)





Technical Data

Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	93.4 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

Explosion Protection

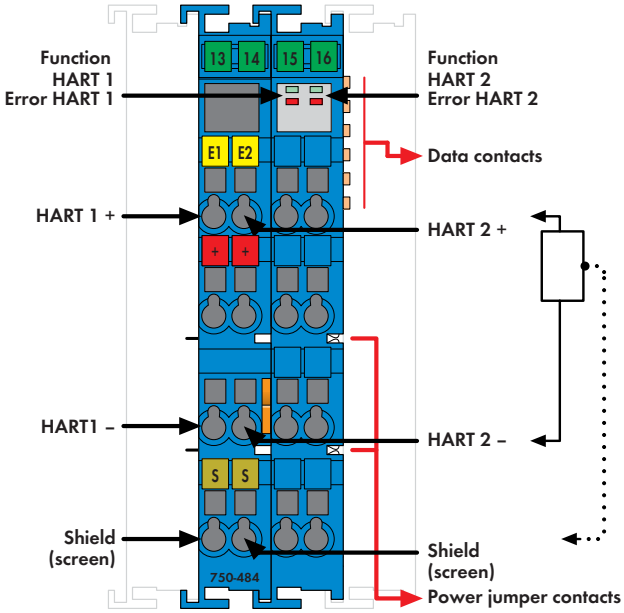
Ex directive	EN 60079-0:2006, EN 60079-11:2007, EN 60079-15:2005, EN 61241-0:2006, EN 61241-1:2004, EN 61241-11:2006
Electric circuit, safety relevant data	V_0 = 27.3 V ; I_0 = 90 mA; P_0 = 0.61 W; Characteristic: Linear
Intrinsically safe Ex ib IIC	L_0 = 5 mH; C_0 = 88 nF
Intrinsically safe Ex ib IIB	L_0 = 18 mH; C_0 = 680 nF
Reaktanzen Ex ib I	L_0 = 38 mH; C_0 = 3.5 µF
	without consideration of the simultaneousness; with consideration of the simultaneousness see manual

Standards, Guidelines and Approvals

EC EMC guideline	2004/108/EG
EC low voltage guideline	2006/95/EG
Conformity marking	CE
TÜV 07 ATEX 554086 X	I (M2) [Ex ib] I, II 3 (2) G Ex nA [ib] IIC T4, II 3 (2) D Ex tD [ibD] A22 IP6X T135°C
TUN 09.0001X	[Ex ib] I, Ex nA [ib] IIC T4, Ex tD [ibD] A22 IP6X T135°C
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
UL 508	
Shipbuilding	see "Approvals Overview" in section 1

2-Channel Analog Input Module 4-20 mA HART, Ex i

Single-ended (S.E.)



Delivered without miniature WSB markers

The analog input module connects 2 transducers with HART interface located in the field. The 750-484 supplies the transducers, reads the process values via analog interface and enables HART communication for configuring and importing dynamic variables.
The 24V supply to the field contacts (HART +) is derived from the power jumper contacts via multipliers. The shield (screen) directly connects to DIN rail.
At approx. 25mA, the overload protection switches the measurement input to a high-resistance state. Under normal operating conditions it is automatically switched back. This input module can supply the voltage for 2-wire transducers.

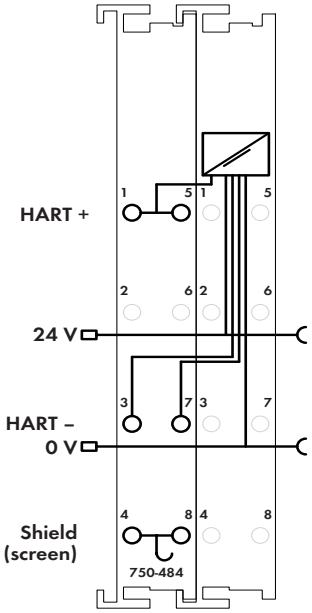
Up to 4 HART dynamic variables (PV, SV, TV, QV) per channel can be mapped in the cyclic process image of the coupler or controller (configurable). For HART communication with connected intelligent HART field devices, the HART protocol can be mapped in the cyclic process image of the coupler or controller (configurable).
FDT/DTM device drivers are available for select (programmable) couplers, allowing HART tool routing to the connected HART device.

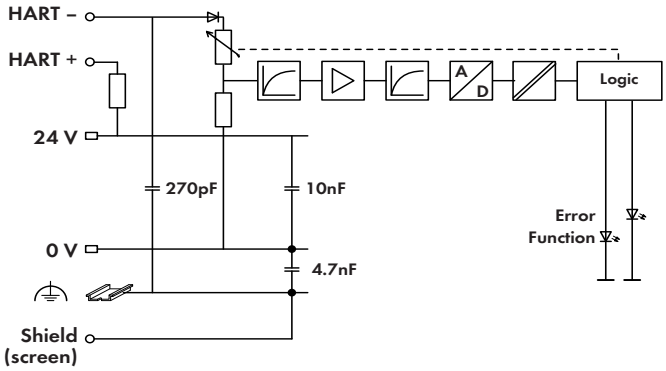
Note:
Only use the analog input module in connection with the 24VDC Ex i Supply Module (note the power supply instructions on page 23)!
General information (e.g., installation regulations) on explosion protection is available in the WAGO-I/O-SYSTEM 750 manuals!

Description	Item No.	Pack. Unit
2AI 4-20 mA S.E. HART Ex i	**750-484**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	
PROFIBUS/HART Gateway DTM		**759-360**	1
MODBUS TCP/HART Gateway DTM		**759-359**	1

Technical Data	
Number of inputs	2
Voltage via power jumper contacts	Supply via 24 V DC Ex i supply module
Current consumption typ. (internal)	25 mA
Input voltage (max.)	24 V
Signal current	4 mA ... 20 mA
Overvoltage protection	30 V, reverse polarity protected
Conversion time (typ.)	10 ms
Input filter	parameterizable
Resolution of the A/D converter	12 bits
Measuring error (25 °C)	0.2 % of upper range value (non-linearity)
Temperature coefficient	< ± 0.01 % / K of full scale value
Power consumption P (max.)	1.60 W (with slaves (20 mA))
Power loss P_v	0.62 W (without slaves)
Isolation	375 V system/supply
Bit width	2 x 2 bytes data 2 x 2 bytes data +
	2n x 4 bytes data (n = number of dynamic
	variables) 2 x 2 bytes data + 6 bytes
	mailbox
Diagnostics	Wire break, measuring range overflow
HART devices per channel	1 device (single-drop, no multi-drop)
HART modems per channel	1 modem (no multiplex)





Technical Data

Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	54 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

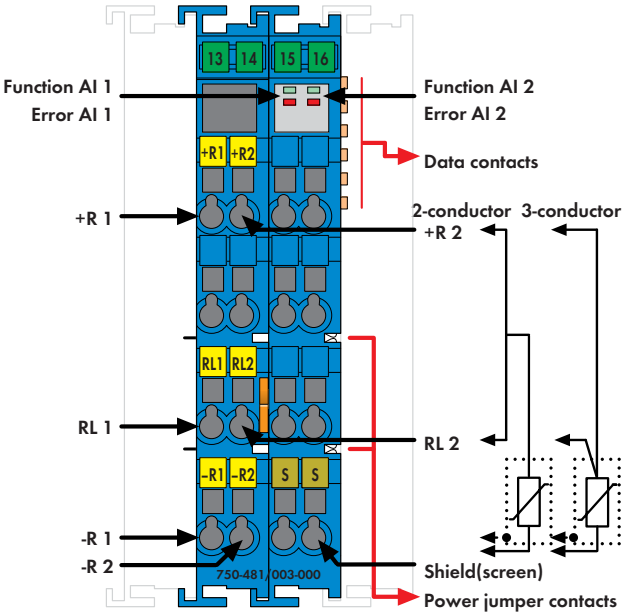
Explosion Protection

Ex directive	EN 60079-0:2006, EN 60079-11:2007, EN 60079-15:2005, EN 61241-0:2006, EN 61241-1:2004, EN 61241-11:2006
Electric circuit, safety relevant data	V_0 = 27.3 V; I_0 = 92 mA; P_0 = 628 mW; Characteristic: Linear
Intrinsically safe Ex ia IIC	L_0 = 4.5 mH; C_0 = 75 nF
Intrinsically safe Ex ia IIB	L_0 = 18 mH; C_0 = 670 nF
Intrisically safe Ex ia I	pending

Standards, Guidelines and Approvals

EC EMC guideline	2004/108/EG
EC low voltage guideline	2006/95/EG
Conformity marking	CE
TÜV approval	pending
TUN approval	pending
ANSI/ISA 12.12.01	pending
UL 508	

2-Channel Analog Input Module for Resistance Sensors, Ex i



Delivered without miniature WSB markers

The analog input module allows the direct connection of Pt and Ni resistance sensors or potentiometers located in the hazardous area of Zone 0+1 and processes their analog signals.
The WAGO-I/O-SYSTEM 750 has to be installed in Zone 2 or in non-hazardous environments. The 24V supply is derived from the power jumper contacts. The transmitter supply is non-inherently electronically short-circuit-protected.
The shield (screen) is directly connected to the DIN rail.

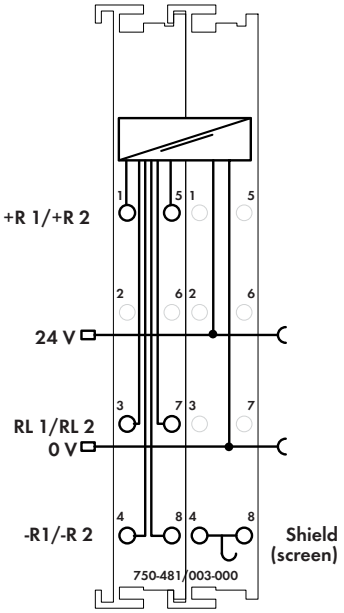
Indicators: Green LED (operational status on /off)
Red LED (short circuit, wire breakage, measuring range overflow/underflow)
Each input is electrically isolated from the bus by use of optocouplers.

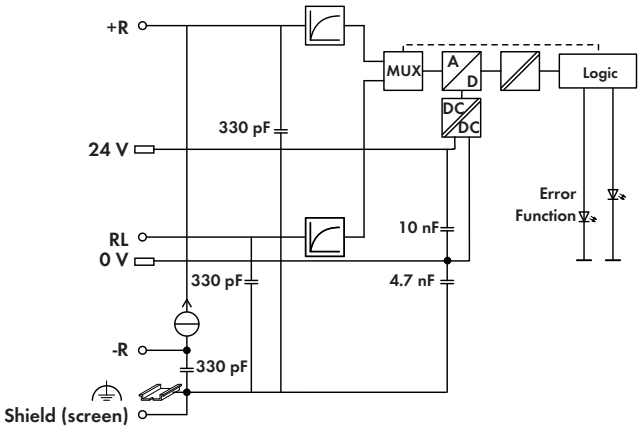
Note:
Only use the analog input module in connection with the 24VDC Ex i Supply Module (note the power supply instructions on page 23)!
General information (e.g., installation regulations) on explosion protection is available in the WAGO-I/O-SYSTEM 750 manuals!

Description	Item No.	Pack. Unit
2AI RTD Ex i	**750-481/003-000**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Technical Data	
Number of inputs	2
Current consumption typ. (internal)	25 mA
Current consumption typ. (24 V)	12 mA
Voltage via power jumper contacts	Supply via 24 V DC Ex i supply module
Conversion time	150 ... 500 ms (per channel)
Measuring error (25 °C)	< ± 0.2 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Measuring current (typ.)	< 0,5 mA
Sensor types (Version can be set via WAGO-I/O-Check software)	
RTD	Pt 100 (preset), Pt 200, Pt 500, Pt 1000, Ni 100, Ni 120, Ni 1000
Ohmmeter	1.25 kΩ, 5 kΩ
Potentiometer	1.25 kΩ, 5 kΩ, % linearized
Sensor connection	3-conductor (preset) or 2-conductor
Temperature range	-200 °C ... + 850 °C (Pt);
	-60 °C ... +250 °C (Ni);
	-80 °C ... +320 °C (Ni 120)
Resolution (over entire range)	0.1 °C, 0.1 Ω, 0.0049 %
Power consumption P (max.)	0.45 W
Power loss P_v	0.45 W
Isolation	500 V system/supply
Bit width	2 x 16 bits data
	2 x 8 bits control / status (optional)





Technical Data

Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	94.2 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

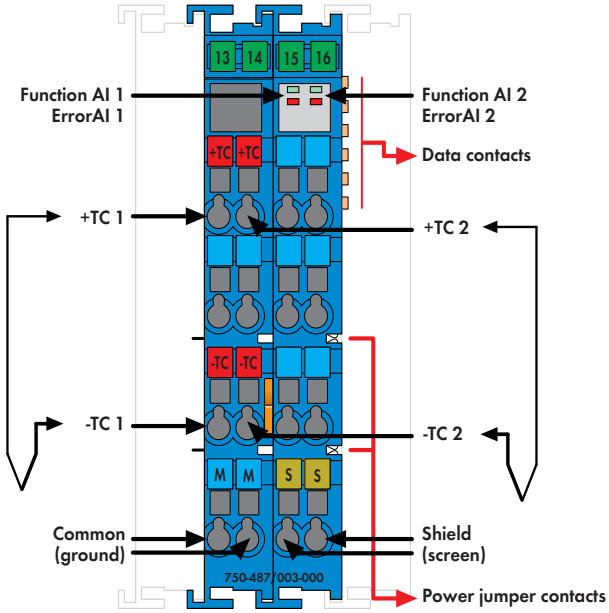
Explosion Protection

Ex directive	EN 60079-0:2006, EN 60079-11:2007, EN 60079-15:2005, EN 61241-0:2006, EN 61241-1:2004, EN 61241-11:2006
Electric circuit, safety relevant data	V_0 = 7.2 V ; I_0 = 5.8 mA; P_0 = 10.5 mW; Characteristic: Linear
Intrinsically safe Ex ia IIC	L_0 = 0.9 H; C_0 = 13.5 µF
Intrinsically safe Ex ia IIB	L_0 = 1 H; C_0 = 240 µF
Intrisically safe Ex ia I	L_0 = 1 H; C_0 = 1000 µF
	without consideration of the simultaneousness; with consideration of the simultaneousness see manual

Standards, Guidelines and Approvals

EC EMC guideline	2004/108/EG
EC low voltage guideline	2006/95/EG
Conformity marking	CE
TÜV 07 ATEX 554086 X	I (M2) [Ex ia] I, II 3 (1) G Ex nA [ia] IIC T4, II 3 (1) D Ex tD [iaD] A22 IP6X T135°C
TUN 09.0001X	[Ex ia] I, Ex nA [ia] IIC T4, Ex tD [iaD] A22 IP6X T135°C
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
UL 508	
Shipbuilding	see "Approvals Overview" in section 1

2-Channel Analog Input Module for Thermocouples Ex i



Delivered without miniature WSB markers

The analog input module directly connects two thermocouples operating in hazardous environments of Zones 0 and 1. The WAGO-I/O-SYSTEM 750 must be installed in Zone 2 or in a non-hazardous area. Internal electrical isolation allows operation of grounded sensors. The module automatically linearizes the entire temperature range. Cold junction compensation mitigates the clamping unit offset voltage over the 0-55 °C operating range.
The 24V supply is derived from the module's power jumper contacts.

An optocoupler provides electrical isolation between the bus and the field side. The module mode is parameterized via WAGO-I/O-CHECK software.

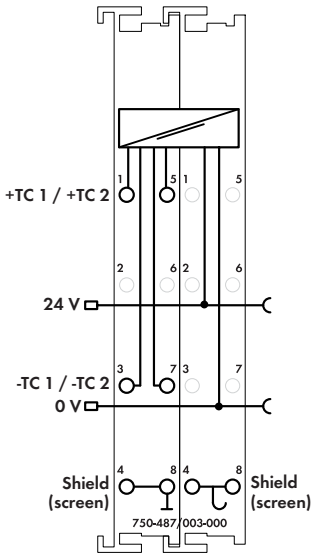
LED indicators:
- LED green (availability ON/OFF)
- LED red (wire breakage, measuring range overflow/underflow)

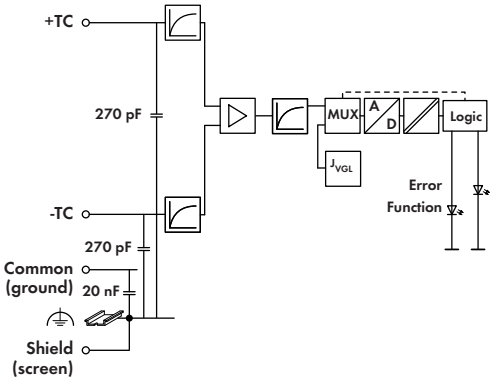
Note:
Only use the analog input module in connection with the 24VDC Ex i Supply Module (note the power supply instructions on page 23)!
General information (e.g., installation regulations) on explosion protection is available in the WAGO-I/O-SYSTEM 750 manuals!

Description	Item No.	Pack. Unit
2AI TC Ex i	**750-487/003-000**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Technical Data	
Number of inputs	2
Current consumption typ. (internal)	50 mA
Voltage via power jumper contacts	Supply via 24 V DC Ex i supply module
Conversion time	≤ 320 ms (both channels)
Measuring error (25 °C)	< ± 6 K (voltage input < ± 2 K; cold junction comp. < ± 4 K) (for type K)
Temperature coefficient	< ± 0.2 K / K of full scale value (type K)
Cold junction compensation	internal; at each pair of modules
Resolution (over entire range)	0.1 °C or 0.01 mV for voltage measurement
Internal resistance	≥ 1 MΩ
Measuring range	**Thermocouples:**
	Type B: +600 °C ... +1,800 °C
	Type E: -200 °C ... +1,000 °C
	Type J: -100 °C... +1,200 °C
	Type K: -100 °C ... +1,370 °C*
	*(default setting)
	Type N: -100 °C ... +1,300 °C
	Type R: 0 °C ... +1,700 °C
	Type S: -50 °C ... +1,700 °C
	Type T: -100 °C ... +400 °C
	Voltage sensors:
	MB1: ± 30 mV
	MB2: ± 60 mV
	MB3: ± 120 mV
Power consumption P (max.)	0.29 W
Power loss P_v	0.29 W
Isolation	375 V system/supply
Bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)





Technical Data

Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	101.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

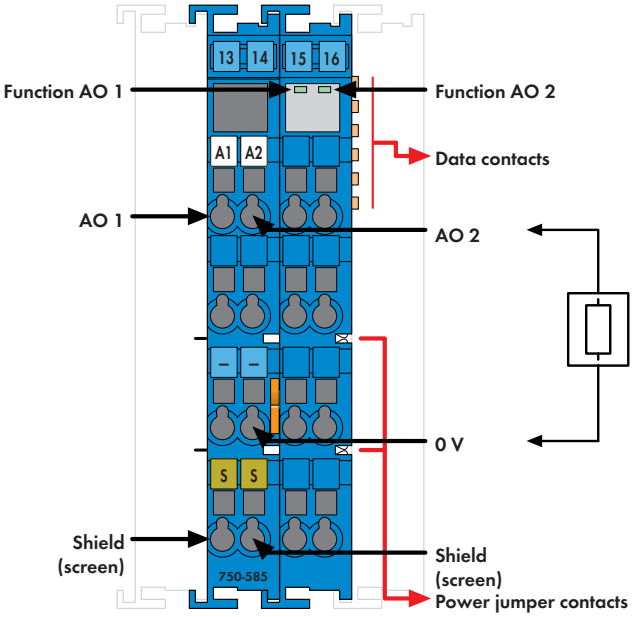
Explosion Protection

Ex directive	EN 61241-0, EN 61241-1, EN 61241-11, EN 60079-0, EN 60079-11, EN 60079-15
Electric circuit, safety relevant data	on request
Intrinsically safe Ex ib IIC	on request
Intrinsically safe Ex ia IIB	on request
Intrisically safe Ex ia I	on request

Standards, Guidelines and Approvals

EC EMC guideline	2004/108/EG
EC low voltage guideline	2006/95/EG
Conformity marking	CE
TÜV approval	pending
TUN approval	pending

2-Channel Analog Output Module 0-20 mA, Ex i



Delivered without miniature WSB markers

The analog output module creates intrinsically safe 0-20mA signals in the hazardous area of Zone 1.
The WAGO-I/O-SYSTEM 750 has to be installed in Zone 2 or in non-hazardous environments.
"Current" analog output modules use power derived from the power jumper contacts.
Outputs are short-circuit-protected.

Indicators:
- Green LED (output status)

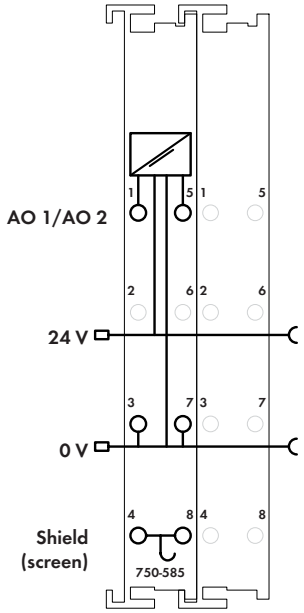
Each output is electrically isolated from the bus by use of optocouplers.

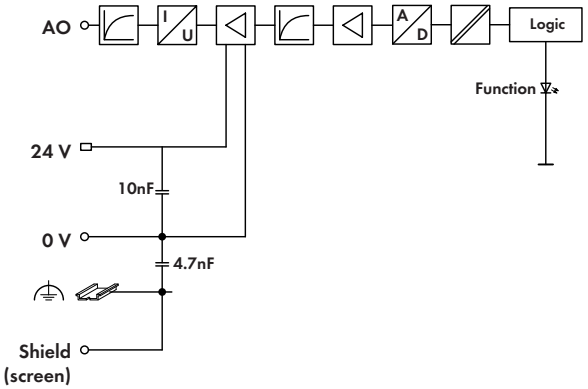
Note:
Only use the analog output module in connection with the 24VDC Ex i Supply Module (note the power supply instructions on page 23)!
General information (e.g., installation regulations) on explosion protection is available in the WAGO-I/O-SYSTEM 750 manuals!

Description	Item No.	Pack. Unit
2AO 0-20mA Ex i	**750-585**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Technical Data	
No. of outputs	2
Max. current consumption (internal)	21 mA
Voltage via power jumper contacts	Supply via 24 V DC Ex i supply module
Signal current	0 ... 20 mA
Load impedance	< 500 Ω
Linearity	± 2 LSB
Resolution	12 bits
Conversion time	< 2 ms
Measuring error (25 °C)	< ± 0.2 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Current consumption typ. (field side)	19 mA / module + load (2 x 20 mA)
Power consumption P (max.)	1.5 W
Power loss P_v	0.9 W
Isolation	375 V system/supply
Bit width	2 x 16 bits data





Technical Data

Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	91.6 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

Explosion Protection

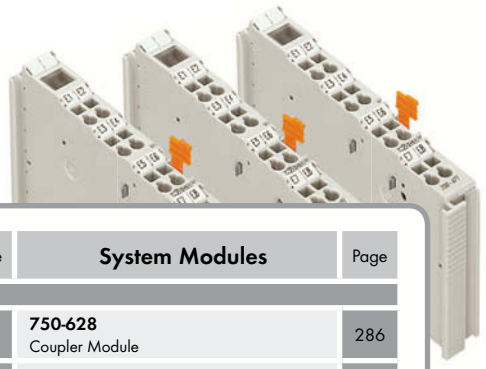
Ex directive	EN 60079-0:2006, EN 60079-11:2007, EN 60079-15:2005, EN 61241-0:2006, EN 61241-1:2004, EN 61241-11:2006
Electric circuit, safety relevant data	V_0 = 27.3 V ; I_0 = 57.5 mA; P_0 = 392 mW; Characteristic: Linear
Intrinsically safe Ex ib IIC	L_0 = 11 mH; C_0 = 88 nF
Intrinsically safe Ex ib IIB	L_0 = 56 mH; C_0 = 680 nF
Reaktanzen Ex ib I	L_0 = 110 mH; C_0 = 3.5 µF

Standards, Guidelines and Approvals

EC EMC guideline	2004/108/EG
EC low voltage guideline	2006/95/EG
Conformity marking	CE
TÜV 07 ATEX 554086 X	I (M2) [Ex ib] I, II 3 (2) G Ex nA [ib] IIC T4, II 3 (2) D Ex tD [ibD] A22 IP6X T135°C
TUN 09.0001X	[Ex ib] I, Ex nA [ib] IIC T4, Ex tD [ibD] A22 IP6X T135°C
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
UL 508	
Shipbuilding	see "Approvals Overview" in section 1

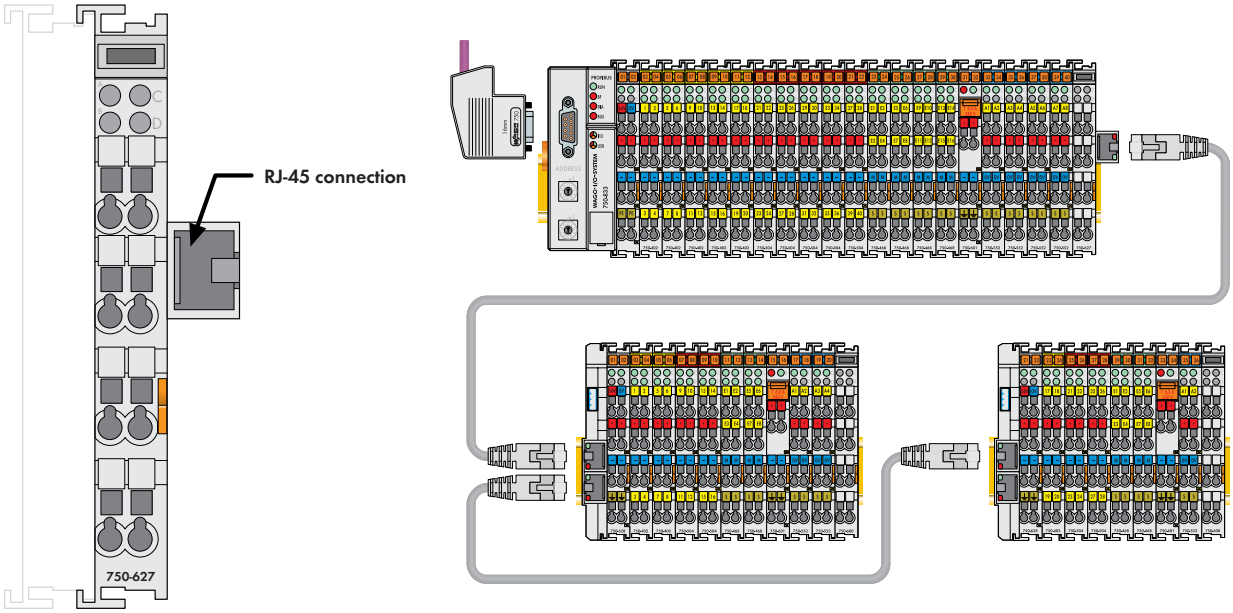
Modular I/O System Overview

System Modules



Function	System Modules	Page	System Modules	Page
Internal Data Bus Extension	**750-627** End Module	285	**750-628** Coupler Module	286
24 V DC Supply Modules	**750-602,** 24 V DC, passive	287	**750-601,** 24 V DC, max. 6.3 A without diagnostics, with fuse carrier	288
	750-610, 24 V DC, max. 6.3 A with diagnostics, with fuse carrier	289	**750-623,** 24 V DC, 5 ... 15 V	290
24 V DC Internal System Supply Module with Bus Power Supply	**750-613,** 24 V DC	291		
120 V AC Power Supply Module	**750-615,** 120 V AC, max. 6.3 A without diagnostics, with fuse carrier	288		
230 V AC Power Supply Modules	**750-612,** 0 ... 230 V AC/DC without diagnostics, passive	287	**750-609,** 230 V AC, max. 6.3 A without diagnostics, with fuse carrier	288
	750-611, 230 V AC, max. 6.3 A with diagnostics, with fuse carrier	289		
Filter Modules	**750-624** Field Side Power Supply Filter	292	**750-626** Power Supply Filter with Overvoltage (Surge) Protection	293
Field Side Connection Modules	**750-604 / 753-604** 0 V DC	296	**750-603 / 753-603** 24 V DC	295
	750-614 / 753-614 0 ... 230 V AC/DC	294		
Separation Modules	**750-616** Separation Module	298	**750-621** Separation Module with Contacts	298
Binary Spacer Module	**750-622** Binary Spacer Module	297		
End Module	**750-600,** End Module	299		
Ex i Modules	**750-625, Ex i Supply Module** with fuse carrier	264		
	750-606, Ex i Supply Module	266		

Internal Data Bus Extension End Module



Delivered without miniature WSB markers

The 750-627 Internal Data Bus Extension End Module is snapped onto the carrier rail at the end of the assembly in the same way as the standard 750-600 End Module. The assembly is completed with this end module allowing a connecting cable to be connected with a RJ-45 plug.
Power to the internal electronics is supplied via the internal bus. One extension end module and at least one 750-628 Coupler Module are an operative unit. The fieldbus coupler/controller carries out all diagnosis and commissioning tasks.

Installation note:
In order to guarantee safe operating conditions when using the 750-627/-628 Internal Data Bus Extension Modules, the buscouplers must have the internal parameters set accordingly. Please order the WAGO extension setting tool 759-314 and use it to inform the buscouplers/controllers 750-304, 750-306, 750-310, 750-319, 750-324, 750-333, 750-337, 750-342, 750-804, 750-806, 750-819, 750-833, 750-837, 750-841, 750-842, including all variations, of the new operating parameters.
Please complete the manufacturing number matrix on the right-hand side of the couplers when updating the firmware and internal operating parameters.
On the left-hand side of the buscouplers, please use the markers (enclosed in 759-314) to identify the modules that have been activated/deactivated.

Description	Item No.	Pack. Unit
Internal Data Bus Extension End Module	**750-627**	1

Accessories		Item No.	Pack. Unit
Software tool (1xCD, 1x750-920, 1xlabel)		**759-314**	1
Communication cable (used to register or remove the end extension module)		**750-920**	10
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

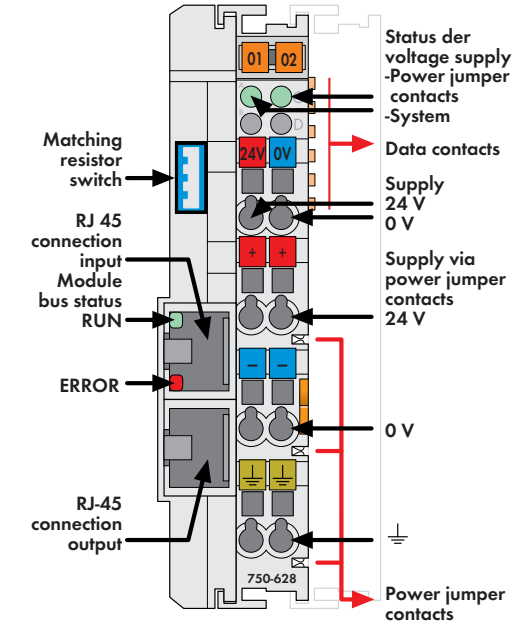
Approvals

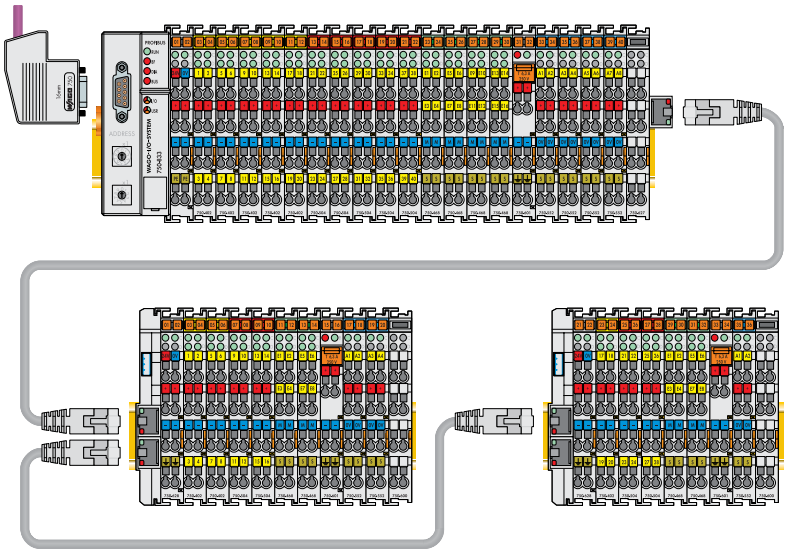
750 Series
Conformity marking CE

Technical Data

Max. no. of coupler modules	up to 10
Max. current consumption (internal)	70 mA
Buscoupler connection	1 x RJ-45 socket
Distance	max. 5 m (end module and coupler module)
Transmission medium	shielded copper wire (ETHERNET patch cable) 4 x 2 x 0.25 mm², twisted pair, double shielding
Isolation	500 V system/supply
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	45.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

Internal Data Bus Extension Coupler Module





Delivered without miniature WSB markers

The 750-628 Internal Data Bus Extension Coupler Module replaces the fieldbus coupler/controller on a I/O module assembly. It is the counterpart to the 750-627 End Extension Module. The connecting cable is plugged into the RJ-45 input socket, providing the logical connection to the fieldbus coupler/controller via the 750-627 Internal Data Bus Extension End Module. The extension does not interfere with the fieldbus coupler/controller, all bus module system functions remain unchanged. The RJ-45 output socket allows further extension of the system (max. 10 stations). The supply voltage for the field side and the internal electronics can be input separately. Both levels are electrically isolated from each other. Two diagnostic LEDs give information about the supply voltage for both the internal and field side. Two LEDs in the RJ-45 socket indicate fault-free communication with the bus coupler. The extension module can be used as the last coupler module in the system (switch on matching resistor) or as a bridge between two I/O module assemblies.

Installation note:
In order to guarantee safe operating conditions when using the 750-627/-628 Internal Data Bus Extension Modules, the buscouplers must have the internal parameters set accordingly. Please order the WAGO extension setting tool 759-314 and use it to inform the buscouplers/controllers 750-304, 750-306, 750-310, 750-319, 750-324, 750-333, 750-337, 750-342, 750-804, 750-806, 750-819, 750-833, 750-837, 750-841, 750-842, including all variations, of the new operating parameters.
Please note that only one terminating resistor must be activated in the whole system. Please complete the manufacturing number matrix on the right-hand side of the couplers when updating the firmware and internal operating parameters.
On the left-hand side of the buscouplers, please use the markers (enclosed in 759-314) to identify the modules that have been activated/deactivated.

Description	Item No.	Pack. Unit
Internal Data Bus Extension Coupler Module	**750-628**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

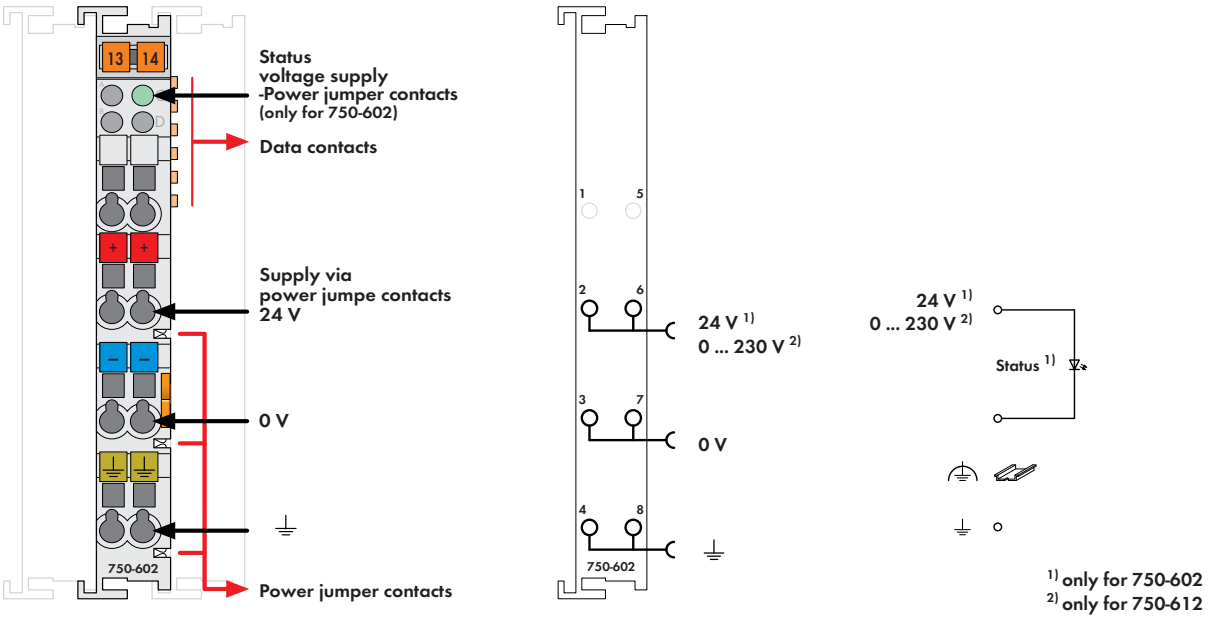
750 Series	
Conformity marking	CE

Technical Data

Max. no. of I/O modules	64 (in the whole system)
Buscoupler connection	2 x RJ-45 socket (input + output)
Distance	5 m (10 m see manual), (end module and coupler or coupler and coupler)
Transmission medium	shielded copper wire (ETHERNET patch cable) 4 x 2 x 0.25 mm², twisted pair, double shielding
Voltage supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	200 mA
Efficiency of the power supply	76 %
Inrush current	2.5 x continuous current
Internal current consumption (5 V)	150 mA
Total current for I/O modules (5 V)	400 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC
Isolation	500 V system/supply
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	25 mm
Weight	74.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

Supply Module 24 V DC / 230 V AC/DC

passive



Delivered without miniature WSB markers

The supply module provides field side power through the power jumper contacts.

Maximum available supply current to all connected modules is 10A.

Should higher currents be necessary, intermediate supply modules must be added to the assembly. Supply modules may also be used to change the supply voltage to certain I/O modules within the assembly - on one fieldbus node.

Description	Item No.	Pack. Unit
24V DC Power Supply	**750-602**	10[1]
0-230V AC/DC Power Supply	**750-612**	10[1]
24V DC Power Supply/T	**750-602/025-000**	1
(Operating temperature -20 °C ... +60 °C)		

[1] Also available individually

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

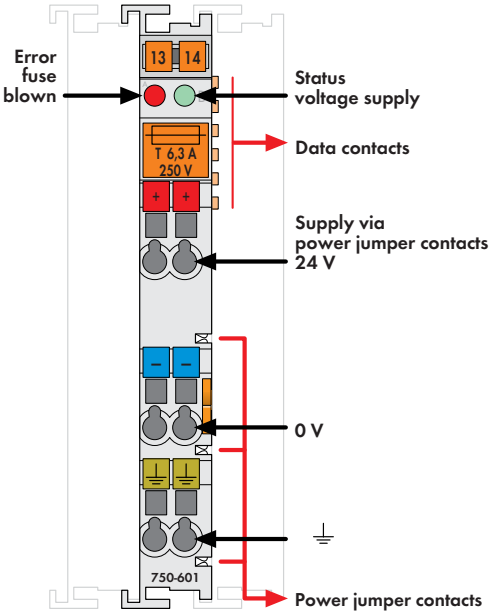
750 Series	(Approvals for product variations upon request)
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see Approvals Overview in section 1

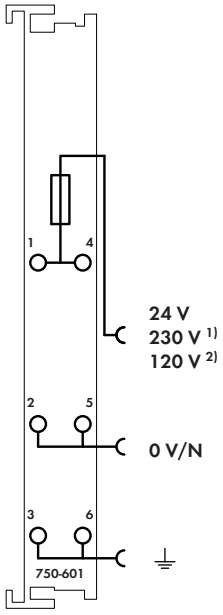
Technical Data

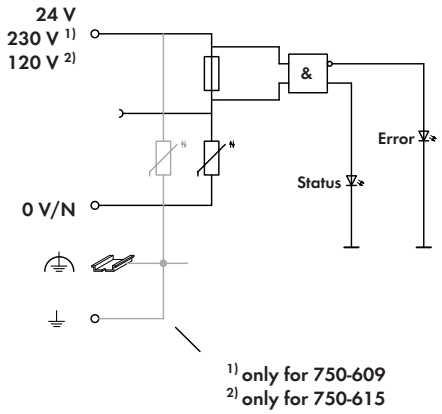
Voltage via power jumper contacts (max.)	24 V DC (750-602)
	0 V ... 230 V AC/DC (750-612)
Current via power jumper contacts (max.)	10 A DC
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	44.5 g (750-602)
	51.5 g (750-612)
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005) (750-602)
	acc. to EN 61000-6-2 (2001) (750-612)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

Supply Module 24 V DC / 230 V AC / 120 V AC

with fuse carrier







Delivered without miniature WSB markers

The supply module provides field side power through the power jumper contacts.

Maximum available supply current to all connected modules is 6.3A. Should higher currents be necessary, intermediate supply modules must be added to the assembly. Supply modules may also be used to change the supply voltage to certain I/O modules within the assembly - on one fieldbus.

This module is fuse-protected (size 5 x 20mm). The fuse can be changed quickly, with ease, from the retractable fuse carrier.

A blown fuse is indicated by an LED.

Description	Item No.	Pack. Unit
24V DC Power Supply/Fuse	**750-601**	10[1]
230V AC Power Supply/Fuse	**750-609**	1
120V AC Power Supply/Fuse	**750-615**	10[1]

[1] Also available individually

Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

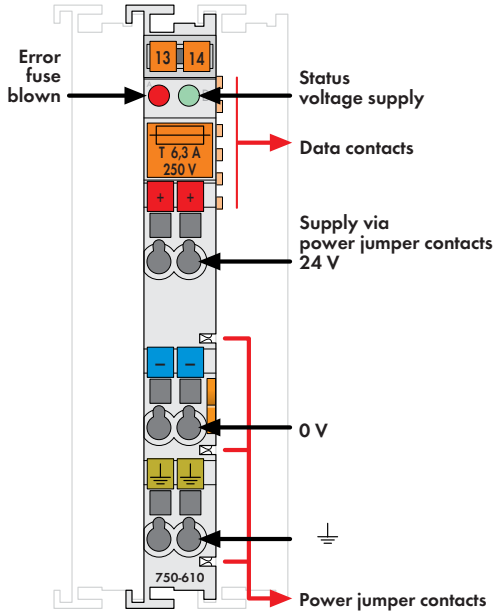
750 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

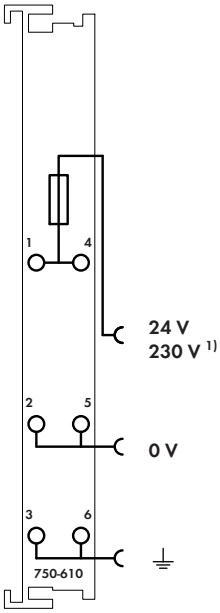
Technical Data

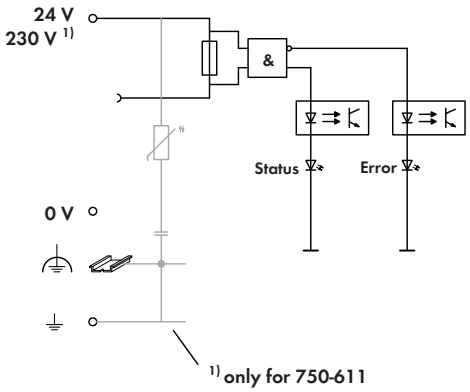
Voltage via power jumper contacts (max.)	24 V DC (750-601)
	230 V AC (750-609)
	120 V AC (750-615)
Current via power jumper contacts (max.)	6.3 A DC
Fuse	5 x 20; T 6.3 A (Fuse not included. Use UL recognized fuses only!)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	50.5 g (750-601, 750-615)
	54.5 g (750-609)
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005) (750-601, 750-615)
	acc. to EN 61000-6-2 (2001) (750-609)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

Supply Module 24 V DC / 230 V AC

with fuse carrier / diagnostics







Delivered without miniature WSB markers

The supply module provides field side power through the power jumper contacts.

Maximum available supply current to all connected modules is 6.3A. Should higher currents be necessary, intermediate supply modules must be added in the assembly. Supply modules may also be used to change the supply voltage to certain I/O modules within the assembly - on one fieldbus.

This module is fuse-protected (size 5 x 20mm). The fuse can be changed quickly, with ease, from the retractable fuse carrier.

A blown fuse and the status of the supply voltage are indicated via LEDs.

The module sends information about the status of the supply module to the fieldbus coupler through two input bits. One bit is for the status of the fuse. The other bit is for the status of the supply voltage.

Description	Item No.	Pack. Unit
24V DC Power Supply/Fuse/Diagn.	**750-610**	10[1]
230V AC Power Supply/Fuse/Diagn.	**750-611**	1

[1] Also available individually

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

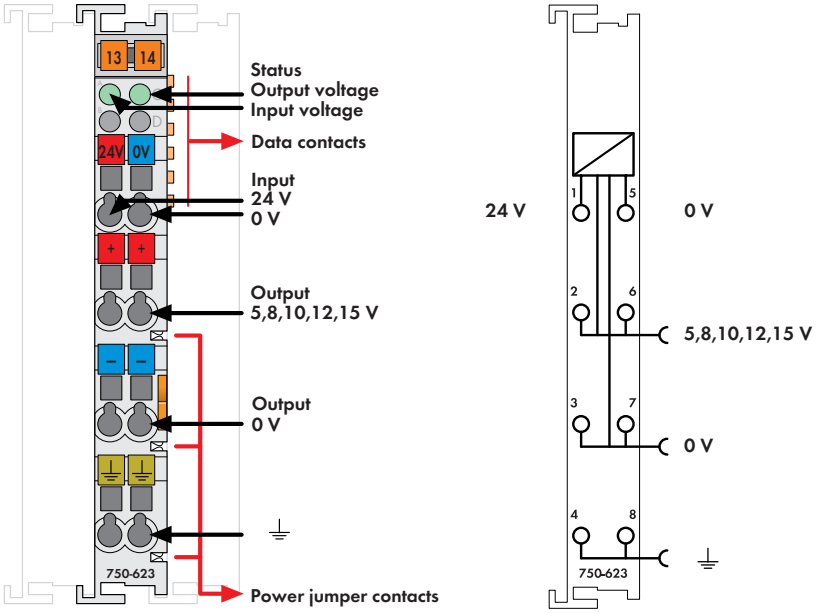
Approvals

750 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Voltage via power jumper contacts (max.)	24 V DC (750-610)
	230 V AC (750-611)
Current via power jumper contacts (max.)	6.3 A DC
Current consumption (internal)	5 mA
Supply voltage detection level on	> 15 V DC (750-610)
	> 164 V AC (750-611)
Supply voltage detection level off	< 5 V DC (750-610)
	< 40 V AC (750-611)
Fuse	5 x 20; T 6.3 A (Fuse not included.
	Use UL recognized fuses only!)
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	51.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

Supply Module 24 V DC / 5 V - 15 V



Delivered without miniature WSB markers

The 750-623 Series Power Supply Module generates 5V, 8V, 10V, 12V and 15V DC output voltages from the 24V DC input voltage. The output voltage is selected by a DIP switch located on the side of the module and can be accessed at the CAGE CLAMP® terminals. Downstream modules are supplied with the selected voltage via the power jumper contacts. LEDs indicate the module's operating state. The input voltage and the output voltage are not electrically isolated.

Description	Item No.	Pack. Unit
Supply Module DC 24V / 5-15V	**750-623**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

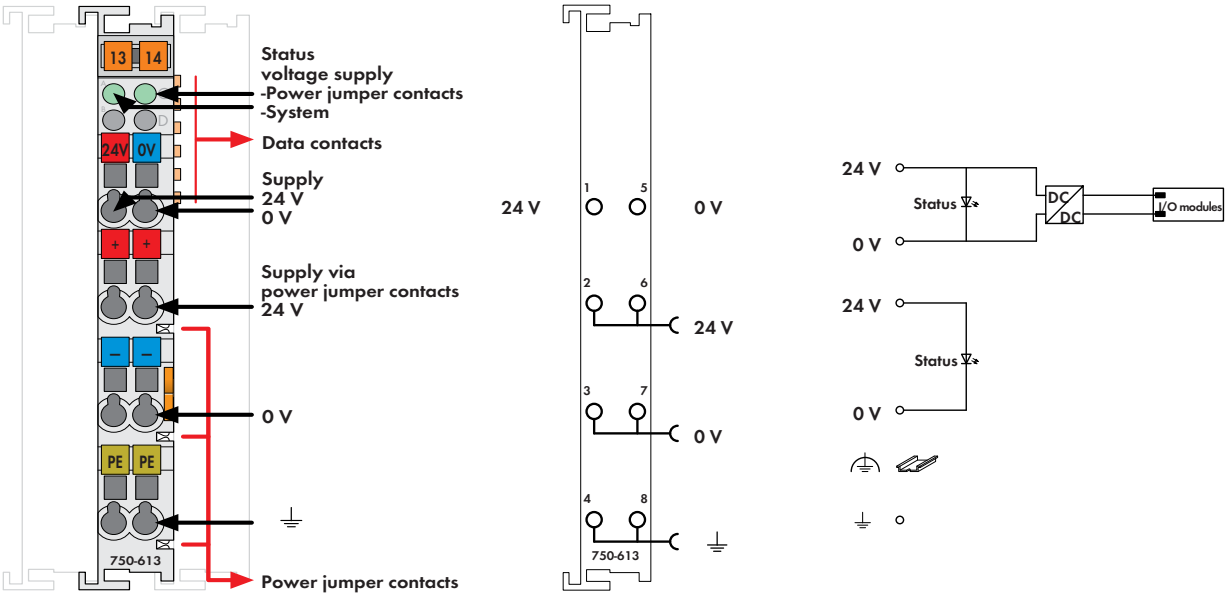
Approvals

750 Series	
Conformity marking	CE
cULus UL 508	

Technical Data

Voltage supply	24 V DC (-15 % ... +20 %)
Output voltage	5 V, 8 V, 10 V, 12 V, 15 V DC
Output current	0.5 A (1 A at 5 V)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	37.016 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)

Internal System Supply Module 24 V DC



The internal system supply module increases the current supply for the internal 5VDC system by 2A.

If the the internal current consumption of all modules is higher than 2A, an additional supply module must be added.

The supply module also supplies field side power to the adjoining modules via the power jumper contacts.

Description	Item No.	Pack. Unit
24V DC Bus Power Supply	**750-613**	10[1]

[1] Also available individually

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

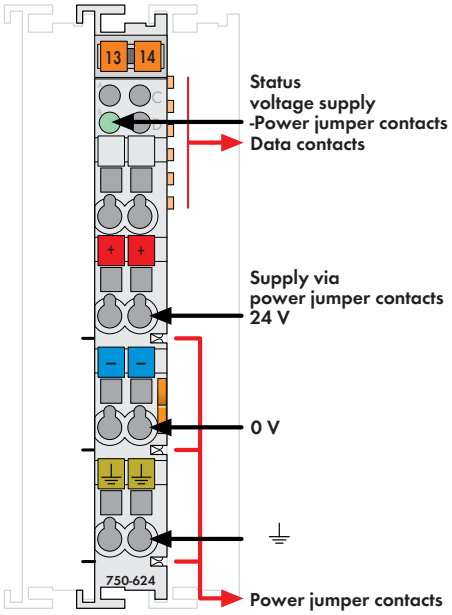
750 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

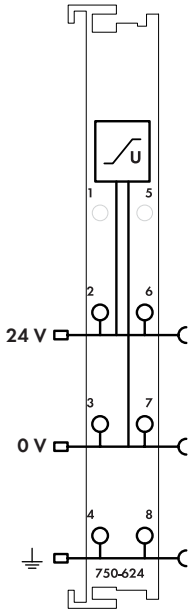
Technical Data

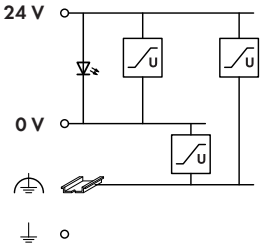
Voltage supply	24 V DC (-25 % ... +30 %)
Input current max.	500 mA
Total current for I/O modules	2000 mA
Voltage via power jumper contacts (max.)	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	58.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

Filter Module

for field side power supply







Delivered without miniature WSB markers

The WAGO-I/O-SYSTEM 750 can also be used in shipping industry applications. Suitable onshore and offshore installations are: platforms, loading facilities, cranes, monitor systems for containers, and other onboard systems. This is possible via certification under the standards of leading agencies such as Germanischer Lloyd and Lloyd's Register. Proper system operation is ensured (certified) by using this overvoltage protection module.

This module is equipped with surge suppression for the 24V field side power supply.

Description	Item No.	Pack. Unit
24V DC Field Side Power Supply Filter with Overvoltage (Surge) Protection	**750-624**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

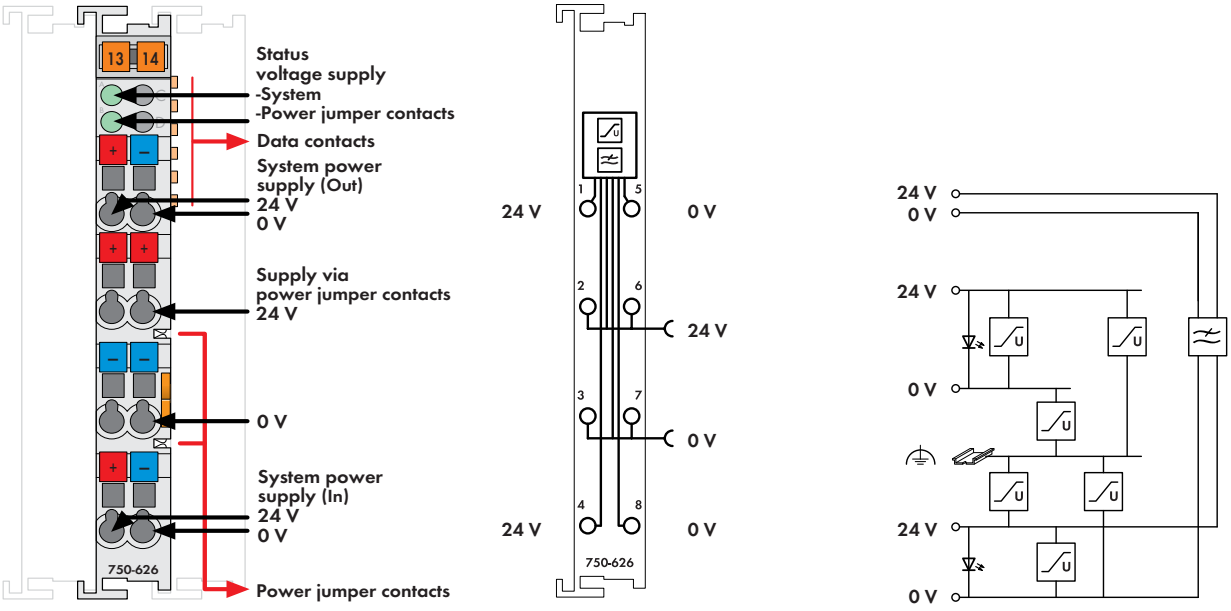
750 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Voltage via power jumper contacts (max.)	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	51 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

Filter Module

for system and field side power supply



Delivered without miniature WSB markers

The WAGO-I/O-SYSTEM 750 can also be used in shipping industry applications. Suitable onshore and offshore installations are: platforms, loading facilities, cranes, monitor systems for containers, and other onboard systems. This is possible via certification under the standards of leading agencies such as Germanischer Lloyd and Lloyd's Register. Proper system operation is ensured (certified) by using this filter module.

This module filters the 24V system power supply.

Furthermore, the filter module is equipped with surge suppression for the 24V field side power supply.

Description	Item No.	Pack. Unit
24V DC Power Supply Filter with Overvoltage (Surge) Protection	**750-626**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Voltage via power jumper contacts (max.)	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC
Current via system voltage (max.)	1 A / 1,5 A (depending on the version, see manual)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	51 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

Field Side Connection Module

0 ... 230 V AC/DC

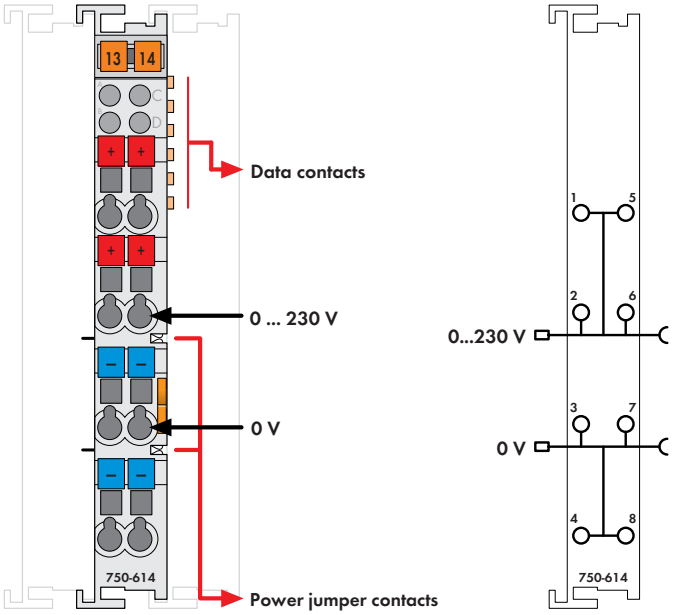


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

This module allows additional + and - voltage connection points (up to 4 additional), eliminating external terminal blocks.

Note: Ground (earth) or shield (screen) connection is discontinued at this point.

Description	Item No.	Pack. Unit
Field Side Connection	**750-614**	10[1]
Field Side Connection (without connector)	**753-614**	10[1]

[1] Also available individually

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	**Miniature WSB Quick marking system**		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Voltage via power jumper contacts (max.)	0 V ... 230 V AC/DC
Current via power jumper contacts (max.)	10 A DC
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	45.5 g
EMC CE-Immunity to interference	acc. to EN 50082-2 (1996)
EMC CE-Emission of interference	acc. to EN 50081-1 (1993)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

Field Side Connection Module

24 V DC

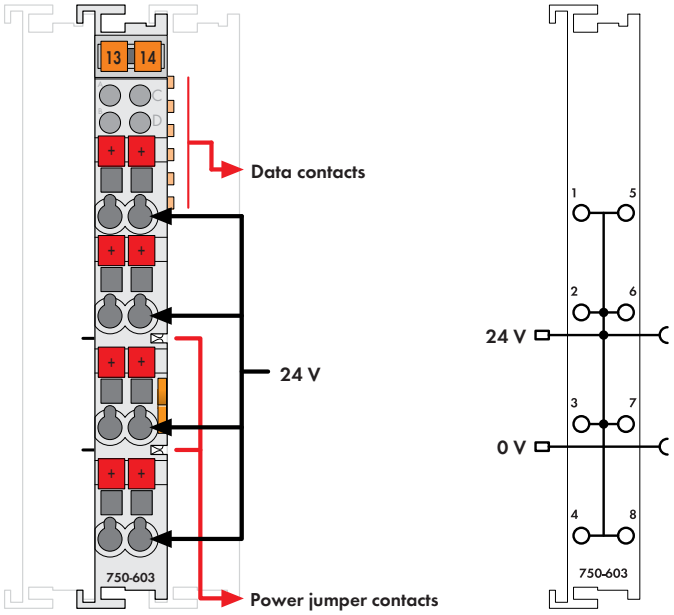


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The field side connection module provides 24V power for the inputs of the 8-channel input module 750-430/-431,

eliminating external terminal blocks.

The 24V supply and 0V potential are derived from the internal power jumper contacts of an adjacent upstream I/O module. A connection of the potentials to the downstream I/O modules is made automatically via the power jumper contacts when snapping the I/O modules together. The 24V power is available to all eight field side CAGE CLAMP® connections and the 0V potential is passed through without being used by the module.

Description	Item No.	Pack. Unit
Field Side Connection	**750-603**	1
Field Side Connection (without connector)	**753-603**	1

Accessories

	Item No.	Pack. Unit
 **753 Series Connectors**	**753-110**	25
Coding elements	**753-150**	100
 **Miniature WSB Quick marking system**		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Voltage via power jumper contacts (max.)	24 V DC
Current via power jumper contacts (max.)	10 A DC
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	48.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

Field Side Connection Module

0 V DC

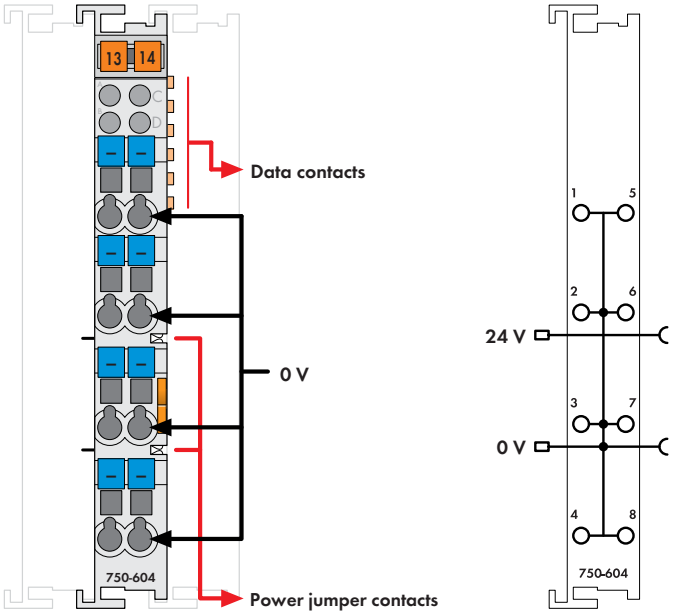


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 12 ... 13 / 14 ... 15

The field side connection module provides 0V potential for the outputs of the 8-channel output module 750-530,

eliminating external terminal blocks.

The 24V supply and 0V potential are derived from the internal power jumper contacts of an adjacent upstream I/O module. A connection of the potentials to the downstream I/O modules is made automatically via the power jumper contacts when snapping the I/O modules together. The 0V potential is available to all eight field side CAGE CLAMP® connections and the 24V power is passed through without being used by the module.

Description	Item No.	Pack. Unit
Field Side Connection	**750-604**	1
Field Side Connection (without connector)	**753-604**	1

Accessories		Item No.	Pack. Unit
	**753 Series Connectors**	**753-110**	25
	Coding elements	**753-150**	100
	Miniature WSB Quick marking system		
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

Approvals

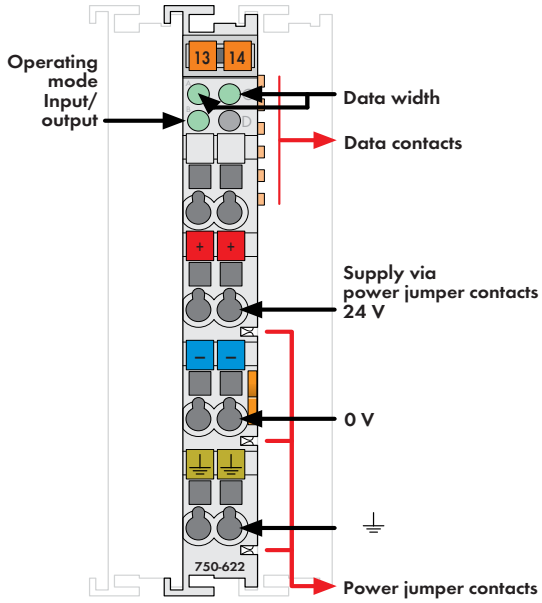
750 and 753 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
750 Series	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

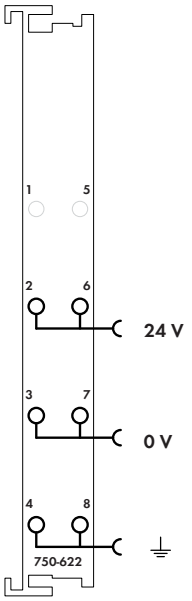
Technical Data

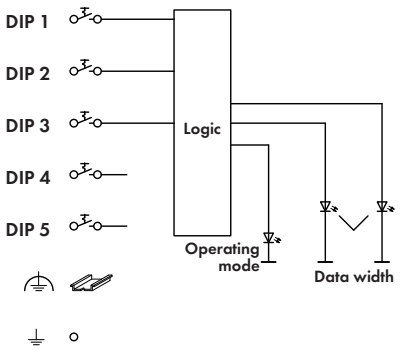
Voltage via power jumper contacts (max.)	24 V DC
Current via power jumper contacts (max.)	10 A DC
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	48.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

Binary Spacer Module

with supply module







Delivered without miniature WSB markers

The binary spacer module reserves bit addresses in the process image of a fieldbus node.

The operating mode as well as the bit width can be adjusted by DIP switches on the side of the module. The operating mode (inputs/outputs) can be chosen by one DIP switch, the number of inputs or outputs (2, 4, 6 or 8) can be chosen by two DIP switches.

The configuration is indicated by means of 3 LEDs.

The binary spacer module can also act as a power supply module, providing a voltage of 24V via the power jumper contacts.

Description	Item No.	Pack. Unit
Binary Spacer Module	**750-622**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	

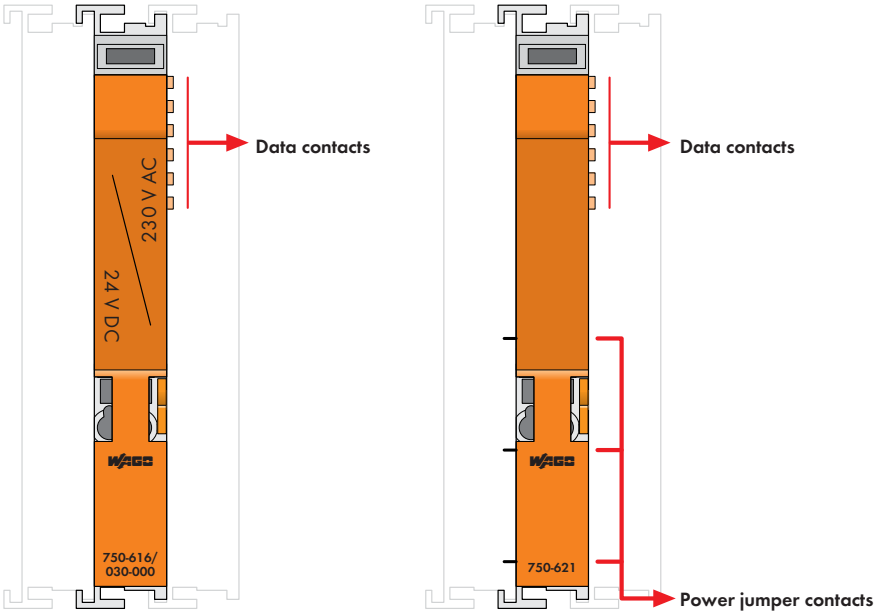
Approvals

750 Series	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4

Technical Data

Voltage via power jumper contacts (max.)	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC
Current consumption (internal)	10 mA
Isolation	500 V system/supply
Internal bit width	2, 4, 6 or 8 Bit
Bit width	2 Bit: DIP1: OFF/DIP2: OFF;
	4 Bit: DIP1: ON/DIP2: OFF ;
	6 Bit: DIP1: OFF/DIP2: ON ;
	8 Bit DIP1: ON/DIP2: ON
Operating mode	Inputs DIP 3 OFF ;
	Outputs DIP 3 ON
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	48 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

Separation Module



A separation module visually divides a fieldbus node into sections.

The 750-616 Separation Module has no power jumper contacts. A separation module with printing on its face has got the item no. 750-616/030-000.

Note:
Operation of the adjacent I/O modules requires a supply module.

The 750-621 Separation Module has power jumper contacts that can supply the power to adjacent bus modules.

Description	Item No.	Pack. Unit
Separation Module	**750-616**	10[1]
Separation Module/ 24V DC/ 230V AC	**750-616/030-000**	1
Separation Module with Contacts	**750-621**	1

[1] Also available individually

Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

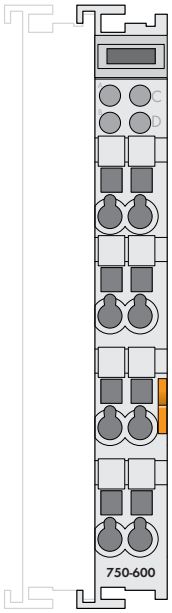
Approvals

750 Series	(Approvals for product variations upon request)
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Width	12 mm
Weight	38.94 g
EMC CE-Immunity to interference	acc. to EN 50082-2 (1996)
EMC CE-Emission of interference	acc. to EN 50081-1 (1993)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

End Module



After the fieldbus node is assembled with the correct buscoupler and selected I/O modules, the end module is snapped onto the assembly.

It completes the internal data circuit and ensures correct data flow.

Description	Item No.	Pack. Unit
End Module	**750-600**	10[1]
End Module/T	**750-600/025-000**	1
(Operating temperature -20 °C ... +60 °C)		

[1] Also available individually

Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
plain	**248-501**	5
with marking	see pages 304 ... 305	

Approvals

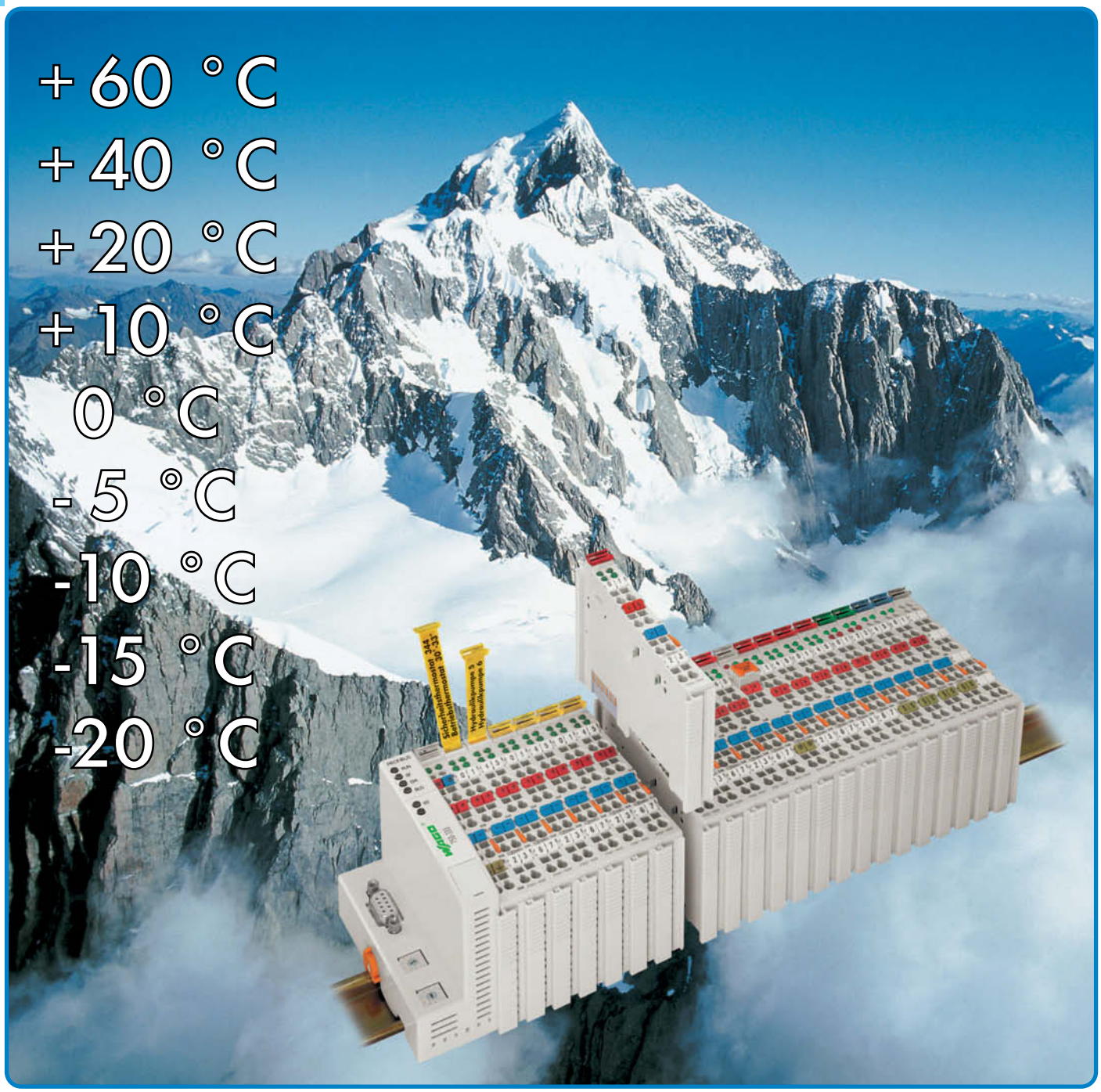
750 Series	(Approvals for product variations upon request)
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Width	12 mm
Weight	33.5 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications - Immunity to interference	acc. to Germanischer Lloyd (2003)
EMC marine applications - Emission of interference	acc. to Germanischer Lloyd (2003)

WAGO-I/O-SYSTEM 750

for an Extended Temperature Range from -20 °C to +60 °C



WAGO-I/O-SYSTEM 750

The standard operating temperature range for most industrial applications is 0°C to 55°C, and WAGO offers a full line of industrial I/O modules to meet these applications. However, some applications require that components operate in environments outside this temperature range; e.g., the monitoring and controlling of rail track heaters, or the lighting control in open-air building such as railway stations.

For these applications, WAGO now offers a line of WAGO-I/O-SYSTEM products for temperatures ranging from -20°C to +60°C. Key to WAGO's extended-temperature products are the continuous enhancement of design and materials, use of coated PCBs and highly accurate production methods.

Fieldbus couplers/controllers

Item No.	Description	Page
750-333/025-000	PROFIBUS DP/V1/T	40
750-337/025-000	CANopen MSS/T	80
750-812/025-000	Contr. MODBUS / RS 485 / 150 ... 19200 Bd/T	98
750-815/025-000	Contr. MODBUS / RS 485 / 1.2 ... 115.2 kBd/T	98
750-833/025-000	PROFIBUS DP/V1 Controller/T	46
750-841/025-000	ETHERNET Controller 100 MBit/s/T	62

Digital input modules **Digital output modules** **Analog input modules** **Analog output modules**




Item No.	Description	Page
750-400/025-000	2DI 24V DC 3.0ms	133
750-402/025-000	4DI 24V DC 3.0ms	136
750-430/025-000	8DI 24V DC, 3.0ms	140
750-504/025-000	4DO 24V DC 0.5A/T	167
750-504/025-800	4DO 24V DC 0.5A/T/R	167
750-530/025-000	8DO 24V DC 0.5A/T	171
750-465/025-000	2AI 0-20mA S.E./T	190
750-454/025-000	2AI 4-20mA Diff./T	189
750-466/025-000	2AI 4-20mA S.E./T	190
750-482/025-000	2AI 4-20mA 12 Bit S.E. HART/T	196
750-455/025-000	4AI 4-20mA S.E./T	193
750-457/025-000	4AI ±10V DC S.E./T	202
750-468/025-000	4AI 0-10V DC S.E./T	200
750-461/025-000	2AI Pt 100/RTD/T	206
750-552/025-000	2AO 0-20mA/T	213
750-554/025-000	2AO 4-20mA/T	213
750-559/025-000	4AO 0-10V DC/T	218

System and specialty modules

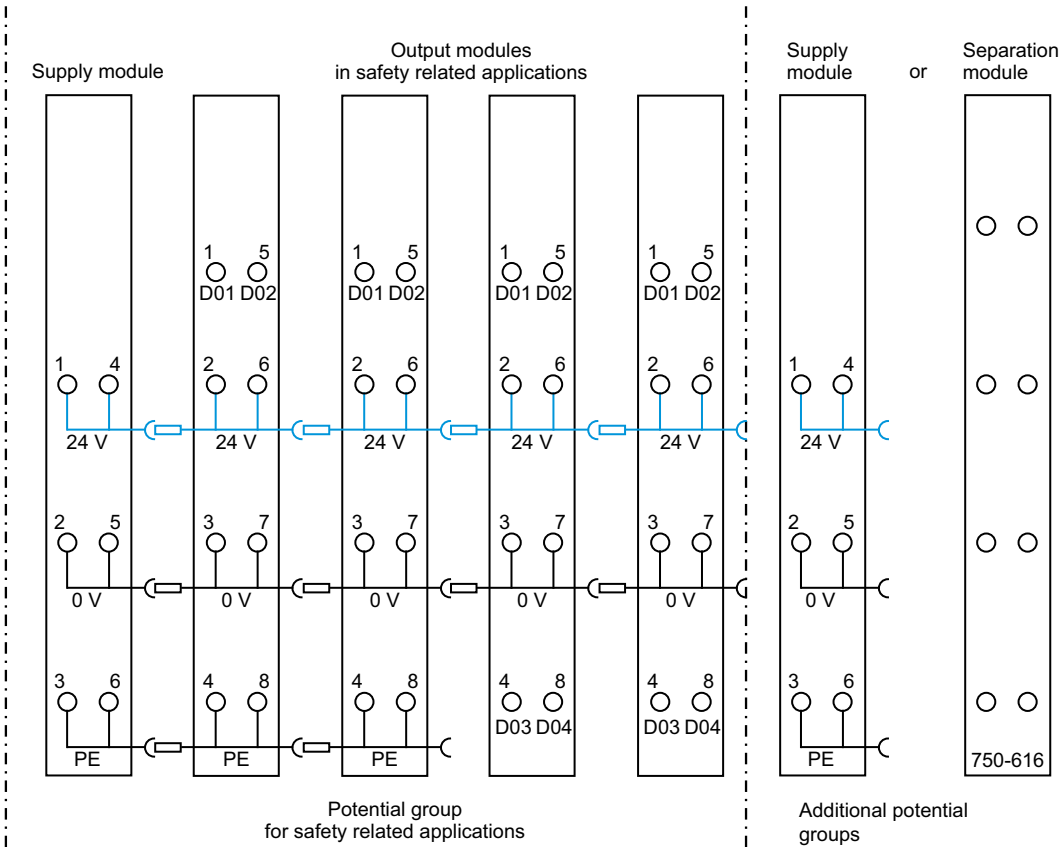
Item No.	Description	Page
750-653/025-000	RS-485 / Configurable/T	229
750-653/025-018	RS-485/ 9600/N/8/1/5 bytes/T	229
750-638/025-000	2-Channel Up/Down Counter, 500 Hz/T	222
750-636/025-000	DC Drive Controller 24V/5A/T	253
750-602/025-000	24V DC Power Supply/T	287
750-600/025-000	End Module/T	299

Use of Interference-Free I/O Modules in Safety Applications

To easily perform cost-effective, centralized deactivation of complete actuator groups safely, the actuator's power supply can be switched off using a safety switching device. This can either be performed for each individual actuator or by turning off the power supply to a group of control outputs.
Ensure that, in the event of failure, no interferences from other current or power circuits will occur even when the control voltage is switched off so the defined safety function properties (logic and time response) remain unchanged.

WAGO 75x-yyy/zzz-8zz I/O Modules are designed to provide "interference-free" safety functionality.
These modules comply with safety requirements up to Category 4 of DIN EN ISO 13847-1:2007.
Safety category and performance level depend solely on the safety components and their wiring. "Interference-free" WAGO I/O modules have no active influence on the safety function, they are not an active part of the safety application and are not a substitute for the safety switching device! When using the components in safety functions, the corresponding notes must be observed in the relevant manual!

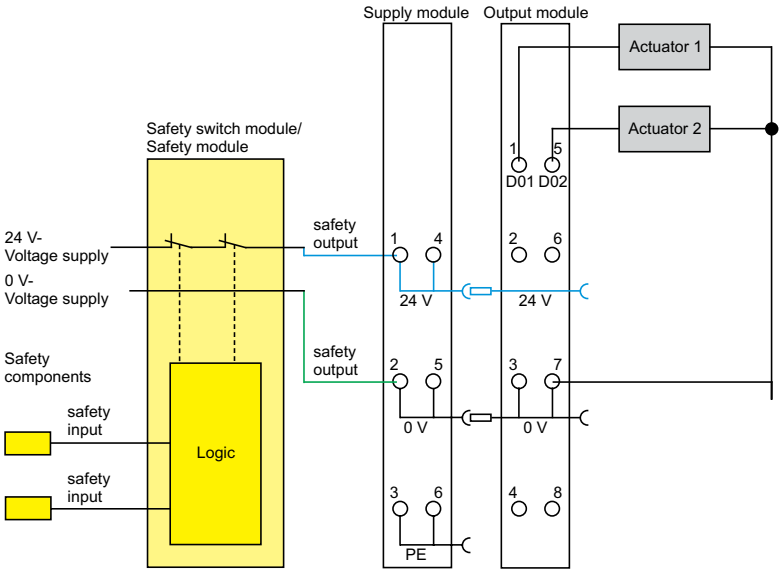
Safety switch module/
Safety module



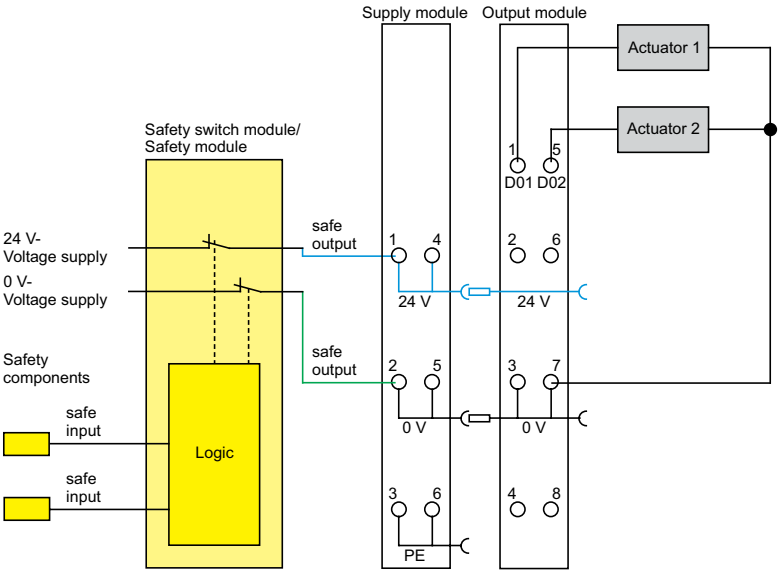
When using the digital output modules in safety-related applications, the modules belonging to a safety switching device shall be combined to form a potential group.
The voltage for the potential group shall only be supplied via 750-601/750-602 Supply Modules or 750-626 Filter Module.
Either a power supply module or a separation module without power jumper contacts (750-616) must be connected at the end of the potential group.

Item description for interference-free I/O modules	
750-501/000-800	2DO 24V DC 0.5A/Interference-free
750-502/000-800	2DO 24V DC 2.0A/Interference-free
750-504/000-800	4DO 24V DC 0.5A/Interference-free
750-504/025-800	4DO 24V DC 0.5A/T/Interference-free
750-506/000-800	2DO 24V DC 0.5A/Diagnostics/Interference-free
750-508/000-800	2DO 24V DC 2.0A/Diagnostics/Interference-free
750-531/000-800	4DO 24V DC 0.5A/2-conductor/Interference-free
750-636/000-800	DC-Drive Controller 24V/5A/Interference-free

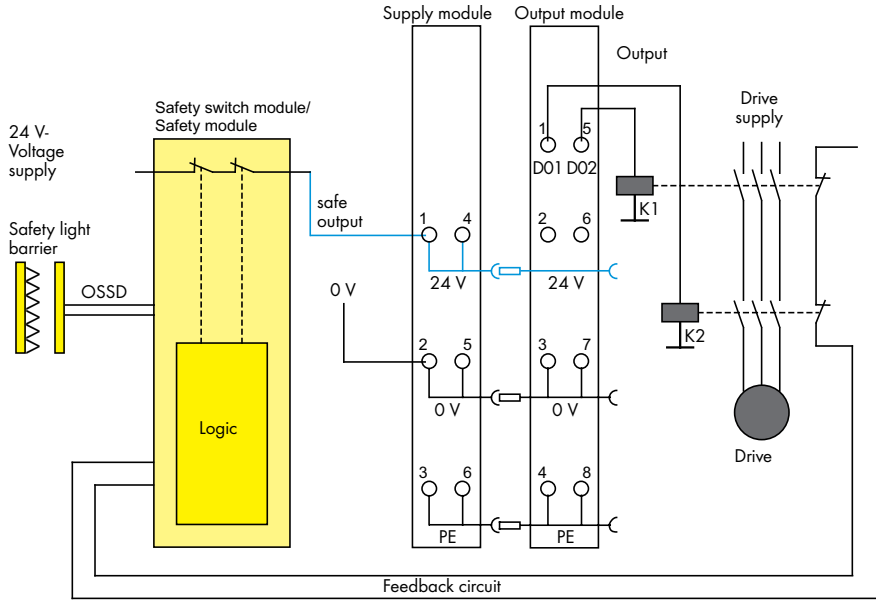
Two-Channel, Single-Pole Power Supply Disconnection



Two-Channel, Double-Pole Power Supply Disconnection



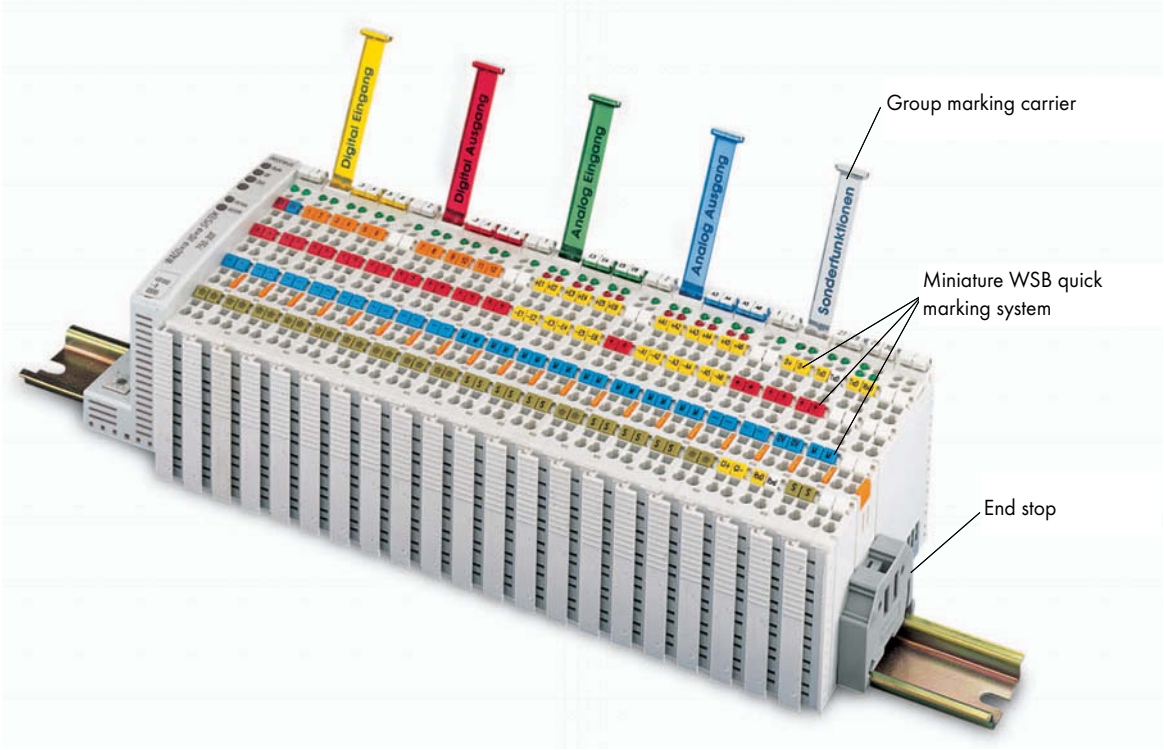
Two-Channel, Single-Pole Disconnection with Feedback from the Contactors' Feedback-Signal Contacts



The examples of circuit configuration show basic connection options for control voltage disconnection.
Depending on the additional circuit used (e.g., safe diagnostics via feedback contacts of the contactors), performance levels up to PLe can be achieved.

Accessories

Manuals, GSD and EDS Files, Marking Accessories, Mounting Accessories



Description		
Manuals:	for fieldbus coupler/controller and ECO fieldbus coupler: PROFINET, PROFIBUS, ETHERNET, DeviceNet, CANopen, SERCOS III, MODBUS, INTERBUS, CC-Link, CAL, Telecontrol, II/O-LIGHTBUS, KNX IP, BACnet, LON, Peer to Peer;	Available in German and English on the Internet at www.wago.com or as DVD AUTOMATION Tools and Docs 0888-0412/xxxx-0101
	for I/O modules (digital input, digital output, analog input, analog output, specialty modules, system modules, Ex i, PROFIsafe)	
GSD and EDS files:	available for the fieldbus system PROFIBUS, DeviceNet and CANopen	



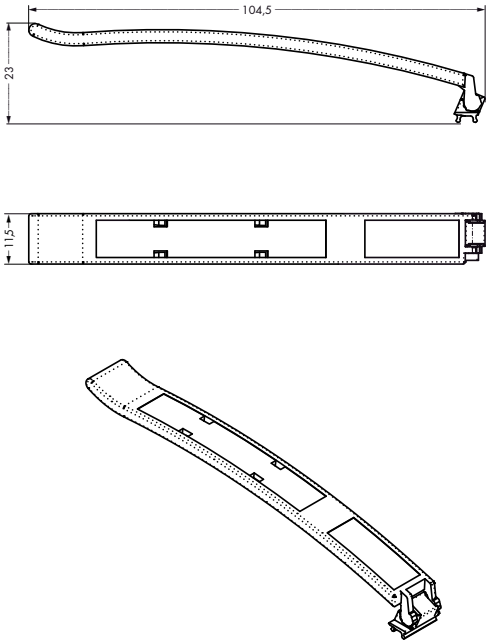

Description		Item No.	Pack. Unit
Marker cards for group marking carrier	sheet DIN A4 (160 cards)	**750-100**	1 sheet
Miniature WSB Quick marking system			
	plain	**248-501**	5 cards
	yellow	**248-501/000-002**	5 cards
	red	**248-501/000-005**	5 cards
	blue	**248-501/000-006**	5 cards
	gray	**248-501/000-007**	5 cards
	orange	**248-501/000-012**	5 cards
	light green	**248-501/000-017**	5 cards
	green	**248-501/000-023**	5 cards
	violet	**248-501/000-024**	5 cards
Marking software and printer/plotter see section 11			
End stop, for DIN 35 rail, 6 mm / 0.236 in wide		**249-116**	100 (4x25)
End stop, for DIN 35 rail, 10 mm / 0.394 in wide		**249-117**	50 (2x25)
Communication cable (used to register or remove the end extension module)		**750-920**	1
WAGO USB Service Cable		**750-923**	1
Operating tool, with partially insulated shaft	Type 1, blade (2.5 x 0.4) mm	**210-719**	1
Operating tool, with partially insulated shaft	Type 2, blade (3.5 x 0.5) mm	**210-720**	1

Accessories

Miniature WSB Quick Marking System

Description		Item No.	Pack. Unit
Miniature WSB quick marking system,			
Marking per card:			
0 V	100 x blue	**247-506/000-006**	5 cards
0 V	100 x white	**247-506**	5 cards
-	100 x blue	**247-507/000-006**	5 cards
-	100 x white	**247-507**	5 cards
24 V	100 x red	**247-508/000-005**	5 cards
24 V	100 x white	**247-508**	5 cards
+	100 x red	**247-509/000-005**	5 cards
+	100 x white	**247-509**	5 cards
	100 x light green	**247-552/000-017**	5 cards
	100 x white	**247-552**	5 cards
PE	100 x light green	**248-578/000-017**	5 cards
PE	100 x white	**248-578**	5 cards
A0 A1 ... A8 A9	10 x white	**247-510**	5 cards
E0 E1 ... E8 E9	10 x white	**247-511**	5 cards
X0 X1 ... X8 X9	10 x white	**247-512**	5 cards
0 to 09	10 x white	**247-513**	5 cards
10 to 19	10 x white	**247-514**	5 cards
20 to 29	10 x white	**247-515**	5 cards
30 to 39	10 x white	**247-516**	5 cards
40 to 49	10 x white	**247-517**	5 cards
50 to 59	10 x white	**247-518**	5 cards
60 to 69	10 x white	**247-519**	5 cards
70 to 79	10 x white	**247-520**	5 cards
80 to 89	10 x white	**247-521**	5 cards
90 to 99	10 x white	**247-522**	5 cards
00 to 49	2 x white	**247-523**	5 cards
50 to 99	2 x white	**247-524**	5 cards
100 to 149	2 x white	**247-525**	5 cards
150 to 199	2 x white	**247-526**	5 cards
200 to 249	2 x white	**247-527**	5 cards
250 to 299	2 x white	**247-528**	5 cards
300 to 349	2 x white	**247-529**	5 cards
350 to 399	2 x white	**247-530**	5 cards
400 to 449	2 x white	**247-531**	5 cards
450 to 499	2 x white	**247-532**	5 cards
500 to 549	2 x white	**247-533**	5 cards
550 to 599	2 x white	**247-534**	5 cards
600 to 649	2 x white	**247-535**	5 cards
650 to 699	2 x white	**247-536**	5 cards
700 to 749	2 x white	**247-537**	5 cards
750 to 799	2 x white	**247-538**	5 cards
800 to 849	2 x white	**247-539**	5 cards
850 to 899	2 x white	**247-540**	5 cards
900 to 949	2 x white	**247-541**	5 cards
950 to 999	2 x white	**247-542**	5 cards
.0 to .7 / plain	10 x /20 x white	**247-543**	5 cards
.0 to .7 /-	10 x /20 x white	**247-544**	5 cards
.0 to .7 /-	10 x /20 x blue	**247-544/000-006**	5 cards
.0 to .7 /+	10 x /20 x white	**247-545**	5 cards
.0 to .7 /+	10 x /20 x red	**247-545/000-005**	5 cards
.0 to .7 /N	10 x /20 x white	**247-546**	5 cards
.0 to .7 /N	10 x /20 x blue	**247-546/000-006**	5 cards
.0 to .7 /L	10 x /20 x white	**247-547**	5 cards

750/753 Series Marker Carrier



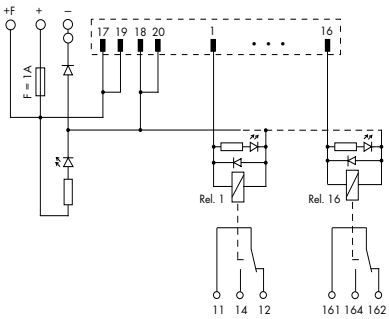
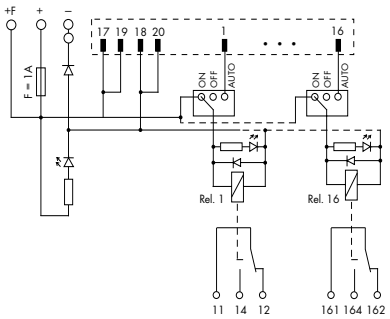
The hinged 750-103 Marker Carrier allows group marking of WAGO-I/O-SYSTEM 750/753 Series components, while featuring a large area for self-marking. The marker carrier can be accommodated in the upper miniature WSB carrier plate.

Description	Item No.	Pack. Unit
750/753 Series Marker Carrier	**750-103**	50

Accessories	Item No.	Pack. Unit
Marker strips for thermal transfer printer (plain; white; 7.5mm/0.29in wide; 50m roll)	**709-178**	1
Markers for marker carriers (plain; white; DIN A4 sheets with removable strips 52 x 8.5mm/0.33in; 99 pieces/sheet)	**750-105**	150

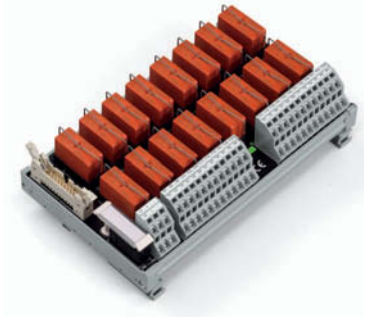
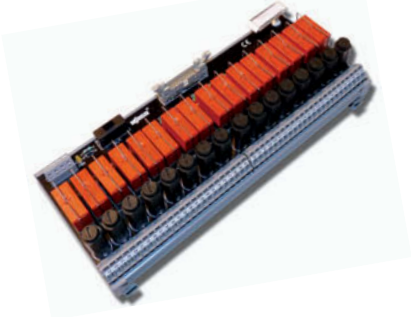
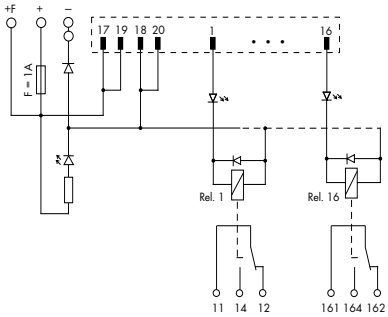
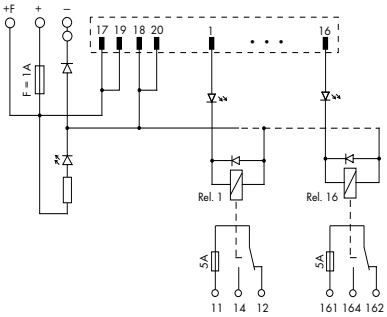
Technical Data	
Dimensions (in mm)	
Width	11.5 mm
Length	104.5 mm
Material	Polycarbonate
Weight	2.84 g

Interface Modules for System Wiring

	Relay output module with miniature switching relay for 16 channels, 1 changeover contact each (1 u) with integrated status indication, 20-pole ribbon cable connector to DIN 41651	Relay output module with miniature switching relay for 16 channels, 1 changeover contact each (1 u) with integrated status indication and manual operation, 20-pole ribbon cable connector to DIN 41651
		
		

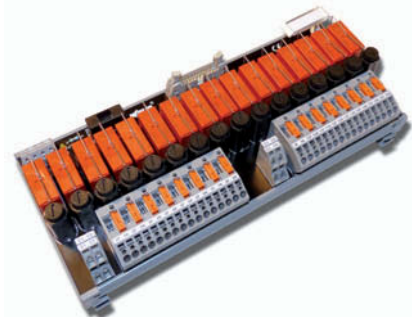
Description	Item No.	Pack. Unit	Item No.	Pack. Unit
Switching relay module, for DIN 35 rail	**704-5024**	1	**704-5044**	1
Technical Data				
Contact material	AgNi 90/10		AgNi 90/10	
Contact type	1 changeover contact		1 changeover contact	
Operating voltage	24 V DC (± 10 %)		24 V DC (± 10 %)	
Max. switching voltage	250 V AC / 48 V DC		250 V AC / 48 V DC	
Max. continuous current	5 A		5 A	
Max. switching power (resistive)	1250 VA / 50 W		1250 VA / 50 W	
Status indication	LED green : Channel		LED green : Channel	
	LED yellow : Power supply		LED yellow : Power supply	
Mechanical life	10 x 10^6 switching operations		10 x 10^6 switching operations	
Dielectric strength contact-coil (AC, 1 min)	4 kV		4 kV	
Dielectric strength contact-contact	1 kV		1 kV	
Fuse	Supply: 1 A		Supply: 1 A	
	Relay output: –		Relay output: –	
Ambient operating temperature	-25 °C ... +40 °C		-25 °C ... +40 °C	
Storage temperature	-40 °C ... +70 °C		-40 °C ... +70 °C	
Dimensions (mm) L x W x H	111 x 65 x 105		121 x 65 x 105	
incl. mounting carrier and relay				
	Height from upper-edge of DIN 35 rail		Height from upper-edge of DIN 35 rail	
Wire connection	Input: 20-pole ribbon cable connector to DIN 41651		Input: 20-pole ribbon cable connector to DIN 41651	
	Output: CAGE CLAMP®		Output: CAGE CLAMP®	
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 12		0.08 mm² ... 2.5 mm² / AWG 28 ... 12	
Stripped lengths	5 ... 6 mm / 0.22 in		5 ... 6 mm / 0.22 in	
Application examples	see page 315		see page 315	
Accessories	Spare relay 857-152		Spare relay 857-152	

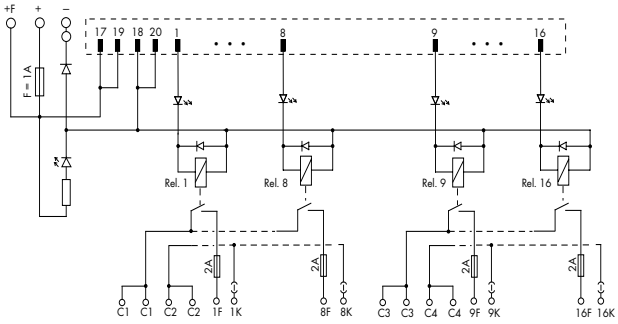
Interface Modules for System Wiring

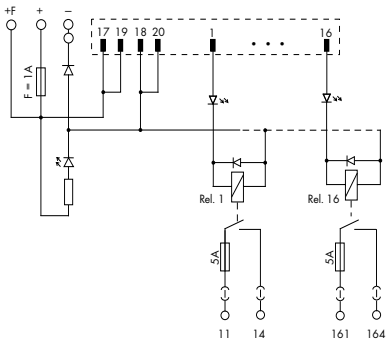
	Relay output module with miniature switching relay for 16 channels, 1 changeover contact each (1 u) with integrated status indication, 20-pole ribbon cable connector to DIN 41651	Relay output module with miniature switching relay for 16 channels, 1 changeover contact each (1 u) with integrated status indication and output fuse, 20-pole ribbon cable connector to DIN 41651
		
		

Description	Item No.	Pack. Unit	Item No.	Pack. Unit
Switching relay module, for DIN 35 rail	**704-5004**	1	**704-5034**	1
Switching relay module without miniature switching relay,	**704-5014**	1		
Technical Data				
Contact material	AgNi 90/10		AgNi 90/10	
Contact type	1 changeover contact		1 changeover contact	
Operating voltage	24 V DC (± 10 %)		24 V DC (± 10 %)	
Max. switching voltage	250 V AC / 48 V DC		250 V AC / 48 V DC	
Max. continuous current	5 A		5 A	
Inrush current	2 s 16 A		2 s 16 A	
Max. switching power (resistive)	1250 VA / 50 W		1250 VA / 50 W	
Status indication	LED green : Channel		LED green : Channel	
	LED yellow : Power supply		LED yellow : Power supply	
Mechanical life	30 x 10^6 switching operations		30 x 10^6 switching operations	
Dielectric strength contact-coil (AC, 1 min)	3 kV		4 kV	
Dielectric strength contact-contact	1 kV		1 kV	
Fuse	Supply: 1 A		Supply: 1 A	
	Relay output: –		Relay output: 5 A	
Ambient operating temperature	-25 °C ... +50 °C		-25 °C ... +50 °C	
Storage temperature	-40 °C ... +70 °C		-40 °C ... +70 °C	
Dimensions (mm) L x W x H	180 x 50 x 105		247 x 55 x 105	
incl. mounting carrier and relay				
	Height from upper-edge of DIN 35 rail		Height from upper-edge of DIN 35 rail	
Wire connection	Input: 20-pole ribbon cable connector to DIN 41651		Input: 20-pole ribbon cable connector to DIN 41651	
	Output: CAGE CLAMP®		Output: CAGE CLAMP®	
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 12		0.08 mm² ... 2.5 mm² / AWG 28 ... 12	
Stripped lengths	5 ... 6 mm / 0.22 in		5 ... 6 mm / 0.22 in	
Application examples	see page 315		see page 315	
Accessories	Spare relay 788-154		Spare relay 788-154	

	Relay output module with miniature switching relay for 16 channels, 1 make contact each (1 a) with integrated status indication, disconnect terminal block and output fuse, 20-pole ribbon cable connector to DIN 41651	Relay output module with miniature switching relay for 16 channels, 1 make contact each (1 a) with integrated status indication, double disconnect terminal block and output fuse, 20-pole ribbon cable connector to DIN 41651







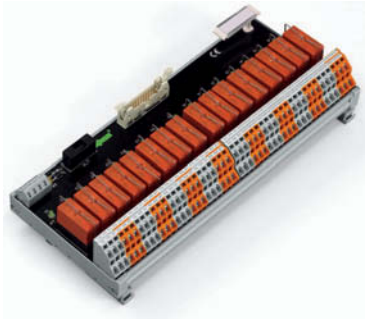
Description	Item No.	Pack. Unit	Item No.	Pack. Unit
Switching relay module, for DIN 35 rail	**704-5054**	1	**704-5074**	1

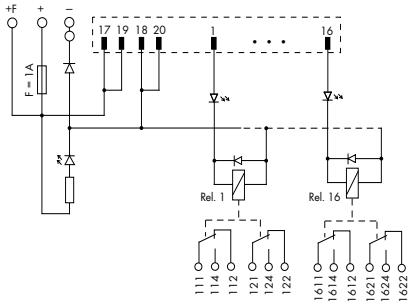
Technical Data

Contact material	AgNi 90/10	AgNi 90/10
Contact type	1 make contact	1 make contact
Operating voltage	24 V DC (± 10 %)	24 V DC (± 10 %)
Max. switching voltage	250 V AC / 48 V DC	250 V AC / 48 V DC
Max. continuous current	2 A	5 A
Max. switching power (resistive)	500 VA / 50 W	1250 VA / 50 W
Status indication	LED green : Channel	LED green : Channel
	LED yellow : Power supply	LED yellow : Power supply
Mechanical life	30 x 10^6 switching operations	30 x 10^6 switching operations
Dielectric strength contact-coil (AC, 1 min)	4 kV	4 kV
Dielectric strength contact-contact	1 kV	1 kV
Fuse	Supply: 1 A	Supply: 1 A
	Relay output: 2 A	Relay output: 5 A
Ambient operating temperature	-25 °C ... +50 °C	-25 °C ... +50 °C
Storage temperature	-40 °C ... +70 °C	-40 °C ... +70 °C
Dimensions (mm) L x W x H	240 x 55 x 105	240 x 55 x 105
incl. mounting carrier and relay		
	Height from upper-edge of DIN 35 rail	Height from upper-edge of DIN 35 rail
Wire connection	Input: 20-pole ribbon cable connector to DIN 41651	Input: 20-pole ribbon cable connector to DIN 41651
	Output: CAGE CLAMP®	Output: CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 12	0.08 mm² ... 2.5 mm² / AWG 28 ... 12
Stripped lengths	5 ... 6 mm / 0.22 in	5 ... 6 mm / 0.22 in
Application examples	see page 315	see page 315
Accessories	Spare relay 788-154	Spare relay 788-154

Interface Modules for System Wiring

	Relay output module with miniature switching relay for 16 channels, 2 changeover contacts each (2 u) with integrated status indication, 20-pole ribbon cable connector to DIN 41651	



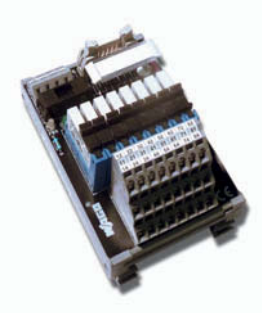


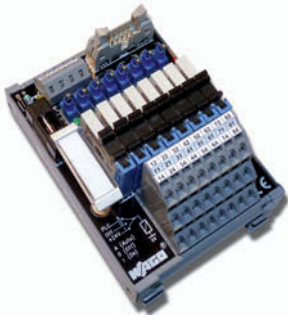
Description	**Item No.**	**Pack. Unit**	
Switching relay module, for DIN 35 rail	**704-5064**	1	

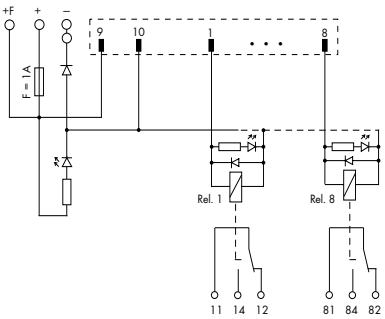
Technical Data

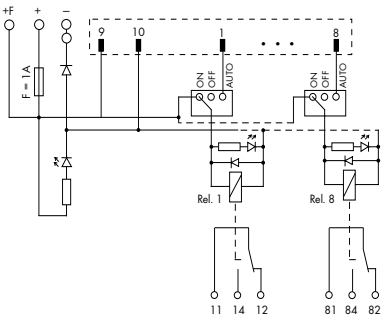
Contact material	AgNi 90/10	
Contact type	2 changeover contact	
Operating voltage	24 V DC (± 10 %)	
Max. switching voltage	250 V AC / 48 V DC	
Max. continuous current	5 A	
Inrush current	2 s 8 A	
Max. switching power (resistive)	1000 VA / 50 W	
Status indication	LED green : Channel	
	LED yellow : Power supply	
Mechanical life	30 x 10^6 switching operations	
Dielectric strength contact-coil (AC, 1 min)	4 kV	
Dielectric strength contact-contact	1 kV	
Fuse	Supply: 1 A	
	Relay output: –	
Ambient operating temperature	-25 °C ... +50 °C	
Storage temperature	-40 °C ... +70 °C	
Dimensions (mm) L x W x H	247 x 50 x 105	
incl. mounting carrier and relay		
	Height from upper-edge of DIN 35 rail	
Wire connection	Input: 20-pole ribbon cable connector to DIN 41651	
	Output: CAGE CLAMP®	
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 12	
Stripped lengths	5 ... 6 mm / 0.22 in	
Application examples	see page 315	
Accessories	Spare relay 788-156	

	Relay output module with miniature switching relay for 8 channels, 1 changeover contact each (1 u) with integrated status indication, 10-pole ribbon cable connector to DIN 41651	Relay output module with miniature switching relay for 8 channels, 1 changeover contact each (1 u) with integrated status indication and manual operation, 10-pole ribbon cable connector to DIN 41651









Description	Item No.	Pack. Unit	Item No.	Pack. Unit
Switching relay module, for DIN 35 rail	**704-5003**	1	**704-5013**	1
Technical Data				
Contact material	AgNi 90/10		AgNi 90/10	
Contact type	1 changeover contact		1 changeover contact	
Operating voltage	24 V DC (± 10 %)		24 V DC (± 10 %)	
Max. switching voltage	250 V AC / 48 V DC		250 V AC / 48 V DC	
Max. continuous current	5 A		5 A	
Max. switching power (resistive)	1250 VA / 50 W		1250 VA / 50 W	
Status indication	LED green : Channel		LED green : Channel	
	LED yellow : Power supply		LED yellow : Power supply	
Mechanical life	10 x 10^6 switching operations		10 x 10^6 switching operations	
Dielectric strength contact-coil (AC, 1 min)	4 kV		4 kV	
Dielectric strength contact-contact	1 kV		1 kV	
Fuse	Supply: 1 A		Supply: 1 A	
	Relay output: –		Relay output: –	
Ambient operating temperature	-25 °C ... +40 °C		-25 °C ... +40 °C	
Storage temperature	-40 °C ... +70 °C		-40 °C ... +70 °C	
Dimensions (mm) L x W x H	70 x 65 x 105		75 x 65 x 105	
incl. mounting carrier and relay				
	Height from upper-edge of DIN 35 rail		Height from upper-edge of DIN 35 rail	
Wire connection	Input: 10-pole ribbon cable connector to DIN 41651		Input: 10-pole ribbon cable connector to DIN 41651	
	Output: CAGE CLAMP®		Output: CAGE CLAMP®	
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 12		0.08 mm² ... 2.5 mm² / AWG 28 ... 12	
Stripped lengths	5 ... 6 mm / 0.22 in		5 ... 6 mm / 0.22 in	
Application examples	see page 315		see page 315	
Accessories	Spare relay 857-152		Spare relay 857-152	

WAGO Ribbon Cables

WAGO ribbon cables provide fast and easy connection of WAGO I/O modules equipped with a ribbon cable connector (750-1400, -1402, -1500, -1501, 1502) to appropriate interface or relay modules (16-channel) featuring a 20-pole female connector. The cables are available in 1-, 2- and 3-meter lengths; each has one 20-pole female connector at both ends.

Description	Item No.	Pack. Unit
WAGO ribbon cable 20/20, lenght 1 m	**706-3057/300-100**	1
WAGO ribbon cable 20/20, lenght 2 m	**706-3057/300-200**	1
WAGO ribbon cable 20/20, lenght 3 m	**706-3057/300-300**	1

Technical Data

Connections	2 x 20-pole female connector acc. to DIN 41651
Wire cross-section	0.14 mm² LiYY
Color coding	acc. to DIN VDE 47100
Current per channel	max. 1 A
Operating temperature	-25 °C ... +70 °C
Degree of protection	IP20
Length	1 m (706-3057/300-100) 2 m (706-3057/300-200) 3 m (706-3057/300-300)

WAGO ribbon cables provide fast and easy connection of WAGO I/O modules equipped with a ribbon cable connector (750-1400, -1402, -1500, -1501, 1502) to appropriate interface or relay modules featuring a 10-pole female connector. For example, this cable connects 2 relay modules (8-channel) to a WAGO I/O module. The cables are available in 1- and 2-meter lengths; each has one 20-pole and two 10-pole female connectors on the ends.

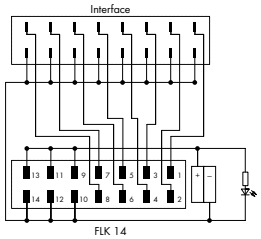
Description	Item No.	Pack. Unit
WAGO ribbon cable 20/2x10, lenght 1 m	**706-7753/302-100**	1
WAGO ribbon cable 20/2x10, lenght 2 m	**706-7753/302-200**	1

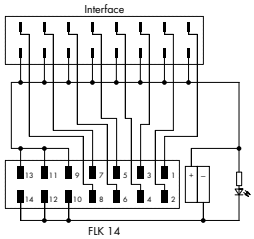
Technical Data

Connections	1 x 20-pole / 2 x 10-pole female connector
Wire cross-section	0.14 mm² LiYY
Color coding	acc. to DIN VDE 47100
Current per channel	max. 1 A
Operating temperature	-25 °C ... +70 °C
Degree of protection	IP20
Length	1 m (706-7753/302-100) 2 m (706-7753/302-200)

JUMPFLEX® 8-Channel Adapters for System Wiring

	8-channel adapter with 14-pin flat cable connector Input, positive switching	8-channel adapter with 14-pin flat cable connector Output, positive switching





Description	Item No.	Pack. Unit	Item No.	Pack. Unit
***JUMPFLEX*® 8-channel adapter for system wiring**	**857-981**	1	**857-982**	1

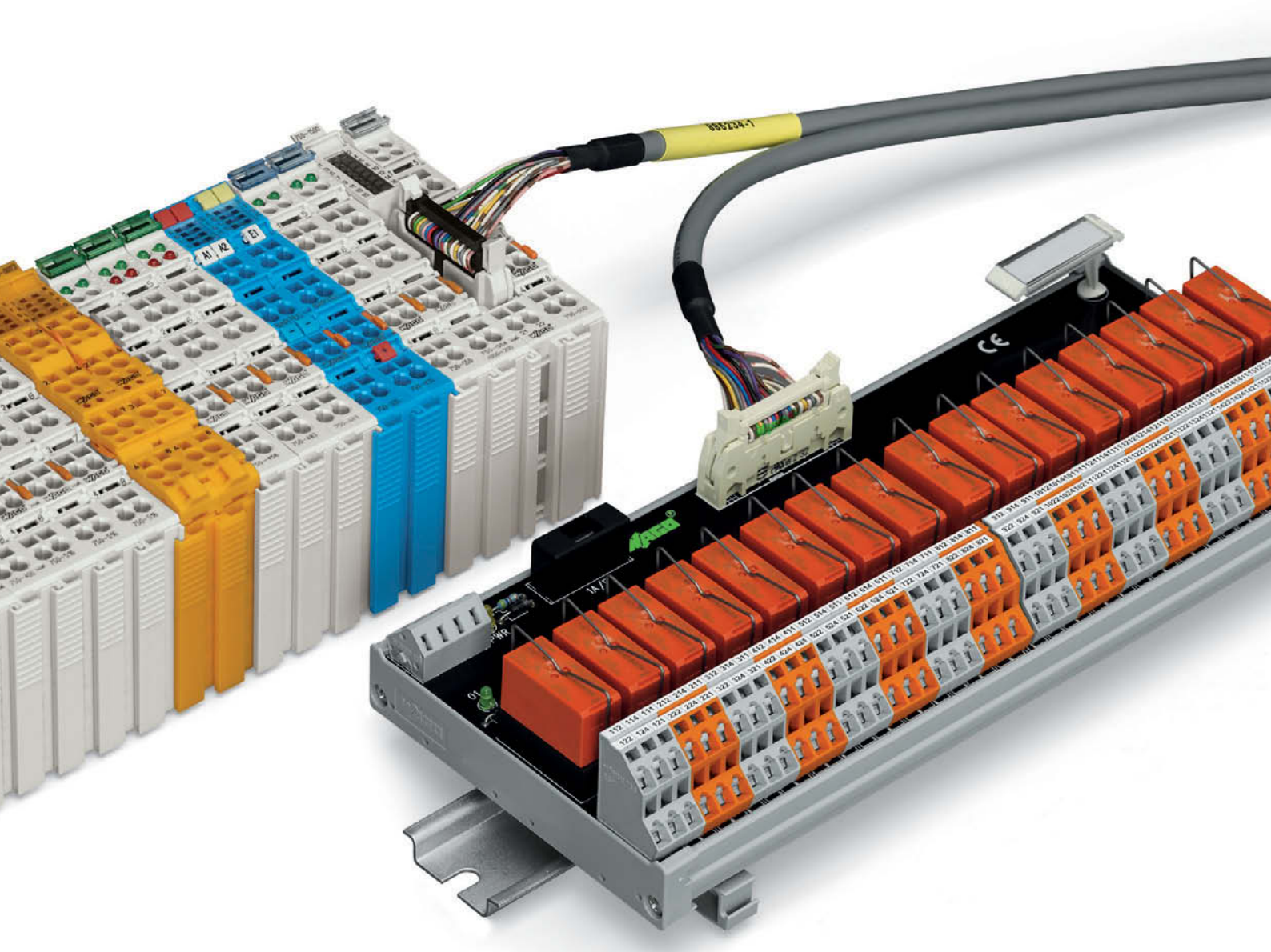
Technical Data

Connection type, signal level	14-pin flat cable connector acc. to DIN 41651	14-pin flat cable connector acc. to DIN 41651
Performance level	3	3
Contact resistance	≤ 20 mΩ	≤ 20 mΩ
Current carrying capacity	1 A	1 A
Test voltage	500 V / 50 Hz / 1 min.	500 V / 50 Hz / 1 min.
Voltage supply V_N	24 V DC	24 V DC
Supply voltage range	16.8 V ... 31.2 V	16.8 V ... 31.2 V
Max. total current	3A	3A
Operational indication	LED, green	LED, green
Connection type, supply	231 Series with CAGE CLAMP®	231 Series with CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	5 ... 6 mm / 0.22 in	5 ... 6 mm / 0.22 in
Accessories	**WAGO flat cable on request**	**WAGO flat cable on request**

16-Channel I/O Module with Interface Module

The new 750-14xx and 750-15xx Series I/O Modules with flat ribbon cable connection offer 16 digital channels in a module less than 1⁄2 inch (12mm) wide. Offering quick connections and a space-efficient design, the DIN-rail mount interface modules simplify installation in confined areas and relocate the termination point. When combined with WAGO interface modules (e.g., item no. 289-614, 289-611), a switch cabinet can be pre-wired before install to minimize wiring time and errors. This is beneficial as wiring can be performed independently of a plant's construction. Pre-wired electronics can be installed right before start-up, saving valuable time during final stages of project completion. The modules are also ideal for connecting series machines or relay modules tasked with the higher loads common to buildings and industrial applications. The interface module also combines the advantages of relays (e.g., manual operation or rapid replacement with socked-mounted versions) with the benefits of a modern I/O system.
Another ideal application would be the integration of pneumatic controllers into a fieldbus network.
Most pneumatic modules have an appropriate connector and can be controlled by the WAGO-I/O-SYSTEM.

Five variants are available: two 16-channel input or output modules (one high-side and one low-side switching variant), as well as a version combining 8 inputs and 8 outputs.

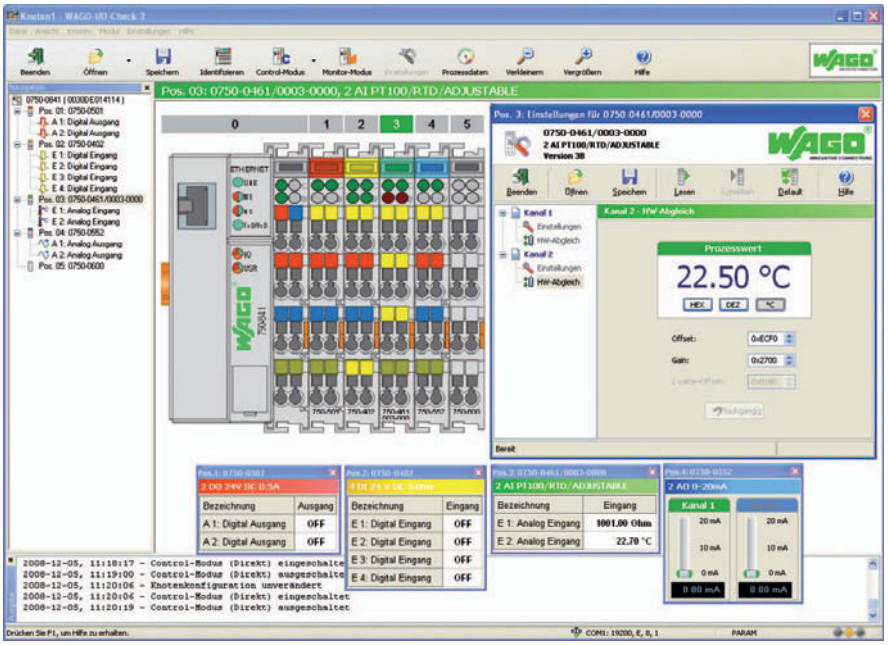


Application Examples

Item. No.	Designation	PLC	Card	
704-5024 704-5044 704-5004 704-5014 704-5034 704-5054 704-5074 704-5064	T16S	Siemens S7-300	6ES7 313-5BE01-0AB0	6ES7 314-6CG03-0AB0
			6ES7 313-5BF03-0AB0	6ES7 322-1BH01-0AA0
			6ES7 313-6BE01-0AB0	6ES7 322-1BH10-0AA0
			6ES7 313-6BF03-0AB0	6ES7 322-1BH80-0AA0
			6ES7 313-6CE01-0AB0	6ES7 322-1BL00-0AA0
			6ES7 313-6CF03-0AB0	6ES7 322-1BP00-0AA0
			6ES7 314-6BF01-0AB0	6ES7 322-1EH01-0AA0
			6ES7 314-6BG03-0AB0	6ES7 323-1BL00-0AA0
			6ES7 314-6CF01-0AB0	
		GEFANUC 90-30 / ALSPA 80-35	IC693 MDL740	IC693 MDL753
			IC693 MDL742	
		SCHNEIDER TSX 37 (Micro)	TSX DMZ 28DT	TSX DMZ 64DTK
			TSX DMZ 28DTK	
		SCHNEIDER TSX 57 (Premium)	TSX DSY 16T2	TSX DMY 28FK
			TSX DSY 32T2K	TSX DMY 28RFK
			TSX DSY 64T2K	
		SCHNEIDER M340	BMX DDO 1602	BMX DDO 6402K
			BMX DDO 3202K	BMX DDM 3202K
		SCHNEIDER QUANTUM	140 DDO 353 00	140 DDO 843 00
			140 DDO 353 01	140 DVO 853 00
			140 DDO 364 00	
		ROCKWELL COMPACT-LOGIX (1769)	1769 - OB16	1769 - OB32
			1769 - OB16P	1769 - OB32T
		ROCKWELL CONTROL-LOGIX (1756)	1756 - OB16D	1756 - OB32
			1756 - OB16E	
		WAGO-I/O-SYSTEM 750/753	753-530 (x2)	
			750-1500	
704-5003 704-5013	T8S	SIEMENS S7-300	6ES7 312-5BD01-0AB0	6ES7 322-8BF00-0AB0
			6ES7 312-5BE03-0AB0	6ES7 323-1BH01-0AA0
			6ES7 322-1BF01-0AA0	6ES7 327-1BH00-0AB0
		GEFANUC 90-30 / ALSPA 80-35	IC693 MDL730	TSX DSZ 08T2
			IC693 MDL732	TSX DSZ 08T2K
			TSX DSZ 04T22	TSX DMZ 16DTK
		SCHNEIDER TSX 57 (Premium)	TSX DSY 08T2	
		SCHNEIDER M340	BMX DDM 16022	
		SCHNEIDER QUANTUM	140 DDM 390 00	
		ROCKWELL COMPACT LOGIX (1769)	1769 - OB8	
		ROCKWELL CONTROL LOGIX (1756)	1756 - OB8	1756 - OB8I
			1756 - OB8EI	
		WAGO-I/O-SYSTEM 750/753	753-530	
			750-1502, -1500	

WAGO-I/O-CHECK

Start-up and diagnostic tool for the WAGO-I/O-SYSTEM 750



WAGO-I/O-CHECK is a Windows application for the checking of inputs and outputs and the display of a WAGO-I/O-SYSTEM 750 node. The software is easy to handle and it is not necessary to connect the node to a fieldbus system. The software reads out the node configuration and displays it as a graphic on the screen. This graphic can be printed out along with a configuration list. Together they are a complete node documentation.
With WAGO-I/O-CHECK it is possible to display and determine the process data of the bus modules. The field wiring, including all sensors and actuators, can thus be checked before start-up.
Application specific settings such as baud rate or sensor type are possible for some particular interface, RTD and thermocouple modules.

The communication between WAGO-I/O-CHECK and the node is made via the communication cable (included in kits) which is connected between the coupler and the serial or USB interface port of the PC.

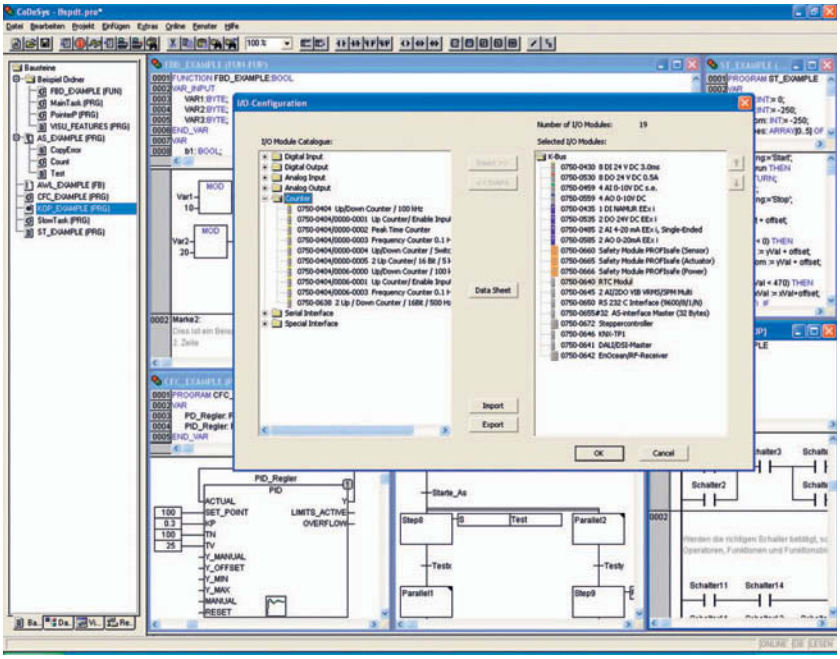
Description	Item No.	Pack. Unit
WAGO-I/O-CHECK, RS-232-Kit	**759-302**	1
WAGO-I/O-CHECK, USB-Kit	**759-302/000-923**	1
WAGO-I/O-CHECK, CD-ROM	**759-920**	1
WAGO-I/O-CHECK, Safety-CD-ROM	**759-920/000-001**	1

Technical Data	
System requirements:	
PC	min. 1 GHz or higher
Operating system	Microsoft® Windows® 2000 or higher
RAM memory	min. 512 Mbytes (Windows XP, 2000); min. 1 Gbytes (Windows Vista)
Hard disk storage	min. 50 Mbytes
CD-ROM	required
Graphics resolution	min. 1024 x 768
Mouse	required
Included:	**RS-232 kit:**
	CD-ROM with software and serial communication cable (750-920)
	USB kit:
	CD-ROM with software and USB communication cable (750-923),
	Safety CD-ROM:
	CD-ROM with software without communication cable

Windows® is a registered trademark of Microsoft Corporation

WAGO-I/O-PRO CAA

Programming tool, IEC 61131-3 compliant



WAGO-I/O-PRO CAA is a programming and visualization tool. It permits development of PLC applications for Programmable Fieldbus Controllers found within the WAGO-I/O-SYSTEM 750.
WAGO-I/O-PRO CAA conforms to IEC 61131-3. This standard defines the requirements fulfilled by a programming system as well as 5 programming languages for PLCs. The languages IL, LD, FBD, ST and FC are supported. For every automation task, the appropriate language can be chosen.
The software meets increasing requirements of control program development, such as re-usability or modularization.

- Powerful translation of the programming languages
- Automatic declaration of variables
- Librarian /Library maintenance

Furthermore, integrated test and diagnostic functions facilitate and expedite PLC working processes.
Features:

- Online status indication in the program code
- Offline simulation
- Integrated visual display of internal and external flags (markers)
- Storage and graphic display of project variables

WAGO-I/O-PRO CAA not only programs WAGO CoDeSys Automation Alliance products but also CoDeSys Automation Alliance products from other manufacturers.

Description	Item No.	Pack. Unit
WAGO-I/O-PRO CAA, RS-232-Kit	**759-333**	
WAGO-I/O-PRO CAA, USB-Kit	**759-333/000-923**	
WAGO-I/O-PRO CAA, CD-ROM	**759-911**	

Approvals

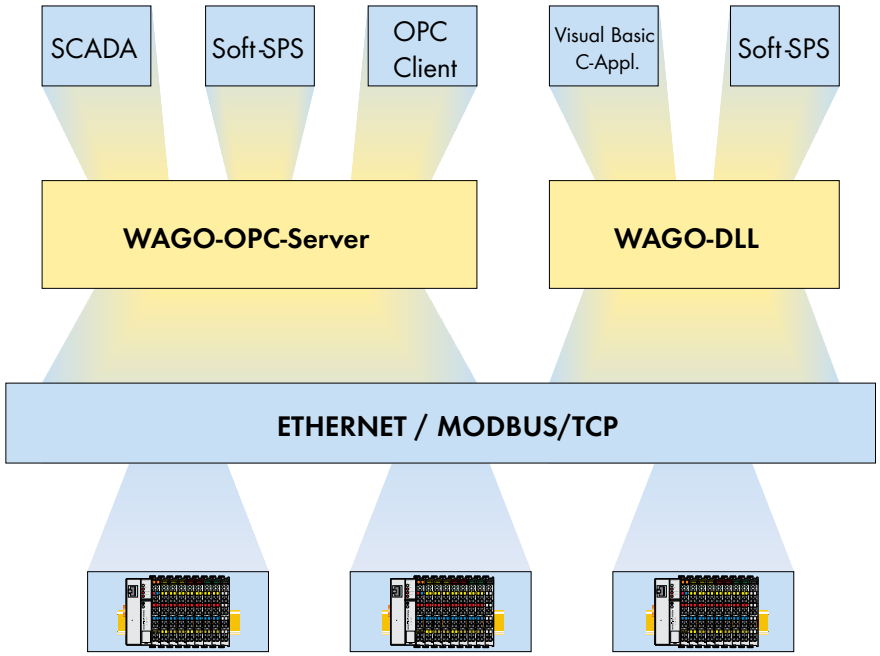
Shipbuilding	ABS (American Bureau of Shipping)
	03-HG374860/2-PDA
	DNV (Det Norske Veritas)
	A-10191; Cl.B
	GL (Germanischer Lloyd)
	26 898-05 HH; Cat. D (EMC 1)
	KR (Korean Register of Shipping)
	HMB05880-EL004
	NKK (Nippon Kaiji Kyokai)
	TA06190M
	RINA (Registro Italiano Navale)
	MAC30402CS1

Technical Data

System requirements:	
PC	Pentium
Operating system	Microsoft® Windows® 2000;
	Microsoft® Windows® XP;
	Microsoft® Windows® Vista (32-Bit)
	Microsoft® Windows® 7 (32-Bit)
RAM memory	min. 16 Mbytes (Windows 95);
	min. 128 Mbytes (Windows 2000)
Hard disk storage	min. 10 Mbytes
CD-ROM	required
Graphics resolution	VGA or higher;
	recommended: Super VGA
Mouse	required
Other	Serial interface
Included:	**RS-232 kit:**
	CD-ROM with software and serial
	communication cable (750-920)
	USB Kit:
	CD-ROM with software and 750-923
	USB communication cable
	CD-ROM:
	CD-ROM with software without
	communication cable

WAGO Interface Software

OPC Server / DLL for MODBUS/TCP



WAGO OPC Server for MODBUS/TCP

The OPC standard defines an open industrial interface which can be used by PC-based software components to transfer data. The interface is based on the OLE (Object Linking and Embedding), COM (Component Object Model), and DCOM (Distributed COM) Windows technologies. This makes OPC an ideal basis for the connection of industrial applications or MS-Office programs with field devices such as the WAGOI/O-SYSTEM in factory automation application.
The WAGO MODBUS/TCP OPC server allows easy and convenient access to MODBUS/TCP Ethernet devices. Simple configuration of the OPC server shortens the time needed for training and start-up.

Description	Item No.	Pack. Unit
WAGO OPC Server for MODBUS/TCP	**759-311**	1

Technical Data

System requirements:	
OPC specifications	Data Access V 1.0A;
	Data Access V 2.04
Operating system	Microsoft® Windows® XP
	Microsoft® Windows® NT 4.0 (as from SP5);
	Microsoft® Windows® 2000;
	Microsoft® Windows® 98
	(with DCOM98 V1.3)
Supported protocols	MODBUS/TCP and MODBUS via UDP
OPC server licenses	759-311 1
	759-311/000-100 10
	759-311/000-200 25
	759-311/000-300 unlimited
Included:	incl. configuration tool

Windows® is a registered trademark of Microsoft Corporation

WAGO DLL for MODBUS/TCP

The DLL supports the programmer when programming his or her own automation.
Using the DLL allows easy access to the WAGO Ethernet coupler/controller. Both C and Visual Basic are appropriate for use with the DLL.

Description	Item No.	Pack. Unit
WAGO DLL for MODBUS/TCP	**759-312**	1

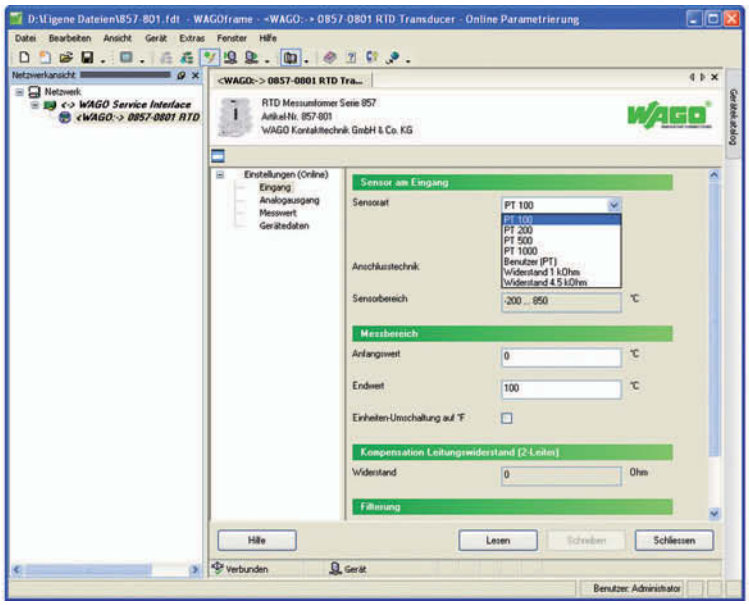
Technical Data

System requirements:	
Operating system	Microsoft® Windows® XP
	Microsoft® Windows® NT 4.0 (as from SP5);
	Microsoft® Windows® 2000;
	Microsoft® Windows® 98
Supported protocols	MODBUS/TCP and MODBUS via UDP;
	FC1, FC2, FC3, FC4, FC7, FC15, FC16
Supported programming languages	Visual Basic (synchronous function calls);
	C (synchronous and asynchronous function call)

Windows® is a registered trademark of Microsoft Corporation

WAGOframe

FDT frame application for parameterization, commissioning and diagnostics of devices with DTM device driver



WAGOframe: Parameterizing a *JUMPLEX*® transducer

WAGOframe: Wizard function

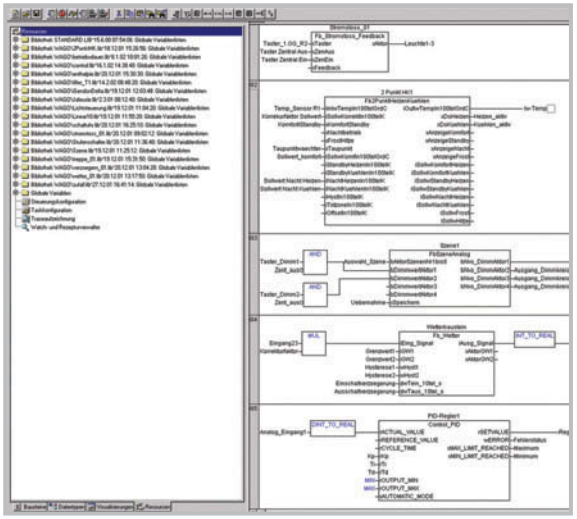
WAGOframe is an FDT/DTM-based software used for parameterization, commissioning and diagnostics of field devices.
DTM device drivers for the devices employed are required to use the WAGOframe FDT frame application.
The WAGOframe FDT frame application provides a wizard, which simplifies the operation of components, such as WAGO JUMPFLEX DTMs. For example, this wizard guides the user through the different operating modes of DTM device drivers.
Depending on the PC communication interface used, an appropriate communication cable including DTM is required.

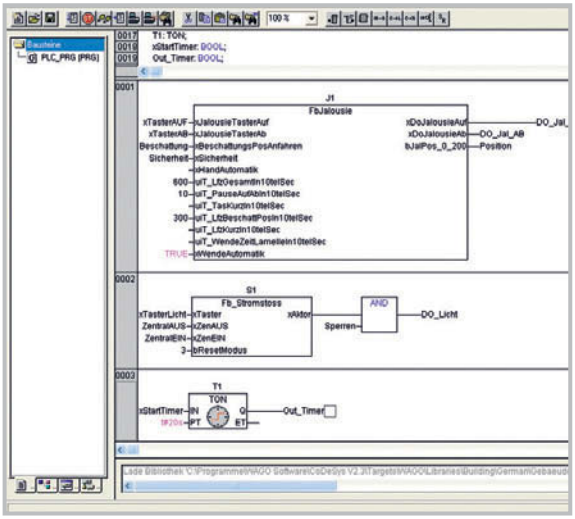
Description	Item No.	Pack. Unit
WAGOframe	**759-370**	1

Accessories	Item No.	Pack. Unit
857 Series JUMPFLEX		
WAGO USB Service Cable	**750-923**	1
767 Series SPEEDWAY configuration		
USB communication cable	**756-4101/042-030**	1

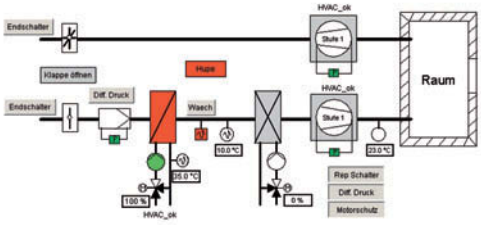
Technical Data	
System requirements:	
PC	Pentium 1 GHz or higher
Operating system	Microsoft® Windows® 2000;
	Microsoft® Windows® XP Professional;
	Microsoft® Windows® Vista®
RAM memory	min. 512 Mbytes (Windows® 2000 + XP);
	min. 1024 Mbytes (Windows® Vista®)
Hard disk storage	min. 50 Mbytes
CD-ROM	required
Graphics resolution	XGA or higher
Mouse	required
Other	Free interface in PC for communication
	with the device (e.g., USB, Serial,
	ETHERNET, ...)
Included:	CD ROM with software and documentation
Additional requirements:	Cable between PC communication
	interface and device.
	DTM software for the
	communication interface used in the PC.
	DTM software of the device.

WAGO Function Blocks for Building Automation





Description	Description
Heating, ventilation, air conditioning	**Room applications**
The library contains function blocks (FBs) to create automation applications for complex heating, ventilation and air-conditioning systems (HVAC). These include fault monitoring, starter circuits, the monitoring of frost protection systems, fan control (stepped/continuous), air mixture valve control, control of air heaters, control of air coolers, cascade control of room/feed air temperature, free night cooling, summer/ winter compensators, enthalpy calculations, filter monitoring, blockage protection, etc.	The library contains function blocks that have been customized especially for building automation. They serve as an aid for the rapid programming of building applications. • Lighting • Dimmers • Lighting scenarios • Constant light control • Blinds • Shading • and other applications

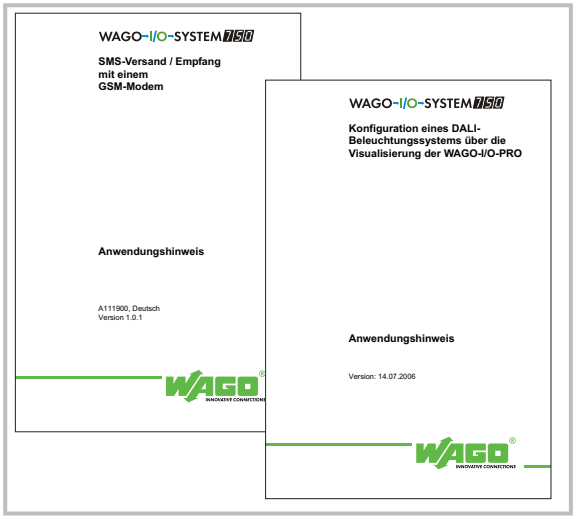


Software System Requirements:

Description	Item no.
WAGO-I/O-PRO CAA	759-333

Download:

Current libraries including descriptions can be downloaded for free at: www.wago.com



Description	Description
Application notes	
The application notes contain function blocks (FBs) for communications applications. • EnOcean radio technology • DALI • MP-Bus • KNX/EIB • M-Bus • E-Mail • SMS • MODBUS • AS-Interface • and other applications	Application reports are freely available from the WAGO homepage and can be downloaded as a ZIP file. The file contains the detailed description of the application (PDF format) along with a functional example program. The required hardware, the libraries used and the example program are explained step by step. Some applications (e.g., for (DALI) digital light controls) also contain a pre-designed visualization. This visualization can be loaded into the controller's Web server and be used for commissioning.

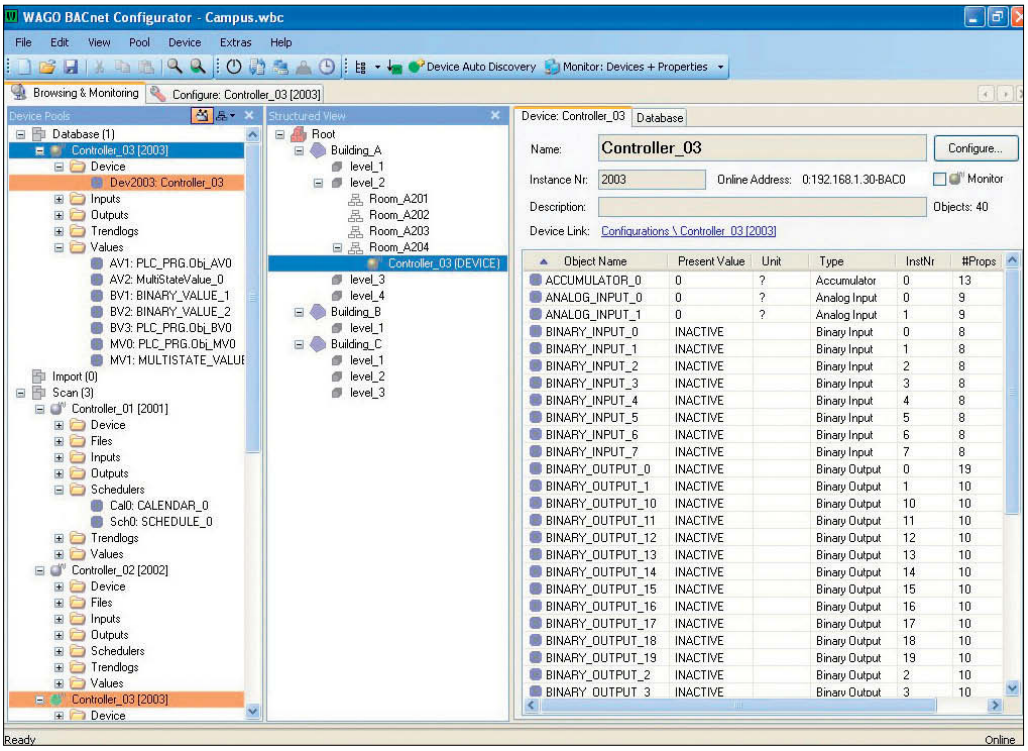
Software System Requirements:

Description	Item no.
WAGO-I/O-PRO CAA	759-333

Download:

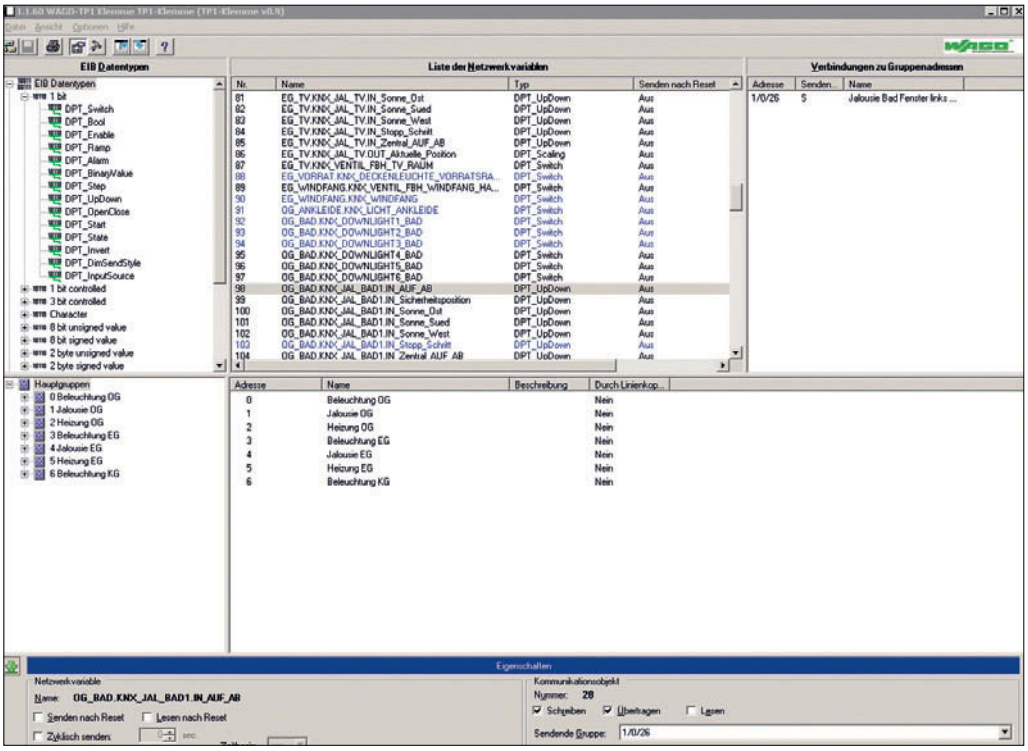
Current application notes can be downloaded at:
www.wago.com

WAGO BACnet Configurator



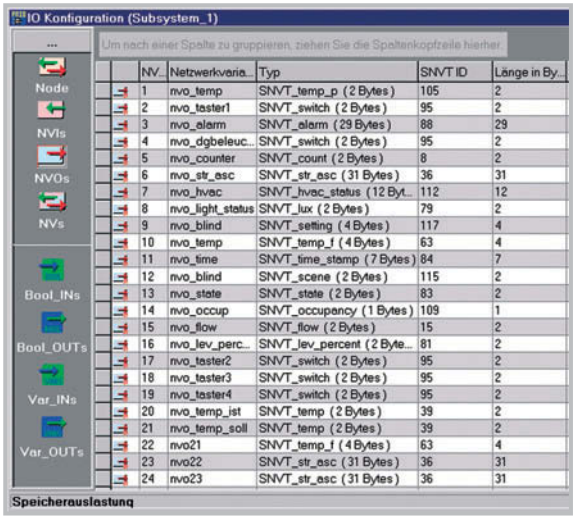
Description	
WAGO BACnet Configurator	
The WAGO BACnet Configurator is an independent commissioning, configuration and management software. The configurator fully supports BACnet-specific functions of the WAGO 750-830 BACnet/IP Controller. The configurator creates and configures WAGO BACnet/IP controllers and sets up data exchange between IEC application and BACnet objects. Import and export functions allow further processing of configuration data. For integration into existing BACnet/IP networks, the BACnet devices available can be scanned, displayed in a browser and data exchange can be implemented for WAGO devices. Among the configurator's additional capabilities are the logical structuring of the project and network, addressing of the controller and configuration of client and server in every WAGO BACnet/IP controller. The representation of the devices, objects and configuration data is done in a logical, structured network and browser view.	Depending on the function used, both online and offline operation is possible. The configurator displays all configuration data. The user may change the data, load it onto either one, or several, controllers and save it as a project. The configurator provides a browser to view the BACnet object properties and modify the current parameters (communicate value changes, write property values, utilize BACnet services, etc.). Additionally, a Transaction Log window is available for client services.
	System requirements: Operating system: Windows® 2000, Windows® XP (XP recommended) Windows® Vista WAGO BACnet Configurator can be downloaded for free at: www.wago.com

WAGO ETS3 Pug-In



Description	
WAGO ETS3 Pug-In	
The WAGO ETS3 Plug-In is a WAGO ETS3 product database extension that allows the use of WAGO products, such as: 753-646 KNX/EIB/TP1 Module, 750-849 KNXnet/IP Controller and KNXnet/IP Router (consisting of KNX Module and KNX IP Controller). The software's enhanced structure offers intuitive navigation – providing both experienced ETS users and newcomers with exceptional usability. WAGO ETS3 Plug-In provides 3 clear user interfaces for various devices. Depending on the mode selected, either the KNX/EIB/TP1 module, the KNX IP controller or the KNXnet/IP router (IP controller with KNX module in first position) are supported. In the graphical interfaces, device parameters are easy to configure and only the setting options required for the selected device are displayed. The following configurations can be performed on the WAGO devices:	1.) KNX/EIB/TP1 Module • Import/Assigment of IEC variables (communication objects) • Creation/Configuration of group addresses 2.) KNX IP Controller • Assignment of IP addresses • Download of IEC application into the controller • Import/Assigment of IEC variables (communication objects) • Creation/Configuration of group addresses 3.) KNXnet/IP Router • Assignment of IP addresses • Setting of routing multicast address • Filtering/Transmission of telegrams Great importance was attached to a convevient und time-saving graphical user interface - especially when assigning communication objects to group addresses. Two different drag-and-drop options and a context menu with automatic filter function are available allowing the user to select his favorite procedure.
	System requirements: Operating system: Windows® 2000, Windows® XP (XP recommended) Other: The plug-in requires the ETS in version 3.0d WAGO ETS3 Plug-In can be downloaded for free at: www.wago.com

WAGO LNS Plug-In PRIO



NV...	Netzwerkvaria...	Typ	SNVT ID	Länge in By...
1	nvo_temp	SNVT_temp_p (2 Bytes)	105	2
2	nvo_taster1	SNVT_switch (2 Bytes)	95	2
3	nvo_alarm	SNVT_alarm (29 Bytes)	88	29
4	nvo_dgbeleuc...	SNVT_switch (2 Bytes)	95	2
5	nvo_counter	SNVT_count (2 Bytes)	8	2
6	nvo_str_asc	SNVT_str_asc (31 Bytes)	36	31
7	nvo_hvac	SNVT_hvac_status (12 Byt...	112	12
8	nvo_light_status	SNVT_lux (2 Bytes)	79	2
9	nvo_blind	SNVT_setting (4 Bytes)	117	4
10	nvo_temp	SNVT_temp_f (4 Bytes)	63	4
11	nvo_time	SNVT_time_stamp (7 Bytes)	84	7
12	nvo_blind	SNVT_scene (2 Bytes)	115	2
13	nvo_state	SNVT_state (2 Bytes)	83	2
14	nvo_occup	SNVT_occupancy (1 Bytes)	109	1
15	nvo_flow	SNVT_flow (2 Bytes)	15	2
16	nvo_lev_perc...	SNVT_lev_percent (2 Byte...	81	2
17	nvo_taster2	SNVT_switch (2 Bytes)	95	2
18	nvo_taster3	SNVT_switch (2 Bytes)	95	2
19	nvo_taster4	SNVT_switch (2 Bytes)	95	2
20	nvo_temp_ist	SNVT_temp (2 Bytes)	39	2
21	nvo_temp_soll	SNVT_temp (2 Bytes)	39	2
22	nvo21	SNVT_temp_f (4 Bytes)	63	4
23	nvo22	SNVT_str_asc (31 Bytes)	36	31
24	nvo23	SNVT_str_asc (31 Bytes)	36	31

Description	
WAGO LNS Plug-In PRIO	
WAGO LNS Plug-In PRIO is an LNS plug-in used to connect the LonWorks® controller of the WAGO-I/O-SYSTEM 750 to the LON® network. The following functions are available: • Connection to WAGO-I/O-PRO CAA programming software (user interface acc. to IEC61131-3) • Allocation of IEC61131-3 variables to network variables, to which any standard network variable types (SNVTs) can be assigned. • Parameters for harmonization purposes with network/coupler behavior (send_on_reset, max /minimum_send_time, send_on_delta, default mask after timeout,...) • IEC61131 application can be downloaded via the network • A maximum of 52 network variables, types available NVI /NVOs: 0/52; 20/32; 26/26; 32/20; 52/0)	
System Requirements: Operating system: Windows® 2000, Windows® XP (XP recommended) The WAGO LNS Plug-In PRIO can be downloaded for free at: www.wago.com	Windows® is a registered trademark of Microsoft Corporation LON® and LonWorks® are registered trademarks of Echelon® Corporation

WAGO Radio Adapter

The radio adapter from WAGO provides a wireless link between a notebook computer featuring Bluetooth functionality and the service interface of the buscouplers/controllers.

Thus, as a cable replacement, the radio adapter offers a simple solution for communicating with the WAGO software tools (WAGO-I/O-CHECK, WAGO-I/O-PRO, ...)

If required, the adapter may be configurated via AT commands.

The adapter is supplied via the service interface and, therefore, via the power supply unit of the buscoupler/controller.

Description	Item No.	Pack. Unit
WAGO Radio Adapter	**750-921**	1

Technical Data	
Data transfer rate	9600 ... 115000 bps
Frequency range	2.4 ... 2.4835 GHz (ISM band)
Type of communication	Point-to-point connection
Protocols	L2CAP, SDP, RFCOM
Profiles supported	General Access Profile, Service Discovery
	Profile, Serial Port Profile
Version	1.1
Radio class	Class 2
RF output power	max. +4 dBm (class 2)
RF input sensitivity	typ. -80 dBm
Antenna	integrated
Connections	4-pole service connectors
Configuration	AT commands (e.g. via Hyper Terminal)
Function	Slave
LED	Operating status
Modulation	FHSS / GSFK
Operating temperature	0 °C ... +55 °C
Current consumption (internal)	120 mA
Security initialisation	PIN code
Security authentification	Security mode 3 supported
Security encryption	128-bit encryption
Dimensions (mm) W x H x L	15 x 50 x 19
Weight	8.5 g

WAGO Communication Cable

The WAGO communication cable offers a simple solution for communicating with the WAGO software tools (e.g., WAGO-I/O-CHECK, WAGO-I/O-PRO)

NOTICE: The communication cable must not be connected or removed when the system is energized.

The WAGO USB Service Cable connects a PC (notebook) to either the service Interface of the 857 Series Signal Conditioners and Relay Modules (JUMPFLEX) or to WAGO-I/O-SYSTEM buscouplers/controllers.

Notice:
Using the WAGO 759-923 USB Service Cable in combination with some of the programmable fieldbus controllers requires a certain firmware version or higher:
750-841 as from firmware version 12
750-872/0020-0000 as from firmware version 2

Description	Item No.	Pack. Unit
Communication cable	**750-920**	10

Technical Data

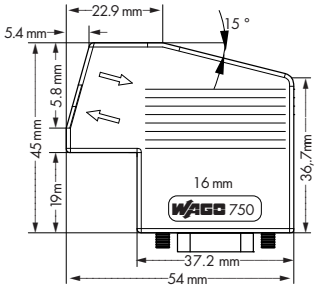
Connections	4-pole service connectors
Operating temperature	0 °C ... +55 °C
Degree of protection	IP20
Length	2.5 m
Connector dimensions (WxHxD)	15 x 50 x 19 mm

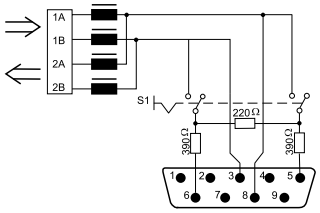
Description	Item No.	Pack. Unit
WAGO USB Service Cable	**750-923**	1

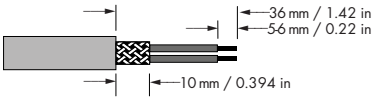
Technical Data

USB specification	2.0 compatible/full-speed device
Operating system	Windows 98/2000/XP/VISTA
Operating temperature	-25 °C ... +70 °C
Interface USB	type A/m
Length	2.5 m
Connector dimensions (WxHxD)	15 x 50 x 19 mm
Test voltage	2.5 kV, 50 Hz, 1 min.
Conformity marking	CE
EMC CE-Immunity to interference	acc. to EN 61000-4-3, EN 61000-4-6
EMC CE-Emission of interference	acc. to EN 55022

PROFIBUS Fieldbus Connector







The fieldbus connector links a PROFIBUS device to a PROFIBUS line.

The fieldbus connector has the following features:
- 2 horizontal cable entries. One input and one output.
- Fast and maintenance-free CAGE CLAMP® connection, can be held in the open position with the help of an actuation slide mechanism.
- Externally operable switch to activate and/or deactivate the network terminating resistor.

For the first and last station on the bus, the switch must be set to “ON” (terminating resistor activated). Switch setting to “OFF” for the intermediate stations on the bus (terminating resistor deactivated).

Description	Item No.	Pack. Unit
Bus connector with D-Sub male connector; 9 poles	**750-960**	1

Accessories	Item No.	Pack. Unit
Operating tool, with partially insulated shaft	**210-719**	1
Type 1, blade (2.5 x 0.4) mm		
Operating tool, with partially insulated shaft	**210-720**	1
Type 2, blade (3.5 x 0.5) mm		
Operating tool for strain relief		
Phillips screwdriver (PH 0)		
Test pin, 1 mm / 0.039 in Test wire for soldering	**735-500**	1
Marking possibilities		
Miniature WSB Quick marking system or WMB Multi marking system		

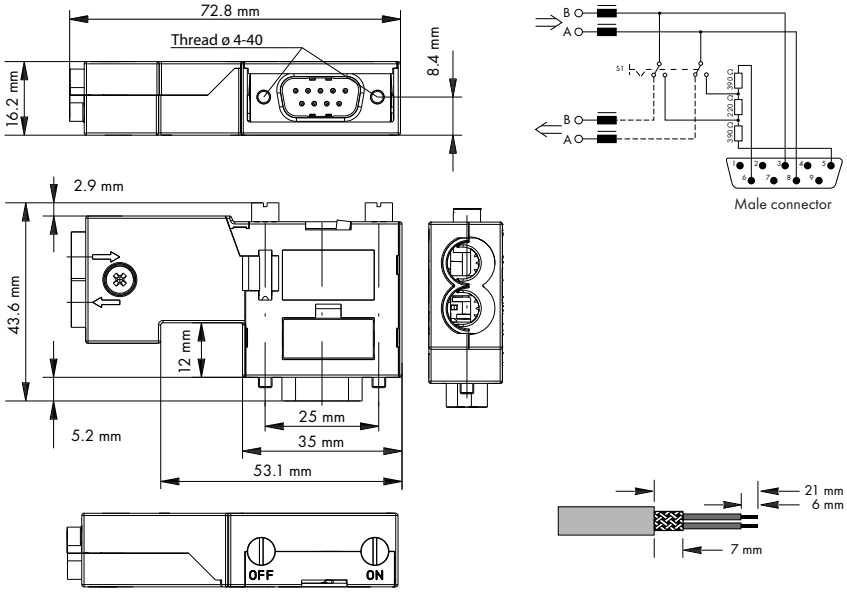
Approvals

UL 508	
Shipbuilding	see "Approvals Overview" in section 1

Technical Data

Double cable input	min. Ø 4.5 mm/0.177 in / max. Ø 9.5 mm/0.374 in
Data transmission rate	corresponding to PROFIBUS specification up to 12 Mbits/s
Voltage supply	4.75 V ... 5.25 V DC
Max. current consumption (internal)	5 mA
Fixing screw	UNC- 2 A 4-40
Max. tightening torque	0.4 Nm
Housing material	PA66-105-V2
Housing color	light gray
Degree of protection	IP20
Ambient operating temperature	0 °C ... +60 °C
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Wire connection	CAGE CLAMP® terminal strip with locking slide (218 Series)
Cross sections	0.08 mm² ... 0.5 mm² / AWG 28 ... 20 sep. connection 0.75 mm² / AWG 18
	possible
Stripped length	see graphic

PROFIBUS Fieldbus Connector



The fieldbus connector links a PROFIBUS device to a PROFIBUS line.

The fieldbus connector has the following features:
- Compact design. It is particularly well-suited for the connection to an S7 PLC.
- No losable parts.
- 2 horizontal cable entries. One input and one output.
- Fast and maintenance-free CAGE CLAMP® connection, can be held in the open position with the help of an actuation slide mechanism.
- Externally operable switch to activate and/or deactivate the network terminating resistor.

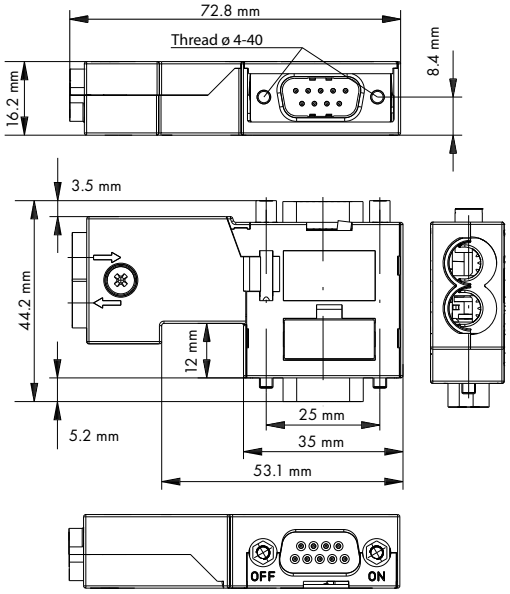
For the first and last station on the bus, the switch must be set to "ON" (terminating resistor activated, outgoing bus line disconnected). Switch setting to "OFF" for the intermediate stations on the bus (terminating resistor deactivated).

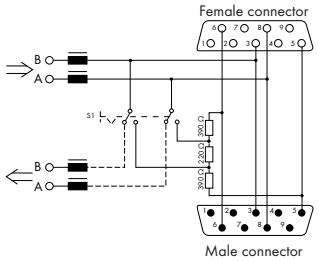
Description	Item No.	Pack. Unit
Bus connector with D-Sub male connector; 9 poles	**750-971**	1

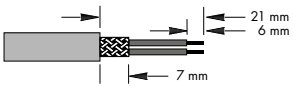
Accessories	Item No.	Pack. Unit
Operating tool, with partially insulated shaft	**210-719**	1
Type 1, blade (2.5 x 0.4) mm		
Test pin, 1 mm / 0.039 in Test wire for soldering	**735-500**	1
Markers		

Technical Data	
Double cable input	Ø 8.5 mm
Data transmission rate	corresponding to PROFIBUS specification
	up to 12 Mbits/s
Voltage supply	4.75 V ... 5.25 V DC
Max. current consumption (internal)	5 mA
Fixing screw	UNC- 2 A 4-40
Max. tightening torque	0.4 Nm
Housing material	PC-V0
Housing color	light gray
Degree of protection	IP20
Ambient operating temperature	0 °C ... +60 °C
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Wire connection	CAGE CLAMP® terminal strip with locking
	slide (218 Series)
Cross sections	0.08 mm² ... 0.5 mm² / AWG 28 ... 20
	sep. connection 0.75 mm² / AWG 18
	possible
Stripped length	see graphic

PROFIBUS Fieldbus Connector







The fieldbus connector links a PROFIBUS device to a PROFIBUS line.

The fieldbus connector has the following features:
- Compact design. It is particularly well-suited for the connection to an S7 PLC.
- No losable parts.
- PG interface
- 2 horizontal cable entries. One input and one output.
- Fast and maintenance-free CAGE CLAMP® connection, can be held in the open position with the help of an actuation slide mechanism.
- Externally operable switch to activate and/or deactivate the network terminating resistor.

For the first and last station on the bus, the switch must be set to "ON" (terminating resistor activated, outgoing bus line disconnected). Switch setting to "OFF" for the intermediate stations on the bus (terminating resistor deactivated).

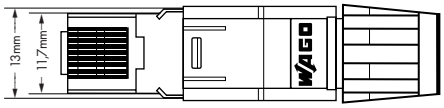
Description	Item No.	Pack. Unit
Bus connector with D-Sub male and female connectors; 9 poles	**750-972**	1

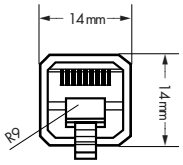
Accessories	Item No.	Pack. Unit
Operating tool, with partially insulated shaft	**210-719**	1
Type 1, blade (2.5 x 0.4) mm		
Test pin, 1 mm / 0.039 in Test wire for soldering	**735-500**	1
Markers		

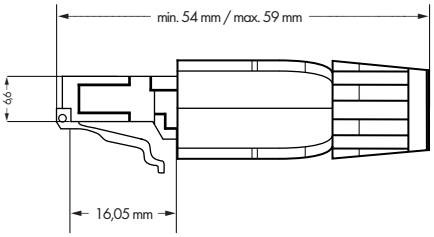
Technical Data	
Double cable input	Ø 8.5 mm
Data transmission rate	corresponding to PROFIBUS specification
	up to 12 Mbits/s
Voltage supply	4.75 V ... 5.25 V DC
Max. current consumption (internal)	5 mA
Fixing screw	UNC- 2 A 4-40
Max. tightening torque	0.4 Nm
Housing material	PC-V0
Housing color	light gray
Degree of protection	IP20
Ambient operating temperature	0 °C ... +60 °C
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Wire connection	CAGE CLAMP® terminal strip with locking
	slide (218 Series)
Cross sections	0.08 mm² ... 0.5 mm² / AWG 28 ... 20
	sep. connection 0.75 mm² / AWG 18 possible
Stripped length	see graphic

ETHERNET RJ-45 Connector, IP20

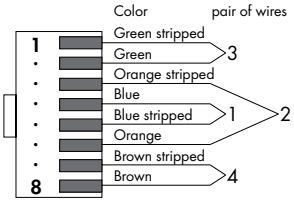
ETHERNET 10/100 Mbits/s; for field assembly







Pin assignment TIA-568A



Versatile RJ-45 connector for industrial, office and building wiring.

The compact RJ-45 uses IDC technology for easy field assembly – connection is made without tools.
The connector is compliant with all required standards. Large conductor cross sections can also be connected.
The connector satisfies Category 5e.

Description	Item No.	Pack. Unit
ETHERNET RJ-45 connector, IP20	**750-975**	1

Technical Data

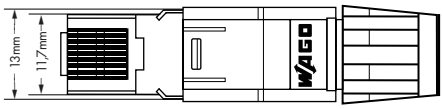
General Specifications	
No. of poles	8
Contact material	Bronze (CuSn6)
Contact plating	> 1.2 µm gold over 1.2 µm nickel
Insulation material	Connector, polycarbonate (UL-94-V0)
Housing material	Plastic, gray, (UL94-V0)
Mating cycles	min. > 1000
Wire connection	IDC acc. to 60352-4
IDC surface treatment	Tin-plated, approx. 5 µm
Cross sections	solid:
	0.13 mm² ... 0.24 mm² /
	AWG 26/1 ... 23/1
	stranded:
	0.14 mm² ... 0.36 mm² /
	AWG 26/7 ... 22/7
Admissible insulation Ø	≤ 1.6 mm
Cable jacket Ø	4.5 mm ... 8.0 mm
Wire strain relief	With plastic ribs
Cable strain relief	> 50 N
Shield contacting	Large surface >180° (on cable shield)
Shield material	Brass (CuZn), hot-dip tinned 3 µm
Ambient operating temperature	-20 °C ... +70 °C
Storage temperature	-40 °C ... +70 °C
Degree of protection	IP20

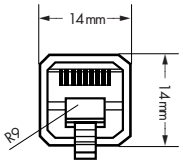
Technical Data

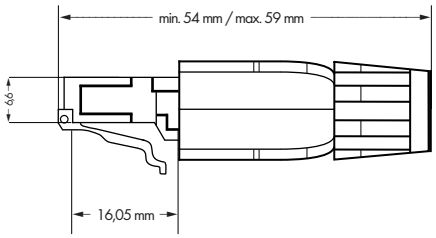
Electrical data:	
Contact resistance	(wire – IDC) < 1 mΩ;
	(strand – IDC) < 5 mΩ
Connector shield	< 20 mΩ
Insulation resistance	(100 V) > 500 MΩ
Dielectric strength	(contact-contact) > 1000 V, 1 min.;
	(shield-contact) > 1500 V, 1 min.
Nominal current	1.75 A / 20 °C
Approvals	- Basic standard:
	IEC 60603-7 RJ-45 Category 5
	- CD ISO/IEC 11801: 2002
	- EN 50173: 2002
	- EIA/TIA 568A: 2002

PROFINET RJ-45 Connector, IP20

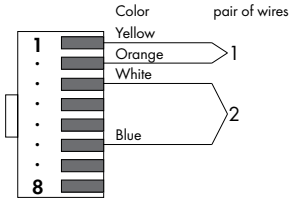
PROFINET 10/100 Mbits/s; for field assembly







Pin assignment PROFINET



Versatile RJ-45 connector for industrial, office and building wiring

The compact RJ-45 PROFINET connector uses IDC technology for tool-free connections in the field. Both solid and stranded conductors can be connected. The connector is compliant with all required standards and complies with Category 5e.

Description	Item No.	Pack. Unit
PROFINET RJ-45 connector	**750-976**	1

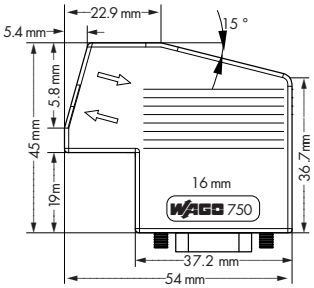
Technical Data

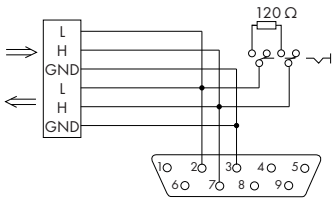
General Specifications	
No. of poles	8
Contact material	Bronze (CuSn6)
Contact plating	> 1.2 µm gold over 1.2 µm nickel
Insulation material	PC (UL-94-V0)
Housing material	PA (UL94-V0)
Mating cycles	min. > 1000
Wire connection	IDC acc. to 60352-4
IDC surface treatment	Tin-plated, approx. 5 µm
Cross sections	Solid:
	0.24 mm² ... 0.32 mm² /
	AWG 23 ... 22
	Stranded:
	0.26 mm² ... 0.36 mm² /
	AWG 23/7 ... 22/7
Admissible insulation Ø	≤ 1.6 mm
Cable jacket Ø	4.5 mm ... 8.0 mm
Wire strain relief	With plastic ribs
Cable strain relief	> 50 N
Shield contacting	Large surface >180° (on cable shield)
Shield material	Brass (CuZn), hot-dip tinned 3 µm
Ambient operating temperature	-20 °C ... +70 °C
Storage temperature	-40 °C ... +70 °C
Degree of protection	IP20

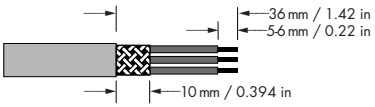
Technical Data

Electrical data:	
Contact resistance	(wire – IDC) < 1 mΩ;
	(strand – IDC) < 5 mΩ
Connector shield	< 20 mΩ
Insulation resistance	(100 V) > 1 GΩ
Dielectric strength	(contact-contact) > 1000 V, 1 min. ;
	(shield-contact) > 1500 V, 1 min.
Nominal current	1.75 A / 20 °C
Approvals	- Basic standard:
	IEC 60603-7 RJ-45 Category 5
	- CD ISO/IEC 11801: 2002
	- EN 50173: 2002

CANopen Fieldbus Connector







The fieldbus connector links a CANopen device to a CANopen line.

The fieldbus connector has the following features:
- 2 horizontal cable entries. One input and one output.
- Fast and maintenance-free CAGE CLAMP® connection, can be held in the open position with the help of an actuation slide mechanism.
- Externally operable switch to activate and/or deactivate the network terminating resistor.

For the first and last station on the bus, the switch must be set to “ON” (terminating resistor activated). Switch setting to “OFF” for the intermediate stations on the bus (terminating resistor deactivated).

Description	Item No.	Pack. Unit
Bus connector with D-Sub female connector; 9 poles	**750-963**	1

Accessories	Item No.	Pack. Unit
Operating tool, with partially insulated shaft	**210-719**	1
Type 1, blade (2.5 x 0.4) mm		
Operating tool, with partially insulated shaft	**210-720**	1
Type 2, blade (3.5 x 0.5) mm		
Operating tool for strain relief		
Phillips screwdriver (PH 0)		
Test pin, 1 mm / 0.039 in Test wire for soldering	**735-500**	1
Marking possibilities		
Miniature WSB Quick marking system or WMB Multi marking system		

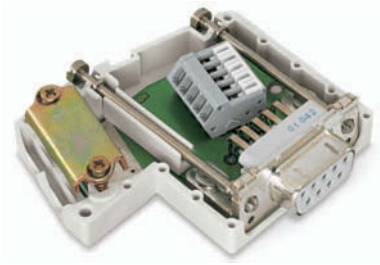
Approvals

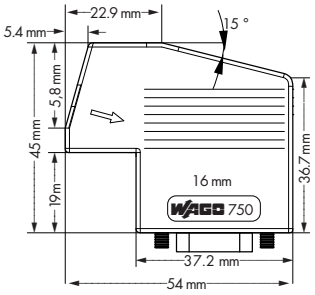
UL 508

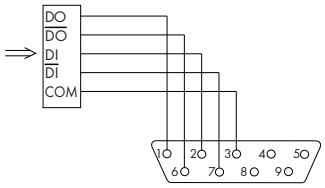
Technical Data

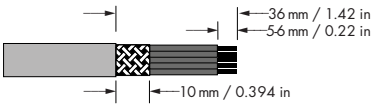
Double cable input	min. Ø 4.5 mm/0.177 in / max. Ø 9.5 mm/0.374 in
Data transmission rate	corresponding to CANopen specification 10 kbaud ... 1 Mbaud
Fixing screw	UNC- 2 A 4-40
Max. tightening torque	0.4 Nm
Housing material	PA66-105-V2
Housing color	light gray
Degree of protection	IP20
Ambient operating temperature	0 °C ... +60 °C
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Wire connection	CAGE CLAMP® terminal strip with locking slide (218 Series)
Cross sections	0.08 mm² ... 0.5 mm² / AWG 28 ... 20 sep. connection 0.75 mm² / AWG 18 possible
Stripped length	see graphic

INTERBUS Fieldbus Connector (IN)









The fieldbus connector links an INTERBUS device to an INTERBUS line.

The fieldbus connector has the following features:

- Fast and maintenance-free CAGE CLAMP® connection, can be held in the open position with the help of an actuation slide mechanism.

Description	Item No.	Pack. Unit
Bus connector with D-Sub female connector; 9 poles	**750-961**	1

Accessories	Item No.	Pack. Unit
Operating tool, with partially insulated shaft	**210-719**	1
Type 1, blade (2.5 x 0.4) mm		
Operating tool, with partially insulated shaft	**210-720**	1
Type 2, blade (3.5 x 0.5) mm		
Operating tool for strain relief		
Phillips screwdriver (PH 0)		
Test pin, 1 mm / 0.039 in Test wire for soldering	**735-500**	1
Marking possibilities		
Miniature WSB Quick marking system or WMB Multi marking system		

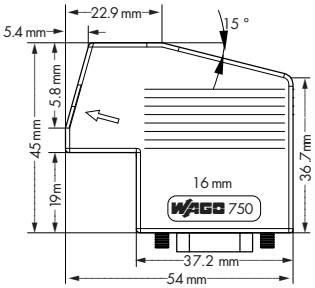
Approvals

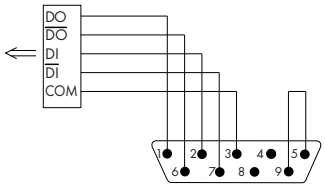
UL 508	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4

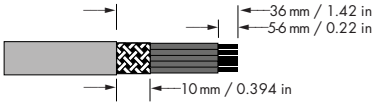
Technical Data

Easy wire connection	min Ø 4.5 mm/0.177 in / max Ø 9.5 mm/0.374 in
Data transmission rate	corresponding to INTERBUS specification 2 Mbaud
Fixing screw	UNC- 2 A 4-40
Max. tightening torque	0.4 Nm
Housing material	PA66-105-V2
Housing color	light gray
Degree of protection	IP20
Ambient operating temperature	0 °C ... +60 °C
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Wire connection	CAGE CLAMP® terminal strip with locking slide (218 Series)
Cross sections	0.08 mm² ... 0.5 mm² / AWG 28 ... 20 sep. connection 0.75 mm² / AWG 18 possible
Stripped length	see graphic

INTERBUS Fieldbus Connector (OUT)







The fieldbus connector links an INTERBUS device to an INTERBUS line.

The fieldbus connector has the following features:
- Fast and maintenance-free CAGE CLAMP® connection, can be held in the open position with the help of an actuation slide mechanism.

Description	Item No.	Pack. Unit
Bus connector with D-Sub male connector; 9 poles	**750-962**	1

Accessories	Item No.	Pack. Unit
Operating tool, with partially insulated shaft	**210-719**	1
Type 1, blade (2.5 x 0.4) mm		
Operating tool, with partially insulated shaft	**210-720**	1
Type 2, blade (3.5 x 0.5) mm		
Operating tool for strain relief		
Phillips screwdriver (PH 0)		
Test pin, 1 mm / 0.039 in Test wire for soldering	**735-500**	1
Marking possibilities		
Miniature WSB Quick marking system or WMB Multi marking system		

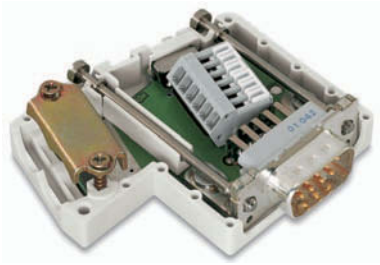
Approvals

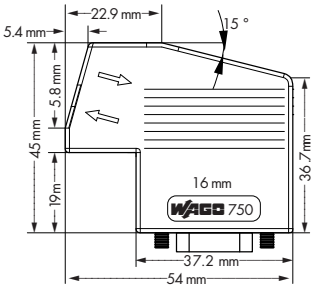
UL 508	
EN 60079-15	I M2 / II 3 GD Ex nA IIC T4

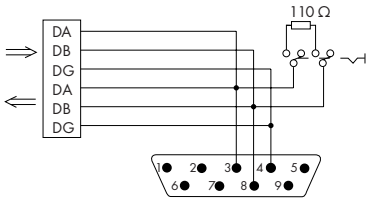
Technical Data

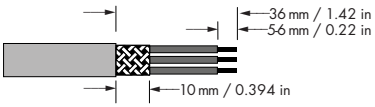
Easy wire connection	min Ø 4.5 mm/0.177 in / max Ø 9.5 mm/0.374 in
Data transmission rate	corresponding to INTERBUS specification 2 Mbaud
Fixing screw	UNC- 2 A 4-40
Max. tightening torque	0.4 Nm
Housing material	PA66-105-V2
Housing color	light gray
Degree of protection	IP20
Ambient operating temperature	0 °C ... +60 °C
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Wire connection	CAGE CLAMP® terminal strip with locking slide (218 Series)
Cross sections	0.08 mm² ... 0.5 mm² / AWG 28 ... 20 sep. connection 0.75 mm² / AWG 18 possible
Stripped length	see graphic

CC-Link Fieldbus Connector









The fieldbus connector connects a CC-Link device to a CC-Link line.
The fieldbus connector has the following features:

- 2 horizontal cable entries. One input and one output.
- Fast and maintenance-free CAGE CLAMP® connection, can be held in the open position with the help of an actuation slide mechanism.
- Externally operable switch to activate and/or deactivate the termination resistor.

For the first and last station on the bus, the switch must be set to “ON” (terminating resistor activated). Switch setting to “OFF” for the intermediate stations on the bus (terminating resistor deactivated).

Description	Item No.	Pack. Unit
Bus connector with D-Sub male connector; 9 poles	**750-965**	1

Accessories	Item No.	Pack. Unit
Operating tool, with partially insulated shaft Type 1, blade (2.5 x 0.4) mm	**210-719**	1
Operating tool, with partially insulated shaft Type 2, blade (3.5 x 0.5) mm	**210-720**	1
Operating tool for strain relief Phillips screwdriver (PH 0)		
Test pin, 1 mm / 0.039 in Test wire for soldering	**735-500**	1
Marking possibilities Miniature WSB Quick marking system or WMB Multi marking system		

Technical Data	
Double cable input	min. Ø 4.5 mm/0.177 in / max. Ø 9.5 mm/0.374 in
Data transmission rate	corresponding to CC-Link specification
Fixing screw	UNC- 2 A 4-40
Max. tightening torque	0.4 Nm
Housing material	PA66-105-V2
Housing color	light gray
Degree of protection	IP20
Ambient operating temperature	0 °C ... +60 °C
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Wire connection	CAGE CLAMP® terminal strip with locking slide (218 Series)
Cross sections	0.08 mm² ... 5 mm² / AWG 28 ... 20 sep. connection 0.75 mm² / AWG 18 possible
Stripped length	see graphic

The WAGO-I/O-SYSTEM 750/753
in IP65 Enclosures

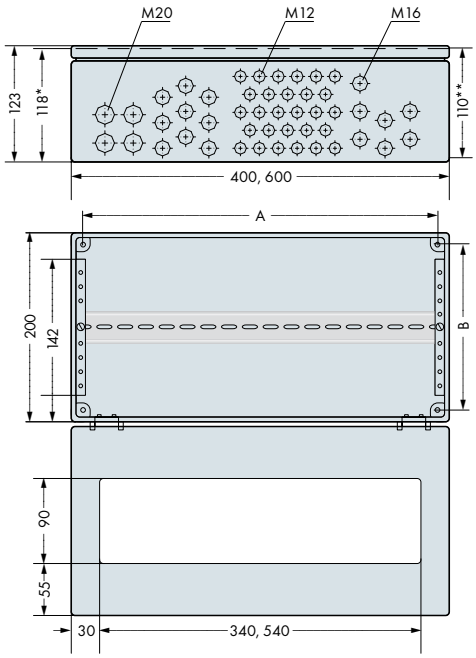
1 Stainless steel
2 Sheet steel
3 Die-cast aluminum
4 Polyester

Enclosures for the WAGO-I/O-SYSTEM

The growing importance of industrial fieldbus systems in the field of process engineering, for example the chemical industry or food industry, demands enclosures that protect both the system equipment and the products.
WAGO offers enclosures that allow the use of the WAGO-I/O-SYSTEM 750 in installations where severe conditions exist.

The IP65 enclosures come equipped with the WAGO-I/O-SYSTEM 750, meeting these requirements. They have the appropriate number of the required metric thread. Each enclosure is available in four different sizes.
Delivery time and other types of enclosures are available upon request!

Stainless Steel IP65 Enclosures



Dimensions in mm
* internal dimension
** from upper-edge of DIN 35 rail

Description		Item No.	Pack. Unit	M 12	M 16	M 20	Mounting dimension A	B	Width	Height	Length	No. of I/O modules
Stainl. steel		**850-804**	1	28	16	4	376	176	400	123	200	≤ 24
Stainl. steel	1)	**850-804/000-001**	1	32	13	2	376	176	400	123	200	≤ 24
Stainl. steel		**850-805**	1	67	19	4	576	176	600	123	200	≤ 40

Description		Item No.	Pack. Unit
Pole mounting	2 molded rails, 600 mm long and 4 clamping profiles, sheet steel, galvanized; 2 tightening straps, stainless steel 1.4301; 4 angle brackets (pole diameter ∅ up to 190 mm or pole width □; up to 150 mm x 150 mm)	**850-903**	1

* **Note:**
Plus fieldbus coupler and end module!
For I/O modules with a width of 12 mm!

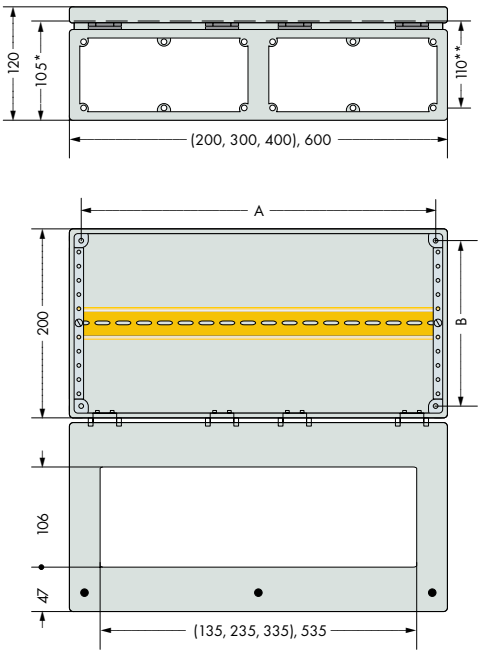
Delivery includes:

- Ground stainless steel enclosure1.4301
- With hinged cover 90°, (850-804/000-001: 180°), with gasket, two to three quick disconnects
- Window made of Makrolon
- Cable grips with metric thread (brass, nickel-plated) **including filler plugs**
  Cable grip M12 Cable Ø 3 ... 6 mm
  Cable grip M16 Cable Ø 5 ... 9 mm
  Cable grip M20 Cable Ø 9 ... 13 mm
- 1 DIN 35/7.5 carrier rail

1) Note:
Arrangement of the cable grips differs from standard enclosures

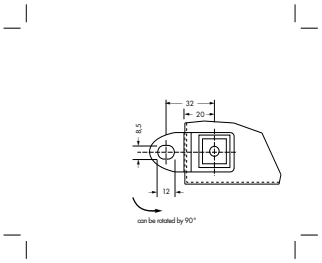
Steel IP65 Enclosures

Fig. 850-817 sheet steel, type 4



Dimensions in mm
* internal dimension
** from upper-edge of DIN 35 rail

Accessories: Wall mounting system



Description	Item No.	Pack. Unit	Mounting dimension A	B	Width	Height	Length	No. of I/O modules	Accessories Flange plates (available separately)
Sheet steel, type 1	**850-814**	1	160	160	200	120	200	≤ 8	1 x F200 or F200-1 or F200-2 or F204
Sheet steel, type 2	**850-815**	1	260	160	300	120	200	≤ 16	1 x F300 or F300-1 or F300-2 or F304
Sheet steel, type 3	**850-816**	1	360	160	400	120	200	≤ 24	2 x F200 or 1 x F200-1 + 1 x F200-2 or 2 x F204
Sheet steel, type 4	**850-817**	1	560	160	600	120	200	≤ 40	2 x F300 or 1 x F300-1 + 1 x F300-2 or 2 x F304

Description	Item No.	Pack. Unit
Wall mounting system, set with 4 mounting angles	**850-904**	1

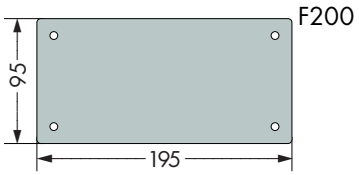
*** Note:**
Plus fieldbus coupler and end module!
For I/O modules with a width of 12 mm!

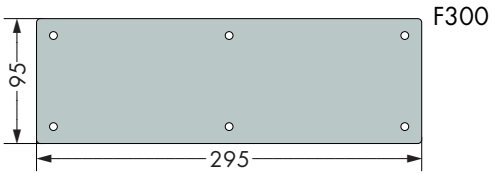
Delivery includes:
- Powder-coated steel enclosure
- Box with narrow beveled edge, sturdy gutter profile
- With hinged cover 180° (PA 6), with PU foam gasket, two to three quick disconnects
- Quick-release fasteners in plastic bushes
- Mounting holes (incl. sealing plugs)
- Window made of Makrolon
- Removable, yellow chromated internal profiles
- Galvanized DIN 35/7.5 carrier rail (connected to the enclosure). Adjustable in steps of 12.5 mm
- Ground connection in both the cover and the flanges via quick disconnect male tabs
- Pebble gray RAL 7032

Accessories:
Flange plates for cable connection
Wall mounting system

Accessories: Flange Plates and Cable Entry Plates

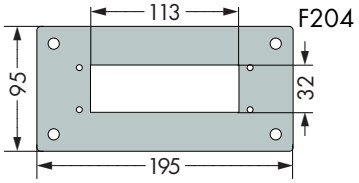
Flange plates, blind, incl. fixing accessories

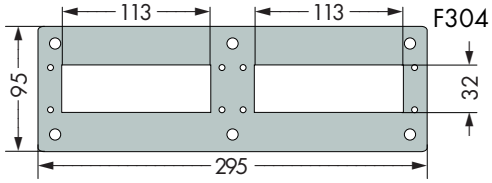


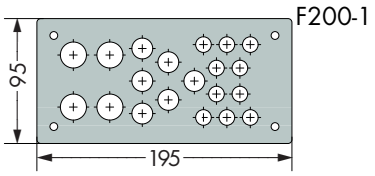


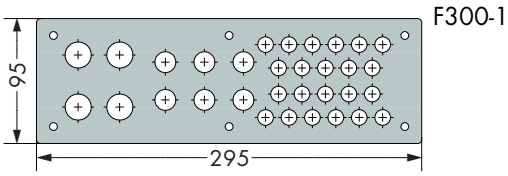
Description	Item No.	Pack. Unit
F200, Flange plate, blind	850-818	1
F300, Flange plate, blind	850-819	1

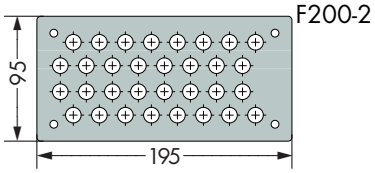
Flange plates with and without cable grips/cable entry plate, incl. fixing accessories

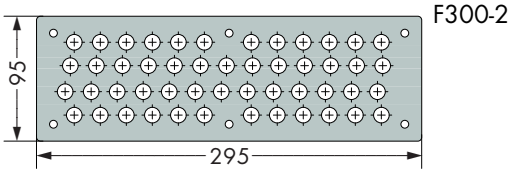










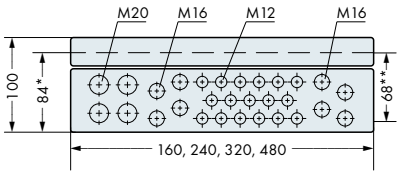


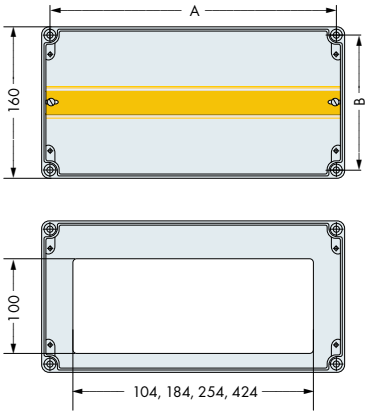
Description	Item No.	Pack. Unit
F204, flange plate without cable entry plate (1 cut-out)	850-818/000-005	1
F304, flange plate without cable entry plate (2 cut-outs)	850-819/000-005	1
Cable entry plate KDP 22 for flange plates F204 + F304 (16 x size 1, 4 x size 2, 2 x size 3)	850-820/000-001	1
Cable entry plate KDP 29 for flange plates F204 + F304 (29 x size 1)	850-820/000-002	1
F200-1, flange plate without cable grips (bore holes: 4 x M20, 6 x M16, 10 x M12)	850-818/000-001	1
F200-1, flange plate with cable grips (cable grips: 4 x M20, 6 x M16, 10 x M12)	850-818/000-002	1
F200-2, flange plate without cable grips (bore holes: 32 x M12)	850-818/000-003	1
F200-2, flange plate with cable grips (cable grips: 32 x M12)	850-818/000-004	1
F300-1, flange plate without cable grips (bore holes: 4 x M20, 6 x M16, 22 x M12)	850-819/000-001	1
F300-1, flange plate with cable grips (cable grips: 4 x M20, 6 x M16, 22 x M12)	850-819/000-002	1
F300-2, flange plate without cable grips (bore holes: 50 x M12)	850-819/000-003	1
F300-2, flange plate with cable grips (cable grips: 50 x M12)	850-819/000-004	1

F200-1 with bore holes and cable grip
Brass, nickel-plated, incl. filler plugs
M12 cable grip: cable ∅ 3 ... 6 mm
M16 cable grip: cable ∅ 5 ... 9 mm
M20 cable grip: cable ∅ 9 ... 13 mm

F204 with KDF 22
(tool-less cable entry technique in IP65)
Cable entry plate, polyamide
Size 1: Cable ∅ 3.0 ... 6.5 mm
Size 2: Cable ∅ 5.0 ... 9.2 mm
Size 3: Cable ∅ 8.0 ... 12.5 mm

Aluminum IP65 Enclosures





Dimensions in mm
* internal dimension
** from upper-edge of DIN 35 rail

Description	Item No.	Pack. Unit	M 12	M 16	M 20	Mounting dimension A	B	Width	Height	Length	No. of I/O modules
Aluminium	**850-825**	1	9		4	142	142	160	100	160	≤ 4
Aluminium	**850-826**	1	14	4	4	222	142	240	100	160	≤ 11
Aluminium	**850-827**	1	17	8	4	302	142	320	100	160	≤ 18
Aluminium	**850-828**	1	35	10	4	462	142	480	100	160	≤ 31

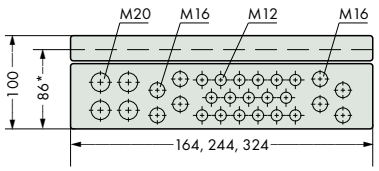
Description		Item No.	Pack. Unit
Pole mounting	2 molded rails, 600 mm long and 4 clamping profiles, sheet steel, galvanized; 2 tightening straps, stainless steel 1.4301; 4 angle brackets (pole diameter ∅ up to 190 mm or pole width □; up to 150 mm x 150 mm)	**850-903**	1

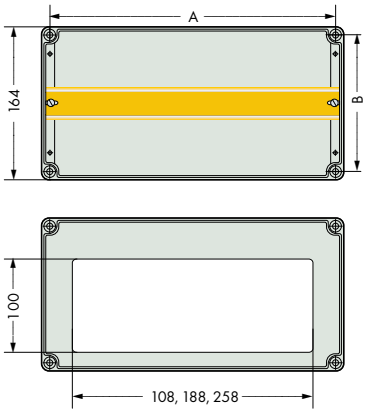
*** Note:**
Plus fieldbus coupler and end module!
For I/O modules with a width of 12 mm!

Delivery includes:

- Die-cast aluminum enclosure, alloy GAL Si12 / DIN 1725
- Captive cover screws made of stainless steel
- Window with spring clip as receptacle for individual marking (marking is not included with the delivery)
- Mounting holes (4 mounting channels located outside the sealed enclosure)
- Cable grips with metric thread (brass, nickel-plated) **including filler plugs**
  Cable grip M12 Cable ∅ 3 ... 6 mm
  Cable grip M16 Cable ∅ 5 ... 9 mm
  Cable grip M20 Cable ∅ 9 ... 13 mm
- 1 DIN 35/7.5 carrier rail
- Tongue and groove system with groove in the cover
- Oil and petrol resistant neoprene string gasket
- Ground connection in the enclosure
- Pebble gray RAL 7032

Polyester IP65 Enclosures





Dimensions in mm
* internal dimension
** from upper-edge of DIN 35 rail

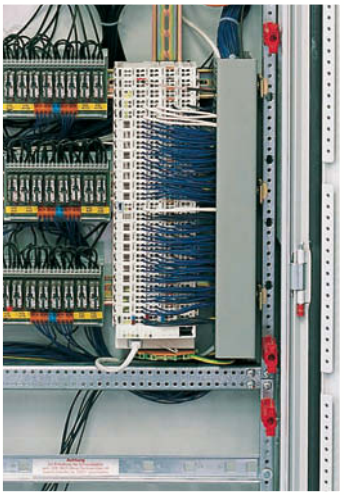
Description	Item No.	Pack. Unit	M 12	M 16	M 20	Mounting dimension A	B	Width	Height	Length	No. of I/O modules
Polyester	**850-834**	1	9		4	142	142	164	100	164	≤ 4
Polyester	**850-835**	1	14	4	4	222	142	244	100	164	≤ 11
Polyester	**850-836**	1	17	8	4	302	142	324	100	164	≤ 18

Description		Item No.	Pack. Unit
Pole mounting	2 molded rails, 600 mm long and 4 clamping profiles, sheet steel, galvanized; 2 tightening straps, stainless steel 1.4301; 4 angle brackets (pole diameter ∅ up to 190 mm or pole width □; up to 150 mm x 150 mm)	**850-903**	1

* **Note:**
Plus fieldbus coupler and end module!
For I/O modules with a width of 12 mm!

Delivery includes:

- Polyester enclosure, glass fiber reinforced, halogen-free V0 version (self-extinguishing)
- Captive cover screws made of polyamide
- Window with spring clip as receptacle for individual marking (marking is not included with the delivery)
- Mounting holes (4 mounting channels located outside the sealed enclosure)
- Cable grips with metric thread (brass, nickel-plated) **including filler plugs**
  Cable grip M12 Cable Ø 3 ... 6 mm
  Cable grip M16 Cable Ø 5 ... 9 mm
  Cable grip M20 Cable Ø 9 ... 13 mm
- 1 DIN 35/7.5 carrier rail
- Oil and petrol resistant neoprene string gasket
- Pebble gray RAL 7032



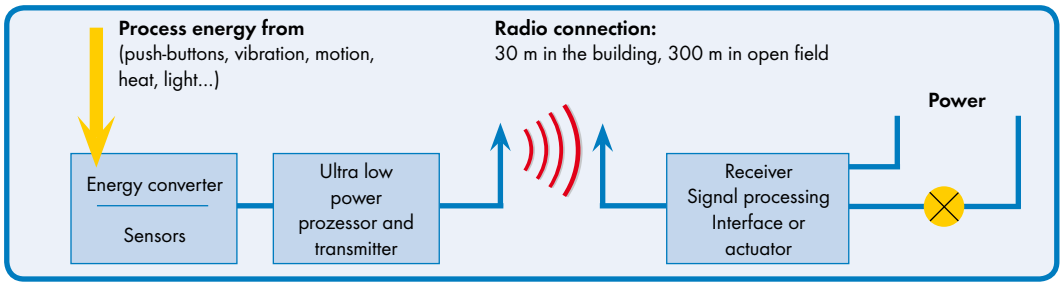
WAGO Application: Plastic Technology Center (SKZ) in Würzburg, Germany

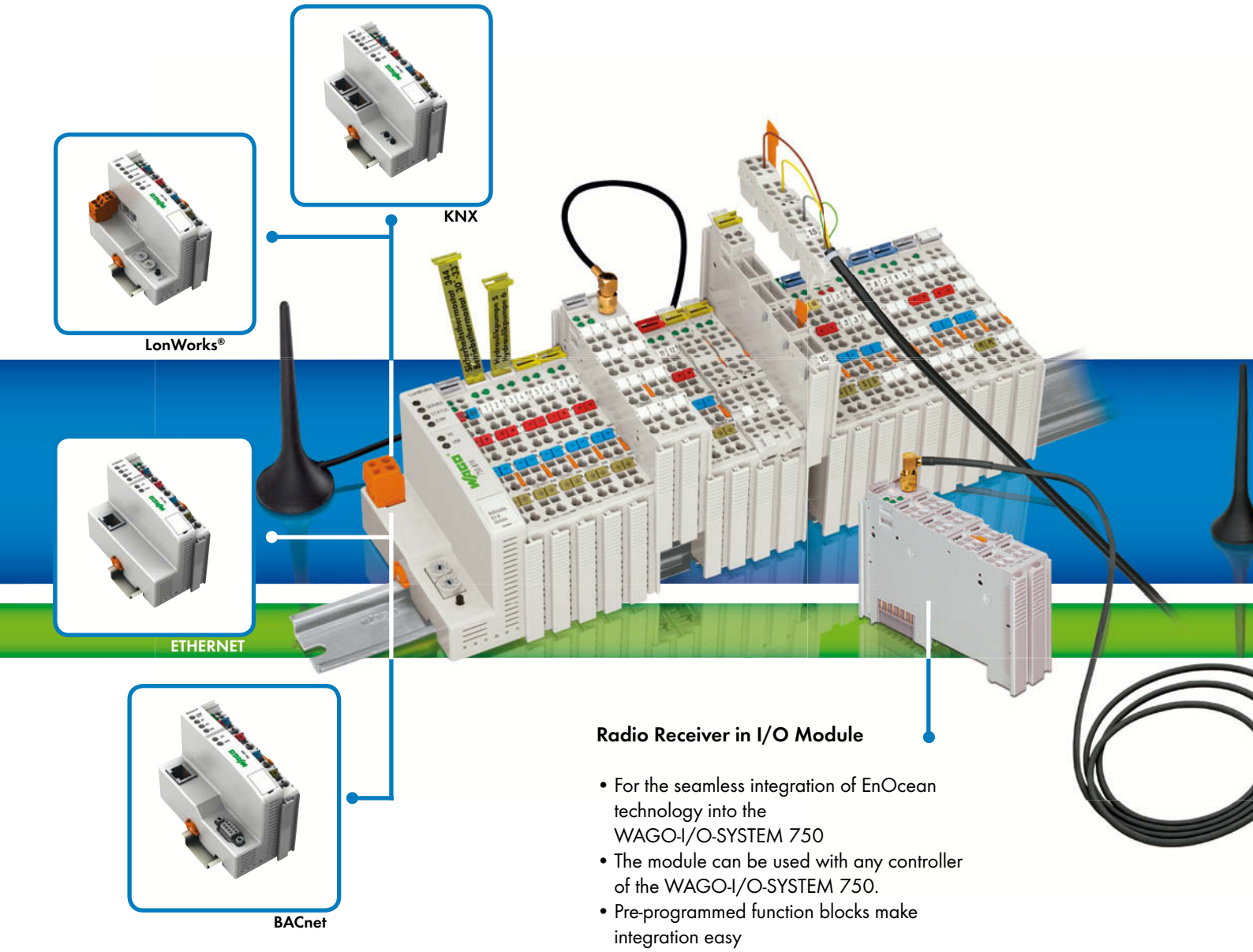
WAGO Products:
WAGO-I/O-SYSTEM with ETHERNET Controllers, DALI and EnOcean Components

2

WAGO Radio Receiver with EnOcean Technology

The benefits for electronic and radio technology





Radio Receiver in I/O Module

- For the seamless integration of EnOcean technology into the WAGO-I/O-SYSTEM 750
- The module can be used with any controller of the WAGO-I/O-SYSTEM 750.
- Pre-programmed function blocks make integration easy
- The number of sensors is almost illimited

Item No. 750-642

enocean®

Radio Receiver in DIN-Rail Mount Enclosure

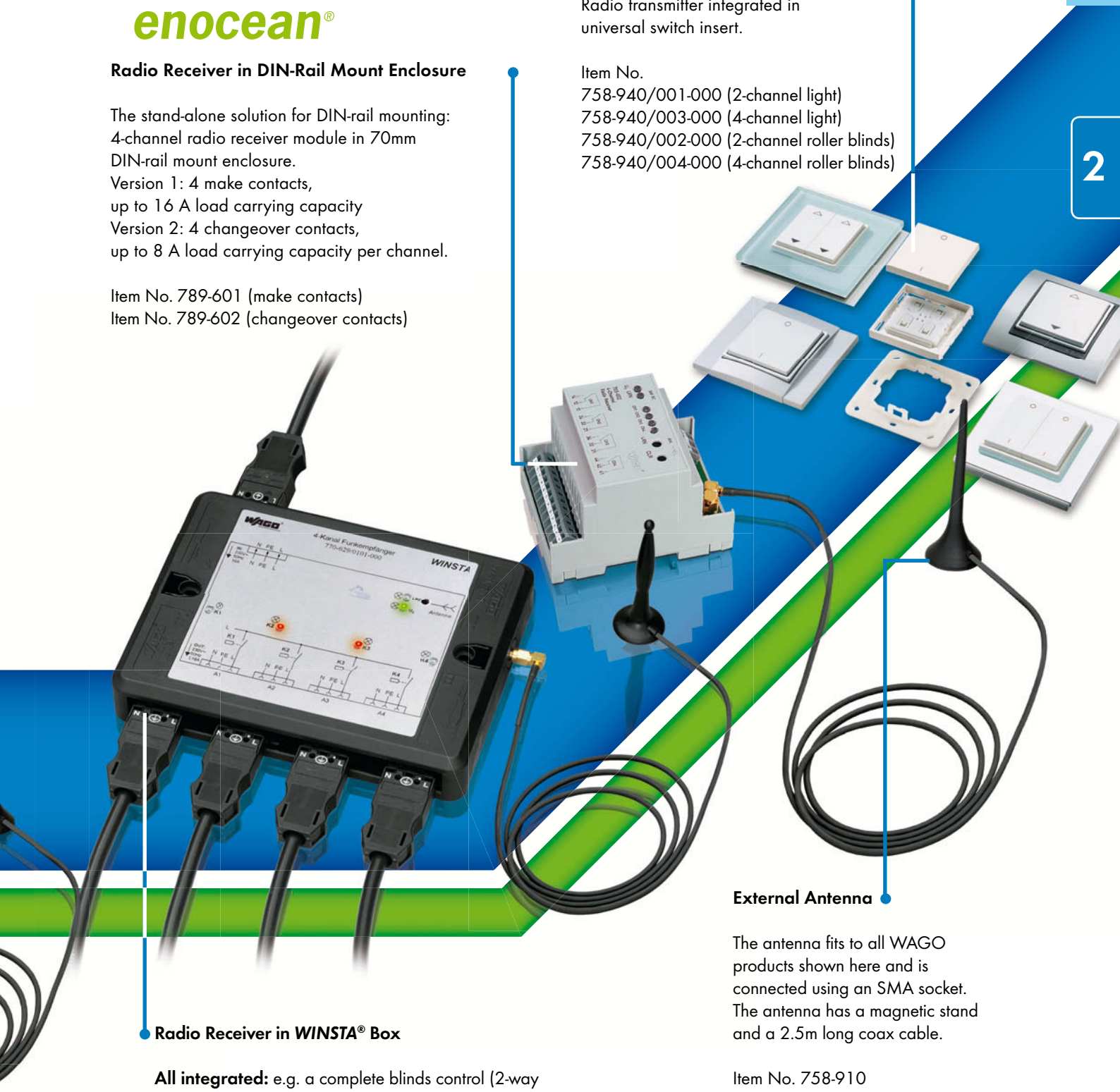
The stand-alone solution for DIN-rail mounting:
4-channel radio receiver module in 70mm DIN-rail mount enclosure.
Version 1: 4 make contacts,
up to 16 A load carrying capacity
Version 2: 4 changeover contacts,
up to 8 A load carrying capacity per channel.

Item No. 789-601 (make contacts)
Item No. 789-602 (changeover contacts)

Radio Transmitter

Radio transmitter integrated in universal switch insert.

Item No.
758-940/001-000 (2-channel light)
758-940/003-000 (4-channel light)
758-940/002-000 (2-channel roller blinds)
758-940/004-000 (4-channel roller blinds)



Radio Receiver in *WINSTA*® Box

All integrated: e.g. a complete blinds control (2-way sunblind outputs for 230V/2A) or a 4-channel module for lighting control (4-way switch output 230V/16A) with receiver and all required switching relay.
The *WINSTA*® boxes are suitable for wall-, floor- and ceiling-mounting.

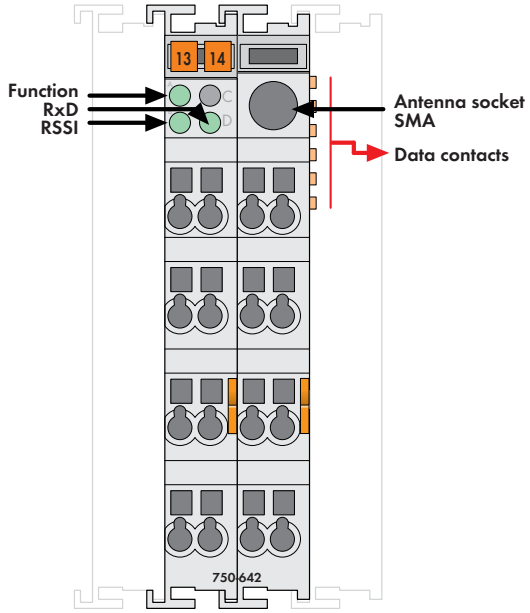
Item No. 770-629/102-000 (sunblinds control)
Item No. 770-629/101-000 (lighting control)

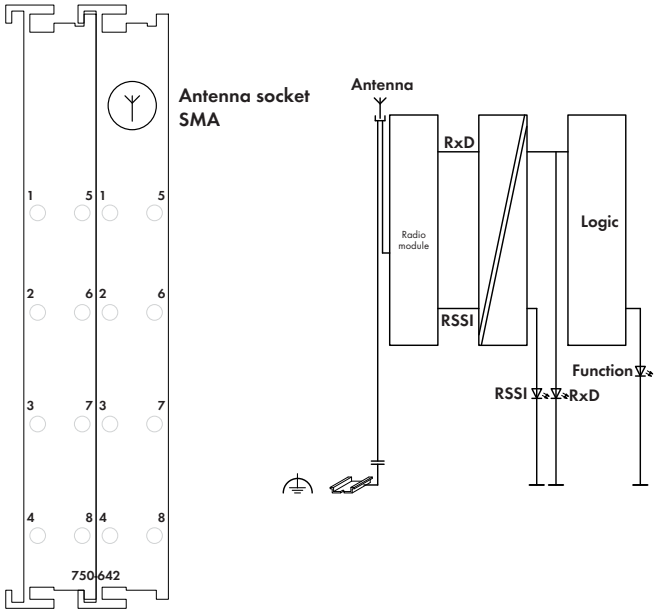
External Antenna

The antenna fits to all WAGO products shown here and is connected using an SMA socket. The antenna has a magnetic stand and a 2.5m long coax cable.

Item No. 758-910

Radio Receiver Module





Delivered without miniature WSB markers

The 750-642 I/O Module receives radio telegrams from maintenance-free, battery-less and cable-less switches and sensors based on EnOcean radio technology.
The module can be used with any controller of the WAGO-I/O-SYSTEM 750. Preprogrammed function blocks make integration easy.
The energy required for switch or sensor operation is produced by converting one type of energy (heat, solar or mechanical energy) into usable electrical energy. The radiated energy from the transmitter modules is around one million times smaller than mobile phones. Almost any number of sensors is possible. However, the maximum number is around 100 transmitters per module, due to the increasing density of switches/sensors.

Four billion code numbers provide for clear transmitter/receiver assignment. Repeated, time-shifted transmission of the radio telegrams, at very short transmission times, results in a high level of protection against externalinterferences. The maximum transmission range is approx. 300 meters in open field. Depending on the building materials used and on the spatial geometry, the range may be reduced to typically 30 meters (see manual for moreinformation). The LED (RSSI) indicates a sufficient input level.
An SMA socket which is integrated into the housing allows the connection of anexternal antenna. The 758-910 External Antenna has a magnetic stand and a 2.5m long coax cable with SMA plug (available as an accessory).

Description		Item No.	Pack. Unit
Radio Receiver Module		**750-642**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	
External antenna	with magnetic stand	**758-910**	1

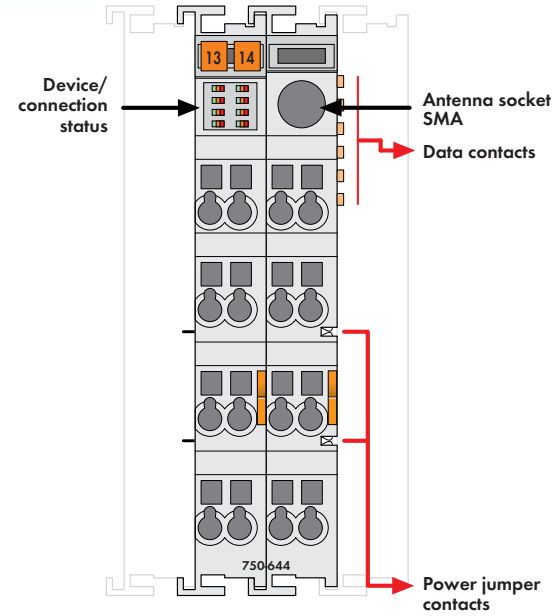
Approvals

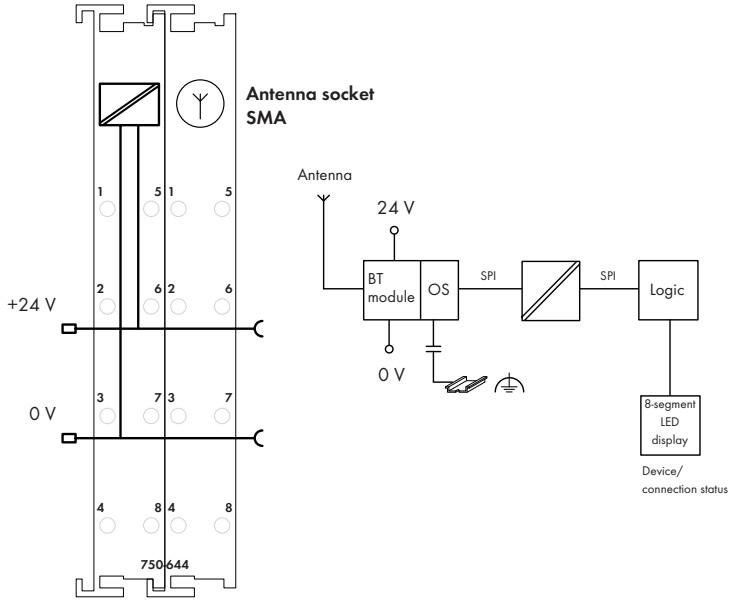
750 Series	
Conformity marking	CE
Conformity marking RTTE	www.wago.com
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-15	I M2 / II 3 GD Ex nL IIC T4

Technical Data

Frequency band	868.3 MHz
Range	300 m in open field (typ. in buildings see manual)
Transmission protocol (radio telegram)	EnOcean
Current consumption (internal)	80 mA
Voltage supply	via system voltage DC/DC
Isolation	500 V antenna connection/system
Internal bit width	1 x 24 bits in/out (3 bytes user data)
	1 x 8 bits control/status
Wire connection	SMA socket
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	24 x 64* x 100
	* + excess length of the SMA socket
	approx. 6.5 mm
Weight	80 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)

Bluetooth/RF Transceiver





Delivered without miniature WSB markers

The 750-644 I/O Module permits the wireless exchange of process data with up to seven other devices via Bluetooth 2.0 radio technology. Interoperability with Bluetooth devices is made non-proprietary via PAN and SPP Bluetooth profiles. A special profile for time-sensitive applications is also available.

Reliable connections over distances of up to 1000m are possible using the WAGO 758-912 external antenna.

The module's extended diagnostic functions include cyclic and acyclic state information. For quick on-site diagnostics, main information on operational status and radio connection is also displayed via 8 LEDs.

The I/O module can be operated with all standard fieldbus couplers/controllers from the WAGO-I/O-SYSTEM 750. Module configuration is performed locally via WAGO-I/O-CHECK.

Description		Item No.	Pack. Unit
Bluetooth/RF Transceiver		**750-644**	1

Accessories		Item No.	Pack. Unit
Miniature WSB Quick marking system			
	plain	**248-501**	5
	with marking	see pages 304 ... 305	
External antenna	WLAN/Bluetooth 2.4 GHz	**758-912**	1

Approvals

Conformity marking	CE
FC	FCC approval (This device complies with part 15 of FCC rules)
Bluetooth	Bluetooth® approval
cULus UL 508	

Technical Data

Dimensions (mm) W x H x L	24 x 64* x 100 * + excess length of the SMA socket approx. 6.5 mm
Weight	85 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005), EN 61131-2 (2003)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007), EN 61131-2 (2003)

Technical Data

Radio technology	Bluetooth® 2.0 + EDR
Topology	Piconet (1 master, max. 7 slaves)
Coexistence	AFH and adaptive transmission power
Profiles	SPP, PAN
Operating modes	Communication mode with ad-hoc profile for high connectivity and real-time profile for time-critical applications, as well as configuration mode
Frequency band	2402-2480 MHz (license-free ISM band)
Transmitter power	up to 20 dBm (Bluetooth® Class 1)
Receiver sensitivity	-94 dBm
Range	max. 1000 m in open field, 100 m in buildings (using a WAGO external antenna, item no. 758-912)
Voltage supply (Bluetooth)	via 24 V DC field supply
Voltage supply (internal)	via system voltage DC/DC
Current consumption (Bluetooth)	approx. 8 mA, max. 35 mA
Current consumption (internal)	approx. 20 mA
Isolation	500 V antenna/system
Internal bit width	12, 24, 48 bytes configurable; incl. 1 byte control/status
Diagnostics (via visual indicator)	Device status, connection status 1)
Diagnostics (via process image)	Device status, connection status 1), time monitoring
Configuration	WAGO-I/O-CHECK and WAGO-I/O-PRO CAA

1) Quality of radio connection, signal strength, interference

WAGO Radio Adapter

The radio adapter from WAGO provides a wireless link between a notebook computer featuring Bluetooth functionality and the service interface of the buscouplers/controllers.

Thus, as a cable replacement, the radio adapter offers a simple solution for communicating with the WAGO software tools (WAGO-I/O-CHECK, WAGO-I/O-PRO, ...)

If required, the adapter may be configurated via AT commands.

The adapter is supplied via the service interface and, therefore, via the power supply unit of the buscoupler/controller.

Description	Item No.	Pack. Unit
WAGO Radio Adapter	**750-921**	1

Technical Data	
Data transfer rate	9600 ... 115000 bps
Frequency range	2.4 ... 2.4835 GHz (ISM band)
Type of communication	Point-to-point connection
Protocols	L2CAP, SDP, RFCOM
Profiles supported	General Access Profile, Service Discovery
	Profile, Serial Port Profile
Version	1.1
Radio class	Class 2
RF output power	max. +4 dBm (class 2)
RF input sensitivity	typ. -80 dBm
Antenna	integrated
Connections	4-pole service connectors
Configuration	AT commands (e.g. via Hyper Terminal)
Function	Slave
LED	Operating status
Modulation	FHSS / GSFK
Operating temperature	0 °C ... +55 °C
Current consumption (internal)	120 mA
Security initialisation	PIN code
Security authentification	Security mode 3 supported
Security encryption	128-bit encryption
Dimensions (mm) W x H x L	15 x 50 x 19
Weight	8.5 g

Radio Receiver and Transmitter

External antenna, GSM 900/1800

External antenna, WLAN/Bluethooth 2.4 GHz

Description		Item No.	Pack. Unit	Technical Data
External antenna	GSM 900/1800	**758-910**	1	Frequency band: 870 MHz ... 960 MHz; 1710 MHz ... 1880 MHz
				VSWR: 870 MHz ... 960 MHz < 1.5; 1710 MHz ... 1880 MHz < 1.5
				Gain: 870 MHz ... 960 MHz 0 dB; 1710 MHz ... 1880 MHz 0 dB
				Max. Power: 20 W
				Cable length: 250 cm
				Connector: SMA right angle plug + ferrite bead
External antenna	WLAN/Bluetooth 2.4 GHz	**758-912**	1	Frequency band: 2400 MHz ... 2485 MHz
				Gain: 2 dBi
				Cable length: 250 cm
				Connector: SMA right angle plug

Notes on operating the antenna with WAGO EnOcean radio receivers:
The antenna is to be mounted on a plate measuring at least 9.8 x 9.8 inches (25 x 25 mm)
The distance of interfering sources to the antenna and antenna line must be at least 11.8 inches (30 mm) and the free space between the antenna and the next wall must be at least 13.78 inches (35 mm).
The antenna cable should, under no circumstances, be bent sharply, since irreversible damage may result to the antenna (RG 174 bend radius > 0.6 inches/15mm)

Radio transmitter, EnOcean easyfit PTM 250

Description	Item No.	Pack. Unit	Technical Data
2-channel Light	**758-940/001-000**	1	Integrated radio transmitter: EnOcean PTM 200
4-channel Light	**758-940/003-000**	1	Energy harvesting source: electrodynamic energy generator, maintenance free
2-channel Roller Blind	**758-940/002-000**	10	Radio technology /range: EnOcean 868 MHz, RPS Type 2; 300 m free field, typ. 30 m within buildings
4-channel Roller Blind	**758-940/004-000**	1	Total installation height: 14 mm (frame lies directly against the wall)
			Dimensions of rocker /frame cut-out /central plate: 50 x 50 mm / 55 x 55 mm / 71 x 71 mm
			Color: white

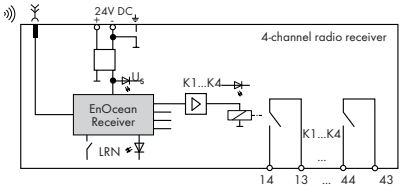
The universal switch insert can be integrated into numerous control programmes by different manufacturers, e.g.: BERKER, GIRA, JUNG and MERTEN.
Delivery is without frame. Frames of the desired control programm have been orderen separately.

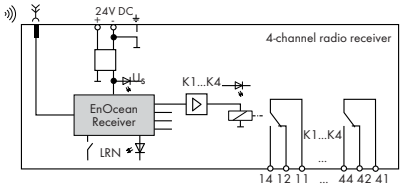
4-Channel EnOcean Radio Receiver in DIN-Rail Mount Enclosure

	4-channel EnOcean radio receiver with 4 make contacts, 16 A	4-channel EnOcean radio receiver with 4 changeover contacts, 8 A

The 4-channel radio receiver in DIN-rail mount enclosure is used to switch 4 independent electrical devices or loads. The radio receiver processes telegrams transmitted by sensors (binary information) using EnOcean radio technology (PTM + STM modules).
The outputs are switched via relay contacts.

- Radio receiver for battery-less and wireless sensors
- LED indication of switch status
- External antenna for optimum transmission range (required)
- Frequency band 868 MHz
- Transmitter-to-receiver assignment via learn mode





Description	Item No.	Pack. Unit	Item No.	Pack. Unit
4-channel EnOcean radio receiver	**789-601**	1	**789-602**	1

Technical Data

Voltage supply	24 V DC	24 V DC
Voltage range	-15 % ... + 20 %	-15 % ... + 20 %
Current consumption (internal)	max. 90 mA	max. 90 mA
Number of receive channels	40 (10 per output)	40 (10 per output)
Number of channels	4 (relay outputs)	4 (relay outputs)
Output current (per channel)	max. 16 A, AC1	max. 8 A, AC1
Type of load	resistive / lamp load	resistive / motor load
Switching frequency	max. < 5 Hz	max. < 5 Hz
Delay time transmitter /output command	< 100 ms; 40 ms ... 70 ms typ.	< 100 ms; 40 ms ... 70 ms typ.
Switching voltage	230 V AC	230 V AC
Fuse protection	Loads: wire breaker, max.16 A	Loads: wire breaker, max.16 A
Isolation	potential free contacts	potential free contacts
Ambient operating temperature	0 °C ... +55 °C	0 °C ... +55 °C
Storage temperature	-25 °C ... +85 °C	-25 °C ... +85 °C
Relative air humidity (no condensation)	85 %	85 %
Degree of pollution	2	2
Degree of protection	IP20	IP20
Mounting position	any	any
Dimensions (mm) W x H x L	70 x 55 x 90	70 x 55 x 90
	Height from upper-edge of DIN 35 rail	Height from upper-edge of DIN 35 rail
Wire connection	CAGE CLAMP® (WAGO 236 Series)	CAGE CLAMP® (WAGO 236 Series)
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)	0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)
Stripped lengths	5 ... 6 mm / 0.22 in	5 ... 6 mm / 0.22 in
Approvals	Vibration and shock resistance acc. to IEC 60068-2-6 and	Vibration and shock resistance acc. to IEC 60068-2-6 and
	IEC 60068-2-27	IEC 60068-2-27
Accessories: RF magnetic antenna incl. 3m connecting		
cable with SMA connector	758-910	758-910

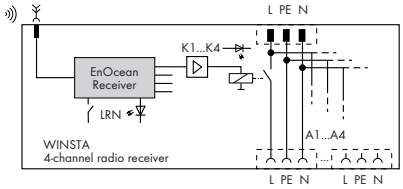
WINSTA® Radio Receiver

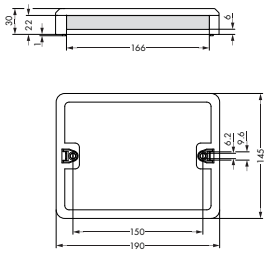
	4-channel radio receiver with 4 make contacts	2-channel radio receiver with sunblind outputs

The 4-channel radio receiver is used to switch 4 independent electrical devices. The 2-channel radio receiver has 2 sunblind outputs that can be controlled independently from each other. The radio receiver processes telegrams transmitted by switches using EnOcean radio technology (STM modules). The outputs are switched via relay contacts.

- Radio receiver for battery-less and wireless sensors
- LED indication of switch status
- External antenna for optimum transmission range (required)
- Frequency band 868 MHz
- Transmitter-to-receiver assignment via learn mode
- The state of outputs can be predefined for a power failure scenario
- Wire connection using WINSTA connectors

Illustration and block diagram for 770-629/101-000





Description	Item No.	Pack. Unit	Item No.	Pack. Unit
WINSTA® radio receiver	**770-629/101-000**	1	**770-629/102-000**	1

Technical Data

Voltage supply	230 V AC, 50 Hz ... 60 Hz, max. 16 A	230 V AC, 50 Hz ... 60 Hz, max. 16 A
Voltage range	± 10 %	± 10 %
Current consumption (internal)	max. 21 mA	max. 21 mA
Number of channels	4	2
Output current (per channel)	max. 16 A / 4 A	2 A motor load
Total current	max. 16 A	max. 4 A
Inrush current	max. 120 A / 50 ms	25 A
Type of load	resistive / lamp load	resistive / inductive
Switching frequency	max. 5 Hz	max. 5 Hz
Isolation	isolated internal voltage supply	isolated internal voltage supply
	2500 V impulse withstand voltage	2500 V impulse withstand voltage
Fuse protection	External, 16 A max.	External, 16 A max.
Ambient operating temperature	0 °C ... +55 °C	0 °C ... +55 °C
Storage temperature	-25 °C ... +85 °C	-25 °C ... +85 °C
Relative air humidity (no condensation)	85 %	85 %
Degree of pollution	2	2
Degree of protection	IP20	IP20
Mounting position	any	any
Dimensions (mm) W x H x L	195 x 145 x 30	195 x 145 x 30
Type of mounting	Wall screw fixing	Wall screw fixing
Approvals	Vibration and shock resistance acc. to IEC 60068-2-6 and	Vibration and shock resistance acc. to IEC 60068-2-6 and
	IEC 60068-2-27	IEC 60068-2-27
Accessories: RF magnetic antenna incl. 3m connecting		
cable with SMA connector	758-910	758-910
Connection accessories WINSTA connectors	Input: socket, 3 poles, e.g. 770-103;	Input: socket, 3 poles, e.g. 770-103;
	4-channel output: plug, 3 poles, e.g. 770-113	2-channel output: plug, 4 poles, e.g. 770-114

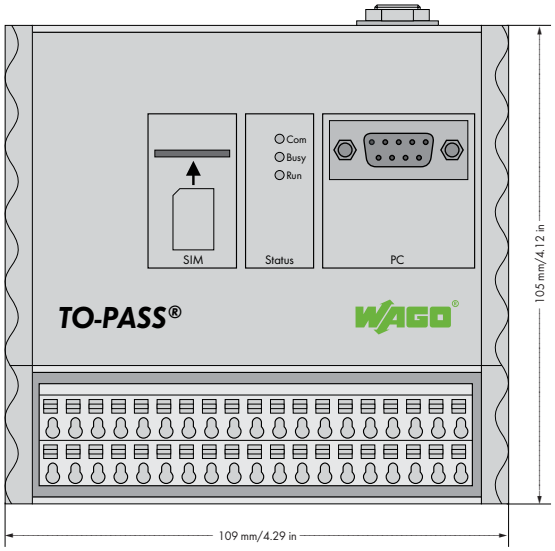
WAGO Application: Traffic Control System in Canton of Tessin (Gotthard Route), Switzerland

WAGO Products:
WAGO-I/O-SYSTEM (ETHERNET, CANopen),
WAGO X-COM®-SYSTEM,
MULTICONNECTION SYSTEM,
TOPJOB®S Rail-Mounted Terminal Blocks

3

TO-PASS® Telecontrol Module S

Telecontrol module for fault detection/indication, monitoring and remote control



Compact telecontrol module for fault detection/indication and monitoring of machines and installations over a GSM network. The module can be used in many countries via an integrated quad-band GSM modem. Messages are sent via SMS, e-mail, fax or phone call. In addition, the process image can be transmitted in an adjustable cycle to a user-selected Internet address. Switching of outputs is performed via SMS.

4 digital inputs, 4 digital outputs and 2 analog inputs with integrated GSM modem. Ideal for applications in distributed stations for temperatures ranging from -20°C to +70°C. Ability to mount on DIN-rail and intuitive user software make unit easy to handle. Operating voltage ranges from 8.5 to 36VDC.

Special functions:

- Acknowledgment: Acknowledging any fault message
- Stand-by: Automatic remote switching of the stand-by service
- Remote parametrization: Programming and remote control conveniently performed from the office

LED indicators:

- Continuous "Com" + "Busy" + "Run" LED: CSD connection/communication initialization phase approx. 50 sec.
- Continuous "Busy" + "Run" LED: Active mode
- "Run" LED 2 Hz: Error
- "Run" LED 0.5 Hz: Ready for operation

Description	Item No.	Pack. Unit
Telecontrol Module S	**761-100**	1

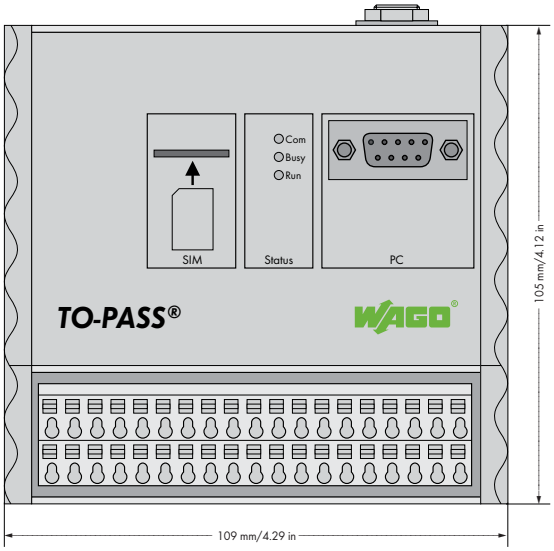
Accessories	Item No.
Antennas, USB adapter, GSM modem and power supply units	see page 371

Approvals	
Approvals	for all EU countries
	Approvals for other countries on request

Technical Data	
Number of inputs	Digital: 4 (6.5 V ... 24 V)
No. of outputs	Digital: 4 contacts
Number of receivers	4 (PC, SMS, e-mail, phone, fax)
Communication	GSM quad-band
Communication types	SMS (bidirectional), telecommunication dial-up connection (CSD)
Operating voltage	8.5 V ... 36 V DC
Closed current	40 mA
Current during transmission	< 600 mA
Max. input current (24 V)	1.6 mA
Load of digital outputs	36 V DC/0.5 A
Operating temperature	-20 °C ... +70 °C
Type of mounting	DIN 35 rail
Wire connection	Terminal strips with push-wire connection (WAGO 250 Series)
Cross sections	0.5 mm² ... 1.5 mm² / AWG 22 ... 14
Stripped lengths	9 mm /0.35 in
Dimensions (mm) W x H x L	109 x 105 x 78
Weight	485.31 g
Storage temperature	-20 °C ... +70 °C
Degree of protection	IP20
Antenna connection	SMA (version 2 and higher), FME (up to version 1)

TO-PASS® Telecontrol Module S, 2AI

Telecontrol module for fault detection/indication, monitoring and remote control



Compact telecontrol module for fault detection/indication and monitoring of machines and installations over a GSM network. The module can be used in many countries via an integrated quad-band GSM modem. Messages are sent via SMS, e-mail, fax or phone call. Switching of outputs is performed via SMS. 4 digital inputs, 4 digital outputs and 2 analog inputs with integrated GSM modem. Ideal for applications in distributed stations for temperatures ranging from -20 °C to +70 °C. Ability to mount on DIN-rail and intuitive user software make unit easy to handle. Operating voltage ranges from 8.5 to 36VDC.

Special functions:

- Acknowledgment: Acknowledging any fault message
- Stand-by: Automatic remote switching of the stand-by service
- Remote parametrization: Programming and remote control conveniently performed from the office

LED indicators:

- Continuous "Com" + "Busy" + "Run" LED: CSD connection/communication initialization phase approx. 50 sec.
- Continuous "Busy" + "Run" LED: Active mode
- "Run" LED 2 Hz: Error
- "Run" LED 0.5 Hz: Ready for operation

Description	Item No.	Pack. Unit
Telecontrol Module S 2AI	**761-101**	1

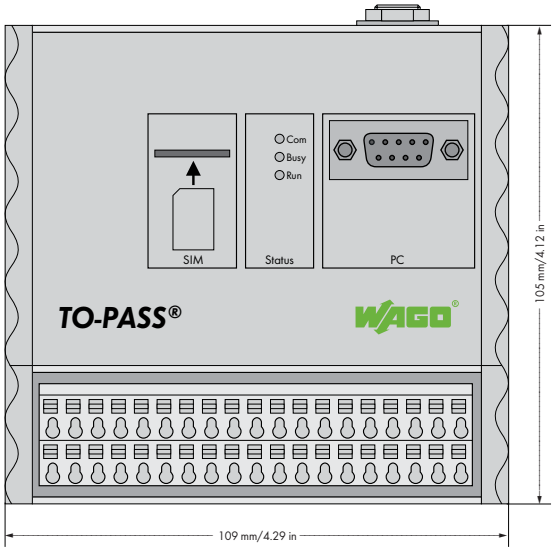
Accessories	Item No.
Antennas, USB adapter, GSM modem and power supply units	see page 371

Approvals	
Approvals	for all EU countries
	Approvals for other countries on request

Technical Data	
Number of inputs	Digital: 4 (6.5 V ... 24 V);
	Analog: 2 (0/4 mA ... 20 mA)
No. of outputs	Digital: 4 contacts
Number of receivers	4 (PC, SMS, e-mail, phone, fax)
Communication	GSM quad-band
Communication types	SMS (bidirectional),
	telecommunication dial-up connection
	(CSD)
Operating voltage	8.5 V ... 36 V DC
Closed current	40 mA
Current during transmission	< 600 mA
Internal resistance (analog inputs)	250 Ω
Max. input current (24 V)	1.6 mA
Load of digital outputs	36 V DC/0.5 A
Operating temperature	-20 °C ... +70 °C
Type of mounting	DIN 35 rail
Wire connection	Terminal strips with push-wire connection
	(WAGO 250 Series)
Cross sections	0.5 mm² ... 1.5 mm² / AWG 22 ... 14
Stripped lengths	9 mm /0.35 in
Dimensions (mm) W x H x L	109 x 105 x 78
Weight	485,31 g
Storage temperature	-20 °C ... +70 °C
Degree of protection	IP20
Antenna connection	SMA (version 2 and higher),
	FME (up to version 1)

TO-PASS® Telecontrol Module S, Web

Telecontrol module for fault detection/indication, monitoring and remote control



Compact telecontrol module for fault detection/indication and Internet connectivity for machines and installations over a GSM network. The module can be used in many countries via an integrated quad-band GSM modem. Messages are sent via SMS, e-mail, fax or phone call. In addition, the process image can be transmitted in an adjustable cycle to a user-selected Internet address. Switching of outputs is performed via SMS.
4 digital inputs and 4 digital outputs with integrated GSM modem. Ideal for applications in distributed stations for temperatures ranging from -20°C to +70°C. Ability to mount on DIN-rail and intuitive user software make unit easy to handle. Operating voltage ranges from 8.5 to 36VDC.

Special functions:
- Acknowledgment: Acknowledging any fault message
- Stand-by: Automatic remote switching of the stand-by service
- Remote parametrization: Programming and process visualization conveniently performed from the office
- GPRS-dedicated line: Permanent online connection to the process on a WEB server or PC with fixed IP address (e.g., DSL connection)

LED indicators:
- Continuous "Com" + "Busy" + "Run" LED: CSD connection/communication initialization phase approx. 50 sec.
- Continuous "Busy" + "Run" LED: Active mode
- "Run" LED 2 Hz: Error
- "Run" LED 0.5 Hz: Ready for operation

Description	Item No.	Pack. Unit
Telecontrol Module S WEB	**761-102**	1

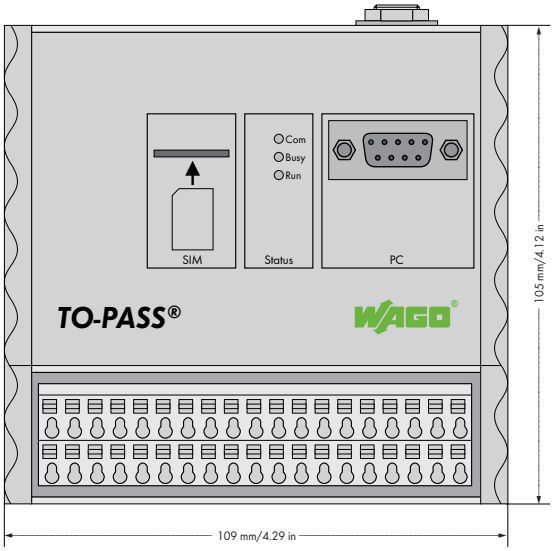
Accessories	Item No.
Antennas, USB adapter, GSM modem and power supply units	see page 371

Approvals	
Approvals	for all EU countries
	Approvals for other countries on request

Technical Data	
Number of inputs	Digital: 4 (6.5 V ... 24 V)
No. of outputs	Digital: 4 contacts
Number of receivers	4 (PC, SMS, e-mail, phone, fax)
Communication	GSM quad-band
Communication types	SMS (bidirectional), telecommunication dial-up connection (CSD)
Operating voltage	8.5 V ... 36 V DC
Closed current	40 mA
Current during transmission	< 600 mA
Max. input current (24 V)	1.6 mA
Load of digital outputs	36 V DC/0.5 A
Operating temperature	-20 °C ... +70 °C
Type of mounting	DIN 35 rail
Wire connection	Terminal strips with push-wire connection (WAGO 250 Series)
Cross sections	0.5 mm² ... 1.5 mm² / AWG 22 ... 14
Stripped lengths	9 mm /0.35 in
Dimensions (mm) W x H x L	109 x 105 x 78
Weight	785.31 g
Storage temperature	-20 °C ... +70 °C
Degree of protection	IP20
Antenna connection	SMA (version 2 and higher), FME (up to version 1)

TO-PASS® Telecontrol Module S, 2AI, Web

Telecontrol module for fault detection/indication, monitoring and remote control



Compact telecontrol module for fault detection/indication and Internet connectivity for machines and installations over a GSM network. The module can be used in many countries via an integrated quad-band GSM modem. Messages are sent via SMS, e-mail, fax or phone call. In addition, the process image can be transmitted in an adjustable cycle to a user-selected Internet address. Switching of outputs is performed via SMS.
4 digital inputs, 4 digital outputs and 2 analog inputs with integrated GSM modem. Ideal for applications in distributed stations for temperatures ranging from -20°C to +70°C. Ability to mount on DIN-rail and intuitive user software make unit easy to handle. Operating voltage ranges from 8.5 to 36VDC.

Special functions:
- Acknowledgment: Acknowledging any fault message
- Stand-by: Automatic remote switching of the stand-by service
- Remote parametrization: Programming and process visualization conveniently performed from the office
- GPRS-dedicated line: Permanent online connection to the process on a WEB server or PC with fixed IP address (e.g., DSL connection)

LED indicators:
- Continuous "Com" + "Busy" + "Run" LED: CSD connection/communication initialization phase approx. 50 sec.
- Continuous "Busy" + "Run" LED: Active mode
- "Run" LED 2 Hz: Error
- "Run" LED 0.5 Hz: Ready for operation

Description	Item No.	Pack. Unit
Telecontrol Module S 2AI WEB	**761-103**	1

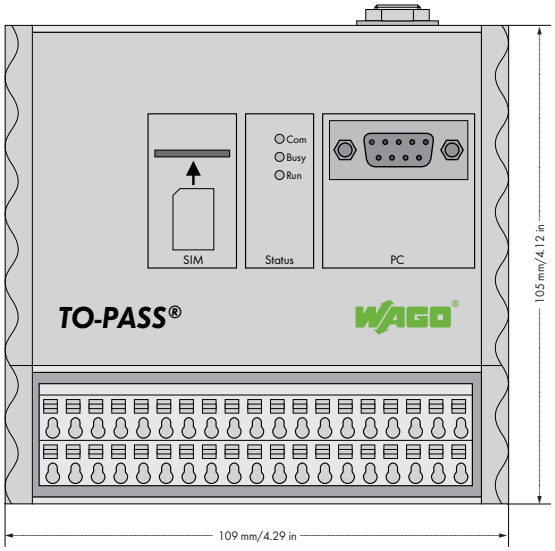
Accessories	Item No.
Antennas, USB adapter, GSM modem and power supply units	see page 371

Approvals	
Approvals	for all EU countries
	Approvals for other countries on request

Technical Data	
Number of inputs	Digital: 4 (6.5 V ... 24 V);
	Analog: 2 (0/4 mA ... 20 mA)
No. of outputs	Digital: 4 contacts
Number of receivers	4 (PC, SMS, e-mail, phone, fax)
Communication	GSM quad-band
Communication types	SMS (bidirectional),
	telecommunication dial-up connection
	(CSD)
Operating voltage	8.5 V ... 36 V DC
Closed current	40 mA
Current during transmission	< 600 mA
Internal resistance (analog inputs)	250 Ω
Max. input current (24 V)	1.6 mA
Load of digital outputs	36 V DC/0.5 A
Operating temperature	-20 °C ... +70 °C
Type of mounting	DIN 35 rail
Wire connection	Terminal strips with push-wire connection
	(WAGO 250 Series)
Cross sections	0.5 mm² ... 1.5 mm² / AWG 22 ... 14
Stripped lengths	9 mm /0.35 in
Dimensions (mm) W x H x L	109 x 105 x 78
Weight	450 g
Storage temperature	-20 °C ... +70 °C
Degree of protection	IP20
Antenna connection	SMA (version 2 and higher),
	FME (up to version 1)

TO-PASS® Telecontrol Module M

Telecontrol module for fault detection/indication, monitoring and remote control



Universal telecontrol module for fault detection/indication and monitoring of machines and installations over a GSM network. The module can be used in many countries via an integrated quad-band GSM modem. Messages are sent via SMS, e-mail, fax or phone call. Switching of outputs is performed via SMS. 8 digital inputs, 4 digital outputs with integrated GSM modem. Ideal for applications in distributed stations for temperatures ranging from -20°C to +70°C. Ability to mount on DIN-rail and intuitive user software make unit easy to handle. Operating voltage ranges from 8.5 to 36VDC.

Special functions:

- Acknowledgment: Acknowledging any fault message
- Stand-by: Automatic remote switching of the stand-by service
- Remote parametrization: Programming and remote control conveniently performed from the office

LED indicators:

- Continuous "Com" + "Busy" + "Run" LED: CSD connection/communication initialization phase approx. 50 sec.
- Continuous "Busy" + "Run" LED: Active mode
- "Run" LED 2 Hz: Error
- "Run" LED 0.5 Hz: Ready for operation

Description	Item No.	Pack. Unit
Telecontrol Module M	**761-200**	1

Accessories	Item No.
Antennas, USB adapter, GSM modem and power supply units	see page 371

Approvals

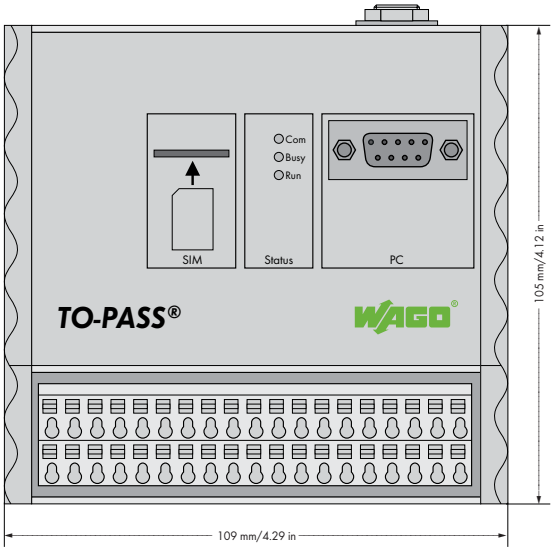
Approvals	for all EU countries
	Approvals for other countries on request

Technical Data

Number of inputs	Digital: 8 (6.5 V ... 24 V)
No. of outputs	Digital: 4 contacts
Number of receivers	4 (PC, SMS, e-mail, phone, fax)
Communication	GSM quad-band
Communication types	SMS (bidirectional), telecommunication dial-up connection (CSD)
Operating voltage	8.5 V ... 36 V DC
Closed current	40 mA
Current during transmission	< 600 mA
Max. input current (24 V)	1.6 mA
Load of digital outputs	36 V DC/0.5 A
Operating temperature	-20 °C ... +70 °C
Type of mounting	DIN 35 rail
Wire connection	Terminal strips with push-wire connection (WAGO 250 Series)
Cross sections	0.5 mm² ... 1.5 mm² / AWG 22 ... 14
Stripped lengths	9 mm /0.35 in
Dimensions (mm) W x H x L	109 x 105 x 78
Weight	485.31 g
Storage temperature	-20 °C ... +70 °C
Degree of protection	IP20
Antenna connection	SMA (version 2 and higher), FME (up to version 1)

TO-PASS® Telecontrol Module M, 8AI

Telecontrol module for fault detection/indication, monitoring and remote control



Universal telecontrol module for fault detection/indication and monitoring of machines and installations over a GSM network. The module can be used in many countries via an integrated quad-band GSM modem. Messages are sent via SMS, e-mail, fax or phone call. Switching of outputs is performed via SMS. 8 digital inputs, 8 analog inputs, 4 digital outputs and 2 analog outputs with integrated GSM modem. Ideal for applications in distributed stations for temperatures ranging from -20 °C to +70 °C. Ability to mount on DIN-rail and intuitive user software make unit easy to handle. Operating voltage ranges from 8.5 to 36VDC.

Special functions:

- Acknowledgment: Acknowledging any fault message
- Stand-by: Automatic remote switching of the stand-by service
- Remote parametrization: Programming and remote control conveniently performed from the office

LED indicators:

- Continuous "Com" + "Busy" + "Run" LED: CSD connection/communication initialization phase approx. 50 sec.
- Continuous "Busy" + "Run" LED: Active mode
- "Run" LED 2 Hz: Error
- "Run" LED 0.5 Hz: Ready for operation

Description	Item No.	Pack. Unit
Telecontrol Module M 8AI	**761-201**	1

Accessories	Item No.	Pack. unit
Antennas, USB adapter, GSM modem and power supply units	see page 371	

Approvals

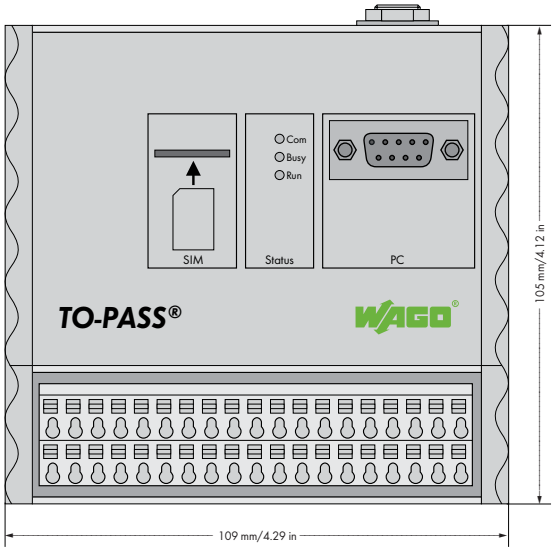
Approvals	for all EU countries
	Approvals for other countries on request

Technical Data

Number of inputs	Digital: 8 (6.5 V ... 24 V);
	Analog: 8 (0/4 mA ... 20 mA)
No. of outputs	Digital: 4 contacts,
	Analog: 2 (0/4 mA ... 20 mA)
Number of receivers	4 (PC, SMS, e-mail, phone, fax)
Communication	GSM quad-band
Communication types	SMS (bidirectional),
	telecommunication dial-up connection
	(CSD)
Operating voltage	8.5 V ... 36 V DC
Closed current	40 mA
Current during transmission	< 600 mA
Internal resistance (analog inputs)	250 Ω
Max. input current (24 V)	1.6 mA
Load of digital outputs	36 V DC/0.5 A
Operating temperature	-20 °C ... +70 °C
Type of mounting	DIN 35 rail
Wire connection	Terminal strips with push-wire connection
	(WAGO 250 Series)
Cross sections	0.5 mm² ... 1.5 mm² / AWG 22 ... 14
Stripped lengths	9 mm /0.35 in
Dimensions (mm) W x H x L	109 x 105 x 78
Weight	485.31 g
Storage temperature	-20 °C ... +70 °C
Degree of protection	IP20
Antenna connection	SMA (version 2 and higher),
	FME (up to version 1)

TO-PASS® Telecontrol Module M, 8AI, ELog

Telecontrol module for fault detection/indication, monitoring and remote control



Universal telecontrol module for fault detection/indication and monitoring of machines and installations over a GSM network. The module can be used in many countries via an integrated quad-band GSM modem. Messages are sent via SMS, e-mail, fax or phone call. The event logger creates the process image of all occurring events and stores all digital and analog values available at the telecontrol module. Switching of outputs is performed via SMS.
8 digital inputs, 8 analog inputs, 4 digital outputs and 2 analog outputs with integrated GSM modem. Ideal for applications in distributed stations for temperatures ranging from -20 °C to +70 °C. Ability to mount on DIN-rail and intuitive user software make unit easy to handle. Operating voltage ranges from 8.5 to 36VDC.

Special functions:
- Acknowledgment: Acknowledging any fault message
- Stand-by: Automatic remote switching of the stand-by service
- Remote parametrization: Programming and remote control conveniently performed from the office
- Event logger: Stores all occurring status changes

LED indicators:
- Continuous "Com" + "Busy" + "Run" LED: CSD connection/communication initialization phase approx. 50 sec.
- Continuous "Busy" + "Run" LED: Active mode
- "Run" LED 2 Hz: Error
- "Run" LED 0.5 Hz: Ready for operation

Description	Item No.	Pack. Unit
Telecontrol Module M 8AI ELog	**761-202**	1

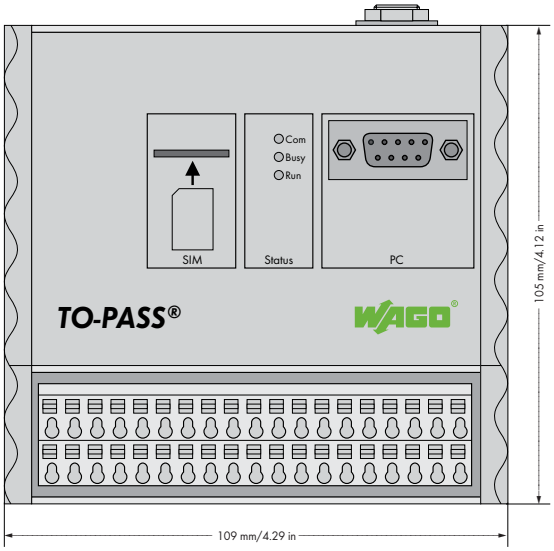
Accessories	Item No.
Antennas, USB adapter, GSM modem and power supply units	see page 371

Approvals	
Approvals	for all EU countries
	Approvals for other countries on request

Technical Data	
Number of inputs	Digital: 8 (6.5 V ... 24 V);
	Analog: 8 (0/4 mA ... 20 mA)
No. of outputs	Digital: 4 contacts,
	Analog: 2 (0/4 mA ... 20 mA)
Number of receivers	4 (PC, SMS, e-mail, phone, fax)
Communication	GSM quad-band
Communication types	SMS (bidirectional),
	telecommunication dial-up connection
	(CSD)
Operating voltage	8.5 V ... 36 V DC
Closed current	40 mA
Current during transmission	< 600 mA
Internal resistance (analog inputs)	250 Ω
Max. input current (24 V)	1.6 mA
Load of digital outputs	36 V DC/0.5 A
Operating temperature	-20 °C ... +70 °C
Type of mounting	DIN 35 rail
Wire connection	Terminal strips with push-wire connection
	(WAGO 250 Series)
Cross sections	0.5 mm² ... 1.5 mm² / AWG 22 ... 14
Stripped lengths	9 mm /0.35 in
Dimensions (mm) W x H x L	109 x 105 x 78
Weight	485.31 g
Storage temperature	-20 °C ... +70 °C
Degree of protection	IP20
Antenna connection	SMA (version 2 and higher),
	FME (up to version 1)

TO-PASS® Telecontrol Module M, 8AI, DLog

Telecontrol module for fault detection/indication, monitoring and remote control



Universal telecontrol module for fault detection/indication and monitoring of machines and installations over a GSM network. The module can be used in many countries via an integrated quad-band GSM modem. Messages are sent via SMS, e-mail, fax or phone call. An integrated data memory stores up to 4200 process images in an adjustable cycle time. Switching of outputs is performed via SMS. 8 digital inputs, 8 analog inputs, 4 digital outputs and 2 analog outputs with integrated GSM modem. Ideal for applications in distributed stations for temperatures ranging from -20 °C to +70 °C. Ability to mount on DIN-rail and intuitive user software make unit easy to handle. Operating voltage ranges from 8.5 to 36VDC.

Special functions:

- Acknowledgment: Acknowledging any fault message
- Stand-by: Automatic remote switching of the stand-by service
- Remote parametrization: Programming and remote control conveniently performed from the office
- Data logger: Stores all process values with adjustable cycle

LED indicators:

- Continuous "Com" + "Busy" + "Run" LED: CSD connection/communication initialization phase approx. 50 sec.
- Continuous "Busy" + "Run" LED: Active mode
- "Run" LED 2 Hz: Error
- "Run" LED 0.5 Hz: Ready for operation

Description	Item No.	Pack. Unit
Telecontrol Module M 8AI DLog	**761-203**	1

Accessories	Item No.
Antennas, USB adapter, GSM modem and power supply units	see page 371

Approvals

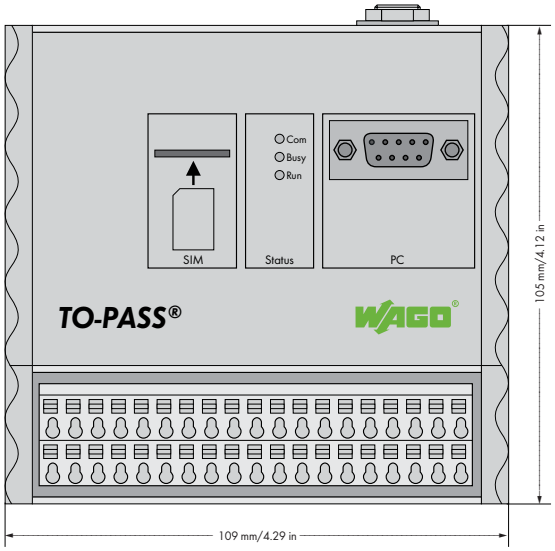
Approvals	for all EU countries
	Approvals for other countries on request

Technical Data

Number of inputs	Digital: 8 (6.5 V ... 24 V);
	Analog: 8 (0/4 mA ... 20 mA)
No. of outputs	Digital: 4 contacts,
	Analog: 2 (0/4 mA ... 20 mA)
Number of receivers	4 (PC, SMS, e-mail, phone, fax)
Communication	GSM quad-band
Communication types	SMS (bidirectional),
	telecommunication dial-up connection
	(CSD)
Operating voltage	8.5 V ... 36 V DC
Closed current	40 mA
Current during transmission	< 600 mA
Internal resistance (analog inputs)	250 Ω
Max. input current (24 V)	1.6 mA
Load of digital outputs	36 V DC/0.5 A
Operating temperature	-20 °C ... +70 °C
Type of mounting	DIN 35 rail
Wire connection	Terminal strips with push-wire connection
	(WAGO 250 Series)
Cross sections	0.5 mm² ... 1.5 mm² / AWG 22 ... 14
Stripped lengths	9 mm /0.35 in
Dimensions (mm) W x H x L	109 x 105 x 78
Weight	485.31 g
Storage temperature	-20 °C ... +70 °C
Degree of protection	IP20
Antenna connection	SMA (version 2 and higher),
	FME (up to version 1)

TO-PASS® Telecontrol Module M, 8AI, ELog, DLog

Telecontrol module for fault detection/indication, monitoring and remote control



Universal telecontrol module for fault detection/indication and monitoring of machines and installations over a GSM network. The module can be used in many countries via an integrated quad-band GSM modem. Messages are sent via SMS, e-mail, fax or phone call. An integrated event logger creates the process image of all occurring events and stores all digital and analog values available at the telecontrol module. The data memory stores up to 4200 process images in an adjustable cycle time. Switching of outputs is performed via SMS.
8 digital inputs, 8 analog inputs, 4 digital outputs and 2 analog outputs with integrated GSM modem. Ideal for applications in distributed stations for temperatures ranging from -20 °C to +70 °C. Ability to mount on DIN-rail and intuitive user software make unit easy to handle. Operating voltage ranges from 8.5 to 36VDC.

Special functions:
- Acknowledgment: Acknowledging any fault message
- Stand-by: Automatic remote switching of the stand-by service
- Remote parametrization: Programming and remote control conveniently performed from the office
- Event logger: Saves all occurring status changes
- Data logger: Saves all process values with adjustable cycle

LED indicators:
- Continuous "Com" + "Busy" + "Run" LED: CSD connection/communication initialization phase approx. 50 sec.
- Continuous "Busy" + "Run" LED: Active mode
- "Run" LED 2 Hz: Error
- "Run" LED 0.5 Hz: Ready for operation

Description	Item No.	Pack. Unit
Telecontrol Module M 8AI ELog, DLog	**761-204**	1

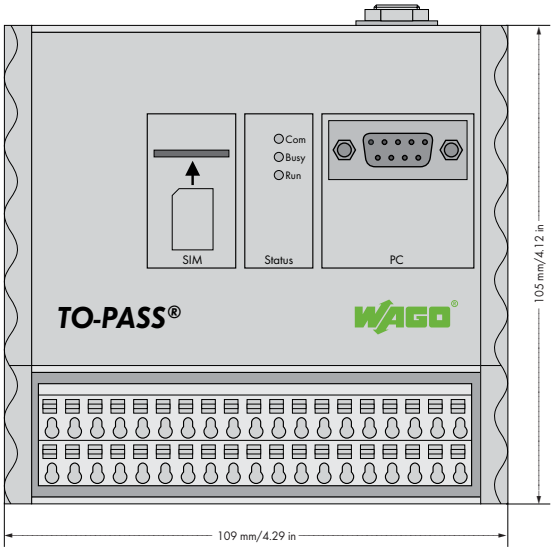
Accessories	Item No.
Antennas, USB adapter, GSM modem and power supply units	see page 371

Approvals	
Approvals	for all EU countries
	Approvals for other countries on request

Technical Data	
Number of inputs	Digital: 8 (6.5 V ... 24 V);
	Analog: 8 (0/4 mA ... 20 mA)
No. of outputs	Digital: 4 contacts,
	Analog: 2 (0/4 mA ... 20 mA)
Number of receivers	4 (PC, SMS, e-mail, phone, fax)
Communication	GSM quad-band
Communication types	SMS (bidirectional),
	telecommunication dial-up connection
	(CSD)
Operating voltage	8.5 V ... 36 V DC
Closed current	40 mA
Current during transmission	< 600 mA
Internal resistance (analog inputs)	250 Ω
Max. input current (24 V)	1.6 mA
Load of digital outputs	36 V DC/0.5 A
Operating temperature	-20 °C ... +70 °C
Type of mounting	DIN 35 rail
Wire connection	Terminal strips with push-wire connection
	(WAGO 250 Series)
Cross sections	0.5 mm² ... 1.5 mm² / AWG 22 ... 14
Stripped lengths	9 mm /0.35 in
Dimensions (mm) W x H x L	109 x 105 x 78
Weight	485.31 g
Storage temperature	-20 °C ... +70 °C
Degree of protection	IP20
Antenna connection	SMA (version 2 and higher),
	FME (up to version 1)

TO-PASS® Telecontrol Module M, Web, MODBUS

Telecontrol module for fault detection/indication, monitoring and remote control



Universal telecontrol module for fault detection/indication and Internet connectivity for machines and installations over a GSM network. The module can be used in many countries via an integrated quad-band GSM modem. Messages are sent via SMS, e-mail, fax or phone call. In addition, the process image can be transmitted in an adjustable cycle to a user-selected Internet address. A Modbus slave (e.g., 750-816) can be connected via RS-232 interface to link additional process values. Switching of outputs is performed via SMS.
8 digital inputs and 4 digital outputs with integrated GSM modem. Ideal for applications in distributed stations for temperatures ranging from -20°C to +70°C. Ability to mount on DIN-rail and intuitive user software make unit easy to handle. Operating voltage ranges from 8.5 to 36VDC.

Special functions:
- Acknowledgment: Acknowledging any fault message
- Stand-by: Automatic remote switching of the stand-by service
- Remote parametrization: Programming and process visualization conveniently performed from the office
- GPRS-dedicated line: Permanent online connection to the process on a WEB server or PC with fixed IP address (e.g., DSL connection)

LED indicators:
- Continuous "Com" + "Busy" + "Run" LED: CSD connection/communication initialization phase approx. 50 sec.
- Continuous "Busy" + "Run" LED: Active mode
- "Run" LED 2 Hz: Error
- "Run" LED 0.5 Hz: Ready for operation

Description	Item No.	Pack. Unit
Telecontrol Module M WEB MODBUS	**761-205**	1

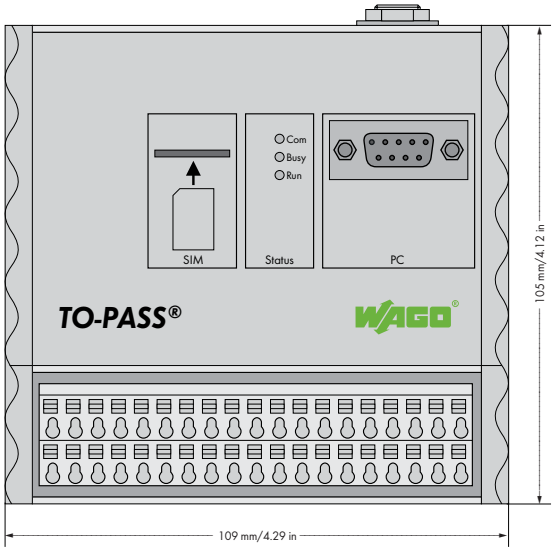
Accessories	Item No.
Antennas, USB adapter, GSM modem and power supply units	see page 371

Approvals	
Approvals	for all EU countries
	Approvals for other countries on request

Technical Data	
Number of inputs	Digital: 8 (6.5 V ... 24 V)
No. of outputs	Digital: 4 contacts
Number of receivers	4 (PC, SMS, e-mail, phone, fax)
Communication	GSM quad-band
Communication types	SMS (bidirectional), telecommunication dial-up connection (CSD)
Operating voltage	8.5 V ... 36 V DC
Closed current	40 mA
Current during transmission	< 600 mA
Max. input current (24 V)	1.6 mA
Load of digital outputs	36 V DC/0.5 A
Operating temperature	-20 °C ... +70 °C
Type of mounting	DIN 35 rail
Wire connection	Terminal strips with push-wire connection (WAGO 250 Series)
Cross sections	0.5 mm² ... 1.5 mm² / AWG 22 ... 14
Stripped lengths	9 mm /0.35 in
Dimensions (mm) W x H x L	109 x 105 x 78
Weight	485.31 g
Storage temperature	-20 °C ... +70 °C
Degree of protection	IP20
Antenna connection	SMA (version 2 and higher), FME (up to version 1)

TO-PASS® Telecontrol Module M, 8AI, Web, MODBUS

Telecontrol module for fault detection/indication, monitoring and remote control



Universal telecontrol module for fault detection/indication and Internet connectivity for machines and installations over a GSM network. The module can be used in many countries via an integrated quad-band GSM modem. Messages are sent via SMS, e-mail, fax or phone call. In addition, the process image can be transmitted in an adjustable cycle to a user-selected Internet address. A Modbus slave (e.g., 750-816) can be connected via RS-232 interface to link additional process values. Switching of outputs is performed via SMS.
8 digital inputs, 8 analog inputs, 4 digital outputs and 2 analog outputs with integrated GSM modem. Ideal for applications in distributed stations for temperatures ranging from -20 °C to +70 °C. Ability to mount on DIN-rail and intuitive user software make unit easy to handle. Operating voltage ranges from 8.5 to 36VDC.

Special functions:
- Acknowledgment: Acknowledging any fault message
- Stand-by: Automatic remote switching of the stand-by service
- Remote parametrization: Programming and process visualization conveniently performed from the office
- GPRS-dedicated line: Permanent online connection to the process on a WEB server or PC with fixed IP address (e.g., DSL connection)

LED indicators:
- Continuous "Com" + "Busy" + "Run" LED: CSD connection/communication initialization phase approx. 50 sec.
- Continuous "Busy" + "Run" LED: Active mode
- "Run" LED 2 Hz: Error
- "Run" LED 0.5 Hz: Ready for operation

Description	Item No.	Pack. Unit
Telecontrol Module M 8AI WEB MODBUS	**761-206**	1

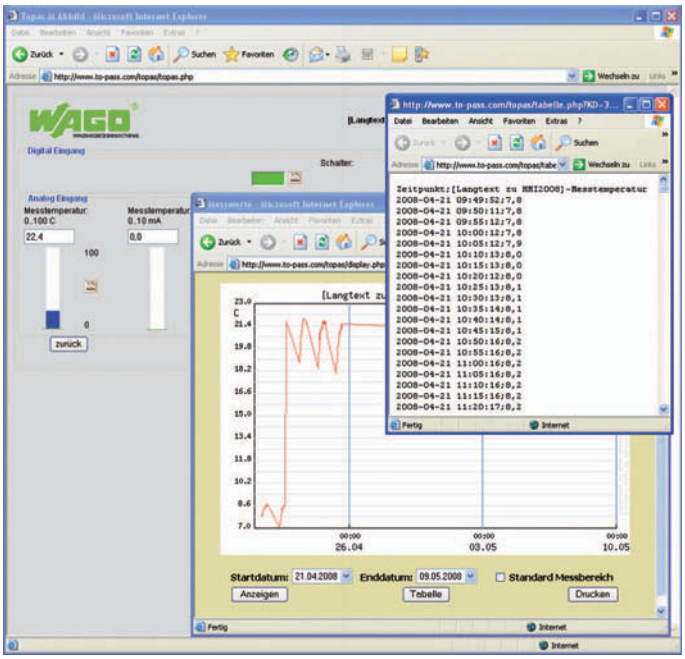
Accessories	Item No.
Antennas, USB adapter, GSM modem and power supply units	see page 371

Approvals	
Approvals	for all EU countries
	Approvals for other countries on request

Technical Data	
Number of inputs	Digital: 8 (6.5 V ... 24 V);
	Analog: 8 (0/4 mA ... 20 mA)
No. of outputs	Digital: 4 contacts,
	Analog: 2 (0/4 mA ... 20 mA)
Number of receivers	4 (PC, SMS, e-mail, phone, fax)
Communication	GSM quad-band
Communication types	SMS (bidirectional),
	telecommunication dial-up connection
	(CSD)
Operating voltage	8.5 V ... 36 V DC
Closed current	40 mA
Current during transmission	< 600 mA
Internal resistance (analog inputs)	250 Ω
Max. input current (24 V)	1.6 mA
Load of digital outputs	36 V DC/0.5 A
Operating temperature	-20 °C ... +70 °C
Type of mounting	DIN 35 rail
Wire connection	Terminal strips with push-wire connection
	(WAGO 250 Series)
Cross sections	0.5 mm² ... 1.5 mm² / AWG 22 ... 14
Stripped lengths	9 mm /0.35 in
Dimensions (mm) W x H x L	109 x 105 x 78
Weight	485.31 g
Storage temperature	-20 °C ... +70 °C
Degree of protection	IP20
Antenna connection	SMA (version 2 and higher),
	FME (up to version 1)

TO-PASS® WEB Portal

WEB portal for visualizing and archiving measured values and messages



The TO-PASS® product family is designed for wireless communication of signals and messages.
Connection is established via global mobile radio network "GSM."
Beyond traditional communication channels (e.g., e-mail, SMS or fax), the devices can also transmit data to a Web server via web functionality. This allows the creation of a permanent GPRS connection similar to a dedicated line.
The process image (i.e., states and values of all digital and analog inputs of a TO-PASS® telecontrol module) is transmitted to the Web server with time stamp at a variably configurable interval and then stored in a database. TO-PASS® eliminates standard data loggers, as well as cumbersome process of reading out data.
Controlling and managing data is simplified by using an Internet browser via:
http://www.to-pass.com
With the basic module, a user's own area is provided on the Web portal.
Access is protected with a username and password. Depending on the expansion level (starter, standard, unlimited), a varying number of devices can log into the portal.

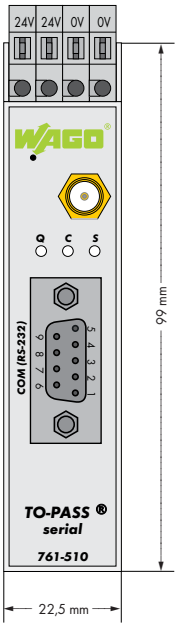
The data recorder function allows digital, analog and MODBUS data of the connected devices to be recorded and displayed from 90 minutes to over 512 days. Data can also be exported in CSV format.
The "Admin" option is an addition to the basic module. It allows the user to administrate additional usernames with passwords, as well as customers and devices with different access authorizations.
The "Alarm" option is a further addition to the basic module. It allows the module to display and administrate alarms generated from analog, digital and +MODBUS values. Using analog values, up to 4 limit values can be configured for each measurement. An alarm list allows all alarms to be displayed and acknowledged.
This option also allows the user to configure the persons and the time at which an alarm will be sent to them via SMS or e-mail.
The usage rights for the basic module with "Admin" and "Alarm" options must be purchased once. Afterwards, only a low flat-rate fee will be charged every month.

Description	Item No.	Pack. Unit
***TO-PASS*® WEB portal setup**	**761-700**	1
***TO-PASS*® WEB-Portal Basic Starter** [2]	**761-700/000-005**	1
***TO-PASS*® WEB-Portal Basic Standard** [3]	**761-700/000-020**	1
***TO-PASS*® WEB portal monthly user fee**		
	761-701	1
***TO-PASS*® WEB-Portal Admin Unlimited** [1]	**761-702**	1
***TO-PASS*® WEB-Portal Admin Starter** [2]	**761-702/000-005**	1
***TO-PASS*® WEB-Portal Admin Standard** [3]	**761-702/000-020**	1
***TO-PASS*® WEB-Portal Alarm Unlimited** [1]	**761-703**	1
***TO-PASS*® WEB-Portal Alarm Starter** [2]	**761-703/000-005**	1
***TO-PASS*® WEB-Portal Alarm Standard** [3]	**761-703/000-020**	1
Individual *TO-PASS*® WEB-Portal	**761-704**	1

[1] Unlimited number of devices
[2] Maximum 5 devices
[3] Maximum 20 devices

Technical Data	
System requirements:	
WEB browser	Microsoft® Internet Explorer with Internet access
User administration	via user name and password
No. of devices	unlimited
Device activation	via Internet
Configuration of measured values	via Internet
History of measured values	unlimited number of data sets
Display of measured values	Table and graphical display
Evaluation of measured values	Graphical evaluation of measured values
Export of measured values	CSV format (MS Excel compatible)

TO-PASS® GPRS Modem, RS-232



The TO-PASS® modem replaces a conventional AT-controlled switched-line or dedicated-line modem. Applications can communicate with a control center or with one another bi-directionally via GPRS. A TSC-capable remote station is required for communication and establishing connections.
A serial RS-232 interface makes it possible to easily integrate this GPRS modem into existing technical infrastructures. Regardless of the operating system used by the application, this GPRS modem uses TCP/IP networks for communication. Incoming and outgoing GSM/CSD data calls are supported.

Description	Item No.	Pack. Unit
***TO-PASS*® Modem GPRS RS-232**	**761-510**	1

Accessories

Antenna	see page 371

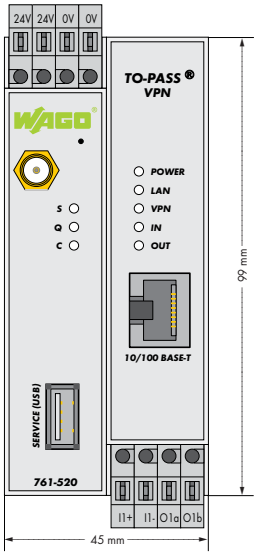
Approvals

Conformity marking	CE; R&TTE (GSM)
other approvals	GSM/GPRS module with GCF approval
Approvals	for all EU countries
	Approvals for other countries on request

Technical Data

Application interface	RS-232 (ITU V.24/V.28) socket: DSub-9
Baud rate	300 bit/s up to 57,600 bit/s
Connection control	AT commands, DTR control,
	Always Online, TSC
Voltage supply	12 V ... 30 V DC (24 V DC nominal)
Input current	I typ. 500 mA at 12 V (peak 1.3 A)
	I typ. 200 mA at 24 V
GPRS connection	Class 10, up to 2 uplinks/up to 4 downlinks,
	max. 5 slots;
	Coding: CS-1, CS-2, CS-3, CS-4
GSM data	CSD 9,600 bit/s
Transmitter power	Quad band; GSM 850/900 MHz:
	max. 2 watts
	DCS 1800 MHz/PCS 1900 MHz:
	max. 1 watt
Antenna connection	Nominal impedance: 50 Ω, socket: SMA
Dimensions (mm) W x H x L	22.5 x 99 x 114.5
	Height from upper-edge of DIN 35 rail
Weight	approx. 150 g
Operating temperature	-20 °C ... +55 °C
Relative air humidity (no condensation)	95 %
Mounting	DIN 35 rail
Housing material	PC
Degree of protection	IP40

TO-PASS® GPRS Modem, VPN Router



The TO-PASS® modem for industrial ETHERNET networks unites GPRS/EDGE wireless modem, VPN (Virtual Private Network) router and firewall in a single device. Highly sensitive data can thus be transmitted wirelessly and safely via GSM network. In addition, the application is effectively protected against unauthorized access via integrated firewall, providing maximum safety and flexibility.
Intelligent communication management ensures stability and high availability of the connection. Thus, remote stations can be easily integrated into an IP network

- VPN protocol: IPSec (tunnel and transport mode)
- VPN encryption: 3DES, AES, DES
- VPN packet authentification: MD5, SHA-1; Internet Key Exchange (IKE); Pre-Shared Key (PSK); X.509v3 certificates;
- Firewall: Stateful inspection firewall; NAT (IP masquerading); Port forwarding; Anti-spoofing
- Other: DNS cache; DHCP server; NTP; remote logging, NAT-T, DynDNS, Dead Peer Detection (DPD)
- Management: Web-based administration, https or SSH remote access via EDGE/GPRS or CSD

Description	Item No.	Pack. Unit
***TO-PASS*® Modem GPRS VPN Router**	**761-520**	1

Accessories

Antenna	see page 371

Approvals

Conformity marking	CE; R&TTE (GSM)
other approvals	GSM/GPRS module with GCF approval
	PTCRB
Approvals	for all EU countries
	Approvals for other countries on request

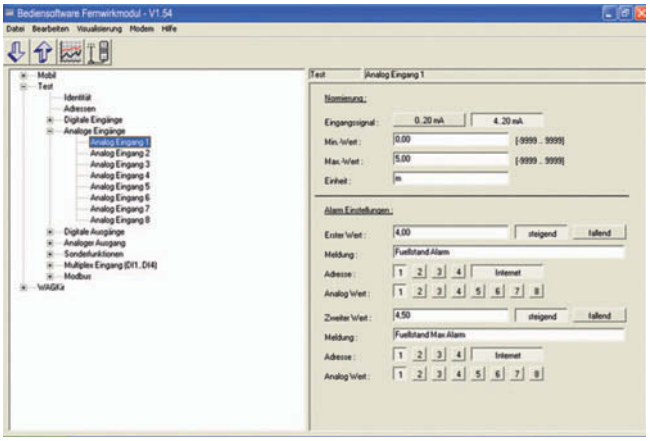
Technical Data

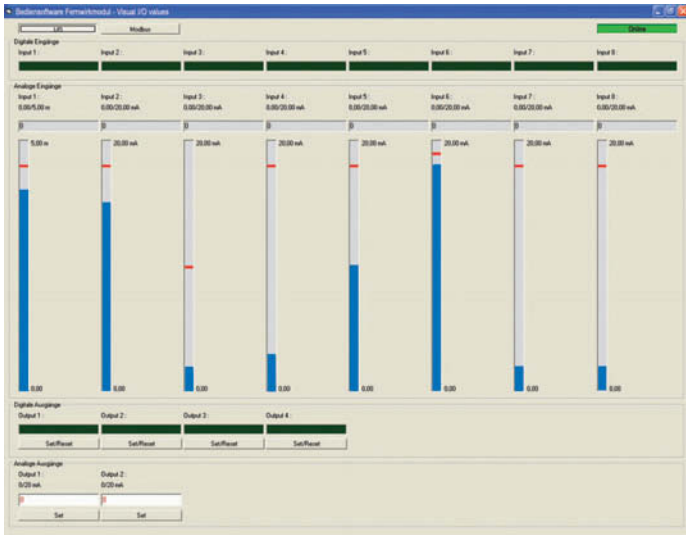
Dimensions (mm) W x H x L	45 x 99 x 114.5
	Height from upper-edge of DIN 35 rail
Weight	280 g
Operating temperature	-20 °C ... +55 °C
Relative air humidity (no condensation)	95 %
Mounting	DIN 35 rail
Housing material	PC
Degree of protection	IP20 acc. to DIN 40050

Technical Data

Application interface	10/100 Base-T (RJ-45 socket) ETHERNET
	IEEE802
Baud rate	10/100 Mbit/s; Auto Cross Over
Service port	USB-A
Voltage supply	12 V ... 30 V DC (24 V DC nominal)
Input current	typ. 365 mA ... 180 mA
	Idle mode: 174 mA ... 120 mA
	(connection, no data transfer)
	Burst: 1.26 A (at full transmitter power)
Burst repeat rate	4.62 ms
Power consumption P (max.)	4.4 W (12 V); 4.0 W (24 V); 5.5 W (60 V)
Input voltage	Relay, 5 V ... 30 V DC, potential-free
Output voltage	max. 30 V DC
Output current (max.)	20 mA
EDGE* (EGPRS) connection	Class 12, up to 4 uplinks/downlinks,
	max. 5 slots;
	Coding process:
	MCS-1 to 9; Mobile station class B
GPRS connection	Class 12, up to 4 uplinks/downlinks,
	max. 5 slots;
	Coding process: CS-1, CS-2, CS-3, CS-4;
	Mobile station class B;
	Full PBCCH support
CSD/MTC connection	V.110, RLP, non-transparent 2.4, 4.8, 9.6,
	14.4 kbps; SMS (TX): Point-to-point MO
Transmitter power	Quad band; GSM 850/900 MHz:
	max. 2 watts
	DCS 1800 MHz/PCS 1900 MHz:
	max. 1 watt
Antenna connection	Nominal impedance: 50 Ω, socket: SMA

TO-PASS® Configuration Software





Software used to configure both 761-1xx and 761-2xx telecontrol modules. Compatible with Windows 2000, XP and Vista. Communication to the modules via RS-232 port, USB port (via USB adapter, included in accessories) or external GSM modem (see accessories).

- Intuitive parametrization of modules, without previous programming experience
- Display of current process values
- Line diagram for both data and event loggers
- Test of module's GSM received intensity
- Documentation and archival of configuration data
- "Fast Copy" function for the multiplication of configuration data
- German and English language interfaces

Description	Item No.	Pack. Unit
Configuration software for 761-1xx and 761-2xx telecontrol modules	**759-930**	

Technical Data	
System requirements:	
PC	Pentium 500 MHz or faster
Operating system	Microsoft® Windows 2000®; Microsoft® Windows XP Professional®; Microsoft® Windows Vista®
RAM memory	min. 512 MByte (Microsoft® Windows XP; Microsoft® Windows 2000®); min. 1 GByte (Microsoft® Windows Vista®)
Hard disk storage	min. 5 Mbytes
CD-ROM	required
Graphics resolution	min. 1024 x 768
Mouse	required
Other	Serial interface
Included:	CD-ROM with software and documentation
Additional requirements:	Configuration cable

Accessories for Telecontrol Modules, 761 Series





Description		Item No.	Pack. Unit
Dipole antenna with 2.5 m cable		761-9001	1
Theft-proof antenna with 2.5 m cable and FME (f) plug		761-9002	1
Rod antenna, long		761-9003	1
Connection cable for rod antenna, 6 m long		761-9004	1
Magnetic foot antenna with 2.5 m connecting cable and SMA right-angle plug		758-910	1


Description		Item No.	Pack. Unit
USB adapter with 1 m connection cable		761-9005	1
Dual-band GSM modem	incl. power supply unit	761-9006	1


Description		Item No.	Pack. Unit
Power supply unit/charge regulator	115 V ... 230 V AC to 24 V DC 1 A, also for battery operation	761-9007	1
Battery	12 VDC 1.2 Ah lead-acid	761-9008	1

TO-PASS® Outdoor

TO-PASS® Outdoor is a compact unit for the installation of TO-PASS® telecontrol modules in an IP 66 enclosure with an integrated GSM antenna, 230 V AC to 24 V DC power supply unit, power failure protection provided by 2 batteries and terminal block connections for the supply of additional sensors (TO-PASS® telecontrol modules are not a component of the delivery).

Description	Item No.	Pack. Unit
Outdoor enclosure	**761-9009**	1

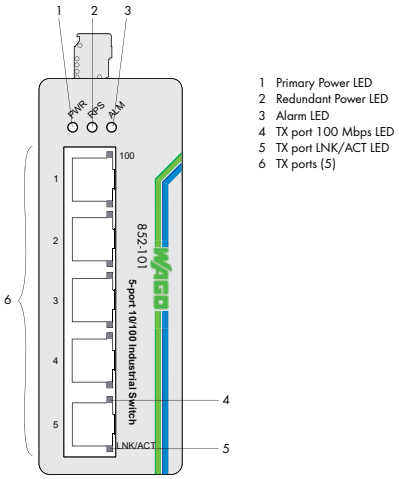
Technical Data	
Degree of protection	IP66
Enclosure	Polycarbonat
Supply $S_{ant, in}$	Wide range of input voltages
	85 V ... 264 V AC,
	120 V ... 375 V DC
Energy consumption	approx. 2.9 W at 230 VAC
	(for full batteries and a *TO-PASS*®
	module without sensors and heating)
Battery capacity	24 V / 1.2 Ah
Heating	8 W
Heater switch	at 3 °C ON, at 15 °C OFF
Dimensions (mm) W x H x L	
incl. cable grips	280 x 130 x 310
	Wide range of input voltages
Weight	3405.497 g
Cable grip	10 x M16, 2 x M25
Assembly	4 x drilled holes of 7mm diameter

WAGO Application: Francia Mozzarella, Tempelhof Plant

WAGO Products:
WAGO-I/O-SYSTEM with PROFIBUS Couplers

4

5-Port 100BASE-TX Industrial Switch



1 Primary Power LED
2 Redundant Power LED
3 Alarm LED
4 TX port 100 Mbps LED
5 TX port LNK/ACT LED
6 TX ports (5)

The 852-101 Industrial Switch is a 5-port 10/100Base-TX ETHERNET switch. The switch has a rugged housing, a redundant power supply and function monitoring with relay, making it ideal for a wide range of applications.

Features:

- Redundant DC power supply
- Wide supply voltage range: 9 V ... 48 V
- DIP switch enables alarm functions
- Full compliance with IEEE802.3, 802.3u stantards
- Non-blocking, store-and-forward switching
- Auto-negotiation on all 10/100Base-TX ports
- Auto-MDI/MDIX (crossover) on all 10/100Base-TX ports

Description	Item No.	Pack. Unit
5-Port 100BASE-TX Industrial Switch	**852-101**	1

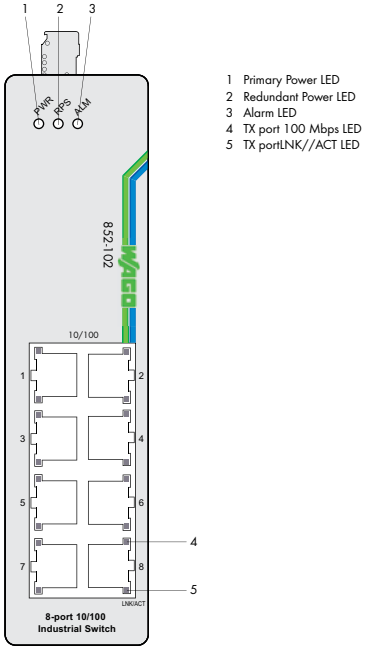
Approvals

UL 508

Technical Data

Ports	5 x 10/100Base-TX (RJ-45)
Standards	IEEE 802.3u 100Base-TX;
	IEEE 802.3 10Base-T
Maximum distances	10/100Base-TX: 100 m
Supply voltage	9 V ... 48 V DC (line length < 30 m)
Energy consumption max.	3.84 W
Energy consumption typ. (24 V)	3.36 W
Operating temperature	0 °C ... +60 °C
Storage temperature	-20 °C ... +80 °C
Relative air humidity (no condensation)	95 %
Dimensions (mm) W x H x L	50 x 120 x 105
	Height from upper-edge of DIN 35 rail
Weight	639 g
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP30
EMC 1-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC 1-Emission of interference	acc. to EN 61000-6-4 (2001)

8-Port 100BASE-TX Industrial Switch



The 852-102 Industrial Switch is an 8-port 10/100Base-TX ETHERNET switch.
The switch has a rugged housing, a redundant power supply and function monitoring with relay, making it ideal for a wide range of applications.

Features:
- Redundant DC power supply
- Large supply voltage range: 9 V ... 48 V
- DIP switch enables alarm functions
- Full compliance with IEEE802.3, 802.3u stantards
- Non-blocking, store-and-forward switching
- Auto-negotiation on all 10/100Base-TX ports
- Auto-MDI/MDIX (crossover) on all 10/100Base-TX ports

Description	Item No.	Pack. Unit
8-Port 100BASE-TX Industrial Switch	**852-102**	1

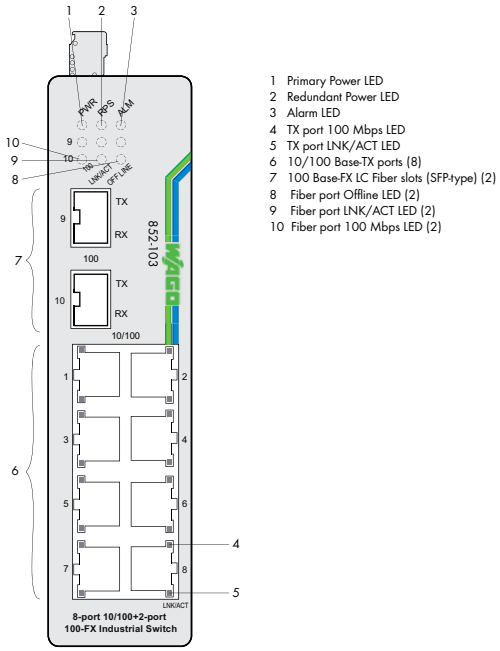
Approvals

UL 508

Technical Data

Ports	8 x 10/100Base-TX (RJ-45)
Standards	IEEE 802.3u 100Base-TX;
	IEEE 802.3 10Base-T
Throughputs	14,880/148,800 packets per second
	(pps) to 10/100 Mbps ports
Maximum distances	10/100Base-TX: 100 m
Supply voltage	9 V ... 48 V DC (line length < 30 m)
Energy consumption max.	5.28 W
Energy consumption typ. (24 V)	4.56 W
Operating temperature	0 °C ... +60 °C
Storage temperature	-20 °C ... +80 °C
Relative air humidity (no condensation)	95 %
Dimensions (mm) W x H x L	50 x 162 x 120
	Height from upper-edge of DIN 35 rail
Weight	909 g
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP30
EMC 1-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC 1-Emission of interference	acc. to EN 61000-6-3 (2001)

8-Port 100BASE-TX + 2-Slot 100BASE-FX Industrial Switch



The 852-103 Industrial Switch is an 8-port 10/100Base-TX with dual SFP 100Base-FX port (SFP modules are optional) ETHERNET switch.
The switch has a rugged housing, a redundant power supply and function monitoring with relay, making it ideal for a wide range of applications.

Features:

- Redundant DC power supply
- Large supply voltage range: 9 V ... 48 V
- DIP switch enables alarm functions
- Full compliance with IEEE802.3, 802.3u stantards
- Non-blocking, store-and-forward switching
- Auto-negotiation on all 10/100Base-TX ports
- Auto-MDI/MDIX (crossover) on all 10/100Base-TX ports

Description	Item No.	Pack. Unit
8/2 Port 100BASE-TX/FX Industrial Switch	**852-103**	1

Accessories	Item No.
SFP Module 2: 1310nm, 100Base-FX Multi-mode LC, 2 km	**852-201/107-002**
SFP Module 30: 1310nm, 100Base-FX Single-mode LC, 30 km	**852-201/107-030**

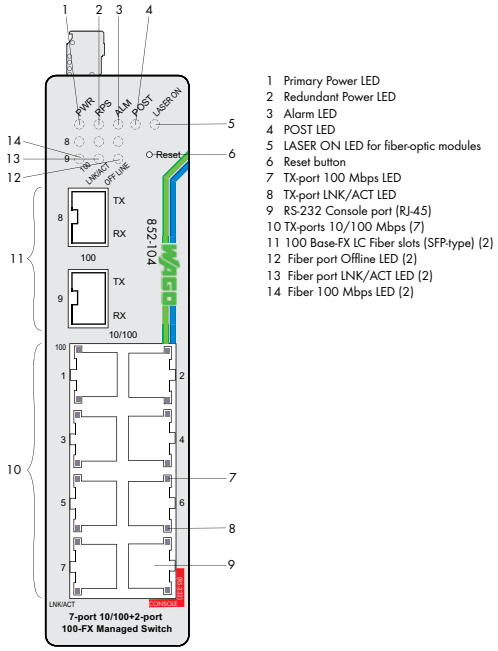
Approvals

UL 508

Technical Data

Ports	8 x 10/100Base-TX (RJ-45); 2 x SFP 100Base-FX Fiber
Standards	IEEE 802.3u 100Base-TX/FX; IEEE 802.3 10Base-T
Throughputs	14,880/148,800 packets per second (pps) to 10/100 Mbps ports
Wavelength (optical fibers)	depend on SFP module
Maximum distances	10/100Base-TX: 100 m; Fiber optic: up to 30 km
Supply voltage	9 V ... 48 V DC (line length < 30 m)
Energy consumption max.	6.08 W
Energy consumption typ. (24 V)	5.76 W
Operating temperature	0 °C ... +60 °C
Storage temperature	-20 °C ... +80 °C
Relative air humidity (no condensation)	95 %
Dimensions (mm) W x H x L	50 x 162 x 120
	Height from upper-edge of DIN 35 rail
Weight	922 g
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP30
EMC 1-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC 1-Emission of interference	acc. to EN 61000-6-4 (2001)

7-Port 100BASE-TX + 2-Slot 100BASE-FX Industrial Managed Switch



The 852-104 Industrial Switch is a 7-port 10/100Base-TX with dual SFP 100Base-FX port (SFP modules are optional) configurable ETHERNET switch. The switch has a rugged housing, a redundant power supply and function monitoring with relay. These functions along with extensive ETHERNET switch options make it ideal for a wide range of applications.

Features:
- Web-based/SNMP management
- Redundant DC power supply
- Large supply voltage range: 9 V ... 48 V
- DIP switch to enable alarm functions
- Full compliance with IEEE802.3, 802.3u, 802.3x,802.1d, 802.1q, 802.1p standards
- Xpress Ring (redundant ring recovery < 50 ms)
- Non-blocking, store-and-forward switching
- Auto-negotiation on all 10/100Base-TX ports
- Auto-MDI/MDIX (crossover) on all 10/100Base-TX ports
- VLAN (802.1q) VID
- IGMP Snooping for multicast filtering
- Port configuration, status, statistics
- Port Trunking
- SNMP v1/v2 and RMON

Description	Item No.	Pack. Unit
7/2-Port 100BASE-TX/FX Industrial Managed Switch	**852-104**	1

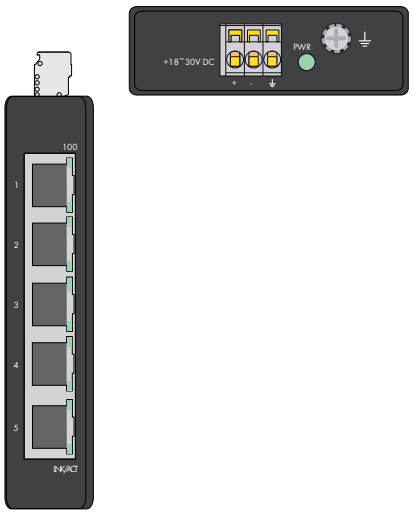
Accessories	Item No.
SFP Module 2: 1310nm, 100Base-FX Multi-mode LC, 2 km	**852-201/107-002**
SFP Module 30: 1310nm, 100Base-FX Single-mode LC, 30 km	**852-201/107-030**

Approvals

UL 508

Technical Data	
Ports	7 x 10/100Base-TX (RJ-45);
	2 x SFP 100Base-FX Fiber;
	1 x RS-232 (RJ-45)
Standards	IEEE 802.3u 100Base-TX/FX;
	IEEE 802.3ad Port Trunking;
	IEEE 802.3 10Base-T;
	IEEE 802.1d Spanning Tree Protocol;
	IEEE 802.3x Flow Control;
	IEEE 802.1p Priority Queues;
	IEEE 802.1q VLAN Tagging
MAC table	Up to 2K addresses
VLANs	Port-based and Tag-based (64VIDs)
Throughputs	14,880/148,800 packets per second
	(pps) to 10/100 Mbps ports
Wavelength (optical fibers)	depend on SFP module
Maximum distances	10/100Base-TX: 100 m;
	Fiber optic: up to 30 km;
	RS-232: 15 m
Supply voltage	9 V ... 48 V DC (line length < 30 m)
Energy consumption max.	10.08 W
Energy consumption typ. (24 V)	8.4 W
Operating temperature	0 °C ... +60 °C
Storage temperature	-20 °C ... +80 °C
Relative air humidity (no condensation)	95 %
Dimensions (mm) W x H x L	50 x 162 x 120
	Height from upper-edge of DIN 35 rail
Weight	1050 g
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP30
EMC 1-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC 1-Emission of interference	acc. to EN 61000-6-4 (2001)

5-Port 100BASE-TX Industrial Eco Switch



The 852-111 has 5 ports with each port featuring Auto-negotiation and auto MDI/MDI-X detection. Existing 10Mbps networks can now be upgraded effortlessly to higher speed 100Mbps Fast ETHERNET networks.
The 852-111 5-port density can be used to create multiple segments to alleviate client congestion and provide dedicated bandwidth to each user node. The 852-111 is a cost-effective solution to keep up with the constant demands for emerging IP-based industry communication needs.
The switch can be easily configured and installed and is also ideally suited for small to medium-sized networks.

Features:
- 5-port 10/100 Mbps Auto-negotiation ETHERNET ports
- Comprehensive front-panel diagnostic LEDs
- Supports Auto-MDI/MDI-X
- Full/half-duplex transfer modes for each port
- Wire speed reception and transmission
- Store-and-forward switching method
- Integrated address Look-Up Engine, supports 2K absolute MAC addresses
- Supports surge protection
- IEEE 802.3x flow control for fullduplex
- Supports DIN 35 rail

Description	Item No.	Pack. Unit
5-Port 100BASE-TX Industrial Eco Switch	**852-111**	1

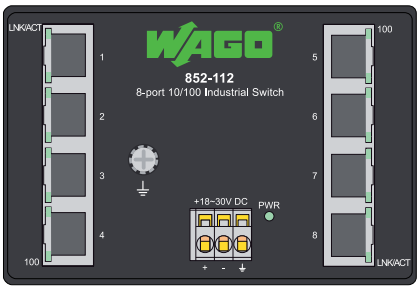
Approvals

UL 508

Technical Data

Ports	5 x 10/100Base-TX (RJ-45)
Standards	IEEE 802.3 10Base-T;
	IEEE 802.3u 100Base-TX/FX;
	IEEE 802.3x Flow Control
Topology	Star
LED	each device:
	1 x Power (PWR), green;
	each port:
	1 x Link/Activity (LNK/ACT), green;
	1 x Speed (100 Mbps), green
Supply voltage	18 V ... 30 V DC
Energy consumption max.	3 W
Operating temperature	0 °C ... +60 °C
Storage temperature	-20 °C ... +80 °C
Relative air humidity (no condensation)	95 %
Dimensions (mm) W x H x L	23.4 x 73.8 x 109.2
	Height from upper-edge of DIN 35 rail
Mounting	DIN 35 rail
Weight	350 g

8-Port 100BASE-TX Industrial Eco Switch



852-112 has 8 ports with each port featuring Auto-negotiation and Auto MDI/MDI-X detection. Existing 10Mbps networks can now be upgraded effortlessly to higher speed 100Mbps Fast ETHERNET networks.
The 852-112 8-port density can be used to create multiple segments to alleviate client congestion and provide dedicated bandwidth to each user node. The 852-112 is a cost-effective solution to keep up with the constant demands for emerging IP-based industry communication needs.
The switch can be easily configured and installed and is also ideally suited for small to medium-sized networks.

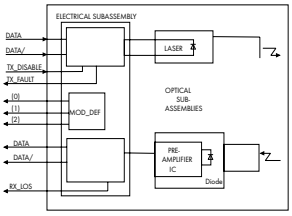
Features:

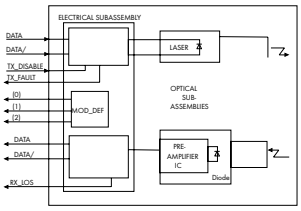
- 8-port 10/100 Mbps Auto-negotiation ETHERNET ports
- Comprehensive front-panel diagnostic LEDs
- Supports Auto-MDI/MDI-X
- Full/half-duplex transfer modes for each port
- Wire speed reception and transmission
- Store-and-forward switching method
- Integrated address Look-Up Engine, supports 2K absolute MAC addresses
- Supports surge protection
- IEEE 802.3x flow control for fullduplex
- Supports DIN 35 rail

Description	Item No.	Pack. Unit
8-Port 100BASE-TX Industrial Eco Switch	**852-112**	1

Technical Data	
Ports	8 x 10/100Base-TX (RJ-45)
Standards	IEEE 802.3 10Base-T;
	IEEE 802.3u 100Base-TX/FX;
	IEEE 802.3x Flow Control
Topology	Star
LED	each device:
	1 x Power (PWR), green;
	each port:
	1 x Link/Activity (LNK/ACT), green;
	1 x Speed (100 Mbps), green
Supply voltage	18 V ... 30 V DC
Energy consumption max.	3 W
Operating temperature	0 °C ... +60 °C
Storage temperature	-20 °C ... +80 °C
Relative air humidity (no condensation)	95 %
Dimensions (mm) W x H x L	109.2 x 23.4 x 73.8
	Height from upper-edge of DIN 35 rail
Mounting	DIN 35 rail
Weight	415 g

SFP Modules 100Base-FX LC





ETHERNET via fiber optic cables offers a multitude of advantages for industrial applications.
High immunity to interference, electrical isolation, and long ranges are important parameters here.

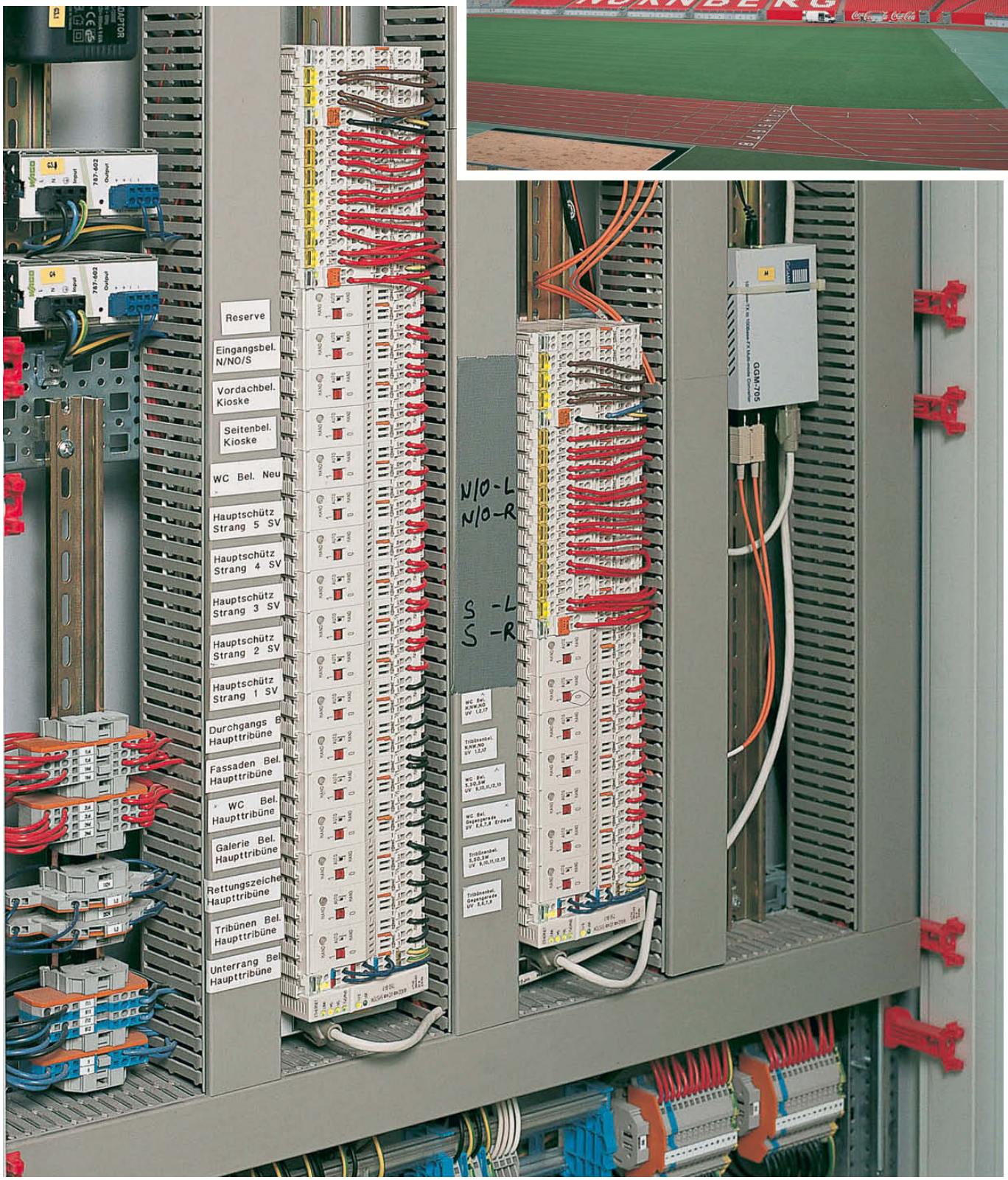
Description		Item No.	Pack. Unit
SFP Module 2: 1310nm,	Connector Duplex LC,	**852-201/107-002**	1
100Base-FX Multi-mode LC, 2 km	Wavelength 1310 nm,		
	Fiber type Multi-mode 62.5/125 µm, 50/125 µm,		
	Maximum distances 2000 m,		
	Operating temperature 0 °C ... +60 °C,		
	Storage temperature -20 °C ... +80 °C,		
	Dimensions (mm) W x H x D: 13.4 x 13.3 x 56.6;		
	Laser Class 1 acc. to EN 60825-1		
SFP Module 30: 1310nm,	Connector Duplex LC,	**852-201/107-030**	1
100Base-FX Single-mode LC, 30 km	Wavelength 1310 nm,		
	Fiber type Single-mode 9/125 µm,		
	Maximum distances 30000 m,		
	Operating temperature 0 °C ... +60 °C,		
	Storage temperature -20 °C ... +80 °C,		
	Dimensions (mm) W x H x D: 13.4 x 13.3 x 56.6;		
	Laser Class 1 acc. to EN 60825-1		

Characteristics:

- Duplex LC optical connector
- Industry standard small form pluggable (SFP) package
- Compliant with Fast ETHERNET standard;
- Differential LVPECL inputs and outputs;
- Single 3.3V power supply;
- TTL signal detect indicator;
- Hot pluggable capability

WAGO Application: Lighting Control System, easyCredit Stadium in Nuremberg, Germany

WAGO Products:
WAGO-I/O-SYSTEM with ETHERNET Controllers,
Power Supply Units and
Rail-Mounted Terminal Blocks



5

PERSPECTO – Monitors and Panels

Perfect Integration into the WAGO-I/O-SYSTEM

PERSPECTO is a comprehensive WAGO monitor and panel system for operating and monitoring the process data of machines, systems and control technology.

PERSPECTO is optimized
Ideally suited to one another, the WAGO-I/O-SYSTEM and PERSEPCT guarantee smooth, trouble-free communication with a controller or the system's IPC.

PERSPECTO is flexible
Available for a variety of sizes as a Web, visualization or automaton panel model, PERSPECTO provides solutions to suit any customer need.

PERSPECTO is fast
Enhanced runtime systems and programs guarantee consistently high performance.

PERSPECTO is adaptable
Customer-driven designs, complete with reconfigurable displays, enable PERSPECTO units to seamlessly integration into virtually any application.

Clearly in view and clearly in control

Clear Advantages

- Tuned for the WAGO-I/O-SYSTEM
- Expert support from product specialists
- Short boot time
- High computing power
- Outstanding energy efficiency
- Monitor sizes from 3.5″ to 15″
- Flat design
- Multiple interfaces
- Optional IEC-61131-compatible control functionality

The WAGO software package for creating visualization and control applications

PERSPECTO TM

for the display
of IPC content

***PERSPECTO* TM - Touch Monitor**
The Touch Monitors directly connect to DVI-D and USB interfaces. They are an ideal addition to the WAGO-I/O-IPC. The content shown is processed and saved on the connected controller.

PERSPECTO VP

with integrated HMI runtime for
especially short reaction times

***PERSPECTO*-VP - Visu Panel**
The Visu Panel has a special HMI runtime with particularly short response times for optimal connection to the WAGO-I/O- SYSTEM controllers. Web visualization is available during configuration.

PERSPECTO WP

for controllers with
Web servers

***PERSPECTO* WP - Web Panel**
The display of CoDeSys 2.3 Web visualization is optimized for the Web Panel

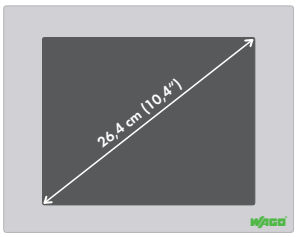
PERSPECTO CP

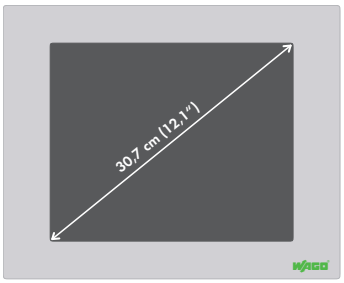
with HMI runtime and CoDeSys
for independent automation

***PERSPECTO*-CP - Control Panel**
In addition to the HMI, the Control Panel also has a CoDeSys runtime, making it a full-fledged automation device. It provides configurable functions for operation and monitoring, and independently performs control tasks.

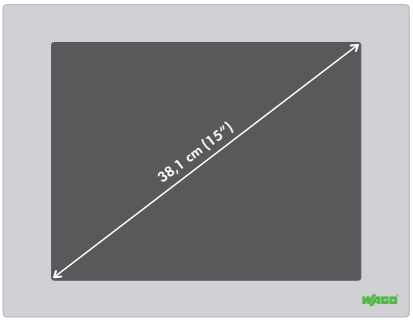
PERSPECTO TM - Touch Monitor

The Touch Monitors directly connect to DVI-D and USB interfaces. They are an ideal addition to the WAGO-I/O-IPC. The content shown is processed and saved on the connected controller.





Description	Description	Item No.	Pack. Unit	Description	Item No.	Pack. Unit
***PERSPECTO* TM, Touch Monitor**	TM 104 VGA	**762-104**	1	TM 121 SVGA	**762-121**	1
Technical Data						
Display type	TFT			TFT		
Screen size (diagonal)	26,4 cm (10.4")			30.7 cm (12.1")		
Display colors	65.536 colors			65.536 colors		
Graphics resolution	640 x 480 pixels			800 x 600 pixels		
Contrast ratio	500:1			500:1		
Viewing angle, horizontal/vertical	-65° ... 65° / -45° ... 65°			-65° ... 65° / -75° ... 45°		
Brightness	430 cd/m²			400 cd/m²		
Display MTBF	50000 hrs.			50000 hrs.		
Panel	Touch screen (analog, resistive)			Touch screen (analog, resistive)		
Light transmission	typ. 80 %			typ. 80 %		
Durability	10 million finger touches			10 million finger touches		
Interfaces (USB)	2 x USB 2.0 (Type A), 1 x USB Device (Type B)			2 x USB 2.0 (Type A), 1 x USB Device (Type B)		
Interfaces (DVI)	1 x DVI-D			1 x DVI-D		
Display setting	OSD, 5 buttons (back)			OSD, 5 buttons (back)		
Front panel	Anodized aluminum, natural, polyester film			Anodized aluminum, natural, polyester film		
Housing material	Sheet steel, painted			Sheet steel, painted		
Dimensions (W x H x D)	284 x 222 x 59 mm			330 x 268 x 60 mm		
Panel cutout (W x H)	268 x 206 mm			312 x 250 mm		
Mounting	6 x clamping elements			6 x clamping elements		
Voltage supply	24 V DC (18 V ... 30 V)			24 V DC (18 V ... 30 V)		
Max. input current (24 V)	500 mA			500 mA		
Operating power	10 W ... 18 W			10 W ... 18 W		
Operating temperature	0 °C ... +50 °C			0 °C ... +50 °C		
Storage temperature	-10 °C ... +60 °C			-10 °C ... +60 °C		
Relative air humidity (no condensation)	10 % ... 85 %			10 % ... 85 %		
Weight	2100 g			2600 g		
Degree of protection	Front IP65, back IP20			Front IP65, back IP20		
Approvals	CE, cULus pending			CE, cULus pending		
Accessories	see pages 396 ...399			see pages 396 ...399		



Description	Description	Item No.	Pack. Unit	
***PERSPECTO* TM, Touch Monitor**	TM 150 XGA	**762-150**	1	

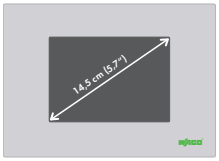
Technical Data

Display type	TFT	
Screen size (diagonal)	38.1 cm (15")	
Display colors	16 million colors	
Graphics resolution	1024 x 768 pixels	
Contrast ratio	500:1	
Viewing angle, horizontal/vertical	-75° ... 75° / -60° ... 60°	
Brightness	250 cd/m²	
Display MTBF	50000 hrs.	
Panel	Touch screen (analog, resistive)	
Light transmission	typ. 80 %	
Durability	35 million finger touches	
Interfaces (USB)	2 x USB 2.0 (Type A), 1 x USB Device (Type B)	
Interfaces (DVI)	1 x DVI-D	
Display setting	OSD, 5 buttons (back)	
Front panel	Anodized aluminum, natural, polyester film	
Housing material	Sheet steel, painted	
Dimensions (W x H x D)	398 x 306 x 61 mm	
Panel cutout (W x H)	383 x 291 mm	
Mounting	6 x clamping elements	
Voltage supply	24 V DC (18 V ... 30 V)	
Max. input current (24 V)	1000 mA	
Operating power	20 W ... 28 W	
Operating temperature	0 °C ... +50 °C	
Storage temperature	-10 °C ... +60 °C	
Relative air humidity (no condensation)	10 % ... 85 %	
Weight	3000 g	
Degree of protection	Front IP65, back IP20	
Approvals	CE, cULus pending	
Accessories	see pages 396 ...399	

PERSPECTO WP - Web Panel

Featuring specialized software, the Web Panel functions as Web browser, connecting a controller with its own Web server. The display of CoDeSys 2.3 Web visualization is optimized for the Web Panel.

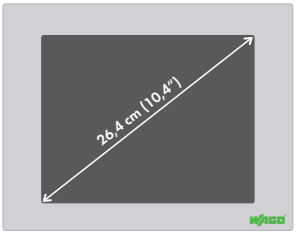
Software configuration:
- **Internet browser**
- **Java Virtual Machine**
- **Panel configuration software**

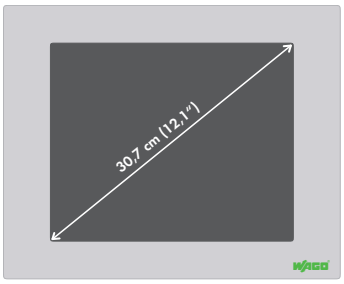


Description	Description	Item No.	Pack. Unit	Description	Item No.	Pack. Unit
***PERSPECTO* WP, Web Panel**	WP 35 QVGA	**762-1035**	1	WP 57 QVGA	**762-1057**	1

Technical Data

Display type	TFT	CSTN
Screen size (diagonal)	8.9 cm (3.5")	14.5 cm (5.7")
Display colors	32.768 colors	4.096 colors
Graphics resolution	320 x 240 pixels	320 x 240 pixels
Contrast ratio	min. 150, typ. 250	35:1
Viewing angle, horizontal/vertical	-45° ... 45° / -15° ... 35°	-10° ... 30° / -30° ... 30°
Brightness	3000 cd/m²	900 cd/m²
Display MTBF	10000 hrs.	10000 hrs.
Operating system	Windows CE 6.0	Windows CE 6.0
Processor	32-bit ARM9 200 MHz	32-bit ARM9 200 MHz
RAM / Flash / SRAM	64 Mbytes / 64 Mbytes / 1 Mbyte	64 Mbytes / 64 Mbytes / 1 Mbyte
Memory expansion	MicroSD card	SD card
Panel	Touch screen (analog, resistive)	Touch screen (analog, resistive)
Light transmission	typ. 80 %	typ. 75 %
Durability	100.000 stylus touches	100.000 stylus touches
Interfaces (USB)	1 x USB 2.0 Host (Type A)	2 x USB 2.0 Host (Type A)
Interface (ETHERNET)	1 x 10/100 Mbit RJ-45	1 x 10/100 Mbit RJ-45
Interface (CAN)	1 x CANopen RJ-45	1 x CANopen RJ-45
Interface (serial)	RS-485 integrated in CAN	1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485 D-Sub 9
Front panel	Plastic, polyester film	Plastic, polyester film
Housing material	plastic	plastic
Dimensions (W x H x D)	96 x 96 x 29 mm	208 x 150 x 42 mm
Panel cutout (W x H)	91 x 91 mm	198 x 140 mm
Mounting	4 x clamping elements	4 x clamping elements
Voltage supply	24 V DC (18 V ... 30 V)	24 V DC (18 V ... 30 V)
Max. input current (24 V)	250 mA	250 mA
Operating power	8 W ... 12 W	8 W ... 12 W
Operating temperature	0 °C ... +50 °C	0 °C ... +50 °C
Storage temperature	-10 °C ... +60 °C	-10 °C ... +60 °C
Relative air humidity (no condensation)	10 % ... 85 %	10 % ... 85 %
Weight	170 g	630 g
Degree of protection	Front IP65, back IP20	Front IP65, back IP20
Approvals	CE, cULus pending	CE, cULus pending
Accessories	see pages 396 ...399	see pages 396 ...399





Description	Description	Item No.	Pack. Unit	Description	Item No.	Pack. Unit
***PERSPECTO* WP, Web Panel**	WP 104 VGA	**762-1104**	1	WP 121 SVGA	**762-1121**	1

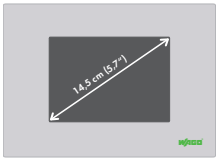
Technical Data

Display type	TFT	TFT
Screen size (diagonal)	26.4 cm (10.4")	30.7 cm (12.1")
Display colors	65.536 colors	65.536 colors
Graphics resolution	640 x 480 pixels	800 x 600 pixels
Contrast ratio	500:1	500:1
Viewing angle, horizontal/vertical	-65° ... 65° / -45° ... 65°	-65° ... 65° / -75° ... 45°
Brightness	430 cd/m²	400 cd/m²
Display MTBF	50000 hrs.	50000 hrs.
Operating system	Windows CE 5.0	Windows CE 5.0
Processor	32-bit XScale 520 MHz	32-bit XScale 520 MHz
RAM / Flash / SRAM	64 Mbytes / 32 Mbytes / 1 Mbyte	64 Mbytes / 32 Mbytes / 1 Mbyte
Memory expansion	CF card	CF card
Panel	Touch screen (analog, resistive)	Touch screen (analog, resistive)
Light transmission	typ. 80 %	typ. 80 %
Durability	10 million finger touches	10 million finger touches
Interfaces (USB)	2 x USB 2.0 Host (Type A)	2 x USB 2.0 Host (Type A)
Interface (ETHERNET)	1 x 10/100 Mbit RJ-45	1 x 10/100 Mbit RJ-45
Interface (CAN)	1 x CAN0 RJ-45, 1 x CAN1 D-Sub 9	1 x CAN0 RJ-45, 1 x CAN1 D-Sub 9
Interface (serial)	1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485/-422 D-Sub	1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485/-422 D-Sub
Front panel	Anodized aluminum, natural, polyester film	Anodized aluminum, natural, polyester film
Housing material	Sheet steel, painted	Sheet steel, painted
Dimensions (W x H x D)	284 x 222 x 46 mm	330 x 268 x 47 mm
Panel cutout (W x H)	268 x 206 mm	312 x 250 mm
Mounting	6 x clamping elements	6 x clamping elements
Voltage supply	24 V DC (18 V ... 30 V)	24 V DC (18 V ... 30 V)
Max. input current (24 V)	500 mA	500 mA
Operating power	10 W ... 18 W	10 W ... 18 W
Operating temperature	0 °C ... +50 °C	0 °C ... +50 °C
Storage temperature	-10 °C ... +60 °C	-10 °C ... +60 °C
Relative air humidity (no condensation)	10 % ... 85 %	10 % ... 85 %
Weight	2100 g	2600 g
Degree of protection	Front IP65, back IP20	Front IP65, back IP20
Approvals	CE, cULus pending	CE, cULus pending
Accessories	see pages 396 ...399	see pages 396 ...399

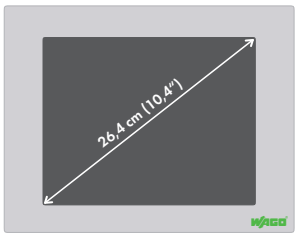
PERSPECTO VP - Visu Panel

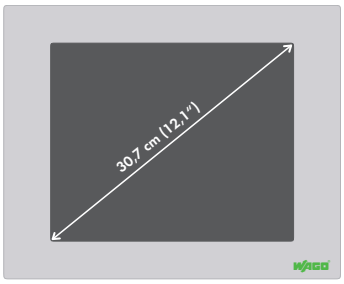
The Visu Panel has a special HMI runtime with particularly short response times for optimal connection to the WAGO-I/O- SYSTEM controllers. Web visualization is available during configuration.

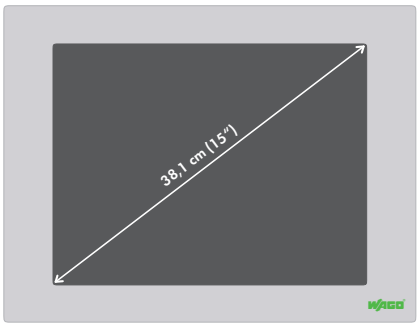
Software configuration:
- **HMI runtime**
- **Panel configuration software**



Description	Description	Item No.	Pack. Unit	Description	Item No.	Pack. Unit
***PERSPECTO* VP, Visu Panel**	VP 35 QVGA	**762-2035**	1	VP 57 QVGA	**762-2057**	1
Technical Data						
Display type	TFT			CSTN		
Screen size (diagonal)	8.9 cm (3.5")			14.5 cm (5.7")		
Display colors	32.768 colors			4.096 colors		
Graphics resolution	320 x 240 pixels			320 x 240 pixels		
Contrast ratio	min. 150, typ. 250			35:1		
Viewing angle, horizontal/vertical	-45° ... 45° / -15° ... 35°			-10° ... 30° / -30° ... 30°		
Brightness	3000 cd/m²			900 cd/m²		
Display MTBF	10000 hrs.			10000 hrs.		
Operating system	Windows CE 6.0			Windows CE 6.0		
Processor	32-bit ARM9 200 MHz			32-bit ARM9 200 MHz		
RAM / Flash / SRAM	64 Mbytes / 64 Mbytes / 1 Mbyte			64 Mbytes / 64 Mbytes / 1 Mbyte		
Memory expansion	MicroSD card			SD card		
Panel	Touch screen (analog, resistive)			Touch screen (analog, resistive)		
Light transmission	typ. 80 %			typ. 75 %		
Durability	100.000 stylus touches			100.000 stylus touches		
Interfaces (USB)	1 x USB 2.0 Host (Type A)			2 x USB 2.0 Host (Type A)		
Interface (ETHERNET)	1 x 10/100 Mbit RJ-45			1 x 10/100 Mbit RJ-45		
Interface (CAN)	1 x CANopen RJ-45			1 x CANopen RJ-45		
Interface (serial)	RS-485 integrated in CAN			1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485 D-Sub 9		
Front panel	Plastic, polyester film			Plastic, polyester film		
Housing material	plastic			plastic		
Dimensions (W x H x D)	96 x 96 x 29 mm			208 x 150 x 42 mm		
Panel cutout (W x H)	91 x 91 mm			198 x 140 mm		
Mounting	4 x clamping elements			4 x clamping elements		
Voltage supply	24 V DC (18 V ... 30 V)			24 V DC (18 V ... 30 V)		
Max. input current (24 V)	250 mA			250 mA		
Operating power	8 W ... 12 W			8 W ... 12 W		
Operating temperature	0 °C ... +50 °C			0 °C ... +50 °C		
Storage temperature	-10 °C ... +60 °C			-10 °C ... +60 °C		
Relative air humidity (no condensation)	10 % ... 85 %			10 % ... 85 %		
Weight	170 g			630 g		
Degree of protection	Front IP65, back IP20			Front IP65, back IP20		
Approvals	CE, cULus pending			CE, cULus pending		
Accessories	see pages 396 ...399			see pages 396 ...399		





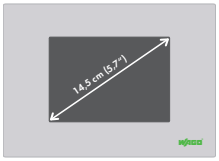


Description	Item No.	Pack. Unit	Description	Item No.	Pack. Unit	Description	Item No.	Pack. Unit
VP 104 VGA	**762-2104**	1	VP 121 SVGA	**762-2121**	1	VP 150 XGA	**762-2150**	1
TFT			TFT			TFT		
26.4 cm (10.4")			30.7 cm (12.1")			38.1 cm (15")		
65.536 colors			65.536 colors			16 million colors		
640 x 480 pixels			800 x 600 pixels			1024 x 768 pixels		
500:1			500:1			500:1		
-65° ... 65° / -45° ... 65°			-65° ... 65° / -75° ... 45°			-75° ... 75° / -60° ... 60°		
430 cd/m²			400 cd/m²			250 cd/m²		
50000 hrs.			50000 hrs.			50000 hrs.		
Windows CE 5.0			Windows CE 5.0			Windows CE 6.0		
32-bit XScale 520 MHz			32-bit XScale 520 MHz			Intel Atom® N270; 1.6 GHz		
64 Mbytes / 32 Mbytes / 1 Mbyte			64 Mbytes / 32 Mbytes / 1 Mbyte			256 Mbytes / 128 Mbytes / -		
CF card			CF card			CF card		
Touch screen (analog, resistive)			Touch screen (analog, resistive)			Touch screen (analog, resistive)		
typ. 80 %			typ. 80 %			typ. 80 %		
10 million finger touches			10 million finger touches			35 million finger touches		
2 x USB 2.0 Host (Type A)			2 x USB 2.0 Host (Type A)			4 x USB 2.0 Host (Type A)		
1 x 10/100 Mbit RJ-45			1 x 10/100 Mbit RJ-45			1 x 10/100/1000 Mbit RJ-45		
1 x CAN0 RJ-45, 1 x CAN1 D-Sub 9			1 x CAN0 RJ-45, 1 x CAN1 D-Sub 9			Option (RJ-45 or D-Sub 9)		
1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485/-422 D-Sub			1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485/-422 D-Sub			1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485/-422 D-Sub		
Anodized aluminum, natural, polyester film			Anodized aluminum, natural, polyester film			Anodized aluminum, natural, polyester film		
Sheet steel, painted			Sheet steel, painted			Sheet steel, painted		
284 x 222 x 46 mm			330 x 268 x 47 mm			398 x 306 x 77 mm		
268 x 206 mm			312 x 250 mm			383 x 291 mm		
6 x clamping elements			6 x clamping elements			6 x clamping elements		
24 V DC (18 V ... 30 V)			24 V DC (18 V ... 30 V)			24 V DC (18 V ... 30 V)		
500 mA			500 mA			1300 mA		
10 W ... 18 W			10 W ... 18 W			28 W ... 35 W		
0 °C ... +50 °C			0 °C ... +50 °C			0 °C ... +45 °C		
-10 °C ... +60 °C			-10 °C ... +60 °C			-10 °C ... +60 °C		
10 % ... 85 %			10 % ... 85 %			10 % ... 85 %		
2100 g			2600 g			3500 g		
Front IP65, back IP20			Front IP65, back IP20			Front IP65, back IP20		
CE, cULus pending			CE, cULus pending			CE, cULus pending		
see pages 396 ...399			see pages 396 ...399			see pages 396 ...399		

PERSPECTO CP - Control Panel

In addition to the HMI, the Control Panel also has a CoDeSys runtime, making it a full-fledged automation device. It provides configurable functions for operation and monitoring, and independently performs control tasks.

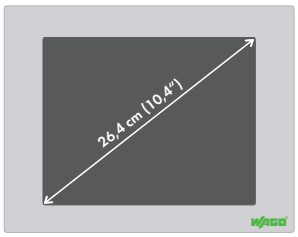
Software configuration:
- **HMI runtime**
- **PLC runtime**
- **Panel configuration software**

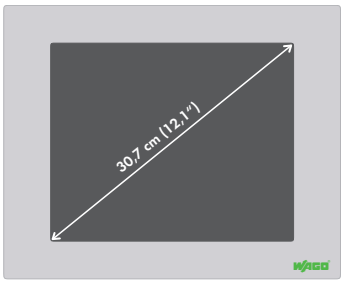


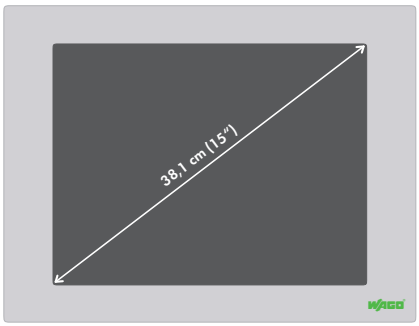
Description	Description	Item No.	Pack. Unit	Description	Item No.	Pack. Unit
***PERSPECTO* CP, Control Panel**	CP 35 QVGA	**762-3035**	1	CP 57 QVGA	**762-3057**	1

Technical Data

Display type	TFT	CSTN
Screen size (diagonal)	8.9 cm (3.5")	14.5 cm (5,7")
Display colors	32.768 colors	4.096 colors
Graphics resolution	320 x 240 pixels	320 x 240 pixels
Contrast ratio	min. 150, typ. 250	35:1
Viewing angle, horizontal/vertical	-45° ... 45° / -15° ... 35°	-10° ... 30° / -30° ... 30°
Brightness	3000 cd/m²	900 cd/m²
Display MTBF	10000 hrs.	10000 hrs.
Operating system	Windows CE 6.0	Windows CE 6.0
Processor	32-bit ARM9 200 MHz	32-bit ARM9 200 MHz
RAM / Flash / SRAM	64 Mbytes / 64 Mbytes / 1 Mbyte	64 Mbytes / 64 Mbytes / 1 Mbyte
Memory expansion	MicroSD card	SD card
Panel	Touch screen (analog, resistive)	Touch screen (analog, resistive)
Light transmission	typ. 80 %	typ. 75 %
Durability	100.000 stylus touches	100.000 stylus touches
Interfaces (USB)	1 x USB 2.0 Host (Type A)	2 x USB 2.0 Host (Type A)
Interface (ETHERNET)	1 x 10/100 Mbit RJ-45	1 x 10/100 Mbit RJ-45
Interface (CAN)	1 x CANopen RJ-45	1 x CANopen RJ-45
Interface (serial)	RS-485 integrated in CAN	1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485 D-Sub 9
Front panel	Plastic, polyester film	Plastic, polyester film
Housing material	plastic	plastic
Dimensions (W x H x D)	96 x 96 x 29 mm	208 x 150 x 42 mm
Panel cutout (W x H)	91 x 91 mm	198 x 140 mm
Mounting	4 x clamping elements	4 x clamping elements
Voltage supply	24 V DC (18 V ... 30 V)	24 V DC (18 V ... 30 V)
Max. input current (24 V)	250 mA	250 mA
Operating power	8 W ... 12 W	8 W ... 12 W
Operating temperature	0 °C ... +50 °C	0 °C ... +50 °C
Storage temperature	-10 °C ... +60 °C	-10 °C ... +60 °C
Relative air humidity (no condensation)	10 % ... 85 %	10 % ... 85 %
Weight	170 g	630 g
Degree of protection	Front IP65, back IP20	Front IP65, back IP20
Approvals	CE, cULus pending	CE, cULus pending
Accessories	see pages 396 ...399	see pages 396 ...399



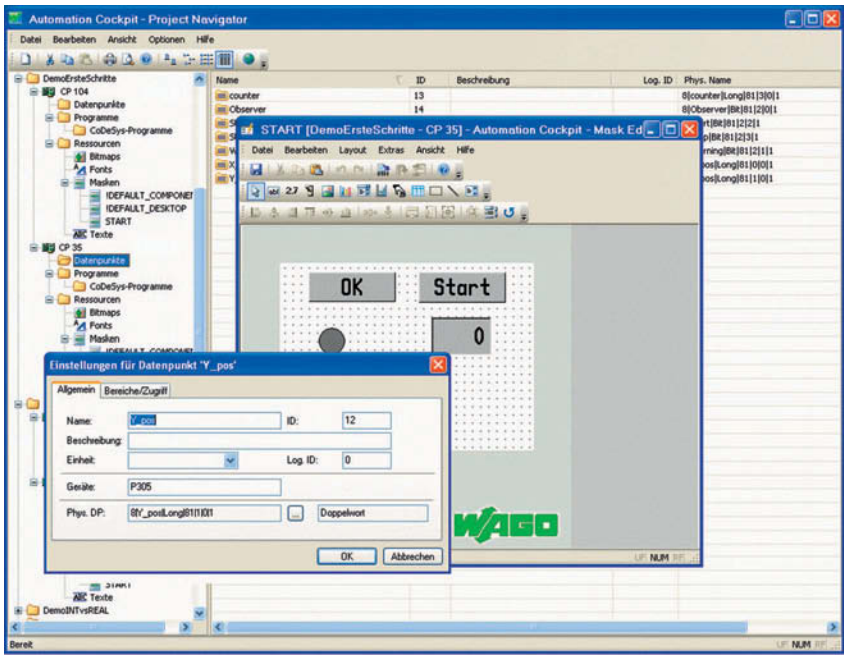




Description	Item No.	Pack. Unit	Description	Item No.	Pack. Unit	Description	Item No.	Pack. Unit
CP 104 VGA	**762-3104**	1	CP 121 SVGA	**762-3121**	1	CP 150 XGA	**762-3150**	1
TFT			TFT			TFT		
26.4 cm (10.4")			30.7 cm (12.1")			38.1 cm (15")		
65.536 colors			65.536 colors			16 million colors		
640 x 480 pixels			800 x 600 pixels			1024 x 768 pixels		
500:1			500:1			500:1		
-65° ... 65° / -45° ... 65°			-65° ... 65° / -75° ... 45°			-75° ... 75° / -60° ... 60°		
430 cd/m²			400 cd/m²			250 cd/m²		
50000 hrs.			50000 hrs.			50000 hrs.		
Windows CE 5.0			Windows CE 5.0			Windows CE 6.0		
32-bit XScale 520 MHz			32-bit XScale 520 MHz			Intel Atom® N270; 1.6 GHz		
64 Mbytes / 32 Mbytes / 1 Mbyte			64 Mbytes / 32 Mbytes / 1 Mbyte			256 Mbytes / 128 Mbytes / -		
CF card			CF card			CF card		
Touch screen (analog, resistive)			Touch screen (analog, resistive)			Touch screen (analog, resistive)		
typ. 80 %			typ. 80 %			typ. 80 %		
10 million finger touches			10 million finger touches			35 million finger touches		
2 x USB 2.0 Host (Type A)			2 x USB 2.0 Host (Type A)			4 x USB 2.0 Host (Type A)		
1 x 10/100 Mbit RJ-45			1 x 10/100 Mbit RJ-45			1 x 10/100/1000 Mbit RJ-45		
1 x CAN0 RJ-45, 1 x CAN1 D-Sub 9			1 x CAN0 RJ-45, 1 x CAN1 D-Sub 9			Option (RJ-45 or D-Sub 9)		
1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485/-422 D-Sub			1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485/-422 D-Sub			1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485/-422 D-Sub		
Anodized aluminum, natural, polyester film			Anodized aluminum, natural, polyester film			Anodized aluminum, natural, polyester film		
Sheet steel, painted			Sheet steel, painted			Sheet steel, painted		
284 x 222 x 46 mm			330 x 268 x 47 mm			398 x 306 x 77 mm		
268 x 206 mm			312 x 250 mm			383 x 291 mm		
6 x clamping elements			6 x clamping elements			6 x clamping elements		
24 V DC (18 V ... 30 V)			24 V DC (18 V ... 30 V)			24 V DC (18 V ... 30 V)		
500 mA			500 mA			1300 mA		
10 W ... 18 W			10 W ... 18 W			28 W ... 35 W		
0 °C ... +50 °C			0 °C ... +50 °C			0 °C ... +45 °C		
-10 °C ... +60 °C			-10 °C ... +60 °C			-10 °C ... +60 °C		
10 % ... 85 %			10 % ... 85 %			10 % ... 85 %		
2100 g			2600 g			3500 g		
Front IP65, back IP20			Front IP65, back IP20			Front IP65, back IP20		
CE, cULus pending			CE, cULus pending			CE, cULus pending		
see pages 396 ...399			see pages 396 ...399			see pages 396 ...399		

WAGO Automation Cockpit

Integrated development environment for all WAGO products



The integrated development environment features configuration, project design and programming for all WAGO devices. This includes the HMI devices, as well as couplers and controllers found in the WAGO-I/O-SYSTEM 750.
WAGO Automation Cockpit also serves as a central entry point for all available WAGO tools (e.g., ETHERNET-Settings, IO-CHECK, IO-Update).
Comprehensive project management makes network and device configuration possible.
The software ensures consistent data management within a project. All data points are input once and are then available within the project.
The IEC 61131 programming environment (CoDeSys software) is also integrated for device programming.

The version management of the installed CoDeSys software versions can be updated as another support from WAGO Automation Cockpit.

WAGO Automation Cockpit includes the following programs:
- 759-911 WAGO-I/O-PRO CAA
- 759-920 WAGO-I/O-CHECK

Description	Item No.	Pack. Unit
WAGO Automation Cockpit	**759-916**	1

Technical Data	
System requirements:	
PC	IBM compatible with Pentium processor
Operating system	Microsoft® Windows® 2000; Microsoft® Windows® XP
RAM memory	min. 128 Mbytes
Hard disk storage	min. 300 Mbytes
CD-ROM	required
Graphics resolution	800 x 600 with 16-bit color quality (High Color); 1024 x 768 with 24-bit color quality (True Color)
Mouse	required
Included:	CD ROM with software and documentation; communication cable

Windows® is a registered trademark of Microsoft Corporation

Accessories

Memory cards, connection cables and mounting sets

Memory Cards	Item No.	Pack. Unit
CF memory card	758-879/000-000	1
SD memory card	758-879/000-001	1
MicroSD memory card	758-879/000-002	1

Connection Cables	Item No.	Pack. Unit
DVI-D cable, 3 m	758-879/000-100	1
USB A-B cable, 3 m	758-879/000-101	1

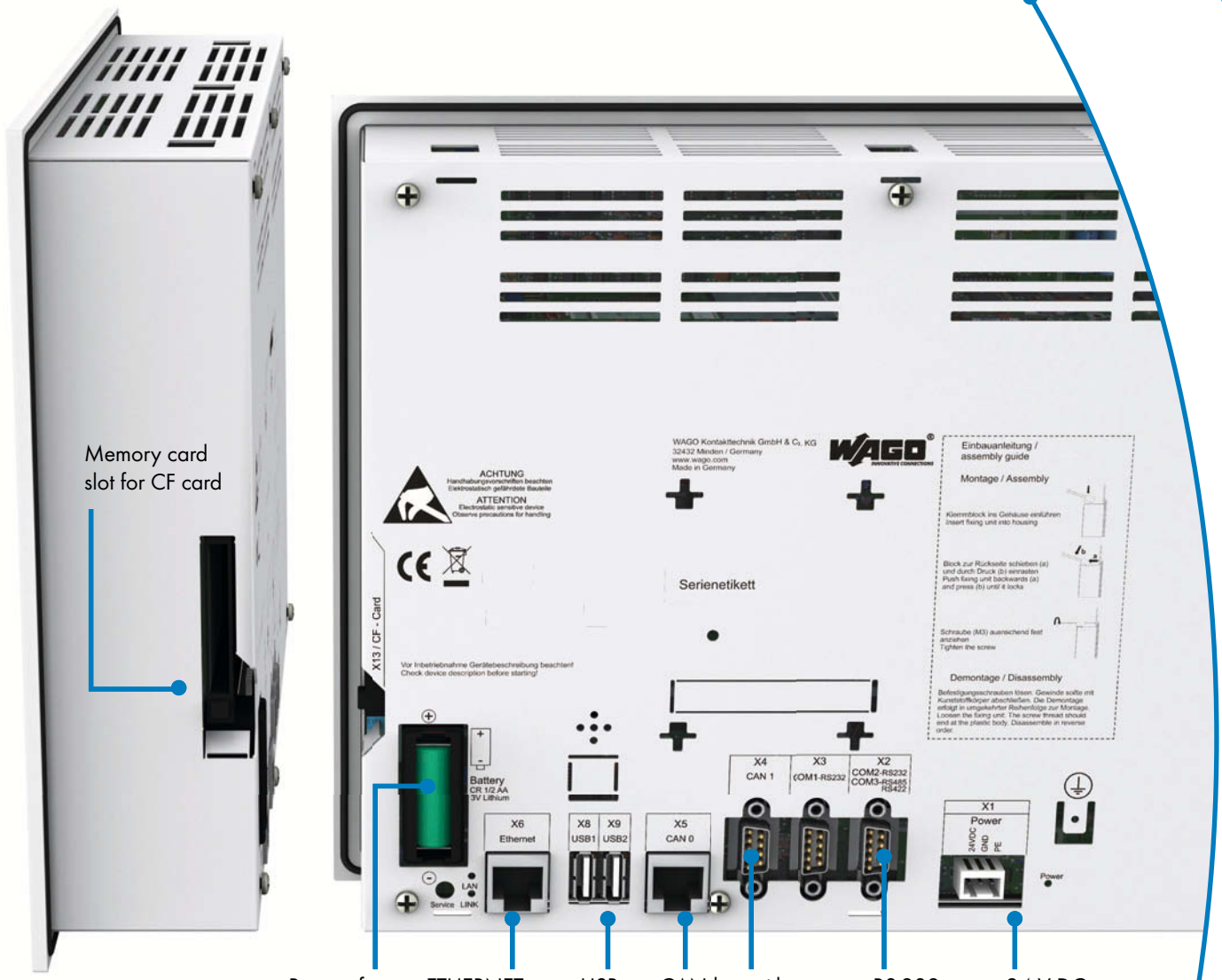
Mounting Sets	Item No.	Pack. Unit
Mounting set for plastic enclosure	758-879/000-300	1
Mounting set for metal enclosure	758-879/000-301	1

Out of sight, but always in reach

This is why *PERSPECTO* carries multiple interfaces, connection ports and other important elements on the back side.

3.5“ version

10.4“ version



Battery for data buffering in event of a power outage

ETHERNET 10 /100 Mbit RJ-45

USB host inter-faces

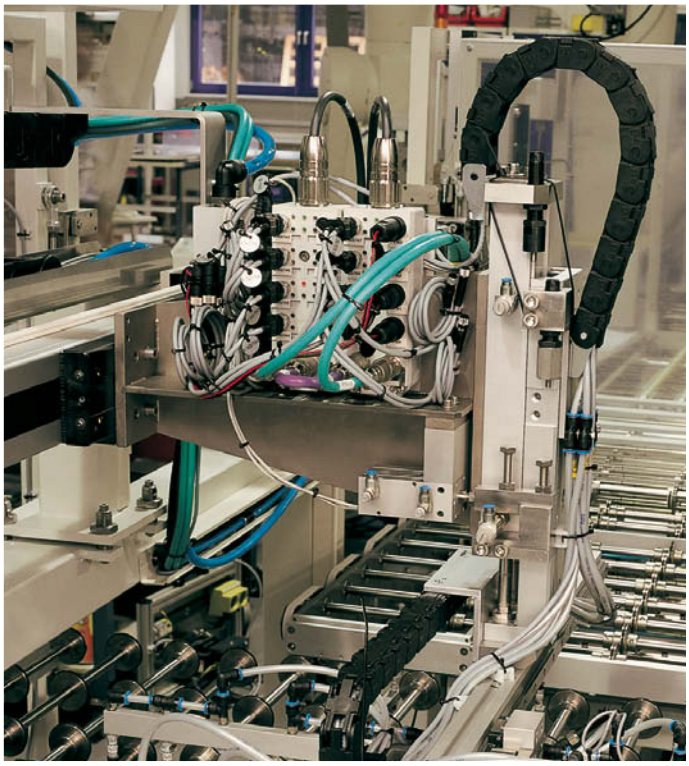
CAN bus with CANopen protocol

RS-232 or RS-485

24 V DC power supply

WAGO Application: Sieghard Schiller GmbH & Co. KG
Assembly line for the production of flat panel displays

WAGO Products:
WAGO-I/O-SYSTEM 755 for connection to PROFIBUS.



Perfection in Every Detail
WAGO = SPEEDWAY 767
the New Performance Standard for Automation without Control Cabinets

The move from parallel wiring toward fieldbus technology has revolutionized control and installation technology over the past decade. In the following years, even greater savings have been achieved for project engineering, assembly, commissioning and system operation through decentralized, IP67-protected and robust fieldbus components. Now, cabinet-free automation has established itself as an industrial standard.

In addition to requirements for a high degree of protection, a robust design and standardized connection technology, there is an increasing demand for highly functional IP67 features that were once only reserved for IP20 systems:

- Speed, synchrony
- Programmable in accordance with IEC 61131-3
- Safety functionality
- Diagnostic capability

Furthermore, machines and systems must be tailored to individual requirements despite the system being created in a very short amount of time. Customer requirements must be incorporated easily and rapidly and then the system must be designed and installed. This makes modular IP67 systems ideal as they are easily scalable and expandable. These systems allow machines to be first mounted in the factory, tested and then accepted by the customers. Then, they are dismantled, re-installed on customer's site and put into operation.

Overview of system features

Modular design
- Allows on-site signal acquisition and transmission per user requirements

High-performance data transfer
- Fast data exchange
- Individual performance adjustment
- Time-synchronous collection and transmission of signals

CoDeSys 3.0 programmable (IEC61131-3)
- Provides signal pre-processing, relief of higher-level control systems and improved system availability

FDT/DTM configuration
- Manufacturer-independent, standardized device management
- Extensive, yet easy-to-set individual device parameters

Asynchronous and synchronous diagnostics
- Performs rapid, precise error analysis and reduces shutdown times

Fieldbus independent
- Accommodates an increasingly wide variety of installation requirements

USB interface
- Easy access for configuration, programming and service (e.g., system update)

Safety feature
- Transmits safety-relevant data deep into the field level

Excellent EMC protection
- Ensures system availability

Effective power supply concept
- Convenient module supply

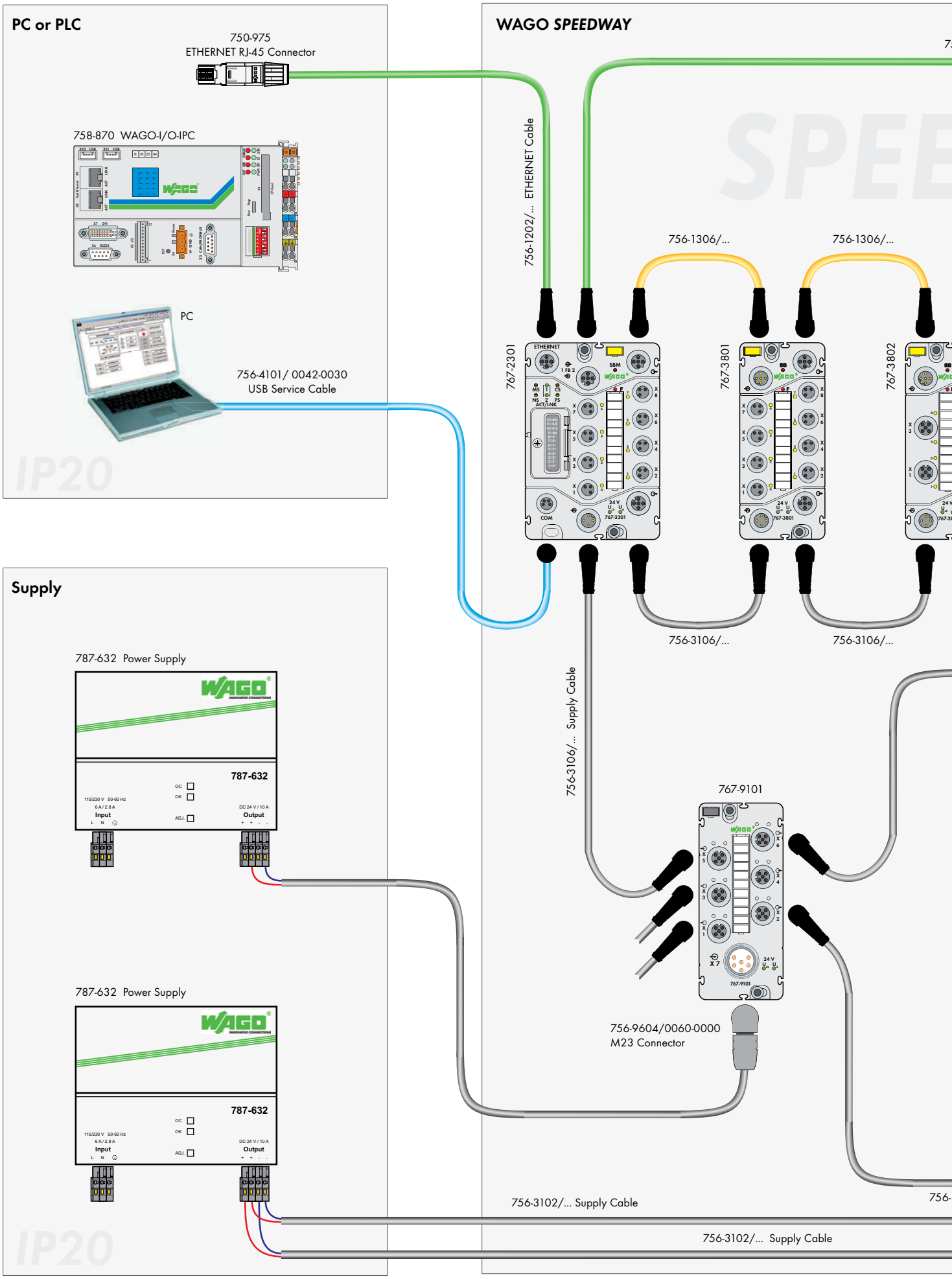
Temperature range from –25 °C to +60 °C
- Ideal for extreme environments

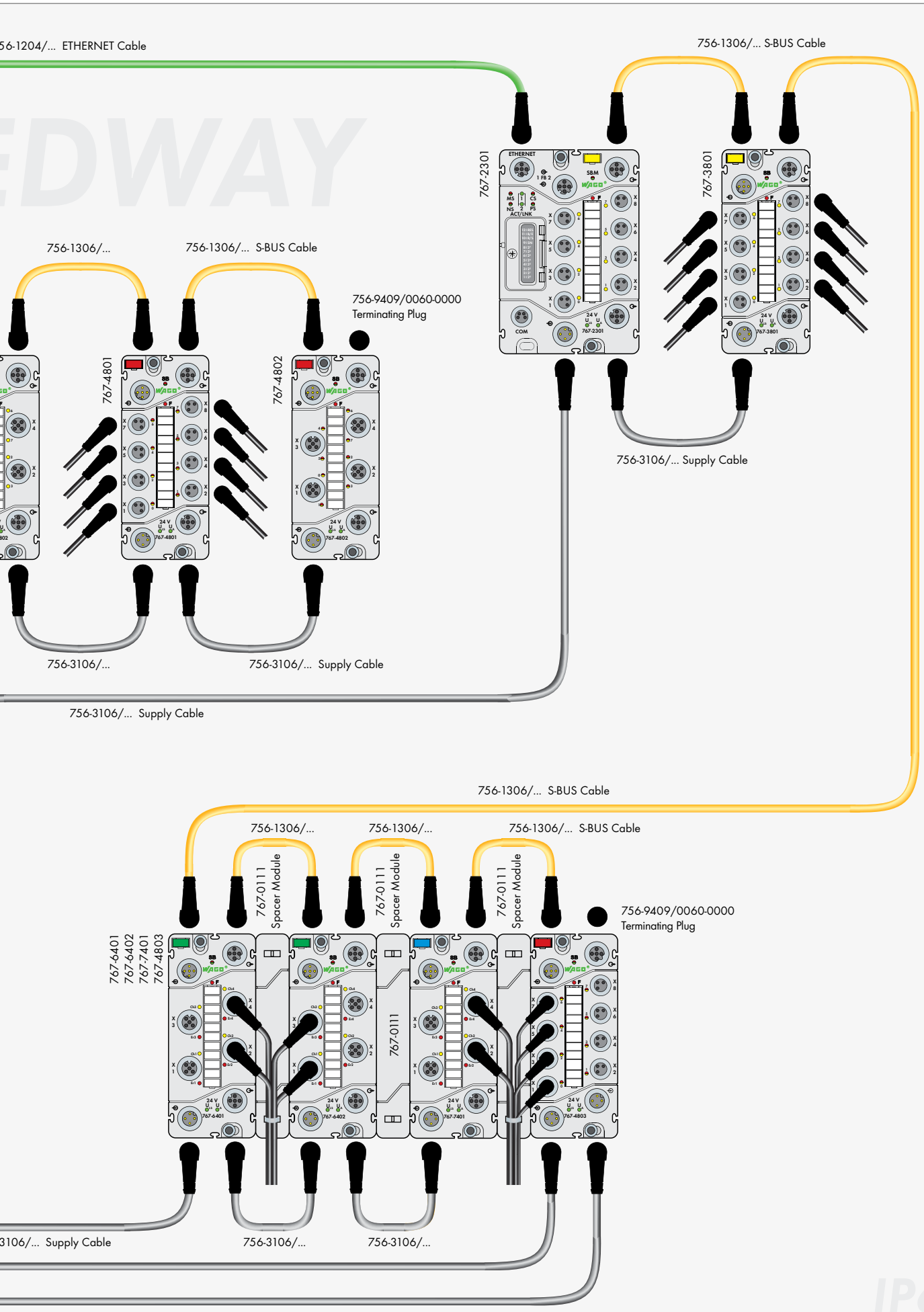
IP67 degree of protection, fully encapsulated
- Ensures uncompromising safety in the harshest conditions

Screw and DIN-rail mounting options
- Enables the flexible installation of modules

Ergonomic design
- Design clearly identifies all indications and markings

Topology Speedway

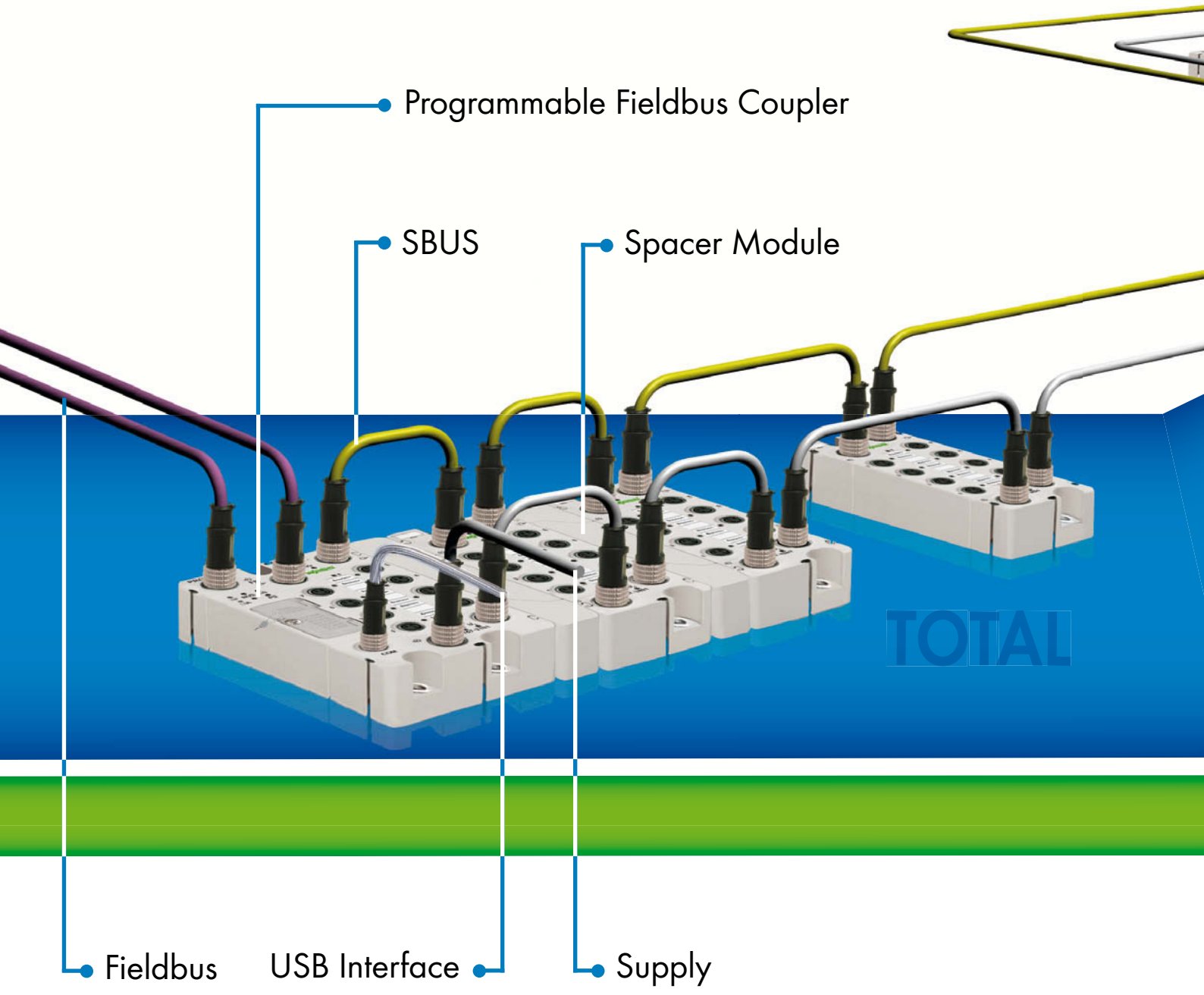



56-1204/... ETHERNET Cable
756-1306/... S-BUS Cable
767-2301
767-3801
ETHERNET
COM
24 V
767-2301
767-3801
756-1306/...
756-1306/... S-BUS Cable
756-9409/0060-0000
Terminating Plug
767-4801
767-4802
24 V
767-4801
767-4802
756-3106/... Supply Cable
756-3106/...
756-3106/... Supply Cable
756-3106/... Supply Cable
756-1306/... S-BUS Cable
756-1306/...
756-1306/...
756-1306/... S-BUS Cable
767-0111
Spacer Module
767-0111
Spacer Module
767-0111
Spacer Module
756-9409/0060-0000
Terminating Plug
767-6401
767-6402
767-7401
767-4803
767-0111
24 V
767-6401
767-6402
767-7401
767-4803
3106/... Supply Cable
756-3106/...
756-3106/...
IP67

Modular Design

Up to:

- 64 I/O modules per station
- 8 channels per module
- 520 channels per station
- 500 m total extension per station
- 50 m between two modules



Customized Onsite Signal Acquisition and Output

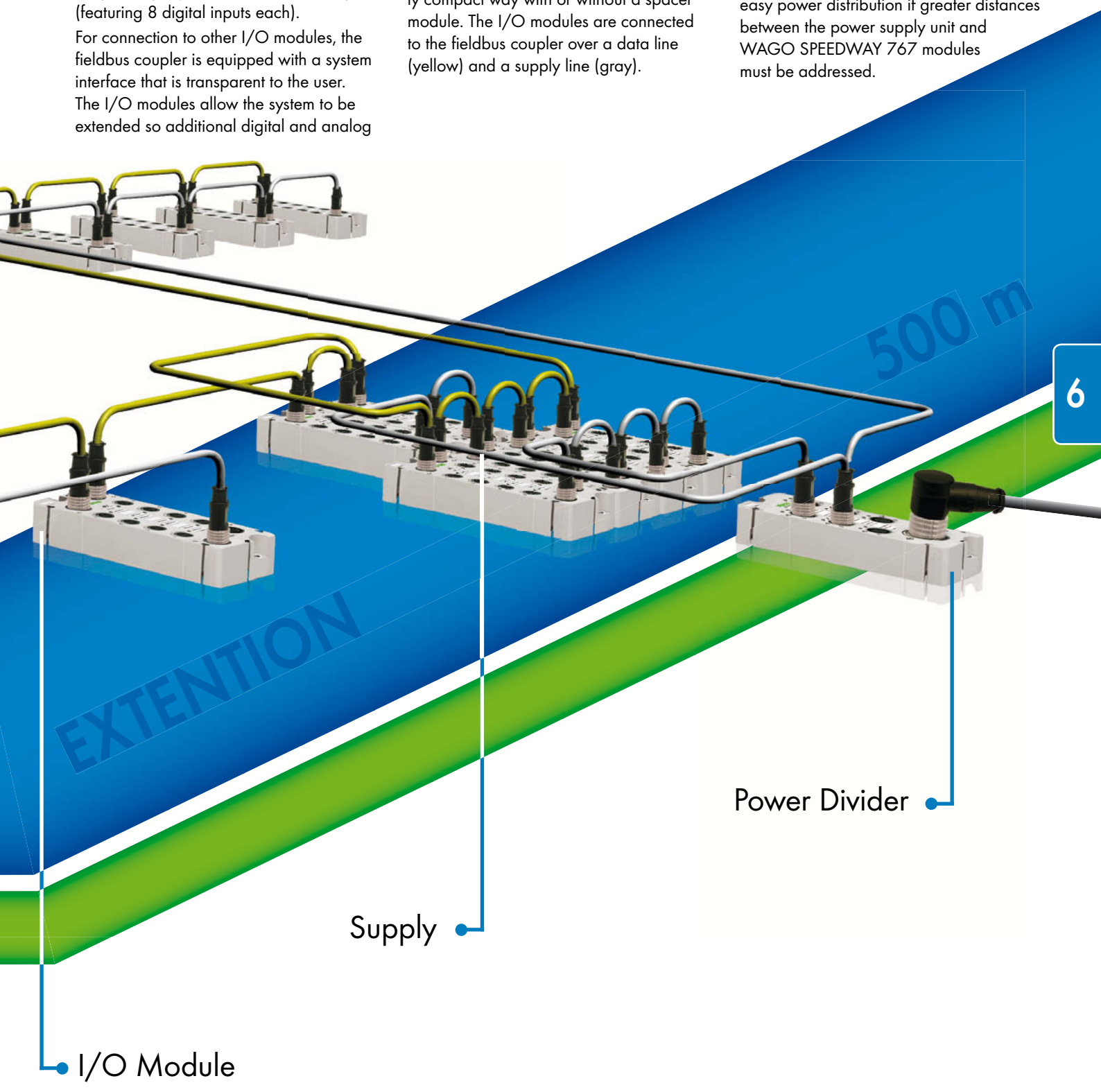
WAGO SPEEDWAY 767 is a modular I/O system with IP67 protection.

It can connect to a fieldbus and thus to an higher-level control system via fieldbus coupler or programmable fieldbus coupler (featuring 8 digital inputs each).

For connection to other I/O modules, the fieldbus coupler is equipped with a system interface that is transparent to the user. The I/O modules allow the system to be extended so additional digital and analog signals can be processed. This permits signals to be acquired and output directly on site per specific user requirements. When used in areas of high signal concentration, the modules can be installed in an extremely compact way with or without a spacer module. The I/O modules are connected to the fieldbus coupler over a data line (yellow) and a supply line (gray).

Configuration, programming, service and diagnostics are performed via fieldbus or USB interface, which is integrated into the fieldbus coupler.

If required, power dividers can be used for easy power distribution if greater distances between the power supply unit and WAGO SPEEDWAY 767 modules must be addressed.



Improved Data Transmission

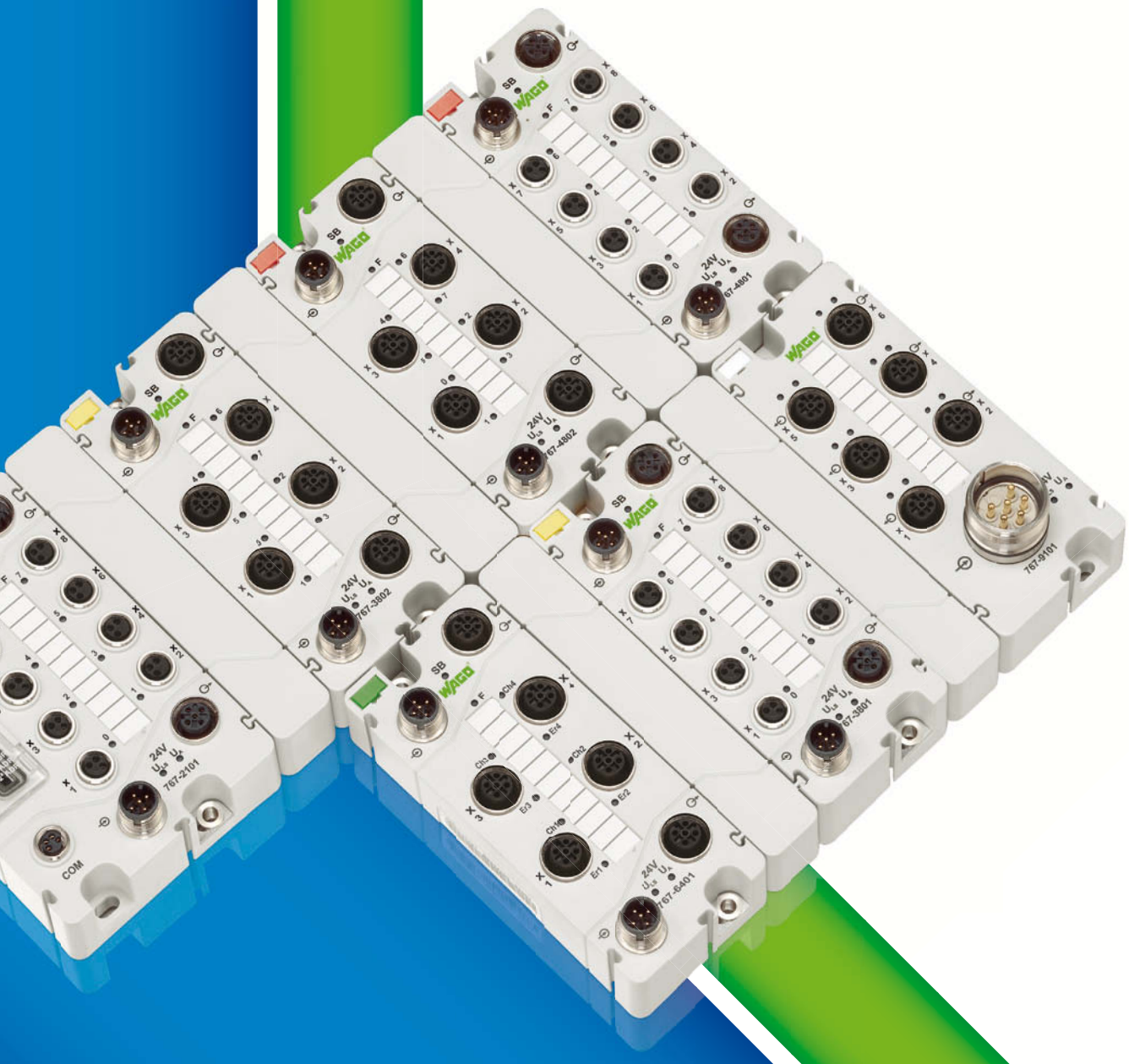
- Short cycle times
- Synchronous collection and transmission of signals
- Low jitter/skew
- Low latency
- WAGO-DSC (Digital System Control)

Faster Data Exchange

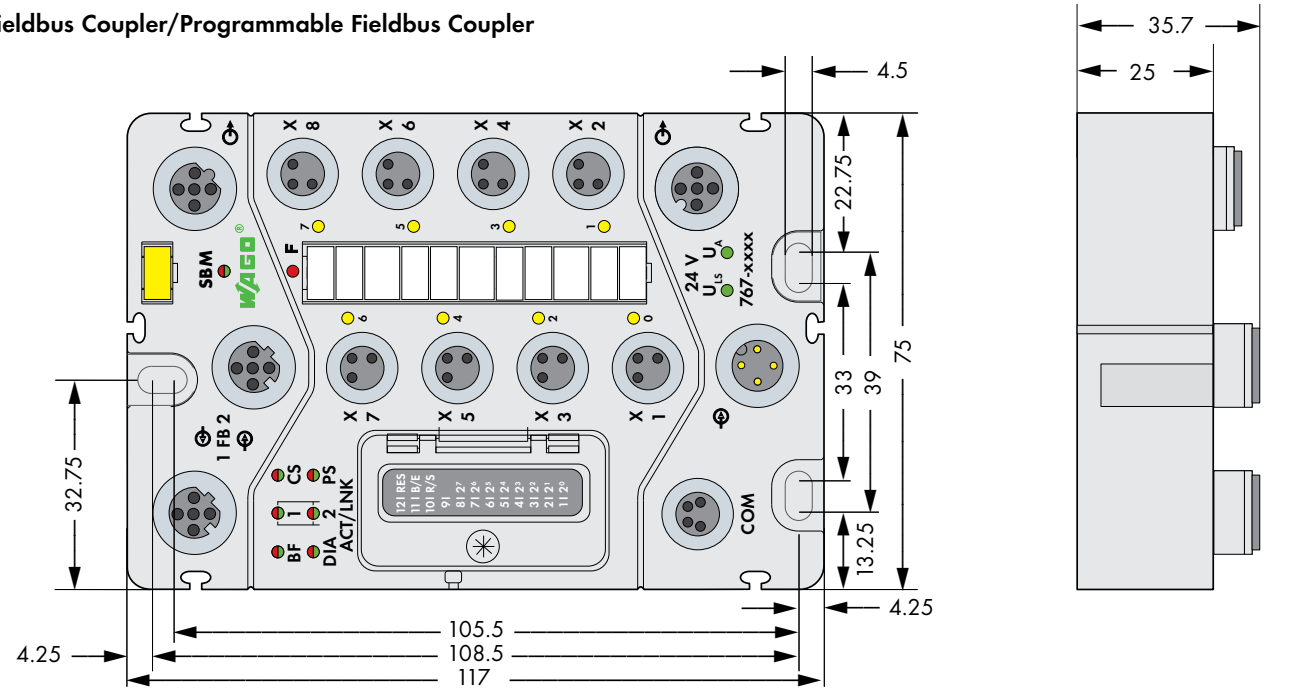
The degree of automation in systems and machines is increasing steadily, resulting in higher communication requirements. Fast ETHERNET-based protocols, such as ETHERNET/IP, PROFINET or Sercos III, are supported as they replace well-established fieldbus systems. With ETHERNET, a seamlessly integrated system is available that spans from the shop floor to the top floor. Depending on the applications, requirements for low cycle and jitter times are increasing. Not only dynamically changing states (e.g., complex motion control applications) but also interlinking machines and installation parts require efficient and synchronous-capable systems.

These systems reach cycle times far below one millisecond and their individual components offer fast conversion and processing times.

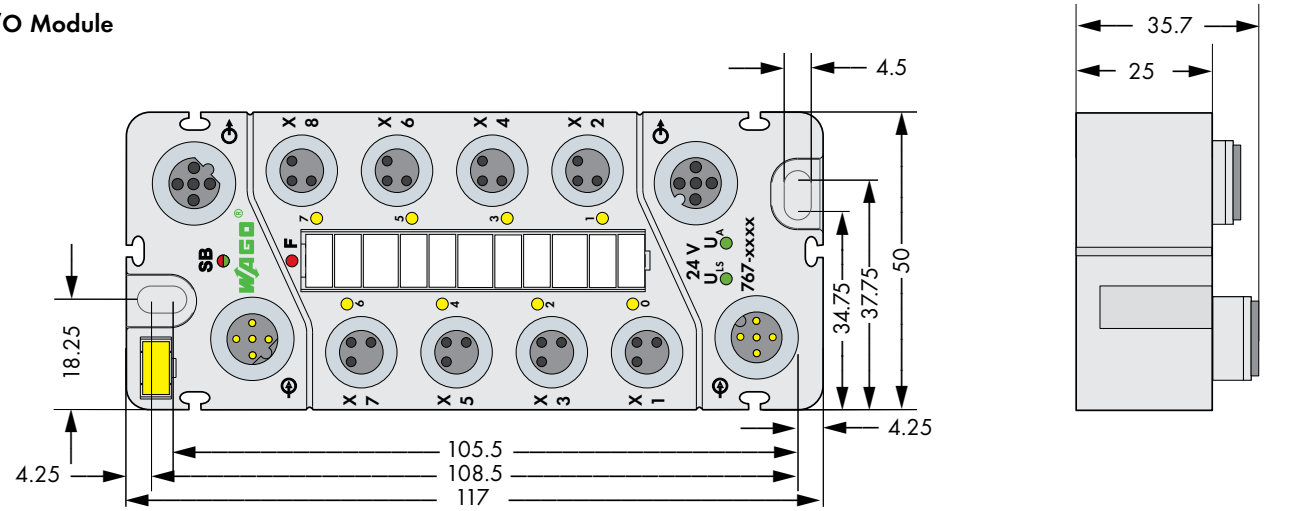
However, the modular nature of distributed IP67 Systems means that installation features (e.g., cable length and number of slaves) impact system requirements and performance. SPEEDWAY's patented DSC procedure compensates for factors such as number of slaves and total system extension to improve data communication performance and reliability.



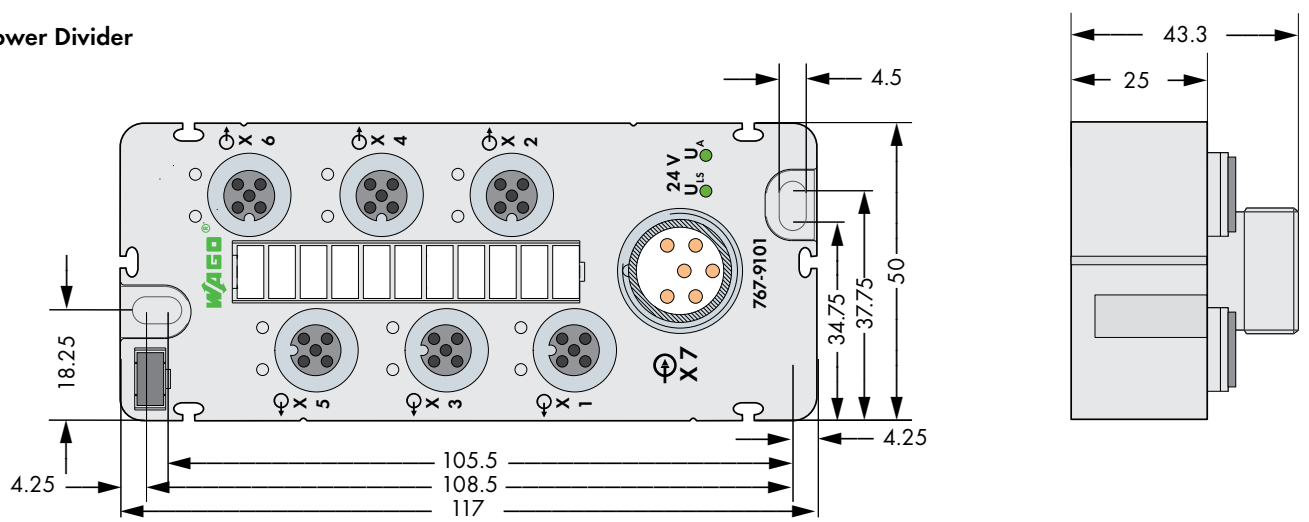
Fieldbus Coupler/Programmable Fieldbus Coupler



I/O Module



Power Divider

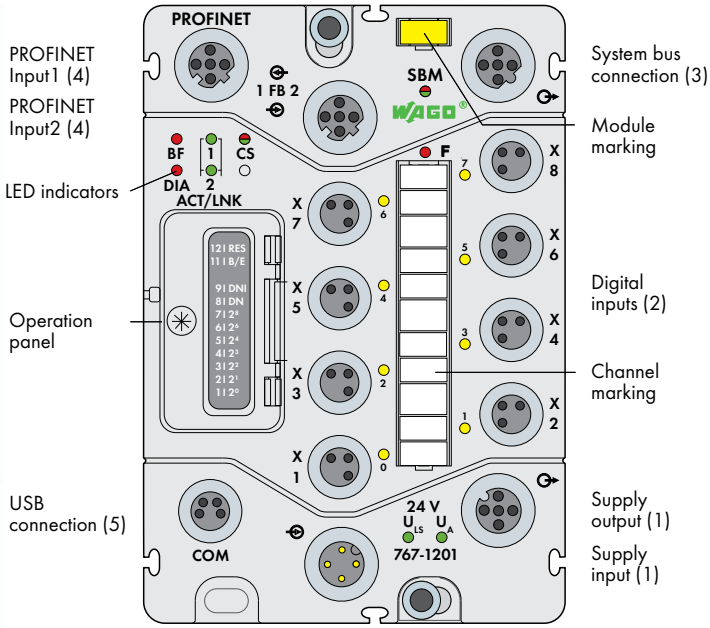


Technical Data

Materials:		
Enclosures	Polyamide (PA)	light gray (RAL7035)
	Makrolon (address switch cover)	transparent
	Flammability acc. to UL94-V0	
	halogen-, silicon-free	
Sealing	Polyurethane (PUR)	
	halogen-, silicon-free	
M8+M12 connectors	M8x1 Ms nickel-plated tapped bush	
	M12x1 Ms nickel-plated tapped bush	
	CUSn6 contacts (Ni/Au surface)	
	50 mating cycles	
	Viton seal	
Transportation and storage requirements:		
Free fall	≤1 m	IEC/EN 60068-2-32
Temperature	-40 °C ... +85 °C	
Relative humidity	5 ... 95 %	without condensation
Air pressure	1.080 ... 660 hPa	-1.000 ... 3.500 m
Operating conditions:		
Operating temperature	-25 ... +60 °C	any fitting position
Temperature change	3 K/ s	
Air pressure	1.080 ... 795 hPa	-1.000 ... 2.000 m
Pollutant concentration	SO2: <0.5 ppm	
	H2S: <0.1 ppm	
Degree of pollution	3	IEC60664 (IEC61131)
Protection class	III	IEC60536 (VDE0106, Part1)
Degree of protection	IP67 (NEMA 6&6P)	DIN40050 (EN60529)
Mechanical capacities: acc. to IEC61131-2		
Test specification	**Criterion**	**Limit values**
IEC 60068-2-6 Vibration resistance	10 Hz ≤ f < 59 Hz	0.35 mm amplitude (permanent)
	59 Hz ≤ f < 500 Hz	5 g (permanent)
	Frequency change	1 octave/minute
	Vibration direction	3 mutually perpendicular axes
	Duration	10 frequency cycles per axis
IEC 60068-2-27 Shock resistance (temporary)	Type of shock	Half sine
	Shock intensity	50 g
	Shock duration	11 ms
	Shock direction	3 mutually perpendicular axes in ± direction
	Number of shocks	3 shocks in each axis
IEC 60068-2-29 Shock resistance (permanent)	Type of shock	Half sine
	Shock intensity	30 g
	Shock duration	6 ms
	Shock direction	3 mutually perpendicular axes
	Number of shocks	1000 shocks in each axis
Electromagnetic compatibility:		
Immunity to interference	acc. to EN 61000-6-2	
Emission of interference	acc. to EN 61000-6-4	

PROFINET IO Fielbus Coupler

incl. 8 digital inputs (8 x M8)



Short description:
PROFINET IO is the ETHERNET-based, manufacturer-independent and open fieldbus standard from PROFIBUS & PROFINET International (PI). This standard offers solutions for manufacturing/process automation and safety applications in addition to covering an entire range of needs from drive technology to synchronous motion control applications.
The fieldbus coupler links the WAGO SPEEDWAY 767 I/O modules to PROFINET IO. The fieldbus coupler creates a process image of all inputs and outputs depending on the station's module structure and the configuration data transmitted by the IO controller. In addition, the coupler provides the connected I/O modules with the parametrization data provided by the device description (GSDML file) and transferred by the IO controller. The device signals existing module and channel errors as diagnostic alarms.

Characteristics:
- Integrated switch
- 8 digital 24VDC inputs included
- Modular and extendable up to 64 I/O modules (via system bus connection)
- USB interface for servicing purposes
- Parametrization via GSDML or FDT/ DTM (incl. diagnostics and simulation)
- Enclosed operation panel (operating mode and address switch)

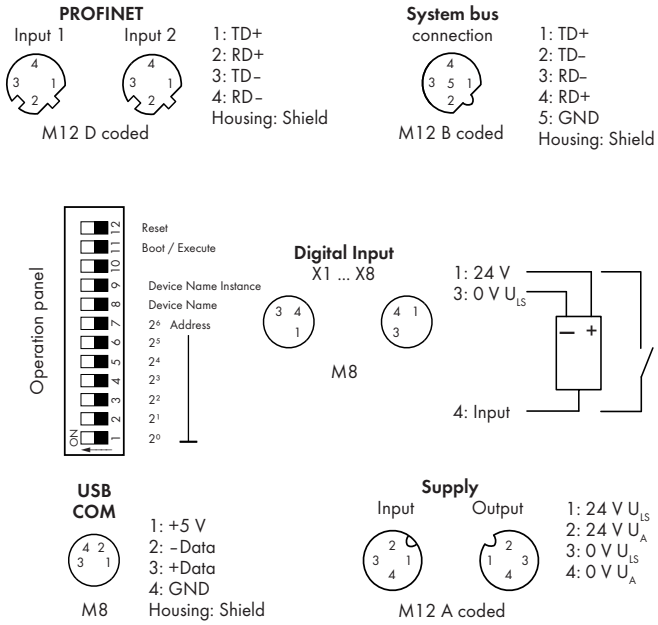
Included:
- Module WMB marker card, yellow (1 pcs)
- Channel marker strips (1 pcs)
- M8 protective caps (2 pcs)

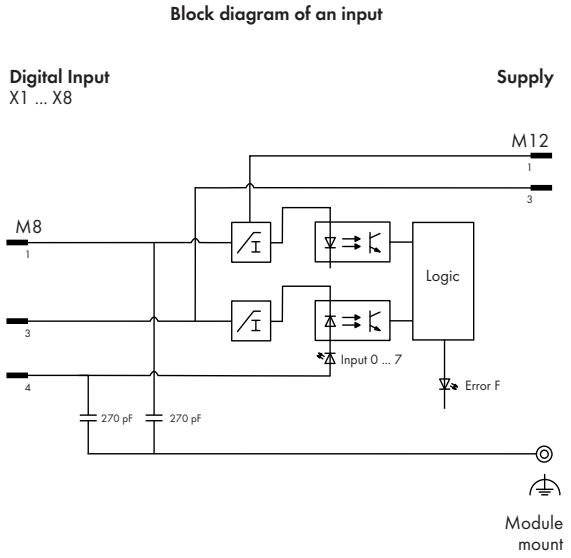
Description	Item No.	Pack. Unit
FC PROFINET IO 8DI 24V DC	**767-1201**	1

Accessories	Item No.
PROFINET cable + accessories	see pages 466 + 471
System bus/power supply cable + accessories	see pages 458 ... 461 + 470
General accessories	see pages 472 ... 473
GSDML file	Download: www.wago.com
DTM (Device Type Manager)	Download: www.wago.com

Technical Data	
Fieldbus:	
Device type	PROFINET IO device
Connection type (4)	M12 connectors, D coded, 5 poles
Baud rate	100 Mbit/s, full duplex
Transmission medium	100Base-TX, twisted pair copper cables
Station name	Adjustable via operation panel or DCP
Protocols	PROFINET IO, DCP, LLDP
Additional data	see manual
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles [1]
Current carrying capacity of supply	
connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage UL_S	24 V DC (-25 % ... +30 %)
Actuator voltage U_A [2]	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 125 mA + sensors (max. 400 mA)
Actuator current I_A	5 mA
Protection	Reverse voltage protection for U_{LS} + U_A; short circuit protection for sensor supply

[1] Derating must be observed
[2] Also required for power supply transmission





Technical Data

Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- to 3-wire
Input filter	parametrizable
Input characteristic	Type 1, acc. to IEC 61131-2
Signal voltage (0)	-30 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U_{IN} < +30 V DC)
Input current (typ.)	2.8 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect
System bus:	
Number of expendable modules	64
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Isolation:	
Channel - Channel	no
U_{LS}, U_A, system bus, fieldbus	500 V DC each
Service:	
Type	USB standard 1.1
Connection type (5)	M8 connectors, 4 poles
Standards and approvals:	
PROFINET	IEC 61158
cULus UL 508	
Conformity marking	CE
Configurable functions:	
Fieldbus coupler	see manual
Digital Inputs	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation	
(per channel)	Lock/unlock; simulation value: 0/1;
(per module)	diagnostics
I/O diagnostics:	
(per module)	Short circuit/wire break of sensor supply
(per module)	Undervoltage (U_{LS} + U_A)

Technical Data

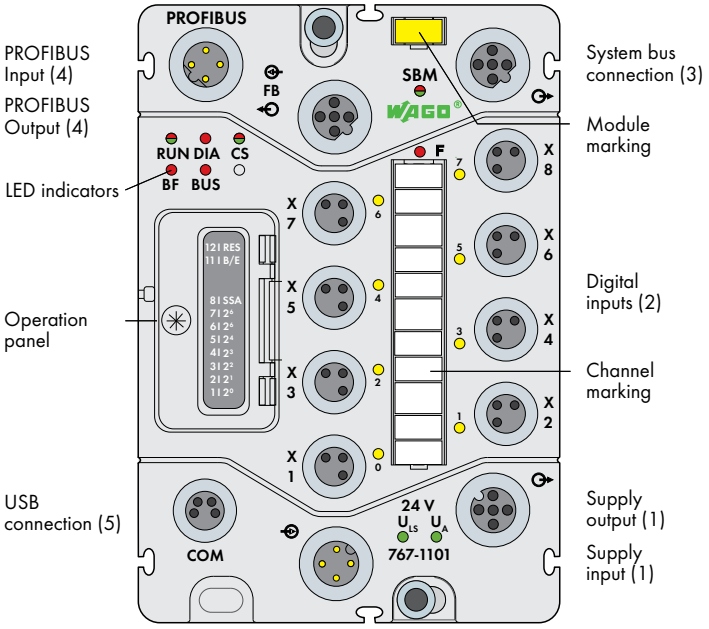
Process image:	
Input process image	512 bytes
Output process image	512 bytes
LED indicators:	
BF : PROFINET IO bus error	LED (red)
DIA : PROFINET IO diagnostics	LED (red)
ACT/LNK 1 : Network connection FB1	LED (green)
ACT/LNK 2 : Network connection FB2	LED (green)
CS : Fieldbus coupler status	LED (green/red)
SBM : System bus master status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	75 x 35.7 x 117
Weight	377.1 g

PROFIBUS DP-V1 Fieldbus Coupler

incl. 8 digital inputs (8 x M8)



Short description:
PROFIBUS DP is the manufacturer-independent and open fieldbus standard from PROFIBUS & PROFINET International (PI). This standard offers solutions for manufacturing/process automation and safety applications in addition to covering an entire range of needs from drive technology to synchronous motion control applications. The fieldbus coupler links the WAGO SPEEDWAY 767 I/O modules to PROFIBUS DP. The coupler creates a process image of all inputs and outputs depending on the station's module structure and the configuration data transmitted by the DP master. In addition, the coupler provides the connected I/O modules with the parametrization data provided by the device description (GSD file) and transferred by the DP master, if required. In DP-V0 operation mode, the device provides device, identification and channel related diagnostics as well as module status. In DP-V1 operation mode, status messages and optional diagnostic alarms are provided instead of identification and channel based diagnostics.

Characteristics:
- 8 digital 24VDC inputs included
- Modular and extendable up to 63 I/O modules (via system bus connection)
- USB Interface for servicing purposes
- Parametrization via GSD or FDT/ DTM (incl. diagnostics and simulation)
- Enclosed operation panel (operating mode and address switch)

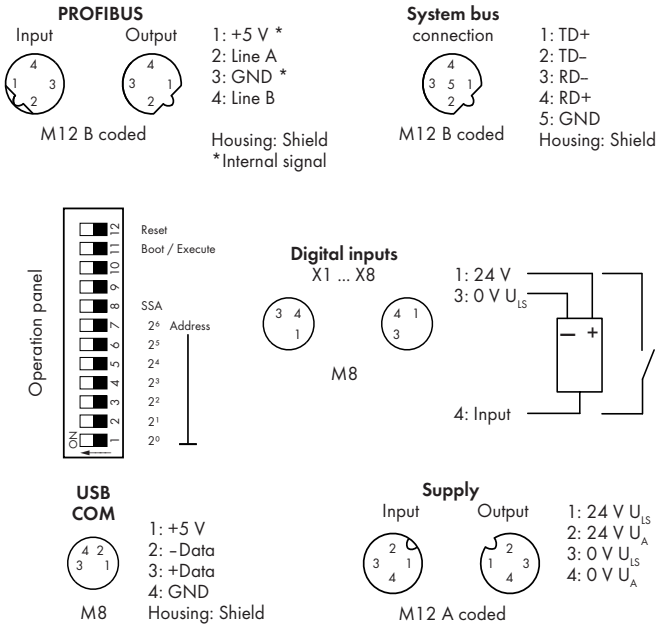
Included:
- Module WMB marker card, yellow (1 pcs)
- Channel marker strips (1 pcs)
- M8 protective caps (2 pcs)

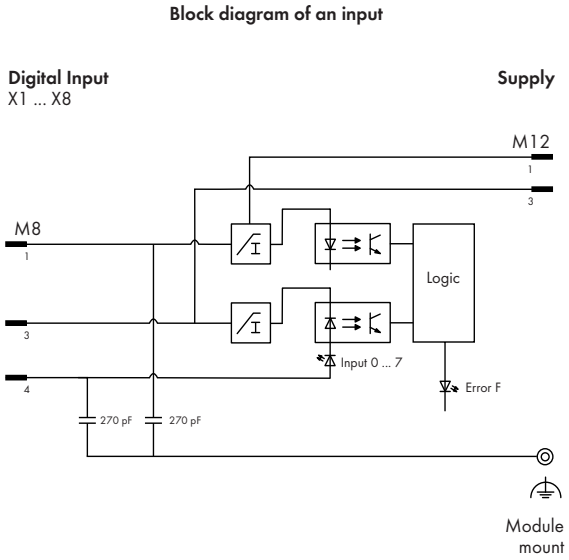
Description	Item No.	Pack. Unit
FC PROFIBUS DP 8DI 24V DC	**767-1101**	1

Accessories	Item No.
PROFIBUS cable + accessories	see pages 462 ... 463
System bus/power supply cable + accessories	see pages 458 ... 461 + 470
General accessories	see pages 472 ... 473
GSD files	Download: www.wago.com
DTM (Device Type Manager)	Download: www.wago.com

Technical Data	
Fieldbus:	
Device type	PROFIBUS DP-V1 slave
Connection type (4)	M12 connectors, B coded, 4 poles
Baud rate	9.6 kBd ... 12 MBd (automatic recognition)
Transmission medium	RS-485 / 2-core copper cable acc. to IEC 61158 and EN50170
Station address	0 - 125 (adjustable via operation panel or PROFIBUS)
Protocols	PROFIBUS DP
Additional data	see manual
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles [1]
Current carrying capacity of supply connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage UL_S	24 V DC (-25 % ... +30 %)
Actuator voltage U_A [2]	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 110 mA + sensors (max. 400 mA)
Actuator current I_A	5 mA
Protection	Reverse voltage protection for U_{LS} + U_A; short circuit protection for sensor supply

[1] Derating must be observed
[2] Also required for power supply transmission





Technical Data

Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- to 3-wire
Input filter	parametrizable
Input characteristic	Type 1, acc. to IEC 61131-2
Signal voltage (0)	-30 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U_{IN} < +30 V DC)
Input current (typ.)	2.8 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect
System bus:	
Number of expendable modules	63
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Isolation:	
Channel - Channel	no
U_{LS}, U_A, system bus, fieldbus	500 V DC each
Service:	
Type	USB standard 1.1
Connection type (5)	M8 connectors, 4 poles
Standards and approvals:	
PROFIBUS	IEC 61158
cULus UL 508	
Conformity marking	CE
Configurable functions:	
Fieldbus coupler	see manual
Digital Inputs	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation	
(per channel)	Lock/unlock; simulation value: 0/1;
(per module)	diagnostics
I/O diagnostics:	
(per module)	Short circuit/wire break of sensor supply
(per module)	Undervoltage (U_{LS} + U_A)

Technical Data

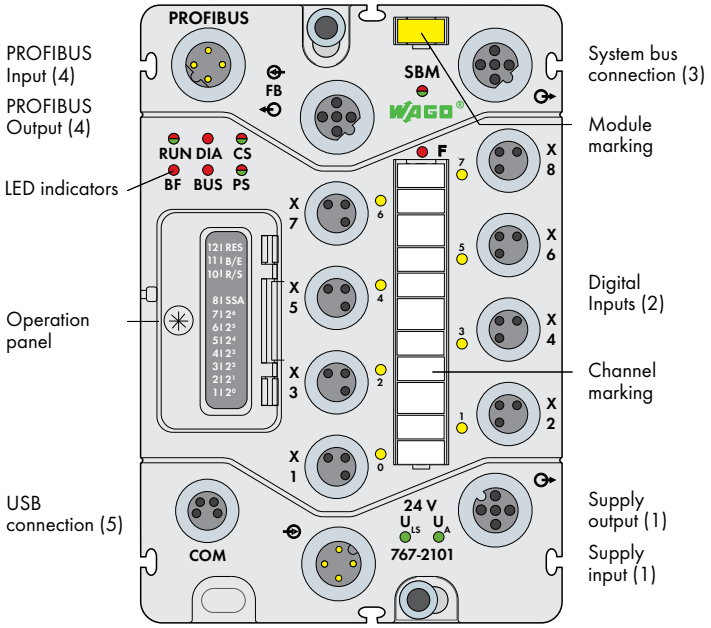
Process image:	
Input process image	244 bytes
Output process image	244 bytes
LED indicators:	
RUN : Fieldbus coupler initialization	LED (green/red)
BF : PROFIBUS DP bus error	LED (red)
DIA : PROFIBUS DP diagnostics	LED (red)
BUS : PROFIBUS DP projecting error	LED (red)
CS : Fieldbus coupler status	LED (green/red)
SBM : System bus master status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	75 x 35.7 x 117
Weight	405 g

PROFIBUS DP-V1 Programmable Fieldbus Coupler

incl. 8 digital inputs (8 x M8)



Short description:
PROFIBUS DP is the manufacturer-independent and open fieldbus standard from PROFIBUS & PROFINET International (PI). This standard offers solutions for manufacturing/process automation and safety applications in addition to covering an entire range of needs from drive technology to synchronous motion control applications. The fieldbus coupler links the WAGO SPEEDWAY 767 I/O modules to PROFIBUS DP. The coupler creates a process image of all inputs and outputs depending on the number of projected fieldbus variables and the configuration data transmitted by the DP master. In addition, the coupler provides the connected I/O modules with the parametrization data provided by the device description (GSD file) and transferred by the DP master, if required. In DP-V0 operation mode, the device provides device, identification and channel related diagnostics. In DP-V1 operation mode, status messages and optional diagnostic alarms are provided instead of identification and channel based diagnostics.

The fieldbus coupler is programmable to IEC61131-3 and can thus relieve the central control system and fieldbus, reduce response times, define the operating mode in the event of failure (fieldbus failure) as well as divide complex applications into independent, functional units.

Characteristics:
- 8 digital 24VDC inputs included
- Modular and extendable up to 63 I/O modules (via system bus connection)
- USB interface for servicing purposes
- Parametrization via GSD or FDT/ DTM (incl. diagnostics and simulation)
- Programmable to IEC61131-3
- Enclosed operation panel (operating mode and address switch)

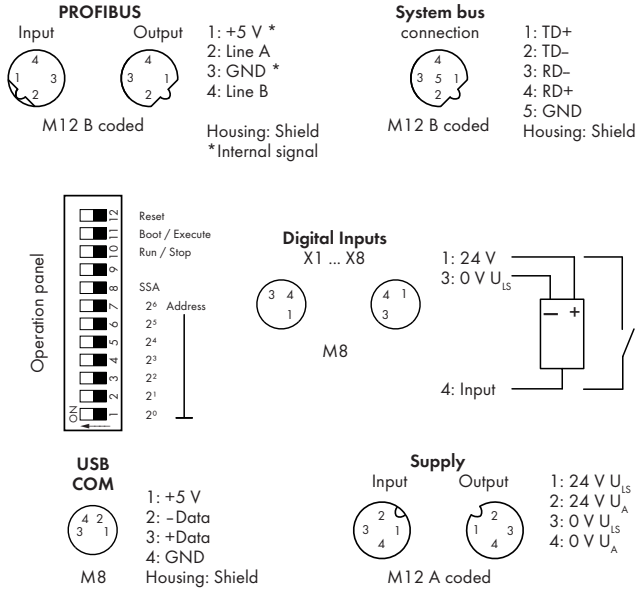
Included:
- Module WMB marker card, yellow (1 pcs)
- Channel marker strips (1 pcs)
- M8 protective caps (2 pcs)

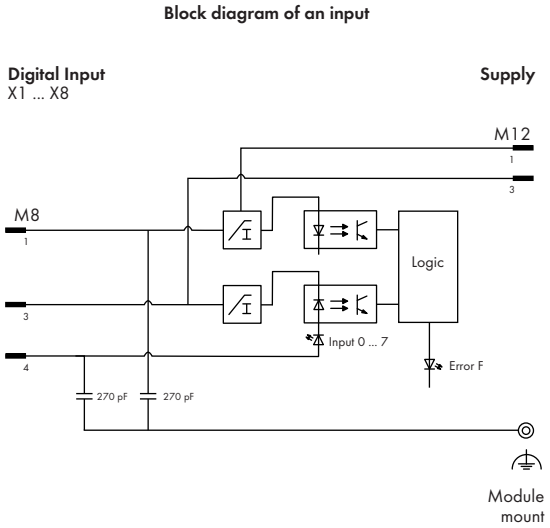
Description	Item No.	Pack. Unit
PFC PROFIBUS DP 8DI 24V DC	**767-2101**	1
Availability on request		

Accessories	Item No.
PROFIBUS cable + accessories	see pages 462 ... 463
System bus/power supply cable + accessories	see pages 458 ... 461 + 470
General accessories	see pages 472 ... 473
GSD files	Download: www.wago.com
DTM (Device Type Manager)	Download: www.wago.com
CoDeSys 3	**759-915**
	(see page 474)

Technical Data	
Fieldbus:	
Device type	PROFIBUS DP-V1 slave
Connection type (4)	M12 connectors, B coded, 4 poles
Baud rate	9.6 kBd ... 12 MBd
	(automatic recognition)
Transmission medium	RS-485 / 2-core copper cable acc. to
	IEC 61158 and EN50170
Station address	0 - 125 (adjustable via operation panel
	or PROFIBUS)
Protocols	PROFIBUS DP
Additional data	see manual
Programming:	
CoDeSys 3	Development system for programming and
	visualization according to IEC61131-3
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles [1]
Current carrying capacity of supply	
connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage UL_S	24 V DC (-25 % ... +30 %)
Actuator voltage U_A [2]	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 110 mA + sensors (max. 400 mA)
Actuator current I_A	5 mA
Protection	Reverse voltage protection for U_{LS} + U_A;
	short circuit protection for sensor supply

[1] Derating must be observed
[2] Also required for power supply transmission





Technical Data

Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- to 3-wire
Input filter	parametrizable
Input characteristic	Type 1, acc. to IEC 61131-2
Signal voltage (0)	-30 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U_{IN} < +30 V DC)
Input current (typ.)	2.8 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect
System bus:	
Number of expendable modules	63
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Isolation:	
Channel - Channel	no
U_{LS}, U_A, system bus, fieldbus	500 V DC each
Service:	
Type	USB standard 1.1
Connection type (5)	M8 connectors, 4 poles
Standards and approvals:	
PROFIBUS	IEC 61158
cULus UL 508	
Conformity marking	CE
Configurable functions:	
Fieldbus coupler	see manual
Digital Inputs	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation	
(per channel)	Lock/unlock; simulation value: 0/1;
(per module)	diagnostics
I/O diagnostics:	
(per module)	Short circuit/wire break of sensor supply
(per module)	Undervoltage (U_{LS} + U_A)

Technical Data

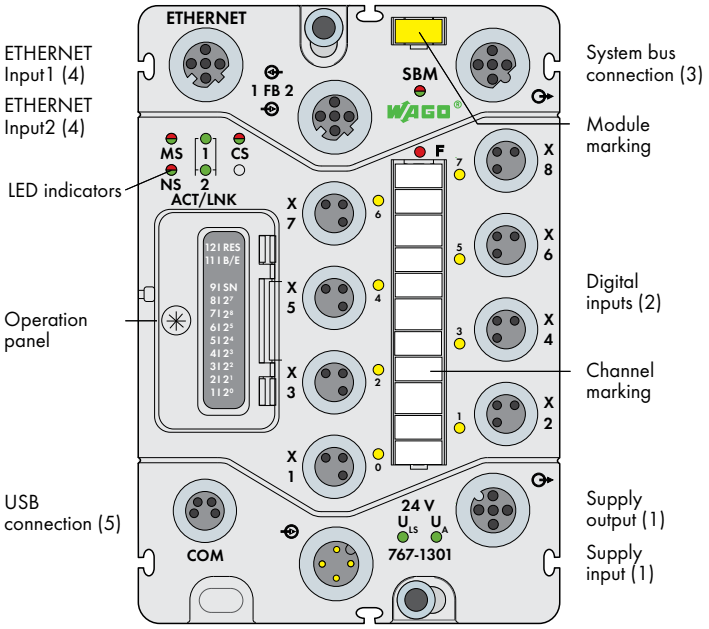
Process image:	
Input process image	244 bytes
Output process image	244 bytes
Input variables	512 bytes
Output variables	512 bytes
Program memory	1024 Kbytes
Data memory	256 Kbytes
Remanent memory	32 Kbytes (20 Kbytes retain, 12 Kbytes flag)
LED indicators:	
RUN : Fieldbus coupler initialization	LED (green/red)
BF : PROFIBUS DP bus error	LED (red)
DIA : PROFIBUS DP diagnostics	LED (red)
BUS : PROFIBUS DP projecting error	LED (red)
CS : Fieldbus coupler status	LED (green/red)
PS: Program status	LED (green/red)
SBM : System bus master status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	75 x 35.7 x 117
Weight	405 g

ETHERNET Fieldbus Coupler

incl. 8 digital inputs (8 x M8)



Short description:
In addition to MODBUS/TCP, the ETHERNET/IP protocol has proven itself as an industrial communication standard over ETHERNET.
The fieldbus coupler links the WAGO SPEEDWAY 767 system to ETHERNET. When initializing, the buscoupler determines the station's module structure and creates a process image of all inputs and outputs. The application protocols MODBUS/TCP and ETHERNET/IP are available for process data and the protocol services Http, BootP, DHCP, DNS, SNTP, FTP and SNMP (on request) for the system administration and diagnostics.

Characteristics:
- Integrated switch
- 8 digital 24VDC inputs included
- Modular and extendable up to 64 I/O modules (via system bus connection)
- USB interface for servicing purposes
- Parametrization via FDT/DTM (incl. diagnostics and simulation)
- Enclosed operation panel (operating mode and address switch)

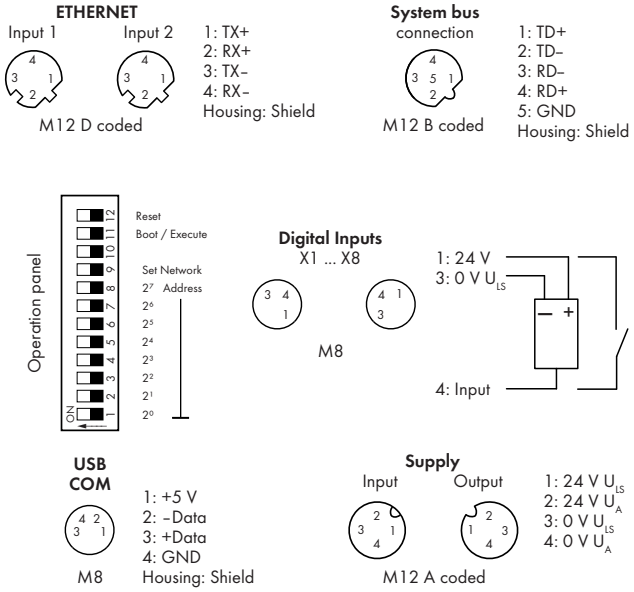
Included:
- Module WMB marker card, yellow (1 pcs)
- Channel marker strips (1 pcs)
- M8 protective caps (2 pcs)

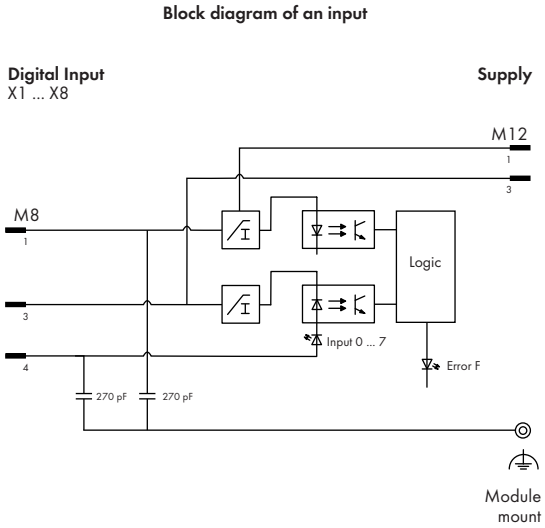
Description	Item No.	Pack. Unit
FC ETHERNET 8DI 24V DC	**767-1301**	1

Accessories	Item No.
ETHERNET cable + accessories	see pages 466 + 471
System bus/power supply cable + accessories	see pages 458 ... 461 + 470
General accessories	see pages 472 ... 473
DTM (Device Type Manager)	Download: www.wago.com

Technical Data	
Fieldbus:	
Device type	ETHERNET device
Connection type (4)	M12 connectors, D coded, 5 poles
Baud rate	10/100 Mbit/s
Transmission medium	Copper cable
Station address	1-255 (last byte of IP address adjustable via operation panel)
Protocols	MODBUS/TCP (UDP), EtherNet/IP
Additional data	see manual
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles [1]
Current carrying capacity of supply connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage UL_S	24 V DC (-25 % ... +30 %)
Actuator voltage U_A [2]	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 125 mA + sensors (max. 400 mA)
Actuator current I_A	5 mA
Protection	Reverse voltage protection for U_{LS} + U_A; short circuit protection for sensor supply

[1] Derating must be observed
[2] Also required for power supply transmission





Technical Data

Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- to 3-wire
Input filter	parametrizable
Input characteristic	Type 1, acc. to IEC 61131-2
Signal voltage (0)	-30 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U_{IN} < +30 V DC)
Input current (typ.)	2.8 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect
System bus:	
Number of expendable modules	64
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Isolation:	
Channel - Channel	no
U_{LS}, U_A, system bus, fieldbus	500 V DC each
Service:	
Type	USB standard 1.1
Connection type (5)	M8 connectors, 4 poles
Standards and approvals:	
cULus UL 508	
Conformity marking	CE
Configurable functions:	
Fieldbus coupler	see manual
Digital Inputs	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation	
(per channel)	Lock/unlock; simulation value: 0/1;
(per module)	diagnostics
I/O diagnostics:	
(per module)	Short circuit/wire break of sensor supply
(per module)	Undervoltage (U_{LS} + U_A)

Technical Data

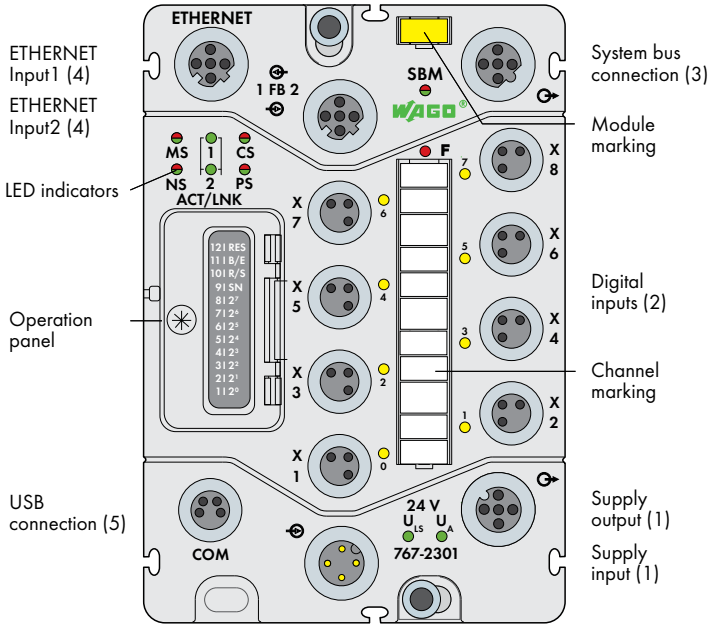
Process image:	
Input process image	2048 bytes
Output process image	2048 bytes
LED indicators:	
MS : ETHERNET module status	LED (green/red)
NS : ETHERNET network status	LED (green/red)
ACT/LNK 1 : ETHERNET data exchange/network connection	LED (green)
ACT/LNK 2 : ETHERNET data exchange/network connection	LED (green)
CS : Fieldbus coupler status	LED (green/red)
SBM : System bus master status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	75 x 35.7 x 117
Weight	330 g

ETHERNET Programmable Fieldbus Coupler

incl. 8 digital inputs (8 x M8)



Short description:
In addition to MODBUS/TCP, the ETHERNET/IP protocol has proven itself as an industrial communication standard over ETHERNET.
The fieldbus coupler links the WAGO SPEEDWAY 767 system to ETHERNET. When initializing, the buscoupler determines the station's module structure and creates a process image of all inputs and outputs. The application protocols MODBUS/TCP and ETHERNET/IP are available for process data and the protocol services Http, BootP, DHCP, DNS, SNTP, FTP and SNMP (on request) for the system administration and diagnostics.
In addition, this fieldbus coupler is programmable to IEC61131-3 and can thus relieve the central control system and fieldbus, reduce response times, define the operating mode in the event of failure (fieldbus failure) as well as divide complex applications into independent, functional units.

Characteristics:
- Integrated switch
- 8 digital 24VDC inputs included
- Modular and extendable up to 64 I/O modules (via system bus connection)
- USB interface for servicing purposes
- Parametrization via FDT/DTM (incl. diagnostics and simulation)
- Programmable to IEC61131-3
- Enclosed operation panel (operating mode and address switch)

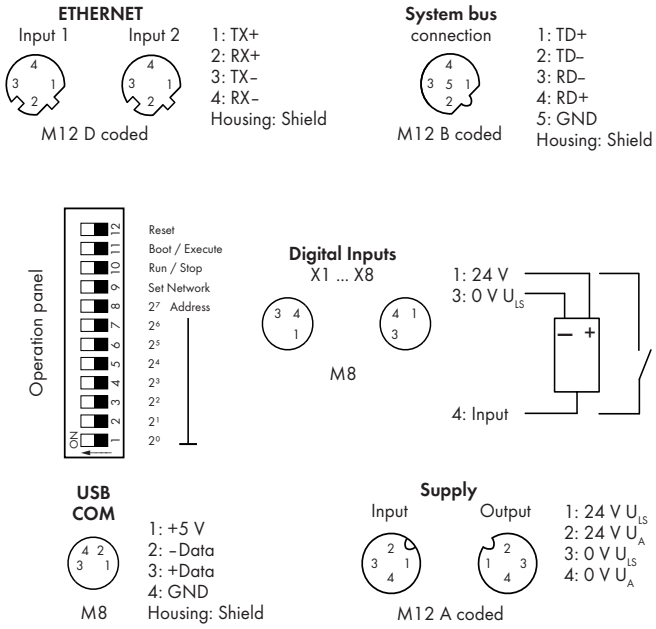
Included:
- Module WMB marker card, yellow (1 pcs)
- Channel marker strips (1 pcs)
- M8 protective caps (2 pcs)

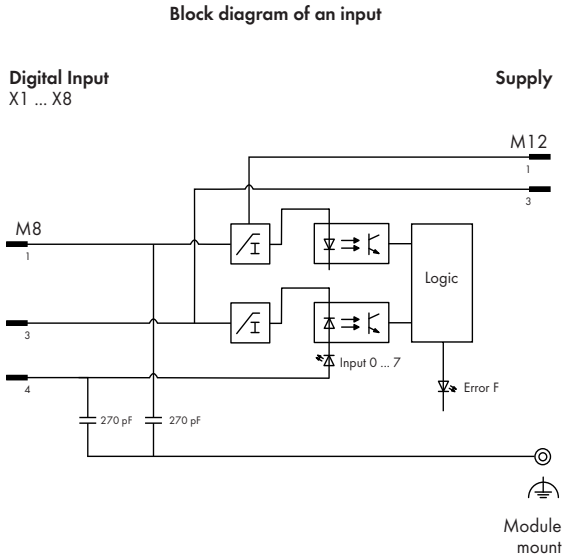
Description	Item No.	Pack. Unit
PFC ETHERNET 8DI 24V DC	**767-2301**	1

Accessories	Item No.
ETHERNET cable + accessories	see pages 466 + 471
System bus/power supply cable + accessories	see pages 458 ... 461 + 470
General accessories	see pages 472 ... 473
DTM (Device Type Manager)	Download: www.wago.com
CoDeSys 3	**759-915**(see page 474)

Technical Data	
Fieldbus:	
Device type	ETHERNET device
Connection type (4)	M12 connectors, D coded, 5 poles
Baud rate	10/ 100 Mbits
Transmission medium	Copper cable
Station address	1-255 (last byte of IP address adjustable via operation panel)
Protocols	MODBUS/TCP (UDP), EtherNet/IP
Additional data	see manual
Programming:	
CoDeSys 3	Development system for programming and visualization according to IEC61131-3
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles [1]
Current carrying capacity of supply connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage UL_S	24 V DC (-25 % ... +30 %)
Actuator voltage U_A [2]	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 125 mA + sensors (max. 400 mA)
Actuator current I_A	5 mA
Protection	Reverse voltage protection for U_{LS} + U_A; short circuit protection for sensor supply

[1] Derating must be observed
[2] Also required for power supply transmission





Technical Data

Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- to 3-wire
Input filter	parametrizable
Input characteristic	Type 1, acc. to IEC 61131-2
Signal voltage (0)	-30 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U_{IN} < +30 V DC)
Input current (typ.)	2.8 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect
System bus:	
Number of expendable modules	64
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Isolation:	
Channel - Channel	no
U_{LS}, U_A, system bus, fieldbus	500 V DC each
Service:	
Type	USB standard 1.1
Connection type (5)	M8 connectors, 4 poles
Standards and approvals:	
cULus UL 508	
Conformity marking	CE
Configurable functions:	
Fieldbus coupler	see manual
Digital Inputs	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation	
(per channel)	Lock/unlock; simulation value: 0/1;
(per module)	diagnostics
I/O diagnostics:	
(per module)	Short circuit/wire break of sensor supply
(per module)	Undervoltage (U_{LS} + U_A)

Technical Data

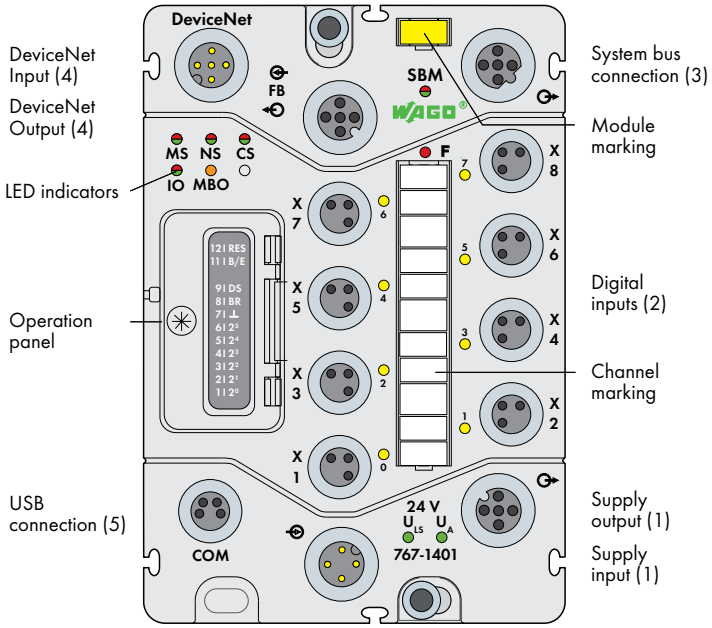
Process image:	
Input process image	2048 bytes
Output process image	2048 bytes
Input variables	512 bytes
Output variables	512 bytes
Program memory	1024 Kbytes
Data memory	256 Kbytes
Remanent memory	32 Kbytes (20 Kbytes retain, 12 Kbytes flag)
LED indicators:	
MS : ETHERNET module status	LED (green/red)
NS : ETHERNET network status	LED (green/red)
ACT/LNK 1 : ETHERNET data exchange/network connection	LED (green)
ACT/LNK 2 : ETHERNET data exchange/network connection	LED (green)
CS : Fieldbus coupler status	LED (green/red)
PS: Program status	LED (green/red)
SBM : System bus master status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	75 x 35.7 x 117
Weight	330 g

DeviceNet Fieldbus Coupler

incl. 8 digital inputs (8 x M8)



Short description:
DeviceNet is a manufacturer-independent, open CAN-based fieldbus protocol typically used for networking sensors and actuators with higher-level automation devices. It operates in both master-slave and multi-master modes, while active participants communicate via a point-to-point or a multipoint connection.
As a slave, the fieldbus coupler links the WAGO SPEEDWAY 767 system to DeviceNet. When initializing, the buscoupler determines the station's module structure and creates a process image of all inputs and outputs.

Characteristics:
- 8 digital 24VDC inputs included
- Modular and extendable up to 64 I/O modules (via system bus connection)
- USB interface for servicing purposes
- Parametrization via FDT/DTM (incl. diagnostics and simulation)
- Enclosed operation panel (operating mode and address switch)

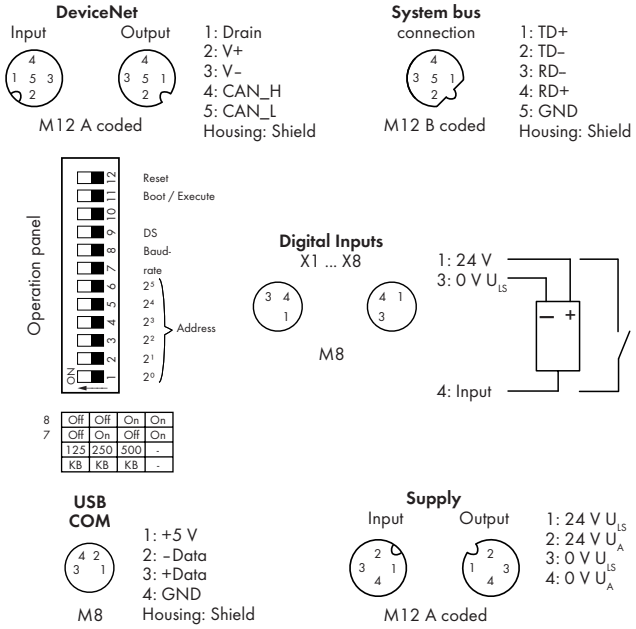
Included:
- Module WMB marker card, yellow (1 pcs)
- Channel marker strips (1 pcs)
- M8 protective caps (2 pcs)

Description	Item No.	Pack. Unit
FC DeviceNet 8DI 24V DC	**767-1401**	1

Accessories	Item No.
DeviceNet cable + accessories	see pages 464 ... 465
System bus/power supply cable + accessories	see pages 458 ... 461 + 470
General accessories	see pages 472 ... 473
DTM (Device Type Manager)	Download: www.wago.com

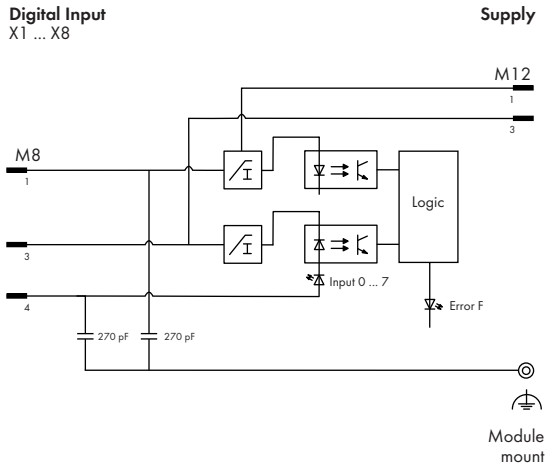
Technical Data	
Fieldbus:	
Device type	DevieNet Slave
Connection type (4)	M12 connectors, A coded, 5 poles
Baud rate	125/ 250/ 500 Kbit/s
Transmission medium	Copper cable
Station address	0-63 (adjustable via operation panel)
Additional data	see manual
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles [1]
Current carrying capacity of supply connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage UL_S	24 V DC (-25 % ... +30 %)
Actuator voltage U_A [2]	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 80 mA + sensors (max. 400 mA)
Actuator current I_A	5 mA
Protection	Reverse voltage protection for U_{LS} + U_A; short circuit protection for sensor supply

[1] Derating must be observed
[2] Also required for power supply transmission



8	Off	Off	On	On
7	Off	On	Off	On
	125	250	500	-
	KB	KB	KB	-

Block diagram of an input



Technical Data

Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- to 3-wire
Input filter	parametrizable
Input characteristic	Type 1, acc. to IEC 61131-2
Signal voltage (0)	-30 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U_{IN} < +30 V DC)
Input current (typ.)	2.8 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect
System bus:	
Number of expendable modules	64
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Isolation:	
Channel - Channel	no
U_{LS}, U_A, system bus, fieldbus	500 V DC each
Service:	
Type	USB standard 1.1
Connection type (5)	M8 connectors, 4 poles
Standards and approvals:	
DeviceNet	IEC62026-3, EN50325-2
cULus UL 508	
Conformity marking	CE
Configurable functions:	
Fieldbus coupler	see manual
Digital Inputs	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation	
(per channel)	Lock/unlock; simulation value: 0/1;
(per module)	diagnostics
I/O diagnostics:	
(per module)	Short circuit/wire break of sensor supply
(per module)	Undervoltage (U_{LS} + U_A)

Technical Data

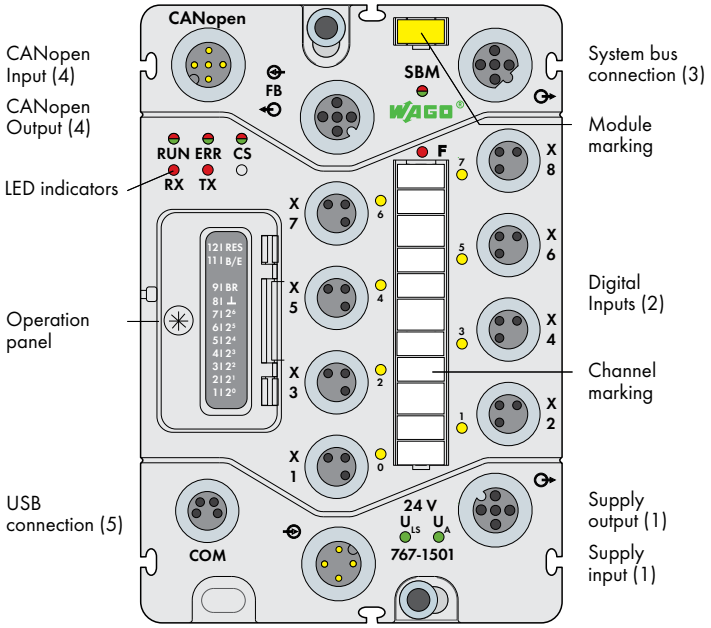
Process image:	
Input process image	2048 bytes
Output process image	2048 bytes
LED indicators:	
MS: DeviceNet module status	LED (green/red)
IO: IO status	LED (green/red)
NS: DeviceNet network status	LED (green/red)
MBO: MAC-ID/Baud rate overwritten	LED (orange)
CS : Fieldbus coupler status	LED (green/red)
SBM : System bus master status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	75 x 35.7 x 117
Weight	330 g

CANopen Fieldbus Coupler

incl. 8 digital inputs (8 x M8)



Short description:
CANopen is an industrial fieldbus protocol based on the Controller Area Network (CAN) system. CANopen links the WAGO SPEEDWAY 767 system as a slave to the master.
Data is transmitted using PDOs and SDOs. When initializing, the buscoupler determines the station's module structure and creates a process image of all inputs and outputs.
The process image is divided into two data zones containing: data received and data to be sent. Process data is available to the bus participants via object directory.

Characteristics:
- 8 digital 24VDC inputs included
- Modular and extendable up to 64 I/O modules (via system bus connection)
- USB interface for servicing purposes
- Parametrization via FDT/DTM (incl. diagnostics and simulation)
- Enclosed operation panel (operating mode and address switch)

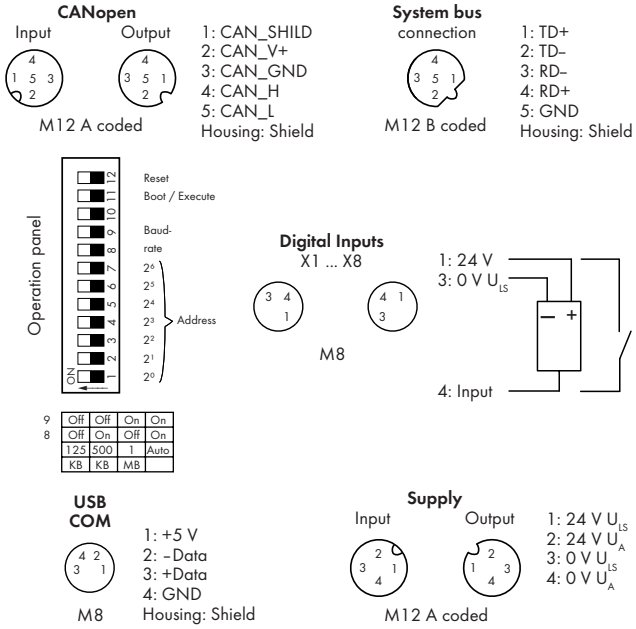
Included:
- Module WMB marker card, yellow (1 pcs)
- Channel marker strips (1 pcs)
- M8 protective caps (2 pcs)

Description	Item No.	Pack. Unit
FC CANopen 8DI 24V DC	**767-1501**	1

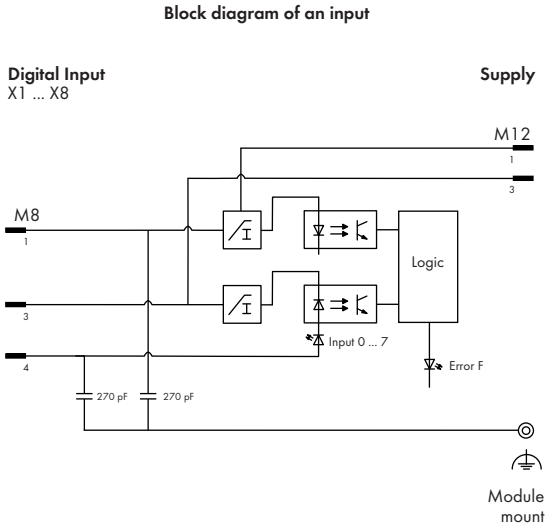
Accessories	Item No.
CANopen cable + accessories	see pages 464 ... 465
System bus/power supply cable + accessories	see pages 458 ... 461 + 470
General accessories	see pages 472 ... 473
DTM (Device Type Manager)	Download: www.wago.com

Technical Data	
Fieldbus:	
Device type	CANopen slave
Connection type (4)	M12 connectors, A coded, 5 poles
Baud rate	125/ 500/ 1000 Kbits
	Auto-baudrate detection
Transmission medium	Copper cable
Station address	1-127 (adjustable via operation panel)
Additional data	see manual
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles [1]
Current carrying capacity of supply	
connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage UL_S	24 V DC (-25 % ... +30 %)
Actuator voltage U_A [2]	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 85 mA + sensors (max. 400 mA)
Actuator current I_A	5 mA
Protection	Reverse voltage protection for U_{LS} + U_A; short circuit protection for sensor supply

[1] Derating must be observed
[2] Also required for power supply transmission



Off	Off	On	On
Off	On	Off	On
125	500	1	Auto
KB	KB	MB	



Technical Data

Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- to 3-wire
Input filter	parametrizable
Input characteristic	Type 1, acc. to IEC 61131-2
Signal voltage (0)	-30 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U_{IN} < +30 V DC)
Input current (typ.)	2.8 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect
System bus:	
Number of expendable modules	64
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Isolation:	
Channel - Channel	no
U_{LS}, U_A, system bus, fieldbus	500 V DC each
Service:	
Type	USB standard 1.1
Connection type (5)	M8 connectors, 4 poles
Standards and approvals:	
cULus UL 508	
Conformity marking	CE
Configurable functions:	
Fieldbus coupler	see manual
Digital Inputs	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation	
(per channel)	Lock/unlock; simulation value: 0/1;
(per module)	diagnostics
I/O diagnostics:	
(per module)	Short circuit/wire break of sensor supply
(per module)	Undervoltage (U_{LS} + U_A)

Technical Data

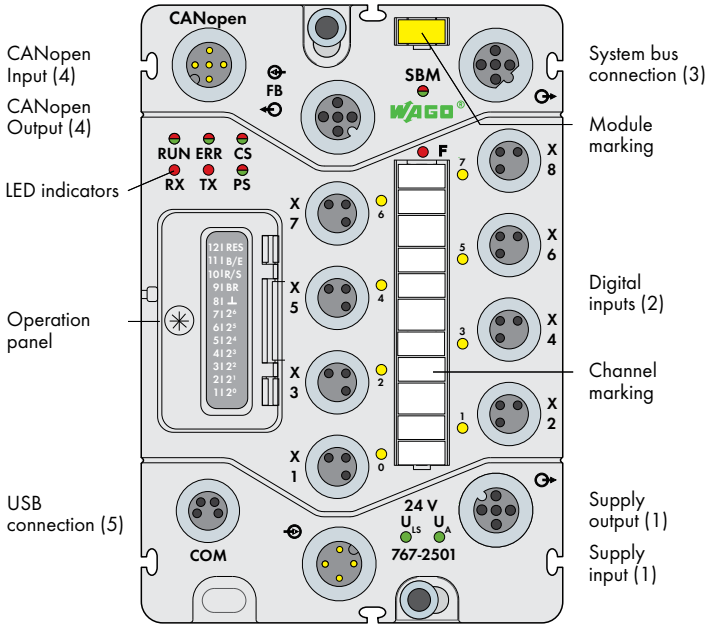
Process image:	
Input process image	512 bytes
Output process image	512 bytes
LED indicators:	
RUN: CANopen status	LED (green/red)
RX: CANopen receiver buffer	LED (red)
ERR: CANopen bus error	LED (green/red)
TX: CANopen transmit buffer	LED (red)
CS : Fieldbus coupler status	LED (green/red)
SBM : System bus master status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	75 x 35.7 x 117
Weight	377 g

CANopen Programmable Fieldbus Coupler

incl. 8 digital inputs (8 x M8)



Short description:
CANopen is an industrial fieldbus protocol based on the Controller Area Network (CAN) system. CANopen links the WAGO SPEEDWAY 767 system as a slave to the master.
Data is transmitted using PDOs and SDOs. When initializing, the buscoupler determines the station's module structure and creates a process image of all inputs and outputs. The process image is divided into two data zones containing: data received and data to be sent. Process data is available to the bus participants via object directory.
In addition, this fieldbus coupler is programmable to IEC61131-3 and can thus relieve the central control system and fieldbus, reduce response times, define the operating mode in the event of failure (fieldbus failure) as well as divide complex applications into independent, functional units.

Characteristics:
- 8 digital DC24V inputs included
- Modular and extendable up to 64 I/O modules (via system bus connection)
- USB interface for servicing purposes
- Parametrization via FDT/DTM (incl. diagnostics and simulation)
- Programmable to IEC61131-3
- Enclosed operation panel (operating mode and address switch)

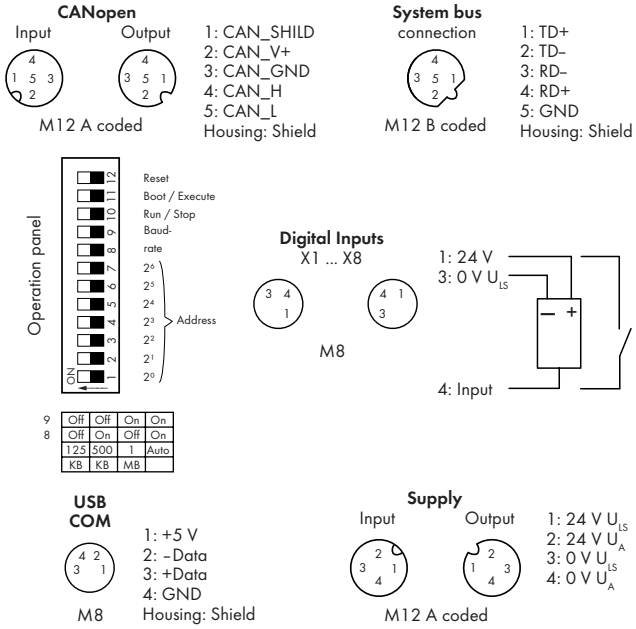
Included:
- Module WMB marker card, yellow (1 pcs)
- Channel marker strips (1 pcs)
- M8 protective caps (2 pcs)

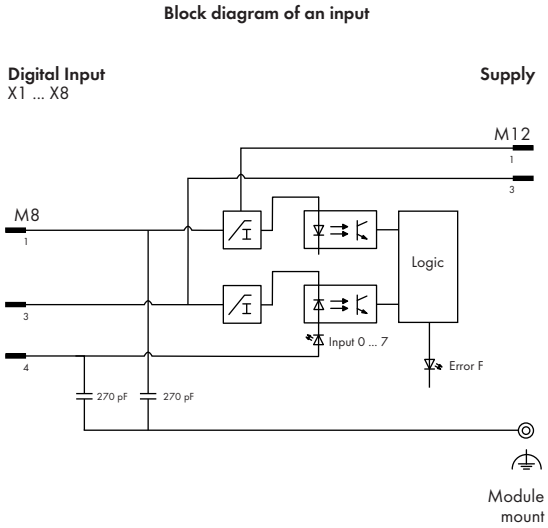
Description	Item No.	Pack. Unit
PFC CANopen 8DI 24V DC	**767-2501**	1

Accessories	Item No.
CANopen cable + accessories	see pages 464 ... 465
System bus/power supply cable + accessories	see pages 458 ... 461 + 470
General accessories	see pages 472 ... 473
DTM (Device Type Manager)	Download: www.wago.com
CoDeSys 3	**759-915**(see page 474)

Technical Data	
Fieldbus:	
Device type	CANopen slave
Connection type (4)	M12 connectors, A coded, 5 poles
Baud rate	125/ 500/ 1000 Kbits
Transmission medium	Copper cable
Station address	1-127 (adjustable via operation panel)
Additional data	see manual
Programming:	
CoDeSys 3	Development system for programming and visualization according to IEC61131-3
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles [1]
Current carrying capacity of supply connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage UL_S	24 V DC (-25 % ... +30 %)
Actuator voltage U_A [2]	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 85 mA + sensors (max. 400 mA)
Actuator current I_A	5 mA
Protection	Reverse voltage protection for U_{LS} + U_A; short circuit protection for sensor supply

[1] Derating must be observed
[2] Also required for power supply transmission





Technical Data

Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- to 3-wire
Input filter	parametrizable
Input characteristic	Type 1, acc. to IEC 61131-2
Signal voltage (0)	-30 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U_{IN} < +30 V DC)
Input current (typ.)	2.8 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect
System bus:	
Number of expendable modules	64
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Isolation:	
Channel - Channel	no
U_{LS}, U_A, system bus, fieldbus	500 V DC each
Service:	
Type	USB standard 1.1
Connection type (5)	M8 connectors, 4 poles
Standards and approvals:	
cULus UL 508	
Conformity marking	CE
Configurable functions:	
Fieldbus coupler	see manual
Digital Inputs	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation	
(per channel)	Lock/unlock; simulation value: 0/1;
(per module)	diagnostics
I/O diagnostics:	
(per module)	Short circuit/wire break of sensor supply
(per module)	Undervoltage (U_{LS} + U_A)

Technical Data

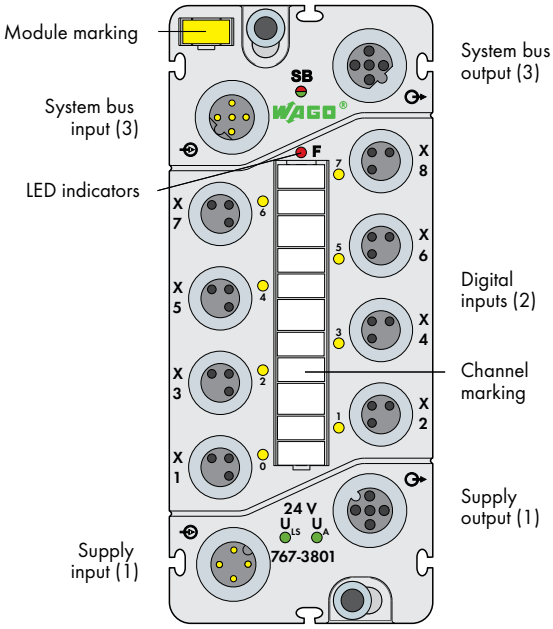
Process image:	
Input process image	512 bytes
Output process image	512 bytes
Input variables	512 bytes
Output variables	512 bytes
Program memory	1024 Kbytes
Data memory	256 Kbytes
Remanent memory	32 Kbytes (20 Kbytes retain, 12 Kbytes flag)
LED indicators:	
RUN: CANopen status	LED (green/red)
RX: CANopen receiver buffer	LED (red)
ERR: CANopen bus error	LED (green/red)
TX: CANopen transmit buffer	LED (red)
CS : Fieldbus coupler status	LED (green/red)
PS: Program status	LED (green/red)
SBM : System bus master status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	75 x 35.7 x 117
Weight	330 g

Digital Input Module 24 V DC

8 outputs (8 x M8)



Short description:
Digital input module records binary signals from switches, sensors and proximity switches (BEROs).

Characteristics:
- 8 digital inputs DC 24 V
- Diagnostic capable (per module)
- Parametrizable (filter, inversion, online simulation and diagnostics)

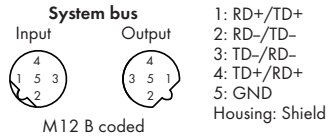
Included:
- Module WMB marker card, yellow (1 pcs)
- Marker strips (1 pcs)
- M8 protective caps (2 pcs)

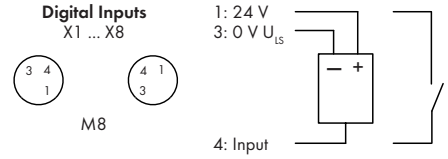
Description	Item No.	Pack. Unit
8DI 24V DC (8xM8)	**767-3801**	1

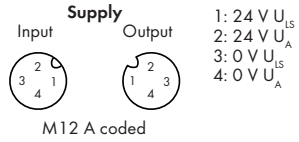
Accessories	Item No.
Marker strips, marking pen, spacer module and protective caps	see pages 472 ... 473
IP67 cables and connectors	see pages 458 ... 471, section 9

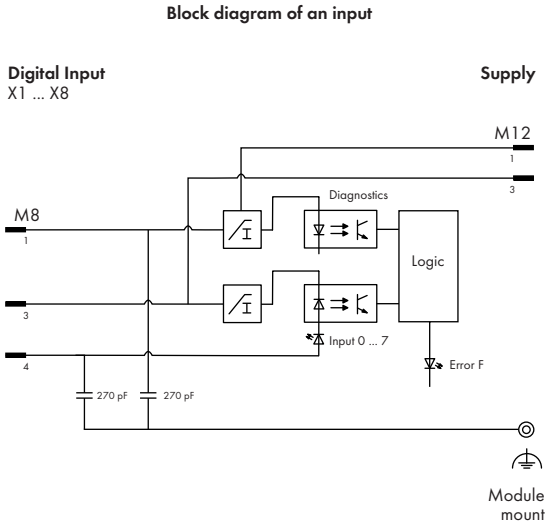
Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles [1]
Current carrying capacity of supply connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage UL_S	24 V DC (-25 % ... +30 %)
Actuator voltage U_A [2]	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 40 mA + sensors (max. 400 mA)
Actuator current I_A	5 mA
Protection	Reverse voltage protection for U_{LS} + U_A; short circuit protection for sensor supply
Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- to 3-wire
Input filter	HW : ≤ 80 µs
	SW : parametrizable
Input characteristic	Type 2, acc. to IEC 61131-2
Signal voltage (0)	-30 V ... +5 V DC
Signal voltage (1)	+11 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U_{IN} < +30 V DC)
Input current (typ.)	7.3 mA
Connection of 2-wire BEROs	max. 1.5 mA admissible closed current
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect

[1] Derating must be observed
[2] Also required for power supply transmission









Technical Data

Input characteristic:	
Input voltage	Typical input current
-30 V DC < U_{IN} < 0 V DC	0
5	2.4 mA
11	6.4 mA
24	7.3 mA
30	7.4 mA
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
cULus UL 508	
Conformity marking	CE

Technical Data

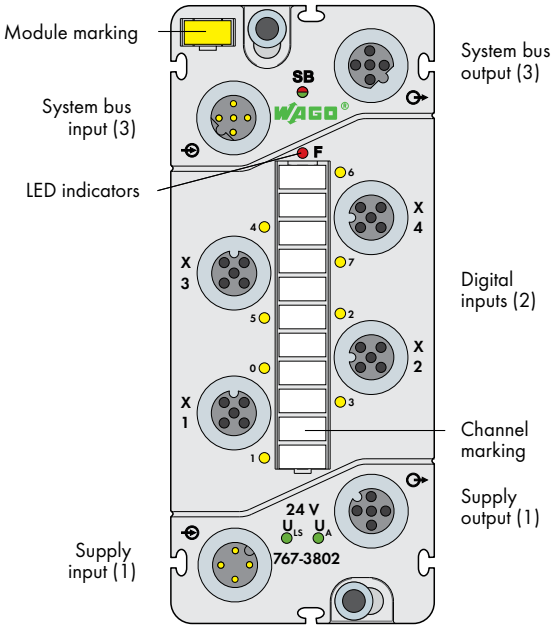
Isolation:	
Channel - Channel	no
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation	
(per channel)	Lock/unlock; simulation value: 0/1;
(per module)	diagnostics
I/O diagnostics:	
(per module)	Short circuit/wire break of sensor supply
(per module)	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	270 g

Digital Input Module 24 V DC

8 inputs (4 x M12, two outputs per connector)



Short description:
Digital input module records binary signals from switches, sensors and proximity switches (BEROs).

Characteristics:
- 8 digital inputs DC 24 V
- Diagnostic capable (per module)
- Parametrizable (filter, inversion, online simulation and diagnostics)

Included:
- Module WMB marker card, yellow (1 pcs)
- Marker strips (1 pcs)
- M12 protective caps (2 pcs)

Description	Item No.	Pack. Unit
8DI 24V DC (4xM12)	**767-3802**	1

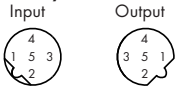
Accessories	Item No.
Marker strips, marking pen, spacer module and protective caps	see pages 472 ... 473
IP67 cables and connectors	see pages 458 ... 471, section 9

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles [1]
Current carrying capacity of supply connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage UL_S	24 V DC (-25 % ... +30 %)
Actuator voltage U_A [2]	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 40 mA + sensors (max. 400 mA)
Actuator current I_A	5 mA
Protection	Reverse voltage protection for U_{LS} + U_A; short circuit protection for sensor supply
Digital inputs:	
Number of inputs	8
Connection type (2)	M12 connectors, A coded, 5 poles
Wire connection	2- to 3-wire
Input filter	HW : ≤ 80 µs SW : parametrizable
Input characteristic	Type 2, acc. to IEC 61131-2
Signal voltage (0)	-30 V ... +5 V DC
Signal voltage (1)	+11 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U_{IN} < +30 V DC)
Input current (typ.)	7.3 mA
Connection of 2-wire BEROs	max. 1.5 mA admissible closed current
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect

[1] Derating must be observed
[2] Also required for power supply transmission

System bus

Input Output



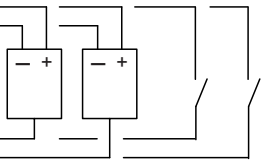
M12 B coded

1: RD+/TD+
2: RD–/TD–
3: TD–/RD–
4: TD+/RD+
5: GND
Housing: Shield

Digital Inputs X1 ... X4
(two intputs/connector)

M12 A coded

1: 24 V
3: 0 V U_{LS}
5: n.c.
4: Input A
2: Input B



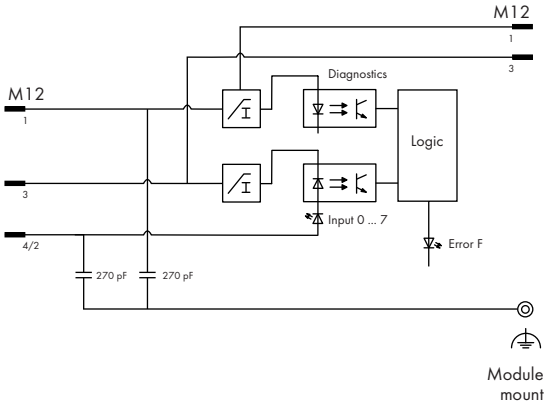
Supply

Input Output

M12 A coded

1: 24 V U_{LS}
2: 24 V U_A
3: 0 V U_{LS}
4: 0 V U_A

Block diagram of an input



Technical Data

Input characteristic:	
Input voltage	Typical input current
-30 V DC < U_{IN} < 0 V DC	0
5	2.4 mA
11	6.4 mA
24	7.3 mA
30	7.4 mA
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
cULus UL 508	
Conformity marking	CE

Technical Data

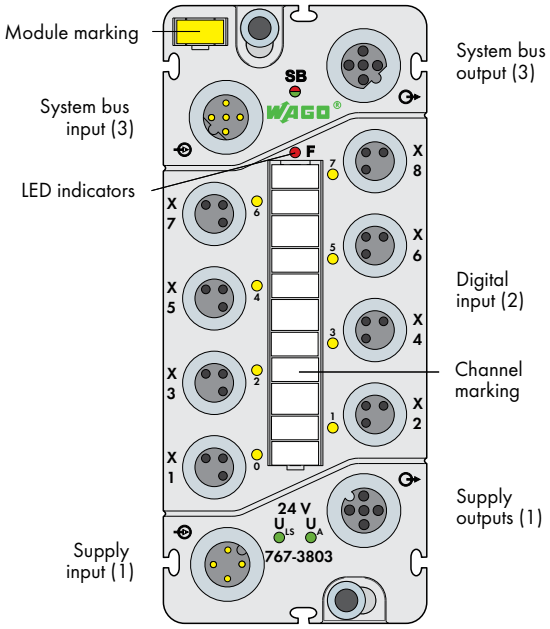
Isolation:	
Channel - Channel	no
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation	
(per channel)	Lock/unlock; simulation value: 0/1;
(per module)	diagnostics
I/O diagnostics:	
(per module)	Short circuit/wire break of sensor supply
(per module)	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	282 g

Digital Input Module 24 V DC

8 inputs (8 x M8), low-side switching



Short description:
This digital input module records binary signals from switches, sensors and proximity switches (BEROs).

Characteristics:
- 8 digital inputs DC 24 V, low-side switching
- Diagnostic capable (per module)
- Parametrizable (filter, inversion, online simulation and diagnostics)

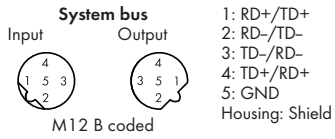
Included:
- Module WMB marker card, yellow
- Marker strip
- M8 protective caps (2 pcs)

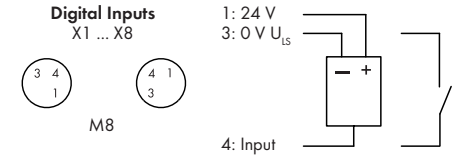
Description	Item No.	Pack. Unit
8DI 24V DC LS SWITCH (8xM8)	**767-3803**	1

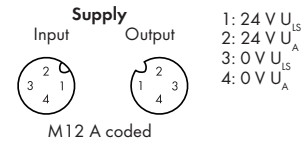
Accessories	Item No.
Marker strips, marking pen, spacer module and protective caps	see pages 472 ... 473
IP67 cables and connectors	see pages 458 ... 471, section 9

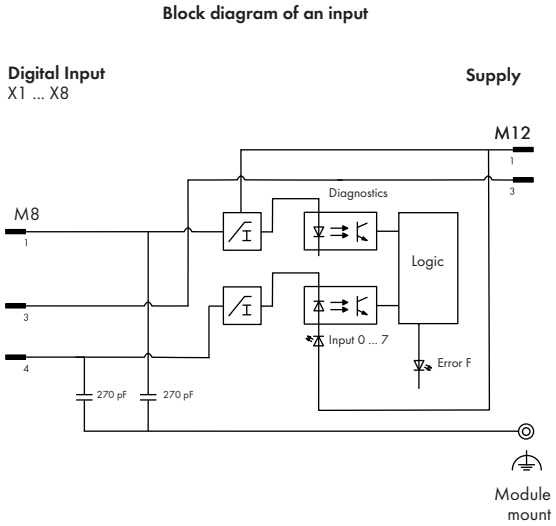
Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles [1]
Current carrying capacity of supply connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage UL_S	24 V DC (-25 % ... +30 %)
Actuator voltage U_A [2]	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	Typ. 40 mA + sensors (max. 400 mA)
Actuator current I_A	5 mA
Protection	Reverse voltage protection for U_{LS} + U_A; Short circuit protection for sensor supply
Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- to 3-wire
Input filter	HW: ≤ 80 µs
	SW: parametrizable
Signal voltage (0)	(U_{LS} - 5 V) ... U_{LS}
Signal voltage (1)	- 3 V ... (U_{LS} - 11 V)
Input wiring	Low-side switching
Input voltage	24 V DC (-30 V DC < U_{IN} < +30 V DC)
Input current (typ.)	7 mA
Connection of 2-wire BEROs	Permitted bias current: max. 1.5 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect

[1] Derating must be observed
[2] Also required for power supply transmission









Technical Data

Input characteristic:	
Input voltage	Typical input current
U_{IN}	0 mA
U_{IN} - 5 V	2.2 mA
U_{IN} - 11 V	6.1 mA ... 6.3 mA
-3 V < U_{IN} < 0 V	7 mA
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
UL 508	
Conformity marking	CE

Technical Data

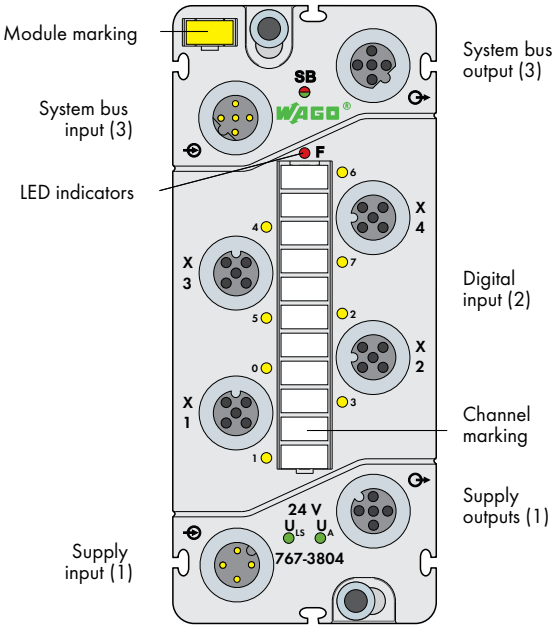
Isolation:	
Channel - Channel	No
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation	
(per channel)	Lock/unlock, simulation value: 0/1;
(per module)	Diagnostics
I/O diagnostics:	
(per module)	Short circuit/wire break of sensor supply
(per module)	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	270 g

Digital Input Module 24 V DC

8 inputs (4 x M12, two inputs per connector), low-side switching



Short description:
This digital input module records binary signals from switches, sensors and proximity switches (BEROs).

Characteristics:
- 8 digital inputs DC 24 V, low-side switching
- Diagnostic capable (per module)
- Parametrizable (filter, inversion, online simulation and diagnostics)

Included:
- Module WMB marker card, yellow
- Marker strip
- M12 protective caps (2 pcs)

Description	Item No.	Pack. Unit
8DI 24V DC LS SWITCH (4xM12)	**767-3804**	1

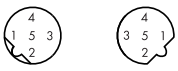
Accessories	Item No.
Marker strips, marking pen, spacer module and protective caps	see pages 472 ... 473
IP67 cables and connectors	see pages 458 ... 471, section 9

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles [1]
Current carrying capacity of supply connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage UL_S	24 V DC (-25 % ... +30 %)
Actuator voltage U_A [2]	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	Typ. 40 mA + sensors (max. 400 mA)
Actuator current I_A	5 mA
Protection	Reverse voltage protection for U_{LS} + U_A; Short circuit protection for sensor supply
Digital inputs:	
Number of inputs	8
Connection type (2)	M12 connectors, A coded, 5 poles
Wire connection	2- to 3-wire
Input filter	HW: ≤ 80 µs; SW: parametrizable
Signal voltage (0)	(U_{LS} - 5 V) ... U_{LS}
Signal voltage (1)	- 3 V ... (U_{LS} - 11 V)
Input wiring	Low-side switching
Input voltage	24 V DC (-30 V DC < U_{IN} < +30 V DC)
Input current (typ.)	7 mA
Connection of 2-wire BEROs	Permitted bias current: max. 1.5 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect

[1] Derating must be observed
[2] Also required for power supply transmission

System bus

Input Output



M12 B coded

1: RD+/TD+
2: RD–/TD–
3: TD–/RD–
4: TD+/RD+
5: GND
Housing: Shield

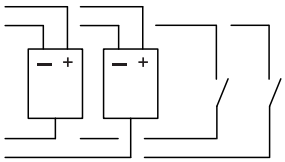
Digital Inputs X1 ... X4
(two intputs/connector)

M12 A coded

1: 24 V
3: 0 V U_{LS}

5: n.c.

4: Input A
2: Input B



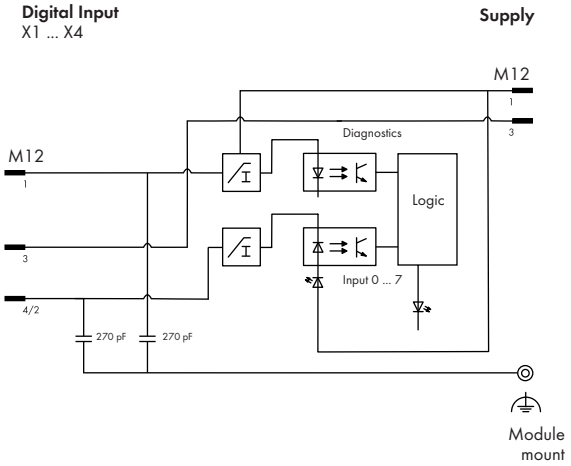
Supply

Input Output

M12 A coded

1: 24 V U_{LS}
2: 24 V U_A
3: 0 V U_{LS}
4: 0 V U_A

Block diagram of an input



Technical Data

Input characteristic:	
Input voltage	Typical input current
U_{IN}	0 mA
U_{IN} - 5 V	2.2 mA
U_{IN} - 11 V	6.1 mA ... 6.3 mA
-3 V < U_{IN} < 0 V	7 mA
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
UL 508	
Conformity marking	CE

Technical Data

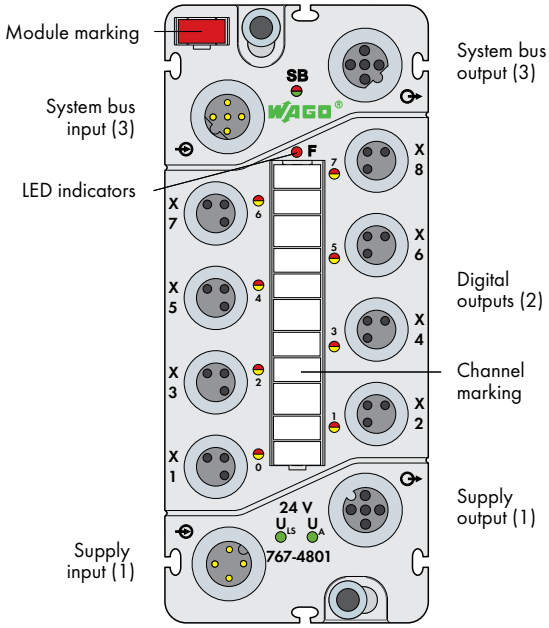
Isolation:	
Channel - Channel	No
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation	
(per channel)	Lock/unlock, simulation value: 0/1;
(per module)	Diagnostics
I/O diagnostics:	
(per module)	Short circuit/wire break of sensor supply
(per module)	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	282 g

Digital Output Module 24 V DC / 0.5 A

8 outputs (8 x M8)



Short description:
Digital output module for actuator control (e.g., magnetic valves, DC contactors, indicators).

Characteristics:
- 8 digital outputs DC 24 V / 0.5 A
- Diagnostic capable (per channel)
- Parametrizable (inversion, substitute value strategy, substitute value, manual operation, online simulation and diagnostics)

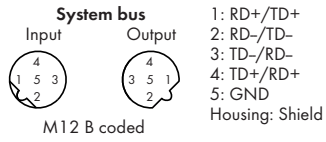
Included:
- Module WMB marker card, red (1 pcs)
- Marker strips (1 pcs)
- M8 protective caps (2 pcs)

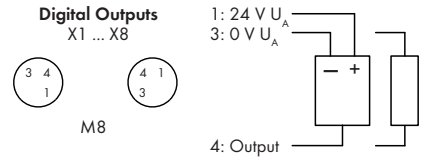
Description	Item No.	Pack. Unit
8DO 24V DC 0.5A (8xM8)	**767-4801**	1

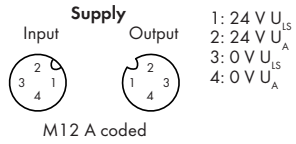
Accessories	Item No.
Marker strips, marking pen, spacer module and protective caps	see pages 472 ... 473
IP67 cables and connectors	see pages 458 ... 471, section 9

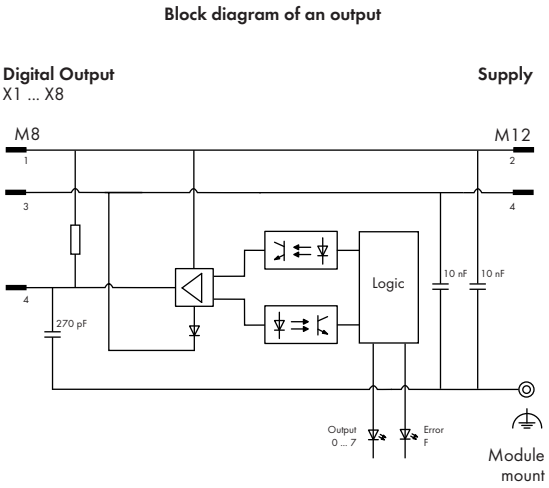
Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles [1]
Current carrying capacity of supply connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage UL_S	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 45 mA (only logic part)
Actuator current I_A	typ. 25 mA + actuators
Protection	Reverse voltage protection for U_{LS} + U_A
Digital outputs:	
No. of outputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- to 3-wire
Output voltage	≤ U_A
Output current (per channel)	0.5 A (max. 0.6 A), short-circuit/overload proof (thermal disconnection)
Voltage drop against U_A at 500 mA	Max. 0.2 V DC
Output current (module)	Max. 4 A
Leakage current in OFF state	Typ. 150 µA
Output circuit	High-side switching

[1] Derating must be observed









Technical Data

Information on selecting the actuator:	
Delay time HW	
from "0" to "1" (0-90%)	Typ. 75 µs (resistive load)
from "1" to "0" (0-90%)	Typ. 270 µs (resistive load)
Rise time	
from "0" to "1"	Typ. 40 µs (resistive load)
from "1" to "0"	Typ. 50 µs (resistive load)
Cable length	≤ 30 m
Protection against reverse voltages	≤ 0.5A
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz
	Resistive load approx. 500 Hz
	Lamp load approx. 500 Hz
Parallel connection of 2 outputs	for power boost
	for redundant actuation of a load
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	< 0.4 Ω
Influence of operating states on output:	
PLC CPU stop	Acc. to substitute value strategy
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles,
	shielded
Standards and approvals:	
UL 508	
Conformity marking	CE

Technical Data

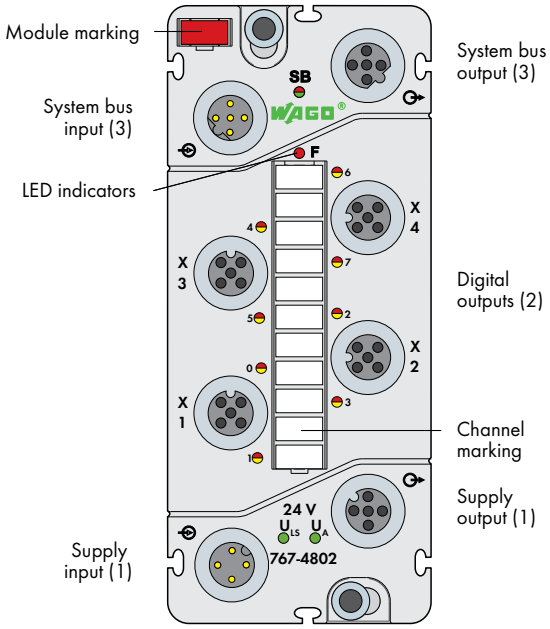
Isolation:	
Channel - Channel	no
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation	
(per channel)	Lock/unlock; simulation value: 0/1;
(per channel/module)	diagnostics
I/O diagnostics:	
(per channel)	Short circuit (actuators)
(per channel)	Wire break (actuators)
(per channel)	Overtemperature
(per module)	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Output signal status	LED (yellow/red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	270 g

Digital Output Module 24 V DC / 0.5 A

8 outputs (4 x M12, two outputs per connector)



Short description:
Digital output module for actuator control (e.g., magnetic valves, DC contactors, indicators).

Characteristics:
- 8 digital outputs DC 24 V / 0.5 A
- Diagnostic capable (per channel)
- Parametrizable (inversion, substitute value strategy, substitute value, manual operation, online simulation and diagnostics)

Included:
- Module WMB marker card, red (1 pcs)
- Marker strips (1 pcs)
- M12 protective caps (2 pcs)

Description	Item No.	Pack. Unit
8DO 24V DC 0.5A (4xM12)	**767-4802**	1

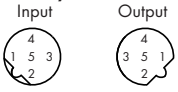
Accessories	Item No.
Marker strips, marking pen, spacer module and protective caps	see pages 472 ... 473
IP67 cables and connectors	see pages 458 ... 471, section 9

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles [1]
Current carrying capacity of supply connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage UL_S	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 45 mA (only logic part)
Actuator current I_A	typ. 25 mA + actuators
Protection	Reverse voltage protection for U_{LS} + U_A
Digital outputs:	
No. of outputs	8
Connection type (2)	M12 connectors, A coded, 5 poles
Wire connection	2- to 3-wire
Output voltage	≤ U_A
Output current (per channel)	0.5 A (max. 0.6 A), short-circuit/overload proof (thermal disconnection)
Voltage drop against U_A at 500 mA	Max. 0.2 V DC
Output current (module)	Max. 4 A
Leakage current in OFF state	Typ. 150 µA
Output circuit	High-side switching

[1] Derating must be observed

System bus

Input Output



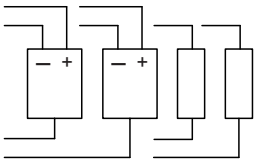
M12 B coded

1: RD+/TD+
2: RD–/TD–
3: TD–/RD–
4: TD+/RD+
5: GND
Housing: Shield

Digital Outputs X1 ... X4
(two outputs/connector)

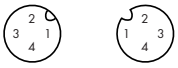
M12 A coded

1: 24 V U_A
3: 0 V U_A
5: n.c.
4: Output A
2: Output B



Supply

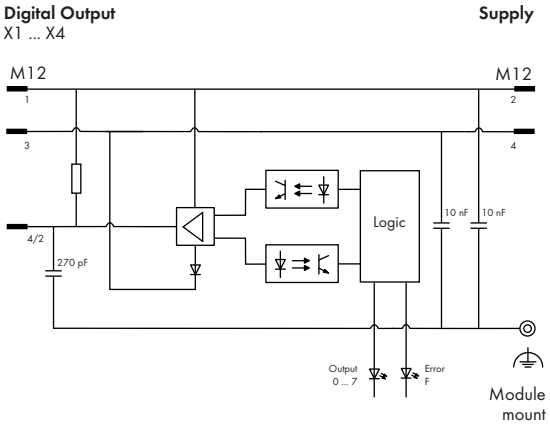
Input Output



M12 A coded

1: 24 V U_{LS}
2: 24 V U_A
3: 0 V U_{LS}
4: 0 V U_A

Block diagram of an output



Technical Data

Information on selecting the actuator:	
Delay time HW	
from "0" to "1" (0-90%)	Typ. 75 µs (resistive load)
from "1" to "0" (0-90%)	Typ. 270 µs (resistive load)
Rise time	
from "0" to "1"	Typ. 40 µs (resistive load)
from "1" to "0"	Typ. 50 µs (resistive load)
Cable length	≤ 30 m
Protection against reverse voltages	≤ 0.5A
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz
	Resistive load approx. 500 Hz
	Lamp load approx. 500 Hz
Parallel connection of 2 outputs	for power boost
	for redundant actuation of a load
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	< 0.4 Ω
Influence of operating states on output:	
PLC CPU stop	Acc. to substitute value strategy
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles,
	shielded
Standards and approvals:	
UL 508	
Conformity marking	CE

Technical Data

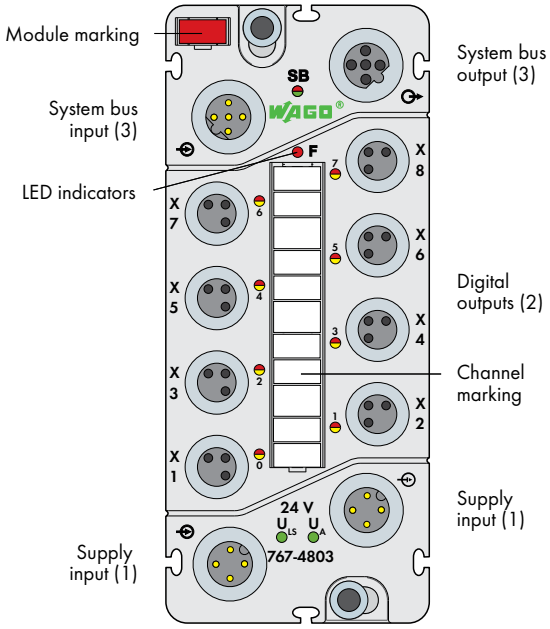
Isolation:	
Channel - Channel	no
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation	
(per channel)	Lock/unlock; simulation value: 0/1;
(per channel/module)	diagnostics
I/O diagnostics:	
(per channel)	Short circuit (actuators)
(per channel)	Wire break (actuators)
(per channel)	Overtemperature
(per module)	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Output signal status	LED (yellow/red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	260 g

Digital Output Module 24 V DC / 2.0 A

8 outputs (8 x M8)



Short description:
Digital output module for actuator control (e.g., magnetic valves, DC contactors, indicators).

Characteristics:
- 8 digital outputs DC 24 V / 2.0 A
- Diagnostic capable (per channel)
- Parametrizable (inversion, substitute value strategy, substitute value, manual mode, online simulation and diagnostics)

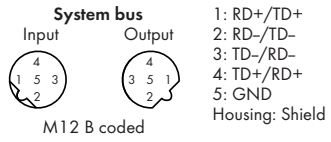
Included:
- Module WMB marker card, red (1 pcs)
- Marker strips (1 pcs)
- M12 protective caps (2 pcs)

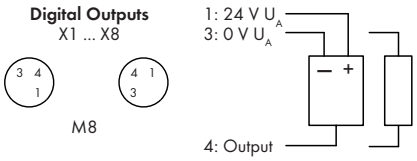
Description	Item No.	Pack. Unit
8DO 24V DC 2.0A(8xM8)	**767-4803**	1

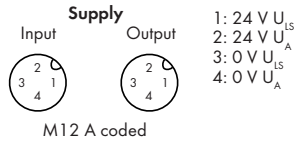
Accessories	Item No.
Marker strips, marking pen, spacer module and protective caps	see pages 472 ... 473
IP67 cables and connectors	see pages 458 ... 471, section 9

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles [1]
Current carrying capacity of supply connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage UL_S	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 45 mA (only logic part)
Actuator current I_A	typ. 55 mA + actuators
Protection	Reverse voltage protection for U_{LS} + U_A
Digital outputs:	
No. of outputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- to 3-wire
Output voltage	≤ U_A
Output current (per channel)	2.0 A (max. 2.4 A), short-circuit/overload proof (thermal disconnection)
Voltage drop against U_A	
at 2.0 A	Max. 0.2 V DC
Output current (module)	Max. 8 A
Leakage current in OFF state	Typ. 780 µA
Output circuit	High-side switching

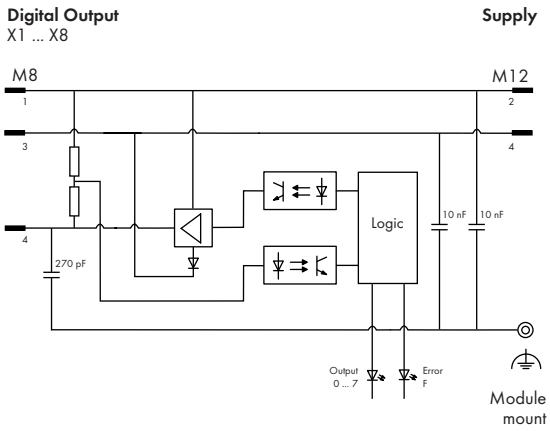
[1] Derating must be observed







Block diagram of an output



Technical Data

Information on selecting the actuator:	
Delay time HW	
from "0" to "1" (0-90%)	Typ. 75 µs (resistive load)
from "1" to "0" (0-90%)	Typ. 265 µs (resistive load)
Rise time	
from "0" to "1"	Typ. 30 µs (resistive load)
from "1" to "0"	Typ. 50 µs (resistive load)
Cable length	≤ 30 m
Protection against reverse voltages	≤ 2A
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz
	Resistive load approx. 500 Hz
	Lamp load approx. 500 Hz
Parallel connection of 2 outputs	for power boost
	for redundant actuation of a load
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	max. 0.1 Ω
Influence of operating states on output:	
PLC CPU stop	Acc. to substitute value strategy
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles,
	shielded
Standards and approvals:	
UL 508	
Conformity marking	CE

Technical Data

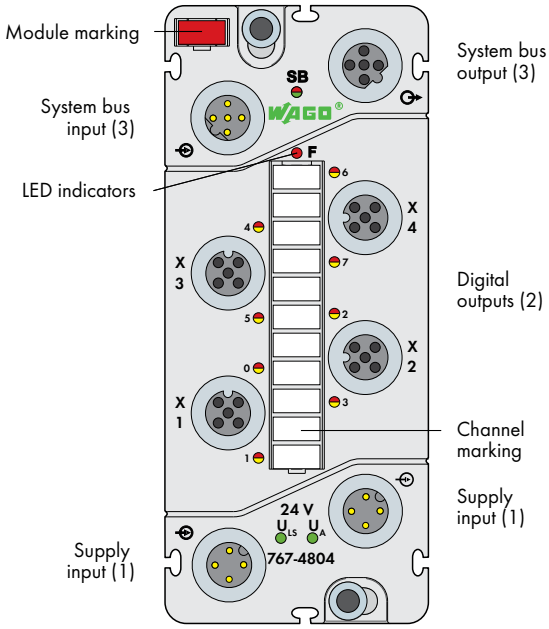
Isolation:	
Channel - Channel	no
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation	
(per channel)	Lock/unlock; simulation value: 0/1;
(per channel/module)	diagnostics
I/O diagnostics:	
(per channel)	Short circuit (actuators)
(per channel)	Wire break (actuators)
(per channel)	Overtemperature
(per module)	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Output signal status	LED (yellow/red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	277 g

Digital Output Module 24 V DC / 2.0 A

8 outputs (4 x M12, two outputs per connector)



Short description:
Digital output module for actuator control (e.g., magnetic valves, DC contactors, indicators).

Characteristics:
- 8 digital outputs DC 24 V / 2.0 A
- Diagnostic capable (per channel)
- Parametrizable (inversion, substitute value strategy, substitute value, manual mode, online simulation and diagnostics)

Included:
- Module WMB marker card, red (1 pcs)
- Marker strips (1 pcs)
- M8 protective caps (2 pcs)

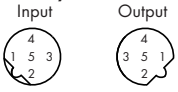
Description	Item No.	Pack. Unit
8DO 24V DC 2.0A(4xM12)	**767-4804**	1

Accessories	Item No.
Marker strips, marking pen, spacer module and protective caps	see pages 472 ... 473
IP67 cables and connectors	see pages 458 ... 471, section 9

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles [1]
Current carrying capacity of supply connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage UL_S	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 45 mA (only logic part)
Actuator current I_A	typ. 55 mA + actuators
Protection	Reverse voltage protection for U_{LS} + U_A
Digital outputs:	
No. of outputs	8
Connection type (2)	M12 connectors, A coded, 5 poles
Wire connection	2- to 3-wire
Output voltage	≤ U_A
Output current (per channel)	2.0 A (max. 2.4 A), short-circuit/overload proof (thermal disconnection)
Voltage drop against U_A	
at 2.0 A	Max. 0.2 V DC
Output current (module)	Max. 8 A
Leakage current in OFF state	Typ. 780 µA
Output circuit	High-side switching

[1] Derating must be observed

System bus



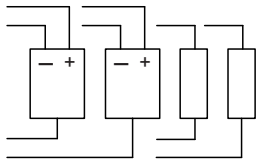
M12 B coded

1: RD+/TD+
2: RD–/TD–
3: TD–/RD–
4: TD+/RD+
5: GND
Housing: Shield

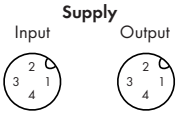
Digital Outputs X1 ... X4
(two outputs/connector)

M12 A coded

1: 24 V U_A
3: 0 V U_A
5: n.c.
4: Output A
2: Output B



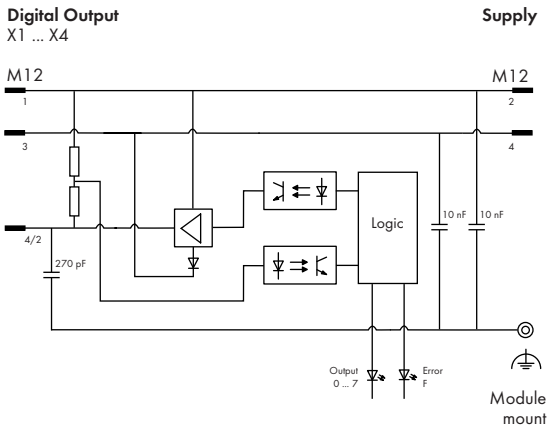
Supply



M12 A coded

1: 24 V U_{LS}
2: 24 V U_A
3: 0 V U_{LS}
4: 0 V U_A

Block diagram of an output



Technical Data

Information on selecting the actuator:	
Delay time HW	
from "0" to "1" (0-90%)	Typ. 75 µs (resistive load)
from "1" to "0" (0-90%)	Typ. 265 µs (resistive load)
Rise time	
from "0" to "1"	Typ. 30 µs (resistive load)
from "1" to "0"	Typ. 50 µs (resistive load)
Cable length	≤ 30 m
Protection against reverse voltages	≤ 2A
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz
	Resistive load approx. 500 Hz
	Lamp load approx. 500 Hz
Parallel connection of 2 outputs	for power boost
	for redundant actuation of a load
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	max. 0.1 Ω
Influence of operating states on output:	
PLC CPU stop	Acc. to substitute value strategy
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles,
	shielded
Standards and approvals:	
UL 508	
Conformity marking	CE

Technical Data

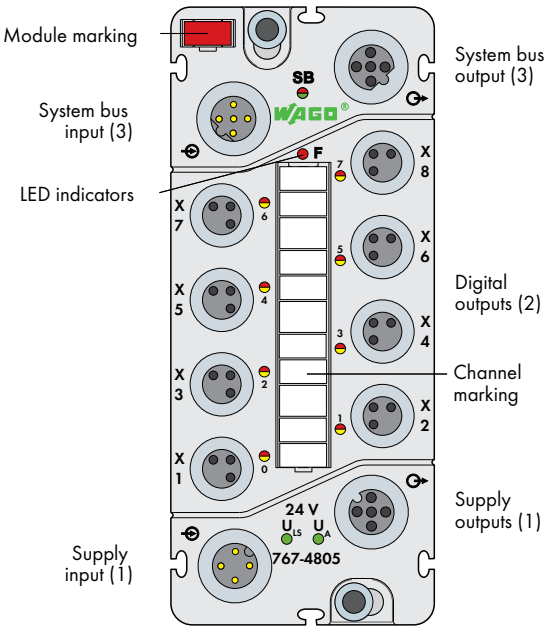
Isolation:	
Channel - Channel	no
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation	
(per channel)	Lock/unlock; simulation value: 0/1;
(per channel/module)	diagnostics
I/O diagnostics:	
(per channel)	Short circuit (actuators)
(per channel)	Wire break (actuators)
(per channel)	Overtemperature
(per module)	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Output signal status	LED (yellow/red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	250 g

Digital Output Module 24 V DC / 0.5 A

8 ouputs (8 x M8), low-side switching



Short description:
Digital output module for actuator control (e.g., magnetic valves, DC contactors, indicators).

Characteristics:
- 8 digital outputs DC 24 V / 0.5 A, low-side switching
- Diagnostic capable (per channel)
- Parametrizable (inversion, substitute value strategy, substitute value, manual mode, online simulation and diagnostics)

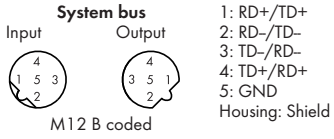
Included:
- WMB module marker card, red
- Marker strip
- M8 protective caps (2 pcs)

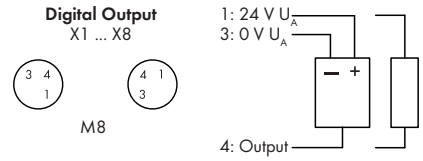
Description	Item No.	Pack. Unit
8DO 24V DC 0.5A LS SWITCH (8xM8)	**767-4805**	1

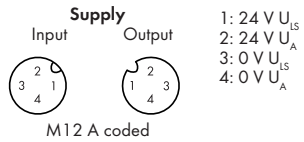
Accessories	Item No.
Marker strips, marking pen, spacer module and protective caps	see pages 472 ... 473
IP67 cables and connectors	see pages 458 ... 471, section 9

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles [1]
Current carrying capacity of supply	
connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage UL_S	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	Typ. 40 mA (only logic part)
Actuator current I_A	Typ. 20 mA + actuators
Protection	Reverse voltage protection for U_{LS} + U_A
Digital outputs:	
No. of outputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- to 3-wire
Output voltage	≥ 0 V U_A
Output current (per channel)	0.5 A (max. 0.6 A), short-circuit/overload protection (thermal shutdown)
Voltage drop against U_A	
at 500 mA	Max. 0.2 V DC (0 V U_A)
Output current (module)	Max. 4 A
Leakage current in OFF state	Typ. 150 µA
Output circuit	Low-side switching

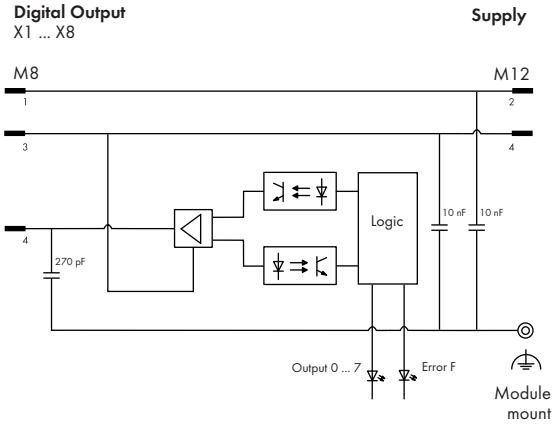
[1] Derating must be observed







Block diagram of an output



Technical Data

Information on selecting the actuator:	
Delay time HW	
from "0" to "1" (0-90%)	Typ. 75 µs (resistive load)
from "1" to "0" (0-90%)	Typ. 270 µs (resistive load)
Rise time	
from "0" to "1"	Typ. 150 µs (resistive load)
from "1" to "0"	Typ. 150 µs (resistive load)
Cable length	≤ 30 m
Protection against reverse voltages	≤ 0.5A
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz
	Resistive load approx. 500 Hz
	Lamp load approx. 500 Hz
Parallel connection of 2 outputs	For power boost
	For redundant load actuation
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	< 0.4 Ω
Influence of operating states on output:	
PLC CPU stop	Acc. to substitute value strategy
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
UL 508	
Conformity marking	CE

Technical Data

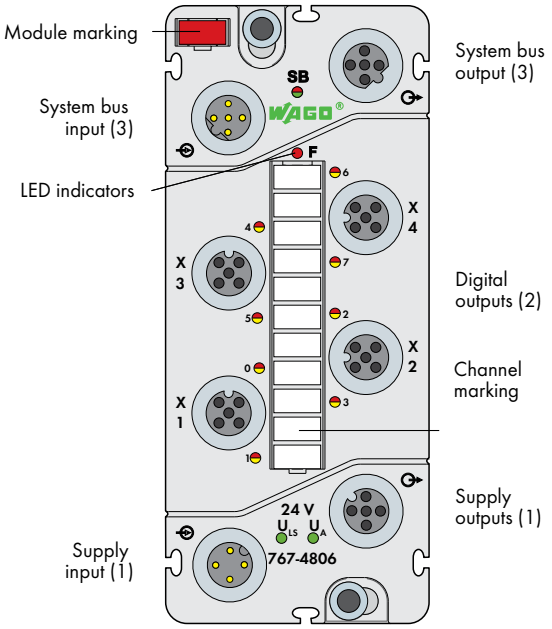
Isolation:	
Channel - Channel	No
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value / hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation	
(per channel)	Lock/unlock, simulation value: 0/1;
(per channel/module)	Diagnostics
I/O diagnostics:	
(per channel)	Overtemperature
(per module)	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Output signal status	LED (yellow/red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	270 g

Digital Output Module 24 V DC / 0.5 A

8 outputs (4 x M12, two inputs per connector), low-side switching



Short description:
Digital output module for actuator control (e.g., magnetic valves, DC contactors, indicators).

Characteristics:
- 8 digital outputs DC 24 V / 0.5 A, low-side switching
- Diagnostic capable (per channel)
- Parametrizable (inversion, substitute value strategy, substitute value, manual mode, online simulation and diagnostics)

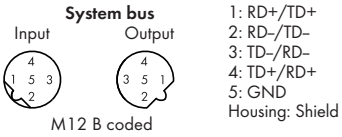
Included:
- WMB module marker card, red
- Marker strip
- M12 protective caps (2 pcs)

Description	Item No.	Pack. Unit
8DO 24V DC 0.5A (4xM12)	**767-4806**	1

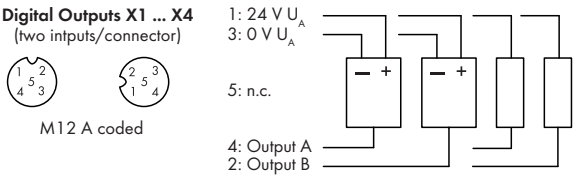
Accessories	Item No.
Marker strips, marking pen, spacer module and protective caps	see pages 472 ... 473
IP67 cables and connectors	see pages 458 ... 471, section 9

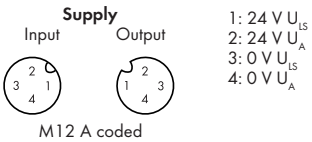
Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles [1]
Current carrying capacity of supply	
connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage UL_S	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	Typ. 40 mA (only logic part)
Actuator current I_A	Typ. 20 mA + actuators
Protection	Reverse voltage protection for U_{LS} + U_A
Digital outputs:	
No. of outputs	8
Connection type (2)	M12 connectors, A coded, 5 poles
Wire connection	2- to 3-wire
Output voltage	≥ 0 V U_A
Output current (per channel)	0.5 A (max. 0.6 A), short-circuit/overload protection (thermal shutdown)
Voltage drop against U_A	
at 500 mA	Max. 0.2 V DC (0 V U_A)
Output current (module)	Max. 4 A
Leakage current in OFF state	Typ. 150 µA
Output circuit	Low-side switching

[1] Derating must be observed

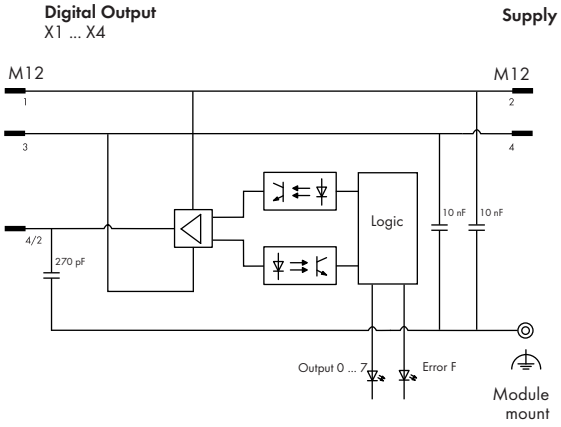


1: RD+/TD+
2: RD–/TD–
3: TD–/RD–
4: TD+/RD+
5: GND
Housing: Shield





Block diagram of an output



Technical Data

Information on selecting the actuator:	
Delay time HW	
from "0" to "1" (0-90%)	Typ. 75 µs (resistive load)
from "1" to "0" (0-90%)	Typ. 270 µs (resistive load)
Rise time	
from "0" to "1"	Typ. 150 µs (resistive load)
from "1" to "0"	Typ. 150 µs (resistive load)
Cable length	≤ 30 m
Protection against reverse voltages	≤ 0.5A
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz
	Resistive load approx. 500 Hz
	Lamp load approx. 500 Hz
Parallel connection of 2 outputs	For power boost
	For redundant load actuation
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	< 0.4 Ω
Influence of operating states on output:	
PLC CPU stop	Acc. to substitute value strategy
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
UL 508	
Conformity marking	CE

Technical Data

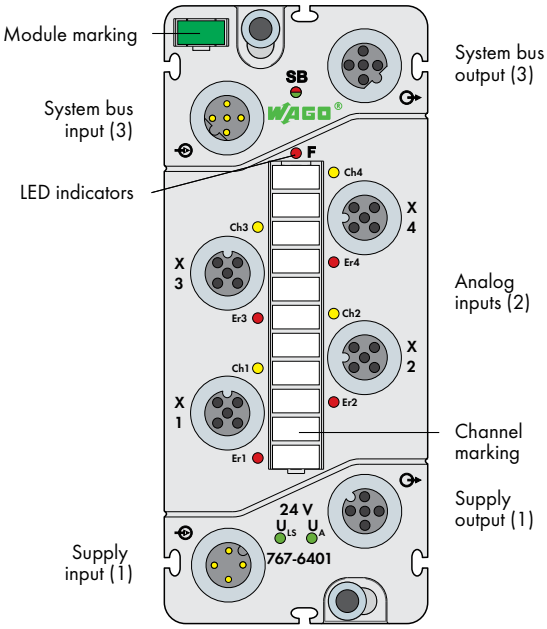
Isolation:	
Channel - Channel	No
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value / hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation	
(per channel)	Lock/unlock, simulation value: 0/1;
(per channel/module)	Diagnostics
I/O diagnostics:	
(per channel)	Overtemperature
(per module)	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Output signal status	LED (yellow/red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	260 g

Analog Input Module Voltage/Current

4 inputs



Short description:
Analog input module records voltage and current signals.

Characteristics:
- 4 analog inputs 0-20 mA, 4-20 mA, ±20 mA, 0-10 V or ±10 V
- Diagnostic capable
- Parametrizable (measuring range, limiting value, filter, substitute value, online simulation and diagnostics)

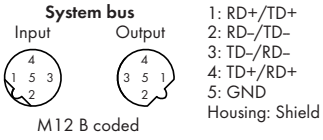
Included:
- Module WMB marker card, green (1 pcs)
- Marker strips (1 pcs)
- M12 protective caps (2 pcs)

Description	Item No.	Pack. Unit
4AI U/I	**767-6401**	1

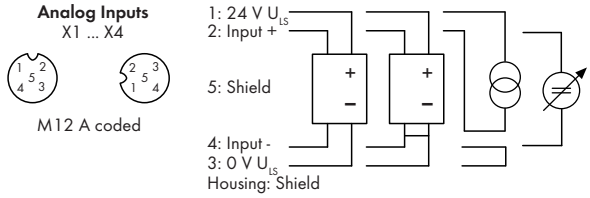
Accessories	Item No.
Marker strips, marking pen, spacer module and protective caps	see pages 472 ... 473
IP67 cables and connectors	see pages 458 ... 471, section 9

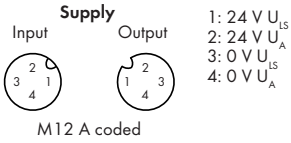
Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles [1]
Current carrying capacity of supply connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage UL_S	24 V DC (-25 % ... +30 %)
Actuator voltage U_A [2]	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	50 mA + sensors (max. 400 mA)
Actuator current I_A	5 mA
Protection	Reverse voltage protection for U_{LS} + U_A; short circuit protection for sensor supply
Analog inputs:	
Number of inputs	4
Connection type (2)	M12 connectors, A coded, 5 poles
Type of signal	Currents and voltages (differencial inputs)
Wire connection	2- to 4-wire (external shield (screen) via knurled nut)
Measuring range	0-20 mA, 4-20 mA, ±20 mA, 0-10 V, ±10 V
Input impedance	AI(U) ≥ 100 kΩ AI(I) ≤ 200 Ω at 20 mA
Type of cable, cable length	shielded, ≤ 30 m

[1] Derating must be observed
[2] Also required for power supply transmission



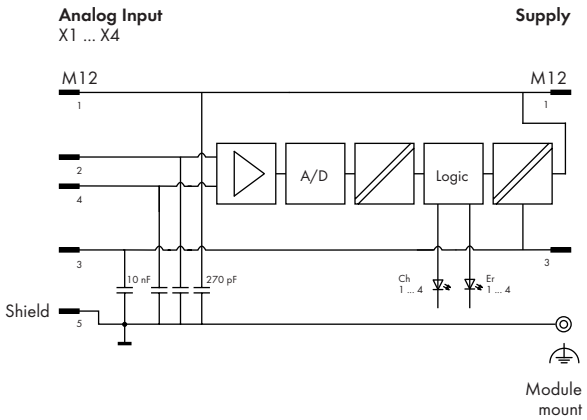
1: RD+/TD+
2: RD–/TD–
3: TD–/RD–
4: TD+/RD+
5: GND
Housing: Shield





1: 24 V U_{LS}
2: 24 V U_A
3: 0 V U_{LS}
4: 0 V U_A

Block diagram of an input



Technical Data

Analog value creation:	
Resolution	16 bits
Conversion method	SAR
Monotonicity without error code	yes
Conversion time	1 ms
Sampling delay	1 ms (module)
	< 100 µs (channel/channel)
Sampling repeat time	1 ms
Failures and errors:	
Voltage proof	up to 32 V (internal current limitation)
Max. measuring error at 25 °C	≤ ± 0.2 % of the measuring range
Temperature error	≤ 100 ppm/K of measuring range
Maximum error over the full	
temperature range	≤ ± 0.6 % of the measuring range
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles,
	shielded
Standards and approvals:	
UL 508	
Conformity marking	CE

Technical Data

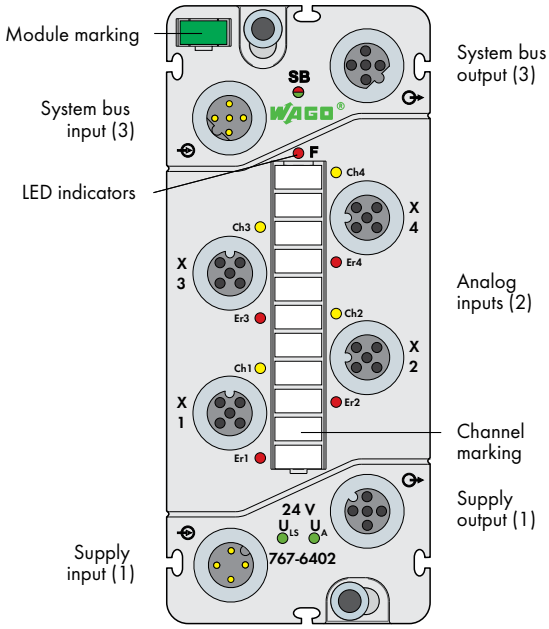
Isolation:	
Channel - Channel	no
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Measuring range (per channel)	0-20 mA, 4-20 mA, ±20 mA,
	0-10 V, ±10 V, user-defined
Limiting values (per channel)	Min./Max.
Input filter (per channel)	50 Hz / 60 Hz / filter off
Substitute value (per channel)	Value
Online simulation	
(per channel)	Lock/unlock; simulation value: (according
	to measuring range);
(per channel/module)	Diagnostics
I/O diagnostics:	
(per channel)	Overrange/measuring range underflow
	and wire break at 4-20 mA
(per channel)	Overcurrent
(per channel)	Limit value violation (min/max)
(per module)	Short circuit (sensor power supply)
(per module)	Wire break (sensor power supply)
(per module)	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	8-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
Ch1 ... Ch4: Input signal status	LED (yellow)
Er1 ... Er4: Input signal error	LED (red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	282 g

Analog Input Module RTD

4 inputs



Short description:
Analog input module records the values from resistance thermometers, resistors and potentiometer adjustment.

Characteristics:
- 4 RTD analog inputs
- Diagnostic capable
- Parametrizable (measuring range, limiting value, filter, substitute value, online simulation and diagnostics)

Included:
- Module WMB marker card, green (1 pcs)
- Marker strips (1 pcs)
- M12 protective caps (2 pcs)

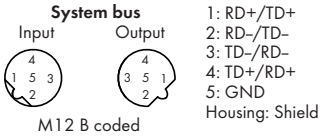
Description	Item No.	Pack. Unit
4AI RTD	**767-6402**	1

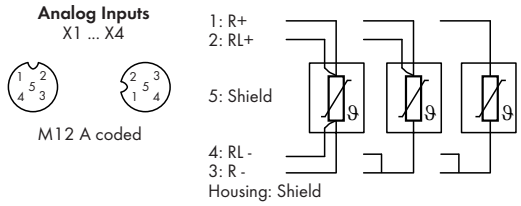
Accessories	Item No.
Marker strips, marking pen, spacer module and protective caps	see pages 472 ... 473
IP67 cables and connectors	see pages 458 ... 471, section 9

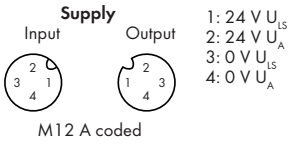
Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles [1]
Current carrying capacity of supply connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage UL_S	24 V DC (-25 % ... +30 %)
Actuator voltage U_A [2]	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 40 mA
Actuator current I_A	4 mA
Protection	Reverse voltage protection for U_{LS} + U_A
Analog inputs:	
Number of inputs	4
Connection type (2)	M12 connectors, A coded, 5 poles
Type of signal	Resistance thermometers, resistors, potentiometers
Wire connection	2-/3-/4-wire (external shield (screen) via knurled nut)
Signal measuring range	
Resistance thermometer	Pt100, Pt200, Pt500, Pt1000 Ni100, Ni120, Ni1000
Resistors	1 kΩ and 4 kΩ
Potentiometer	0 ... 100 % setting angle (for 1 kΩ and 4 kΩ)
Temperature range	Pt: -200 °C ... +850 °C Ni: -60 °C ... +250 °C
Resolution (over entire range)	0.05 °C / 0.05 Ω/ 0.2 Ω / 0.005 %
Measuring current	< 0.5 mA
Type of cable, cable length	shielded, ≤ 30 m

[1] Derating must be observed

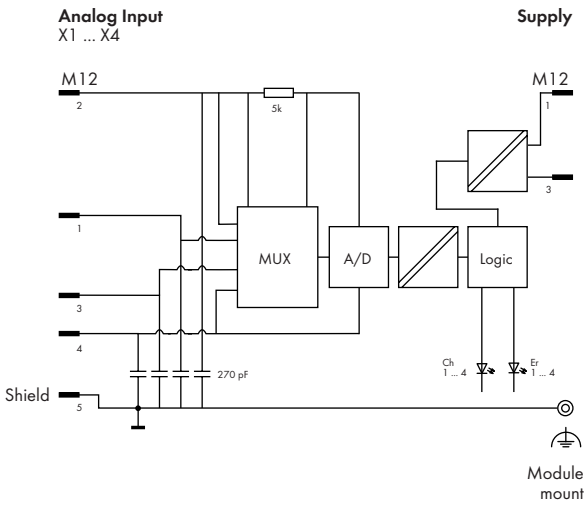
[2] Also required for power supply transmission







Block diagram of an input



Technical Data

Analog value creation:	
Resolution	16 bits
Integration time	2 ... 120 ms
Conversion method	SigmaDelta
Monotonicity without error code	yes
Conversion time	1/Input sampling frequency (s)
Sampling repeat time	Number of active channels x conversion
Linearization	See free characteristic
Failures and errors:	
Max. measuring error at 25 °C	± 0.1 % of the measuring range
Temperature error	± 0.001 % of the measuring range/ K
Maximum error over the full temperature range	on request
Maximum temporary deviation	on request
Repeat accuracy	on request
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Isolation:	
Channel - Channel	no
U_{LS}, U_A, system bus	500 V DC each
Standards and approvals:	
UL 508	
Conformity marking	CE

Technical Data

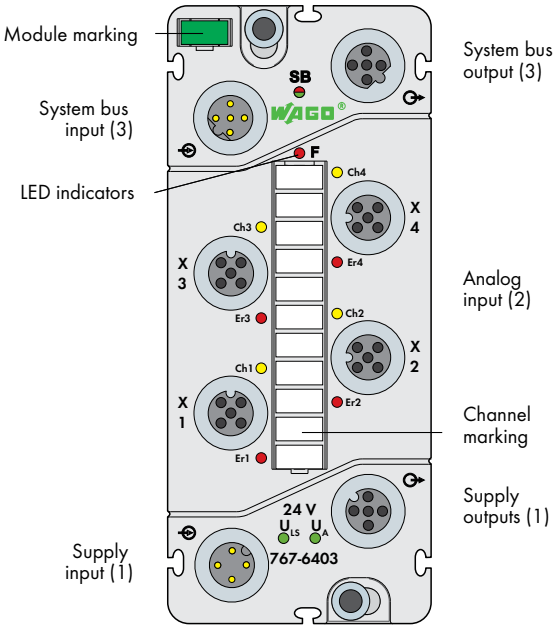
Configurable functions:	
Measuring range (per channel)	Pt100/ Pt200/ Pt500/ Pt1000, Ni100/ Ni120/ Ni1000;
(per channel)	1 kΩ / 4 kΩ;
(per channel)	0 ... 100 % setting angle (for 1 kΩ and 4 kΩ);
(per channel)	user-defined
Wire connection (per channel)	2-wire/3-wire/4-wire
Limiting values (per channel)	Min./Max.
Integration time (per channel)	2, 4, 8, 16.7, 20, 30, 60, 120 ms
Linearization (per channel)	Linear/Pt/Ni/Ni TK 5000
Substitute value (per channel)	Value
Online simulation (per channel)	Lock/unlock; simulation value: (according to measuring range);
(per channel/module)	Diagnostics
I/O diagnostics:	
(per channel)	Overrange/measuring range underflow
(per channel)	Limit value violation (min/max)
(per channel)	Wire break
(per module)	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	8-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
Ch1 ... Ch4: Input signal status	LED (yellow)
Er1 ... Er4: Input signal error	LED (red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	230 g

Analog Input Module for Thermocouples (TCs)

4 inputs



Short description:
This analog input module receives the measured values from thermocouples and voltage sensors.

Characteristics:
- 4 analog inputs TC*
- Diagnostic capable
- Parametrizable (measuring range, limiting values, filter, cold junction compensation, substitute value, online simulation and diagnostics)

* Preassembled connector for cold junction compensation available as accessory.

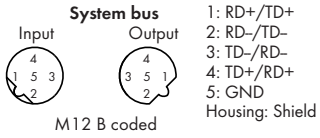
Included:
- WMB module marker card, green
- Marker strip
- M12 protective caps (2 pcs)

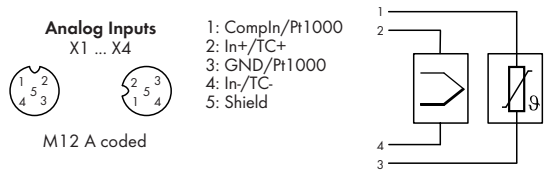
Description	Item No.	Pack. Unit
4AI TC	**767-6403**	1

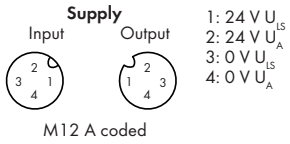
Accessories	Item No.
Marker strips, marking pen, spacer module and protective caps	see pages 472 ... 473
IP67 cables and connectors	see pages 458 ... 471, section 9
Compensation connector, M12 plug, straight, spring clamp technology	**756-9207/050-000**

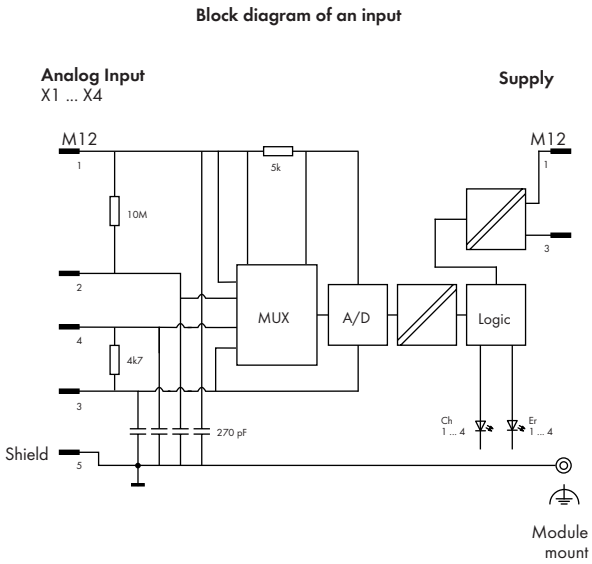
Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles [1]
Current carrying capacity of supply connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage UL_S	24 V DC (-25 % ... +30 %)
Actuator voltage U_A [2]	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	Typ. 40 mA
Actuator current I_A	≤ 5 mA
Protection	Reverse voltage protection for U_{LS} + U_A
Analog inputs:	
Number of inputs	4
Connection type (2)	M12 connectors, A coded, 5 poles
Type of signal	–
Wire connection	2-wire
	(external shield (screen) via connector pin 5)

[1] Derating must be observed
[2] Also required for power supply transmission









Technical Data

Analog inputs:	
Signal measuring range	
Measuring range	**Thermocouples:**
	Type B: +200 °C ... +1,820 °C
	Type C: 0 °C ... +2320 °C
	Type E: –250 °C ... +1000 °C
	Type J: –210 °C... +1200 °C
	Type K: –210 °C ... +1370 °C
	Type N: –210 °C ...+1300 °C
	Type R: –50 °C ...+1768 °C
	Type S: –50 °C ... +1768 °C
	Type T: –210 °C ... +400 °C
	Voltage sensors:
	MB1: ± 36 mV
	MB2: ± 72 mV
	MB3: ± 144 mV
	MB4: ± 288 mV
Resolution (over entire range)	0.1 °C or 0.01 mV
Input resistance	≥ 10 MΩ
Type of cable, cable length	shielded, ≤ 30 m
Analog value creation:	
Resolution	16 bits
Integration time	2 ... 120 ms
Conversion method	SigmaDelta
Monotonicity without error code	Yes
Conversion time	Integration time x 3
Sampling repeat time	Number of active channels x conversion time
Linearization	Acc. to sensor type
Failures and errors:	
Max. measuring error	
(without temperature compensation)	≤ ± 1 K over the entire measuring range (for type K)
Max. measuring error	
Temperature compensation	≤ ± 1 K
Temperature error	± 0.05 K/K (type K)
Maximum error over the full	
temperature range	± 3 K
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded

Technical Data

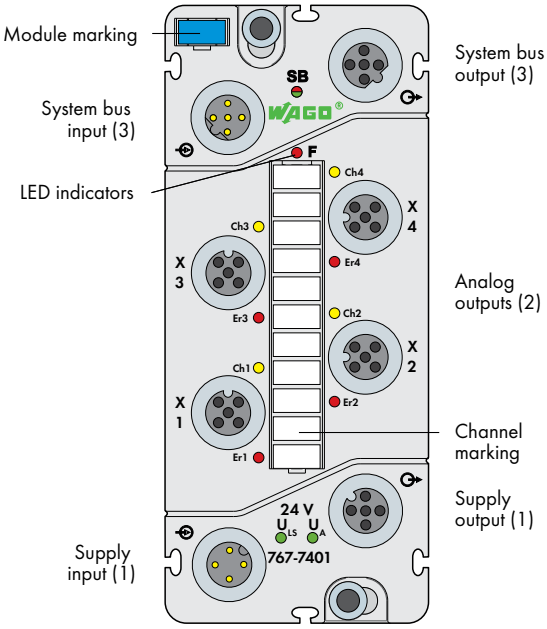
Standards and approvals:	
UL 508	
Conformity marking	CE
Isolation:	
Channel - Channel	No
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Measuring range	
(per channel)	Type B; C; E; J; K; N; R; S; T
(per channel)	MB 1; MB 2
(per channel)	MB 3; MB 4;
	user-defined
Limiting values (per channel)	Min./Max.
Integration time (per channel)	2, 4, 8, 16.7, 20, 30, 60, 120 ms
Substitute value (per channel)	Value
Cold junction compensation (per channel)	**Type:**
	Fixed temperature; comp. connector on the
	input;
	comp. connector on the input;
	Temperature: Value
	Offset: Value
Online simulation (per channel)	Lock/unlock;
I/O diagnostics:	
(per channel)	Overrange/measuring range underflow
(per channel)	Limit value violation
(per channel)	Process value (min./max.)
(per module)	Limit value violation cold junction (min./max.)
	Wire break
	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	8-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
Ch1 ... Ch4: Input signal status	LED (yellow)
Er1 ... Er4: Input signal error	LED (red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	230 g

Analog Output Module Voltage/Current

4 outputs



Short description:
Analog output module for the output of voltage and current signals.

Characteristics:
- 4 analog outputs 0-20 mA, 4-20 mA, ±20 mA, 0-10 V or ±10 V
- Diagnostic capable
- Parametrizable (measuring range, substitute value strategy, substitute value, manual mode, online simulation and diagnostics)

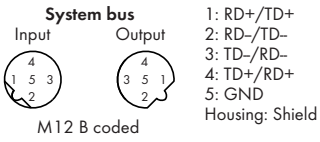
Included:
- Module WMB marker card, blue (1 pcs)
- Marker strips (1 pcs)
- M12 protective caps (2 pcs)

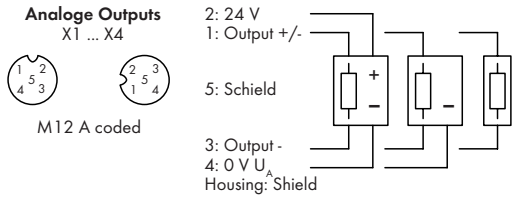
Description	Item No.	Pack. Unit
4AO U/I	**767-7401**	1

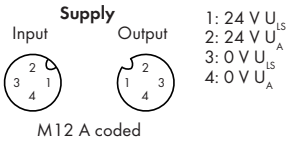
Accessories	Item No.
Marker strips, marking pen, spacer module and protective caps	see pages 472 ... 473
IP67 cables and connectors	see pages 458 ... 471, section 9

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles [1]
Current carrying capacity of supply connections	Max. 8 A (U_{LS}: 4 A, U_A: 4 A)
Supply voltage	
Logic and sensor voltage UL_S	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	28 mA (only logic part)
Actuator current I_A	34 mA + actuators
Protection	Reverse voltage protection for U_{LS} + U_A; Overload and short circuit protection for
Analog outputs:	
No. of outputs	4
Connection type (2)	M12 connectors, A coded, 5 poles
Type of signal	Currents and voltages
Wire connection	2- to 4-wire (external shield (screen) via knurled nut)
Measuring range	0-20 mA, 4-20 mA, ±20 mA,
Output load (load impedance)	≤ 500 Ω (current) ≥ 5 kΩ (voltage)
Maximum capacitive load (at voltage outputs)	10 nF
Maximum inductive load (at current outputs)	1 mH
Type of cable, cable length	shielded, ≤ 30 m

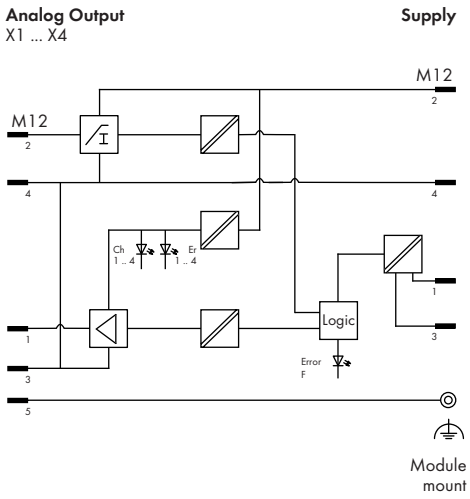
[1] Derating must be observed







Block diagram of an output



Technical Data

Analog value creation:	
Resolution	15-bit unipolar, 16-bit bipolar
Monotonicity	yes
Cycle time	approx. 1 ms
Recovery time for resistive, inductive	
and capacitive loads	approx. 1 ms
Failures and errors:	
Maximum continuous overload	
(without failure)	0 Ω
Max. measuring error at 25 °C	≤ ± 0.2 % of the measuring range
Temperature error	≤ 100 ppm/K of measuring range
Maximum error over the full	
temperature range	≤ ± 0.6 % of the measuring range
Overshooting	approx. ± 0.05 % of the measuring range
Output ripple	approx. ± 0.02 % of the measuring range
Crosstalk between the channels at	
DC voltage and AC voltage	
50 Hz and 60 Hz	- 90 dB
Short circuit protection	electronic
Nominal output current	max. 1 A
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles,
	shielded
Standards and approvals:	
UL 508	
Conformity marking	CE

Technical Data

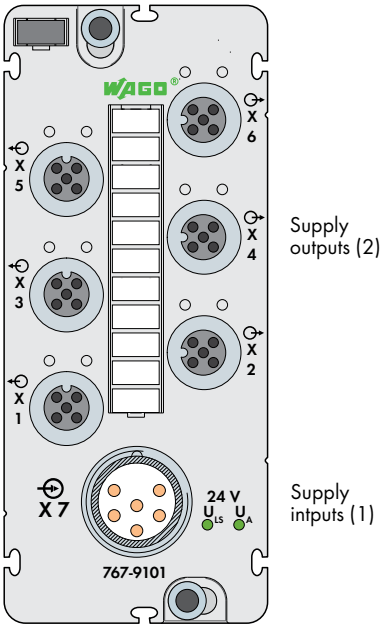
Isolation:	
Channel - Channel	no
U_{LS}, U_A, system bus	500 V DC each
Configurable functions:	
Measuring range (per channel)	0-20 mA, 4-20 mA, ±20 mA,
	0-10 V, ±10 V, user-defined
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0 mA bzw. 0 V / substitute value according
	to measuring range
Manual mode (per channel)	On/off
Manual mode value (per channel)	Value
Online simulation	
(per channel)	Lock/unlock; simulation value: (according
	to measuring range);
(per channel/module)	Diagnostics
I/O diagnostics:	
(per channel)	Short circuit (voltage)
(per channel)	Wire break (curent)
(per channel)	Overtemperature
(per module)	Short circuit (actuator supply)
(per module)	Wire break (current)
(per module)	Undervoltage (U_{LS} + U_A)
Process image:	
Process data width	8-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
Ch1 ... Ch4 : Output signal status	LED (yellow)
Er1 ... Er4 : Output signal error	LED (red)
U_{LS} + U_A: Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	282 g

Power Divider 24 V DC

6 outputs (6xM12)



Short description:
Power divider for supplying SPEEDWAY modules distributed over a large network.

Included:
- Module WMB marker card, gray (1 pcs)
- Marker strips (1 pcs)
- M12 protective caps (2 pcs)

Description	Item No.	Pack. Unit
Power Divider	**767-9101**	1

Accessories	Item No.
Marker strips, marking pen, spacer module and protective caps	see pages 472 ... 473
IP67 cables and connectors	see pages 458 ... 471, section 9

Technical Data	
Module supply:	
Connection type (1)	M23 connector, 6 poles*
Supply voltage	
Logic and sensor voltage UL_S	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 4 mA
Actuator current I_A	typ. 4 mA
Supply outputs	
No. of outputs	6
Connection type (2)	M12 connectors, A coded, 4 poles *
Current carrying capacity / connector	Max. 8 A (U_{LS}: 4 A, U_A: 4 A) *
Current carrying capacity / module	Max. 24 A
	(U_{LS} max. 8 A)
	(U_A max. 16 A) *
Short circuit protection	no
Isolation:	
U_{LS} - U_A	500 V DC
Standards and approvals:	
cULus UL 508	
Conformity marking	CE
*) Derating must be observed	

Supply outputs
X1 ... X6

M12 A coded

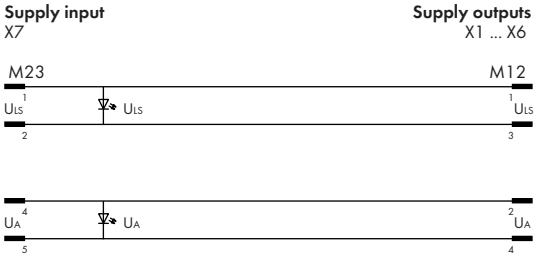
1: 24 V U_{LS}
2: 24 V U_A
3: 0 V U_{LS}
4: 0 V U_A
5: n.c.

Supply
Input

M23

1: 24 V U_{LS}
2: 0 V U_{LS}
3: n.c.
4: 24 V U_A
5: 0 V U_A
6: n.c.

Block diagram of power divider



Technical Data

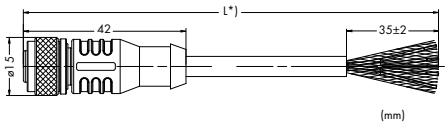
Technical Data

General Specifications

Dimensions (mm) W x H x L	50 x 43.3 x 117
Weight	276 g

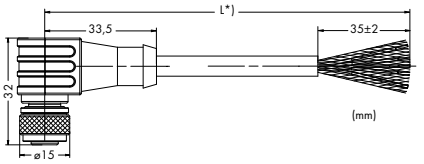
WAGO-SPEEDWAY 767

S-BUS cables, with one end of cable fitted



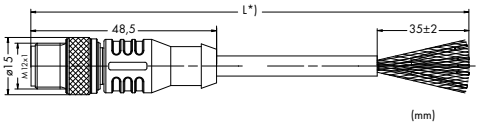
Pin 1 - 5: 0.14 mm²
1 white/blue
2 blue
3 white/orange
4 orange
5 white/green, green, white/brown, brown

M12 socket, straight, B coded	Item No.	Pack. Unit
M12 socket, straight, one free cable end, 2.0 m	**756-1301/060-020**	1
M12 socket, straight, one free cable end, 5.0 m	**756-1301/060-050**	1
M12 socket, straight, one free cable end, 10.0 m	**756-1301/060-100**	1
M12 socket, straight, one free cable end, 20.0 m	**756-1301/060-200**	1



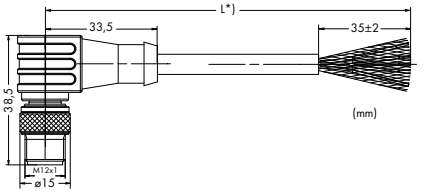
Pin 1 - 5: 0.14 mm²
1 white/blue
2 blue
3 white/orange
4 orange
5 white/green, green, white/brown, brown

M12 socket, right angle, B coded	Item No.	Pack. Unit
M12 socket, right angle, one free cable end, 2.0 m	**756-1302/060-020**	1
M12 socket, right angle, one free cable end, 5.0 m	**756-1302/060-050**	1
M12 socket, right angle, one free cable end, 10.0 m	**756-1302/060-100**	1
M12 socket, right angle, one free cable end, 20.0 m	**756-1302/060-200**	1



Pin 1 - 5: 0.14 mm²
1 white/blue
2 blue
3 white/orange
4 orange
5 white/green, green, white/brown, brown

M12 plug, straight, B coded	Item No.	Pack. Unit
M12 plug, straight, one free cable end, 2.0 m	**756-1303/060-020**	1
M12 plug, straight, one free cable end, 5.0 m	**756-1303/060-050**	1
M12 plug, straight, one free cable end, 10.0 m	**756-1303/060-100**	1
M12 plug, straight, one free cable end, 20.0 m	**756-1303/060-200**	1



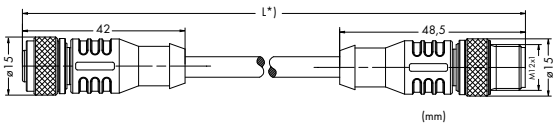
Pin 1 - 5: 0.14 mm²
1 white/blue
2 blue
3 white/orange
4 orange
5 white/green, green, white/brown, brown

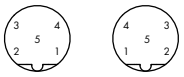
M12 plug, right angle, B coded	Item No.	Pack. Unit
M12 plug, right angle, one free cable end, 2.0 m	**756-1304/060-020**	1
M12 plug, right angle, one free cable end, 5.0 m	**756-1304/060-050**	1
M12 plug, right angle, one free cable end, 10.0 m	**756-1304/060-100**	1
M12 plug, right angle, one free cable end, 20.0 m	**756-1304/060-200**	1

*) Cable length

WAGO-SPEEDWAY 767

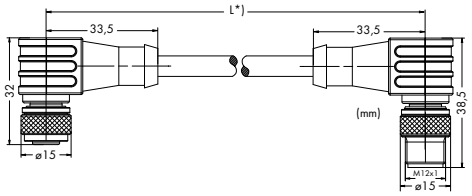
S-BUS cables, with both ends of cable fitted and not fitted with connectors

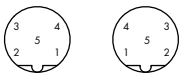




Pin 1 - 5: 0.14 mm²
1 white/blue
2 blue
3 white/orange
4 orange
5 white/green, green, white/brown, brown

M12 socket, straight / M12 plug, straight, B coded	Item No.	Pack. Unit
M12 socket, straight, M12 plug, straight, 0.2 m	**756-1305/060-002**	1
M12 socket, straight, M12 plug, straight, 0.3 m	**756-1305/060-003**	1
M12 socket, straight, M12 plug, straight, 0.5 m	**756-1305/060-005**	1
M12 socket, straight, M12 plug, straight, 1.0 m	**756-1305/060-010**	1
M12 socket, straight, M12 plug, straight, 2.0 m	**756-1305/060-020**	1
M12 socket, straight, M12 plug, straight, 5.0 m	**756-1305/060-050**	1
M12 socket, straight, M12 plug, straight, 10.0 m	**756-1305/060-100**	1
M12 socket, straight, M12 plug, straight, 20.0 m	**756-1305/060-200**	1
M12 socket, straight, M12 plug, straight, 50.0 m	**756-1305/060-500**	1





Pin 1 - 5: 0.14 mm²
1 white/blue
2 blue
3 white/orange
4 orange
5 white/green, green, white/brown, brown

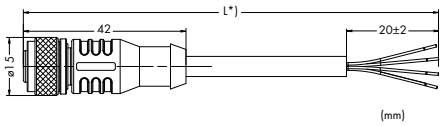
M12 socket, right angle / M12 plug, right angle, B coded	Item No.	Pack. Unit
M12 socket, right angle, M12 plug, right angle, 0.2 m	**756-1306/060-002**	1
M12 socket, right angle, M12 plug, right angle, 0.3 m	**756-1306/060-003**	1
M12 socket, right angle, M12 plug, right angle, 0.5 m	**756-1306/060-005**	1
M12 socket, right angle, M12 plug, right angle, 1.0 m	**756-1306/060-010**	1
M12 socket, right angle, M12 plug, right angle, 2.0 m	**756-1306/060-020**	1
M12 socket, right angle, M12 plug, right angle, 5.0 m	**756-1306/060-050**	1
M12 socket, right angle, M12 plug, right angle, 10.0 m	**756-1306/060-100**	1
M12 socket, right angle, M12 plug, right angle, 20.0 m	**756-1306/060-200**	1
M12 socket, right angle, M12 plug, right angle, 50.0 m	**756-1306/060-500**	1

S-Bus cable, not fitted with connectors	Item No.	Pack. Unit
S-BUS cable, not fitted with connectors, 25.0 m	**756-1300/000-250**	1
S-BUS cable, not fitted with connectors, 50.0 m	**756-1300/000-500**	1
S-BUS cable, not fitted with connectors, 100.0 m	**756-1300/000-1000**	1

*) Cable length

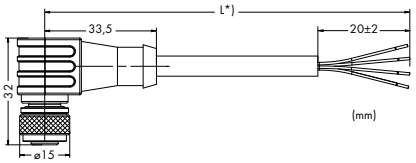
WAGO-SPEEDWAY 767

Power supply cables, with one end of cable fitted



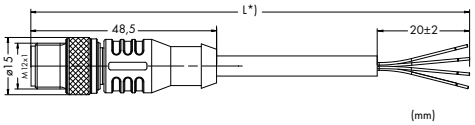
Pin 1 - 4: 0.75 mm²
1 brown
2 white
3 blue
4 black

M12 socket, straight, A coded	Item No.	Pack. Unit
M12 socket, straight, one free cable end, 2.0 m	**756-3101/040-020**	1
M12 socket, straight, one free cable end, 5.0 m	**756-3101/040-050**	1
M12 socket, straight, one free cable end, 10.0 m	**756-3101/040-100**	1
M12 socket, straight, one free cable end, 20.0 m	**756-3101/040-200**	1



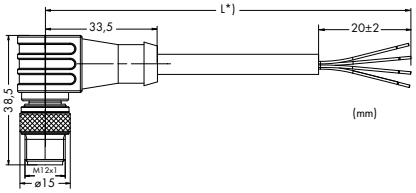
Pin 1 - 4: 0.75 mm²
1 brown
2 white
3 blue
4 black

M12 socket, right angle, A coded	Item No.	Pack. Unit
M12 socket, right angle, one free cable end, 2.0 m	**756-3102/040-020**	1
M12 socket, right angle, one free cable end, 5.0 m	**756-3102/040-050**	1
M12 socket, right angle, one free cable end, 10.0 m	**756-3102/040-100**	1
M12 socket, right angle, one free cable end, 20.0 m	**756-3102/040-200**	1



Pin 1 - 4: 0.75 mm²
1 brown
2 white
3 blue
4 black

M12 plug, straight, A coded	Item No.	Pack. Unit
M12 plug, straight, one free cable end, 2.0 m	**756-3103/040-020**	1
M12 plug, straight, one free cable end, 5.0 m	**756-3103/040-050**	1
M12 plug, straight, one free cable end, 10.0 m	**756-3103/040-100**	1
M12 plug, straight, one free cable end, 20.0 m	**756-3103/040-200**	1



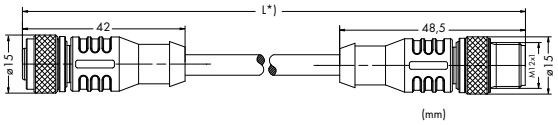
Pin 1 - 4: 0.75 mm²
1 brown
2 white
3 blue
4 black

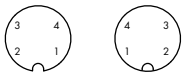
M12 plug, right angle, A coded	Item No.	Pack. Unit
M12 plug, right angle, one free cable end, 2.0 m	**756-3104/040-020**	1
M12 plug, right angle, one free cable end, 5.0 m	**756-3104/040-050**	1
M12 plug, right angle, one free cable end, 10.0 m	**756-3104/040-100**	1
M12 plug, right angle, one free cable end, 20.0 m	**756-3104/040-200**	1

*) Cable length

WAGO-SPEEDWAY 767

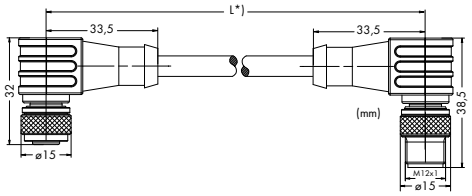
Power supply cables, with both ends fitted and not fitted with connectors

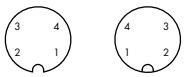




Pin 1 - 4: 0.75 mm²
1 brown
2 white
3 blue
4 black

M12 socket, straight / M12 plug, straight, A coded	Item No.	Pack. Unit
M12 socket, straight, M12 plug, straight, 0.2 m	**756-3105/040-002**	1
M12 socket, straight, M12 plug, straight, 0.3 m	**756-3105/040-003**	1
M12 socket, straight, M12 plug, straight, 0.5 m	**756-3105/040-005**	1
M12 socket, straight, M12 plug, straight, 1.0 m	**756-3105/040-010**	1
M12 socket, straight, M12 plug, straight, 2.0 m	**756-3105/040-020**	1
M12 socket, straight, M12 plug, straight, 5.0 m	**756-3105/040-050**	1
M12 socket, straight, M12 plug, straight, 10.0 m	**756-3105/040-100**	1
M12 socket, straight, M12 plug, straight, 20.0 m	**756-3105/040-200**	1





Pin 1 - 4: 0.75 mm²
1 brown
2 white
3 blue
4 black

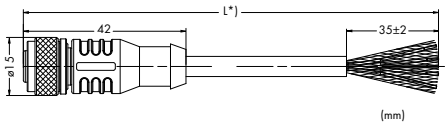
M12 socket, right angle / M12 plug, right angle, A coded	Item No.	Pack. Unit
M12 socket, right angle, M12 plug, right angle, 0.2 m	**756-3106/040-002**	1
M12 socket, right angle, M12 plug, right angle, 0.3 m	**756-3106/040-003**	1
M12 socket, right angle, M12 plug, right angle, 0.5 m	**756-3106/040-005**	1
M12 socket, right angle, M12 plug, right angle, 1.0 m	**756-3106/040-010**	1
M12 socket, right angle, M12 plug, right angle, 2.0 m	**756-3106/040-020**	1
M12 socket, right angle, M12 plug, right angle, 5.0 m	**756-3106/040-050**	1
M12 socket, right angle, M12 plug, right angle, 10.0 m	**756-3106/040-100**	1
M12 socket, right angle, M12 plug, right angle, 20.0 m	**756-3106/040-200**	1

Power supply cable, not fitted with connectors	Item No.	Pack. Unit
Versorgungskabel, unkonfektioniert, 25,0 m	**756-3100/000-250**	1
Power supply cable, not fitted with connectors, 50.0 m	**756-3100/000-500**	1
Power supply cable, not fitted with connectors, 100.0 m	**756-3100/000-1000**	1

*) Cable length

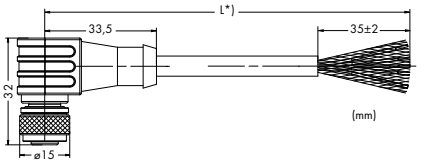
WAGO-SPEEDWAY 767

PROFIBUS cables, with one end of cable fitted



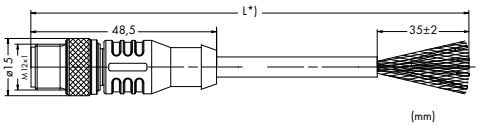
Pin 2 and 4: 0.34 mm²
1 n.c.
2 green
3 n.c.
4 red
5 n.c.

M12 socket, straight, B coded	Item No.	Pack. Unit
M12 socket, straight, one free cable end, 2.0 m	**756-1101/060-020**	1
M12 socket, straight, one free cable end, 5.0 m	**756-1101/060-050**	1
M12 socket, straight, one free cable end, 10.0 m	**756-1101/060-100**	1
M12 socket, straight, one free cable end, 20.0 m	**756-1101/060-200**	1



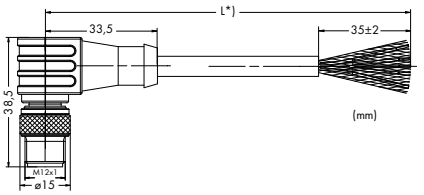
Pin 2 and 4: 0.34 mm²
1 n.c.
2 green
3 n.c.
4 red
5 n.c.

M12 socket, right angle, B coded	Item No.	Pack. Unit
M12 socket, right angle, one free cable end, 2.0 m	**756-1102/060-020**	1
M12 socket, right angle, one free cable end, 5.0 m	**756-1102/060-050**	1
M12 socket, right angle, one free cable end, 10.0 m	**756-1102/060-100**	1
M12 socket, right angle, one free cable end, 20.0 m	**756-1102/060-200**	1



Pin 2 and 4: 0.34 mm²
1 n.c.
2 green
3 n.c.
4 red
5 n.c.

M12 plug, straight, B coded	Item No.	Pack. Unit
M12 plug, straight, one free cable end, 2.0 m	**756-1103/060-020**	1
M12 plug, straight, one free cable end, 5.0 m	**756-1103/060-050**	1
M12 plug, straight, one free cable end, 10.0 m	**756-1103/060-100**	1
M12 plug, straight, one free cable end, 20.0 m	**756-1103/060-200**	1



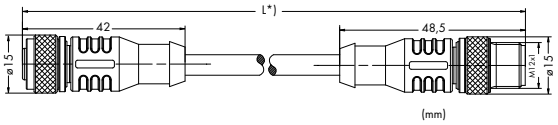
Pin 2 and 4: 0.34 mm²
1 n.c.
2 green
3 n.c.
4 red
5 n.c.

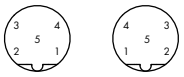
M12 plug, right angle, B coded	Item No.	Pack. Unit
M12 plug, right angle, one free cable end, 2.0 m	**756-1104/060-020**	1
M12 plug, right angle, one free cable end, 5.0 m	**756-1104/060-050**	1
M12 plug, right angle, one free cable end, 10.0 m	**756-1104/060-100**	1
M12 plug, right angle, one free cable end, 20.0 m	**756-1104/060-200**	1

*) Cable length

WAGO-SPEEDWAY 767

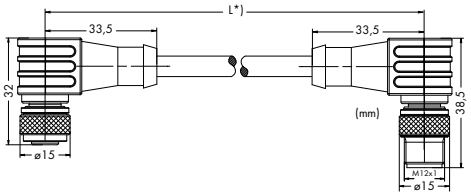
PROFIBUS cables, with both ends of cable fitted

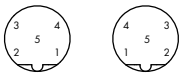




Pin 2 and 4: 0.34 mm²
1 n.c.
2 green
3 n.c.
4 red
5 n.c.

M12 socket, straight / M12 plug, straight, B coded	Item No.	Pack. Unit
M12 socket, straight, M12 plug, straight, 2.0 m	**756-1105/060-020**	1
M12 socket, straight, M12 plug, straight, 5.0 m	**756-1105/060-050**	1
M12 socket, straight, M12 plug, straight, 10.0 m	**756-1105/060-100**	1
M12 socket, straight, M12 plug, straight, 20.0 m	**756-1105/060-200**	1





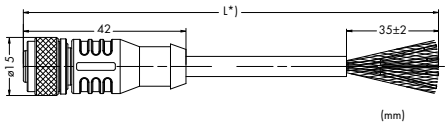
Pin 2 and 4: 0.34 mm²
1 n.c.
2 green
3 n.c.
4 red
5 n.c.

M12 socket, right angle / M12 plug, right angle, B coded	Item No.	Pack. Unit
M12 socket, right angle, M12 plug, right angle, 2.0 m	**756-1106/060-020**	1
M12 socket, right angle, M12 plug, right angle, 5.0 m	**756-1106/060-050**	1
M12 socket, right angle, M12 plug, right angle, 10.0 m	**756-1106/060-100**	1
M12 socket, right angle, M12 plug, right angle, 20.0 m	**756-1106/060-200**	1

*) Cable length

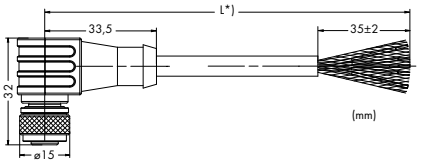
WAGO-SPEEDWAY 767

CANopen, DeviceNet cables, with one end of cable fitted



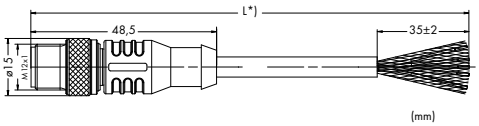
Pin 2 and 3: 0.38 mm²
Pin 4 and 5: 0.67 mm²
1 = Shield
2 = red
3 = black
4 = white
5 = blue

M12 socket, straight, A coded	Item No.	Pack. Unit
M12 socket, straight, one free cable end, 2.0 m	**756-1401/060-020**	1
M12 socket, straight, one free cable end, 5.0 m	**756-1401/060-050**	1
M12 socket, straight, one free cable end, 10.0 m	**756-1401/060-100**	1
M12 socket, straight, one free cable end, 20.0 m	**756-1401/060-200**	1



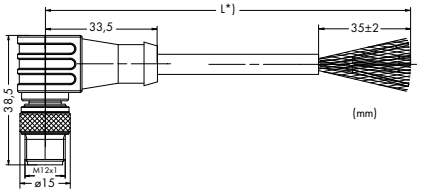
Pin 2 and 3: 0.38 mm²
Pin 4 and 5: 0.67 mm²
1 = Shield
2 = red
3 = black
4 = white
5 = blue

M12 socket, right angle, A coded	Item No.	Pack. Unit
M12 socket, right angle, one free cable end, 2.0 m	**756-1402/060-020**	1
M12 socket, right angle, one free cable end, 5.0 m	**756-1402/060-050**	1
M12 socket, right angle, one free cable end, 10.0 m	**756-1402/060-100**	1
M12 socket, right angle, one free cable end, 20.0 m	**756-1402/060-200**	1



Pin 2 and 3: 0.38 mm²
Pin 4 and 5: 0.67 mm²
1 = Shield
2 = red
3 = black
4 = white
5 = blue

M12 plug, straight, A coded	Item No.	Pack. Unit
M12 plug, straight, one free cable end, 2.0 m	**756-1403/060-020**	1
M12 plug, straight, one free cable end, 5.0 m	**756-1403/060-050**	1
M12 plug, straight, one free cable end, 10.0 m	**756-1403/060-100**	1
M12 plug, straight, one free cable end, 20.0 m	**756-1403/060-200**	1

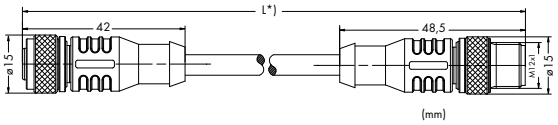


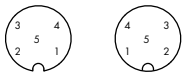
Pin 2 and 3: 0.38 mm²
Pin 4 and 5: 0.67 mm²
1 = Shield
2 = red
3 = black
4 = white
5 = blue

M12 plug, right angle, A coded	Item No.	Pack. Unit
M12 plug, right angle, one free cable end, 2.0 m	**756-1404/060-020**	1
M12 plug, right angle, one free cable end, 5.0 m	**756-1404/060-050**	1
M12 plug, right angle, one free cable end, 10.0 m	**756-1404/060-100**	1
M12 plug, right angle, one free cable end, 20.0 m	**756-1404/060-200**	1

WAGO-SPEEDWAY 767

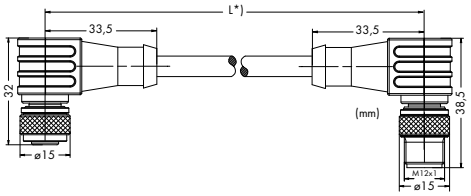
CANopen, DeviceNet cables, with both ends of cable fitted

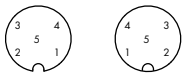




Pin 2 and 3: 0.38 mm²
Pin 4 and 5: 0.67 mm²
1 = Shield
2 = red
3 = black
4 = white
5 = blue

M12 socket, straight / M12 plug, straight, A coded	Item No.	Pack. Unit
M12 socket, straight, M12 plug, straight, 2.0 m	**756-1405/060-020**	1
M12 socket, straight, M12 plug, straight, 5.0 m	**756-1405/060-050**	1
M12 socket, straight, M12 plug, straight, 10.0 m	**756-1405/060-100**	1
M12 socket, straight, M12 plug, straight, 20.0 m	**756-1405/060-200**	1



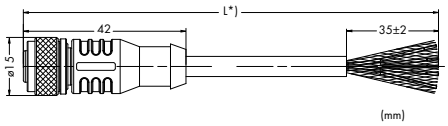


Pin 2 and 3: 0.38 mm²
Pin 4 and 5: 0.67 mm²
1 = Shield
2 = red
3 = black
4 = white
5 = blue

M12 socket, right angle / M12 plug, right angle, A coded	Item No.	Pack. Unit
M12 socket, right angle, M12 plug, right angle, 2.0 m	**756-1406/060-020**	1
M12 socket, right angle, M12 plug, right angle, 5.0 m	**756-1406/060-050**	1
M12 socket, right angle, M12 plug, right angle, 10.0 m	**756-1406/060-100**	1
M12 socket, right angle, M12 plug, right angle, 20.0 m	**756-1406/060-200**	1

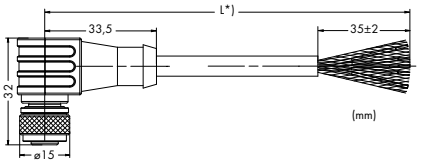
WAGO-SPEEDWAY 767

ETHERNET, PROFINET cables, with one or both ends of cable fitted



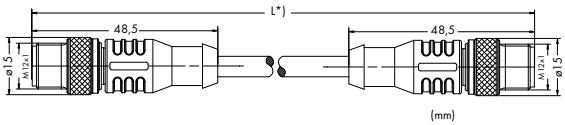
Pin 1 - 4: 0.34 mm²
1 yellow
2 white
3 orange
4 blue

M12 plug, straight, D coded	Item No.	Pack. Unit
M12 plug, straight, one free cable end, 2.0 m	**756-1201/060-020**	1
M12 plug, straight, one free cable end, 5.0 m	**756-1201/060-050**	1
M12 plug, straight, one free cable end, 10.0 m	**756-1201/060-100**	1
M12 plug, straight, one free cable end, 20.0 m	**756-1201/060-200**	1



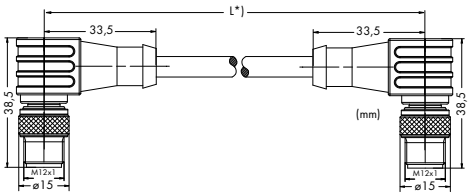
Pin 1 - 4: 0.34 mm²
1 yellow
2 white
3 orange
4 blue

M12 plug, right angle, D coded	Item No.	Pack. Unit
M12 plug, right angle, one free cable end, 2.0 m	**756-1202/060-020**	1
M12 plug, right angle, one free cable end, 5.0 m	**756-1202/060-050**	1
M12 plug, right angle, one free cable end, 10.0 m	**756-1202/060-100**	1
M12 plug, right angle, one free cable end, 20.0 m	**756-1202/060-200**	1



Pin 1 - 4: 0.34 mm²
1 yellow
2 white
3 orange
4 blue

M12 plug, straight / M12 plug, straight, D coded	Item No.	Pack. Unit
M12 plug, straight, M12 plug, straight, 2.0 m	**756-1203/060-020**	1
M12 plug, straight, M12 plug, straight, 5.0 m	**756-1203/060-050**	1
M12 plug, straight, M12 plug, straight, 10.0 m	**756-1203/060-100**	1
M12 plug, straight, M12 plug, straight, 20.0 m	**756-1203/060-200**	1



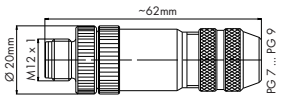
Pin 1 - 4: 0.34 mm²
1 yellow
2 white
3 orange
4 blue

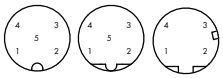
M12 plug, right angle / M12 plug, right angle, D coded	Item No.	Pack. Unit
M12 plug, right angle, M12 plug, right angle, 2.0 m	**756-1204/060-020**	1
M12 plug, right angle, M12 plug, right angle, 5.0 m	**756-1204/060-050**	1
M12 plug, right angle, M12 plug, right angle, 10.0 m	**756-1204/060-100**	1
M12 plug, right angle, M12 plug, right angle, 20.0 m	**756-1204/060-200**	1

*) Cable length

WAGO-SPEEDWAY 767

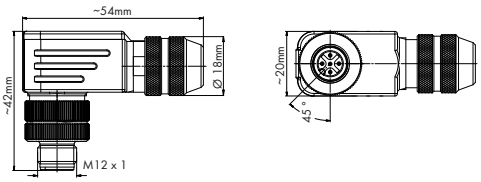
Configurable shielded connectors

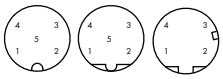




Conductor size
Ø 6 ... 8 mm / 0.14 - 0.5 mm²

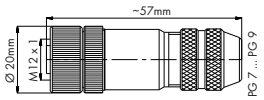
M12 plug, straight, shielded		Item No.	Pack. Unit
M12 plug, A coded, straight, spring clamp technology	CANopen / DeviceNet	**756-9207/060-000**	1
M12 plug, B coded, straight, spring clamp technology	PROFIBUS / S-BUS	**756-9401/060-000**	1
M12 plug, D coded, straight, spring clamp technology	ETHERNET / PROFINET	**756-9501/060-000**	1

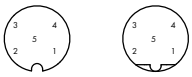




Conductor size
Ø 6 ... 8 mm / 0.14 - 0.5 mm²

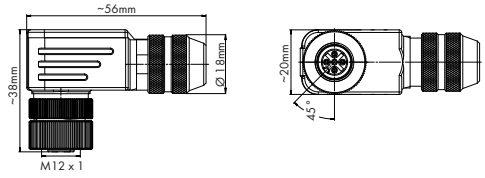
M12 plug, right angle, shielded		Item No.	Pack. Unit
M12 plug, A coded, right angle, spring clamp technology	CANopen / DeviceNet	**756-9211/060-000**	1
M12 plug, B coded, right angle, spring clamp technology	PROFIBUS / S-BUS	**756-9403/060-000**	1
M12 plug, D coded, right angle, spring clamp technology	ETHERNET / PROFINET	**756-9501/040-000**	1





Conductor size
Ø 6 ... 8 mm / 0.14 - 0.5 mm²

M12 socket, straight, shielded		Item No.	Pack. Unit
M12 socket, A coded, straight, spring clamp technology	CANopen / DeviceNet	**756-9208/060-000**	1
M12 socket, B coded, straight, spring clamp technology	PROFIBUS / S-BUS	**756-9402/060-000**	1

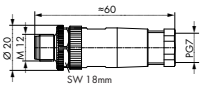


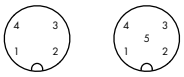
Conductor size
Ø 6 ... 8 mm / 0.14 - 0.5 mm²

M12 socket, right angle, shielded		Item No.	Pack. Unit
M12 socket, A coded, right angle, spring clamp technology	CANopen / DeviceNet	**756-9210/060-000**	1
M12 socket, B coded, right angle, spring clamp technology	PROFIBUS / S-BUS	**756-9404/060-000**	1

WAGO-SPEEDWAY 767

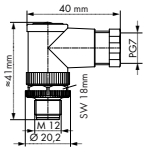
Configurable unshielded connectors

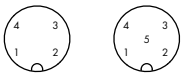




Conductor size
Ø 6 ... 8 mm / 0.14 - 0.5 mm²

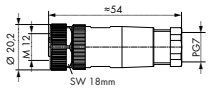
M12 plug, straight, A coded, unshielded			Item No.	Pack. Unit
M12 plug, straight, spring clamp technology	4-pole	Supply	**756-9202/040-000**	5
M12 plug, straight, spring clamp technology	5-pole	CANopen / DeviceNet	**756-9202/050-000**	5

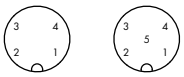




Conductor size
Ø 6 ... 8 mm / 0.14 - 0.5 mm²

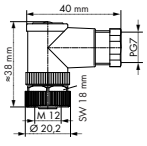
M12 plug, right angle, A coded, unshielded			Item No.	Pack. Unit
M12 plug, right angle, spring clamp technology	4-pole	Supply	**756-9205/040-000**	5
M12 plug, right angle, spring clamp technology	5-pole	CANopen / DeviceNet	**756-9205/050-000**	5

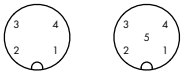




Conductor size
Ø 6 ... 8 mm / 0.14 - 0.5 mm²

M12 socket, straight, A coded, unshielded			Item No.	Pack. Unit
M12 socket, straight, spring clamp technology	4-pole	Supply	**756-9212/040-000**	5
M12 socket, straight, spring clamp technology	5-pole	CANopen / DeviceNet	**756-9212/050-000**	5



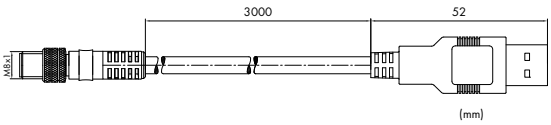


Conductor size
Ø 6 ... 8 mm / 0.14 - 0.5 mm²

M12 socket, right angle, A coded, unshielded			Item No.	Pack. Unit
M12 socket, right angle, spring clamp technology	4-pole	Supply	**756-9215/040-000**	5
M12 socket, right angle, spring clamp technology	5-pole	CANopen / DeviceNet	**756-9215/050-000**	5

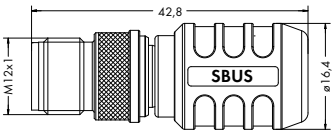
WAGO-SPEEDWAY 767

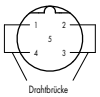
USB communication cable, terminating resistors



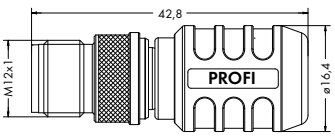
Pin 1 = red
Pin 2 = white
Pin 3 = green
Pin 4 = black

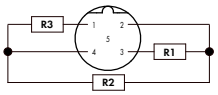
Description	Item No.	Pack. Unit
USB communication cable	**756-4101/042-030**	1





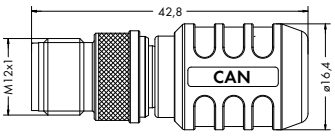
Description	Item No.	Pack. Unit
M12 system bus terminating plug, B coded, straight	**756-9409/060-000**	1

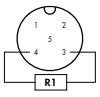




R3=390 Ω 0,4 W
R2=220 Ω 0,4 W
R1=390 Ω 0,4 W

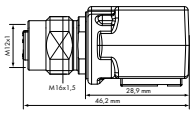
Description	Item No.	Pack. Unit
M12 PROFIBUS terminating plug, B coded, straight	**756-9405/060-000**	1

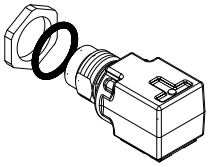


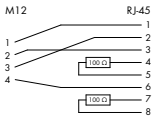


R1=120 Ω 0,25 W

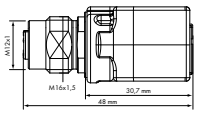
Description	Item No.	Pack. Unit
M12 CANopen, DeviceNet terminating plug, A coded, straight	**756-9209/060-000**	1

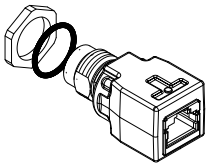


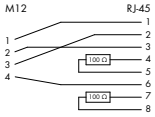




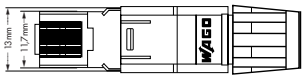
Description	Item No.	Pack. Unit
Adapter, right angle, M12 socket, D coded/RJ-45 socket (also ideally suited for control cabinet feed-through applications or connecting IP67/IP20 components)	**756-9503/040-000**	1

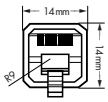


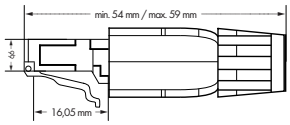




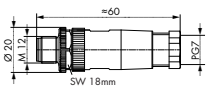
Description	Item No.	Pack. Unit
Adapter, straight, M12 socket, D coded/RJ-45 socket (also ideally suited for control cabinet feed-through applications) or connecting IP67/IP20 components)	**756-9504/040-000**	1

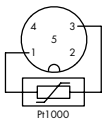






Description	Item No.	Pack. Unit
ETHERNET RJ-45 connector, IP20	**750-975**	1





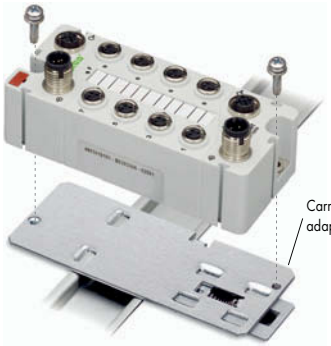
Conductor size
Ø 6 ... 8 mm / 0.14 - 0.5 mm²

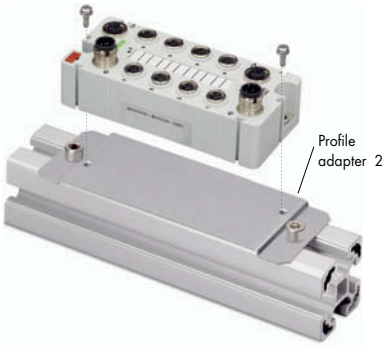
Preassembled M12 plug, axial, A coded, unshielded			Item No.	Pack. Unit
Compensation connector, M12 plug, straight, spring clamp technology	5-pole	for 767-6403 Thermocoupler Module (Pt1000 sensor integrated)	**756-9207/050-000**	1

WAGO-SPEEDWAY 767

General accessories

Application examples: I/O module





Carrier rail and profile adapters	Item No.	Pack. Unit
Carrier rail adapter 1 for couplers/progr. couplers	**767-121**	1
Carrier rail adapter 2 for I/O and power distribution modules	**767-122**	1
Profile adapter 1 for couplers/progr. couplers	**767-123**	1
Profile adapter 2 for I/O and power distribution modules	**767-124**	1

M8 **M12** **M12** **M23**

Protective caps (for covering unused sensor/actuator connectors)		Item No.	Pack. Unit
M8 protective cap	for unused sockets	**756-8101**	1
M12 protective cap	for unused sockets	**756-8102**	1
M12 protective cap (fieldbus)	for unused plugs	**755-809**	1
M23 protective cap (fieldbus/supply)	for unused plugs	**755-837**	1

Conductor size
Ø 6.5 ... 10.5 mm/max. 2.5 mm²

M23 plug, can be pre-assembled		Item No.	Pack. Unit
6 poles	M23 plug, straight, soldering technology	**756-9601/060-000**	1
6 poles	M23 plug, right angle, soldering technology	**756-9602/060-000**	1

Conductor size
Ø 6.5 ... 10.5 mm/max. 2.5 mm²

M23 socket, can be pre-assembled		Item No.	Pack. Unit
6 poles	M23 socket, straight, soldering technology	**756-9603/060-000**	1
6 poles	M23 socket, right angle, soldering technology	**756-9604/060-000**	1

WAGO-SPEEDWAY 767

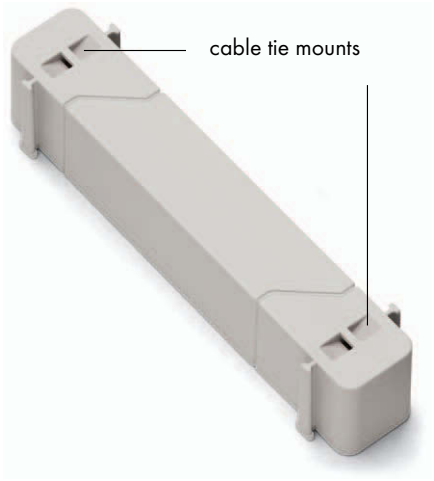
General accessories

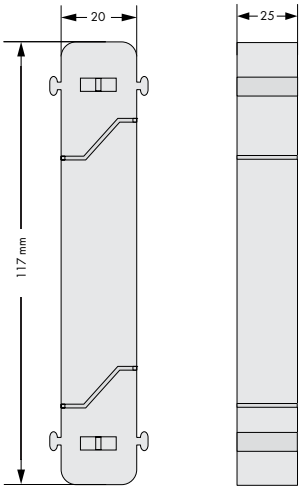
Marker strip

Marking pen with fibre tip

Marking accessories	Item No.	Pack. Unit
Marker strips 8xM8 (for couplers / I/O modules)	767-101	10
Marker strips 4xM12 (for I/O modules)	767-102	10
Marker strips for power distribution modules	767-103	10
Marking pen	210-110	1

Spacer module

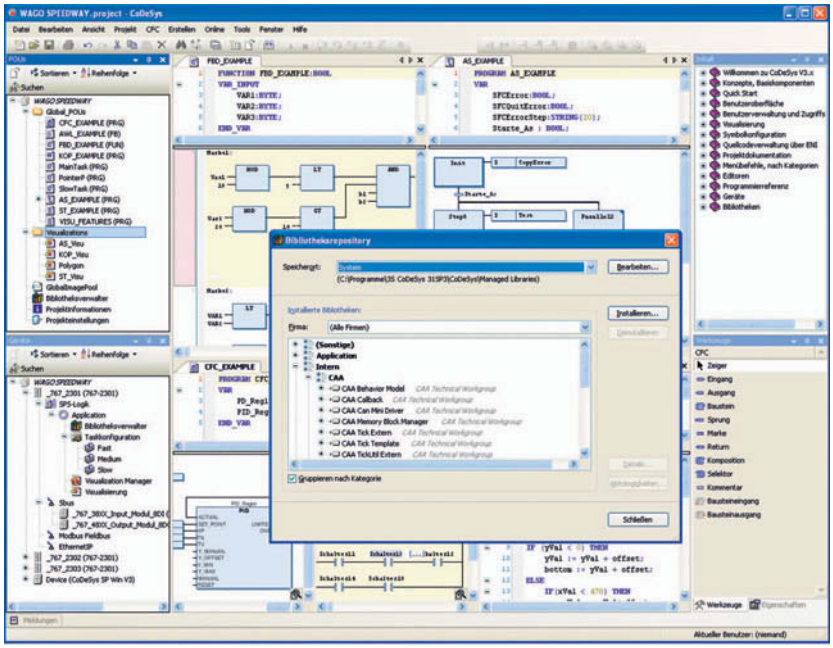




Description	Item No.	Pack. Unit
Spacer module	767-111	1

CoDeSys 3

Development system for programming and visualization according to IEC61131-3



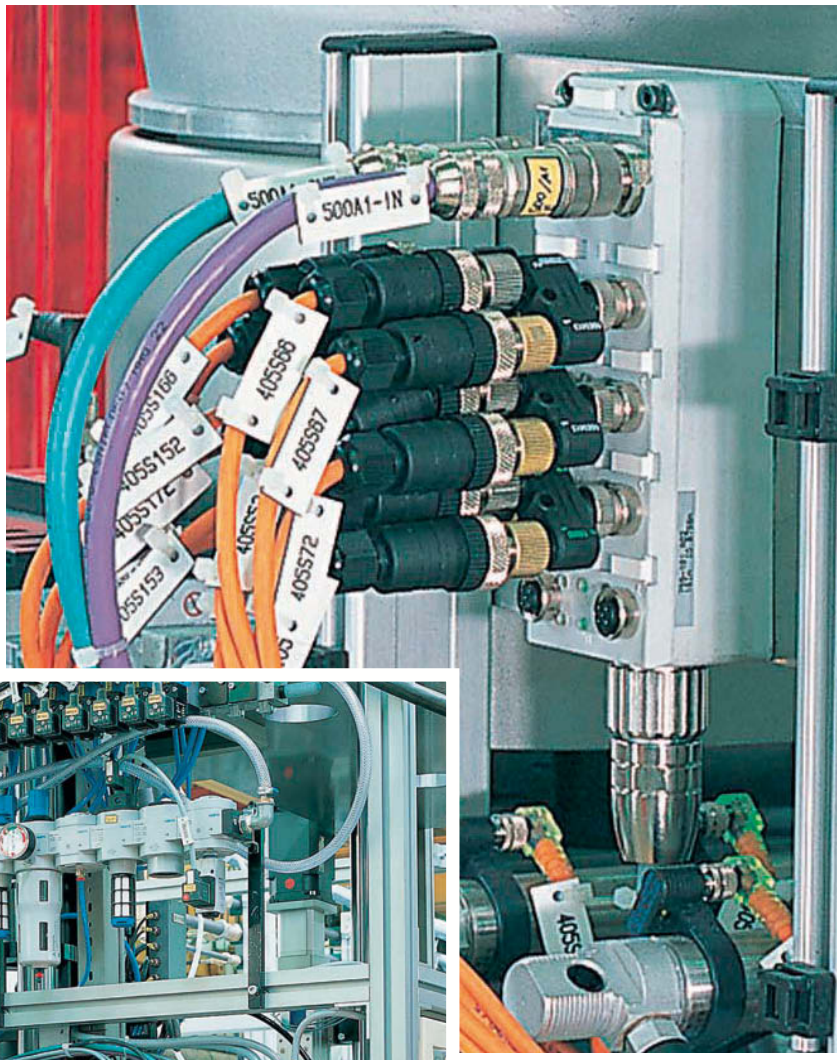
CoDeSys is a programming and visualization tool for PLC programs. With CoDeSys Version 3, users can develop PLC applications for the Programmable Fieldbus Controller found in the WAGO SPEEDWAY 767 Series. CoDeSys 3 works in accordance with IEC 61131-3 and supports IL, LD, FBD, ST and FC, all of which are programming languages for this standard. With extensive programming functions, the software readily meets the increasing requirements of control program development; e.g., reusability or modularization.

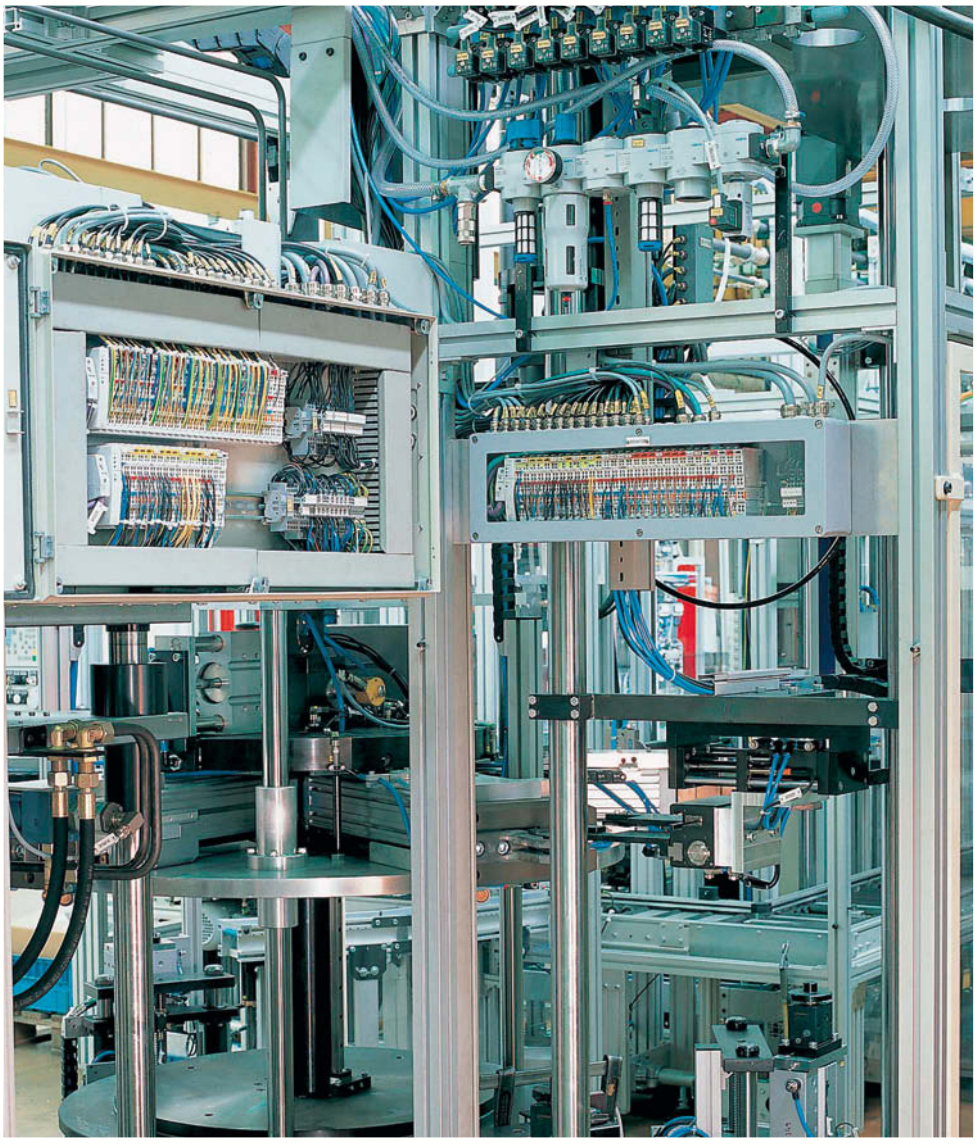
- Programming of different control systems in one application
- Cross communication between control systems
- Object-oriented extension of the IEC61131-3
- Integrated process visualization
- Additional high-performance CFC editor

Description	Item No.	Pack. Unit
CoDeSys 3	**759-915**	25

Technical Data	
System requirements:	
PC	Pentium 1 GHz or higher
Operating system	Microsoft® Windows® 2000;
	Microsoft® Windows® XP Professional®;
	Microsoft® Windows® Vista (32-Bit);
	Microsoft® Windows® 7 (32-Bit)
RAM memory	512 Mbytes or higher
Hard disk storage	200
CD-ROM	Required
Graphics card	XGA or higher
Mouse	Required
Other	Free USB interface in PC for communication
	with the controller
Included:	CD-ROM with software and documentation
Additional requirements:	USB communication cable (item no.
	756-4101/0042-0030) for
	communication between PC and device.

WAGO Application: ZF Sachs AG (Schweinfurt, Germany)
WAGO Products:
WAGO-I/O-SYSTEM 750 / 755
with PROFIBUS connection





7


IP67

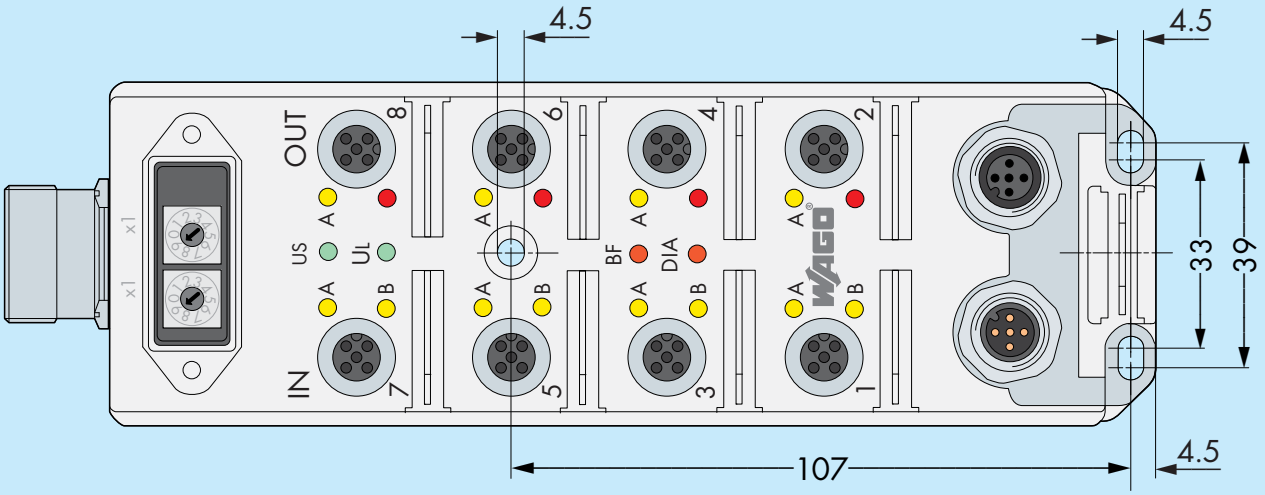
Modules for Use in Severe Conditions

Continued decentralization of automation leads to the close proximity of fieldbus and device connections. They are often so close that there isn't even the space for protective cabinet around them. For these types of applications, the 755 series has been added to the WAGO-I/O-SYSTEM.
The compact WAGO-I/O-SYSTEM 755 with an IP67 degree of protection proves its worthiness in any manufacturing process under severe conditions. Quick replacement of devices in severe environments is an important subject. Also important is the wish for accurate installations and replacements. For this reason you can now find most sensors and actuators already equipped with standard IP65/67 connectors. The WAGO-I/O-SYSTEM 755 meets the demands for Plug and Play solutions for sensors, actuators, power supplies, and the fieldbus. The input and output connectors, sensor and actuator conectors, even the housing dimensions and their fixing holes, everything is the same for all fieldbus systems. If the fieldbus is going to be changed, it is not necessary to replace sensors or actuators!
The WAGO-I/O-SYSTEM 755 is part of the WAGO-I/O-SYSTEM family (750, 752, 758, 759), supporting the single supplier concept for all popular fieldbus systems

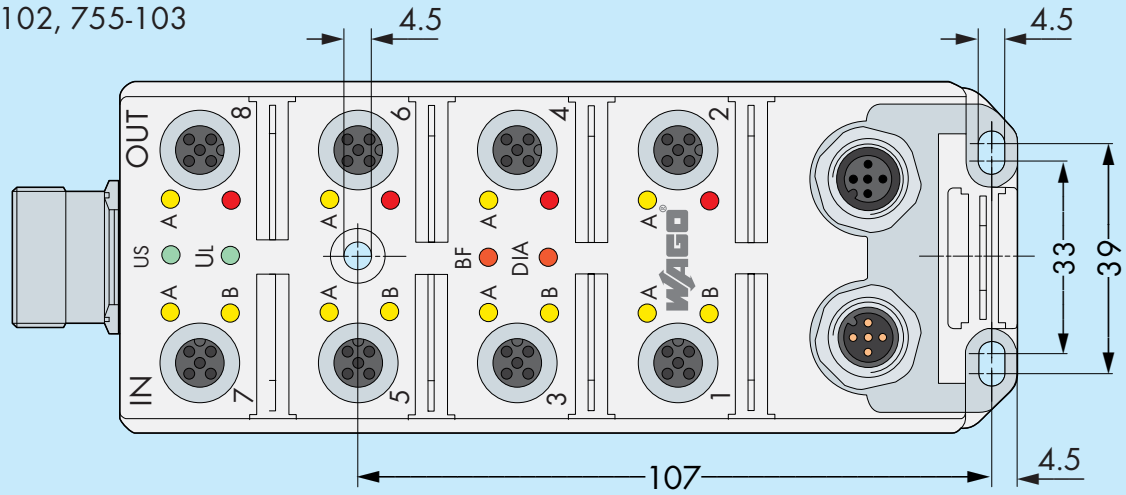
Features

- IP67 degree of protection
- PROFIBUS, DeviceNet and INTERBUS
- Standardized connection technique
- Many different cables for sensors, actuators, fieldbus and power supply
- Reverse voltage protection
- Short circuit monitoring of the inputs and outputs
- Output current up to 2A per channel (up to 15A per module)
- Separate actuator power supply (E-Stop concepts)

755-104, 755-105, 755-106



755-101, 755-102, 755-103



Assembly dimensions (mm)

System description

PROFIBUS DP is another member of the PROFIBUS product family. It is characterized by several special features, an important one being its capability to work in mono-master as well as in multi-master systems. The mono-master structure is often preferred due to its higher baud rate. PROFIBUS DP has been designed especially for faster data transmission. The maximum line length of the fieldbus depends on the baud rate. The baud rate, again, is dependent on the system topology and on the required response time.

Therefore, the transmission speed given by the master applies to all devices on the bus.

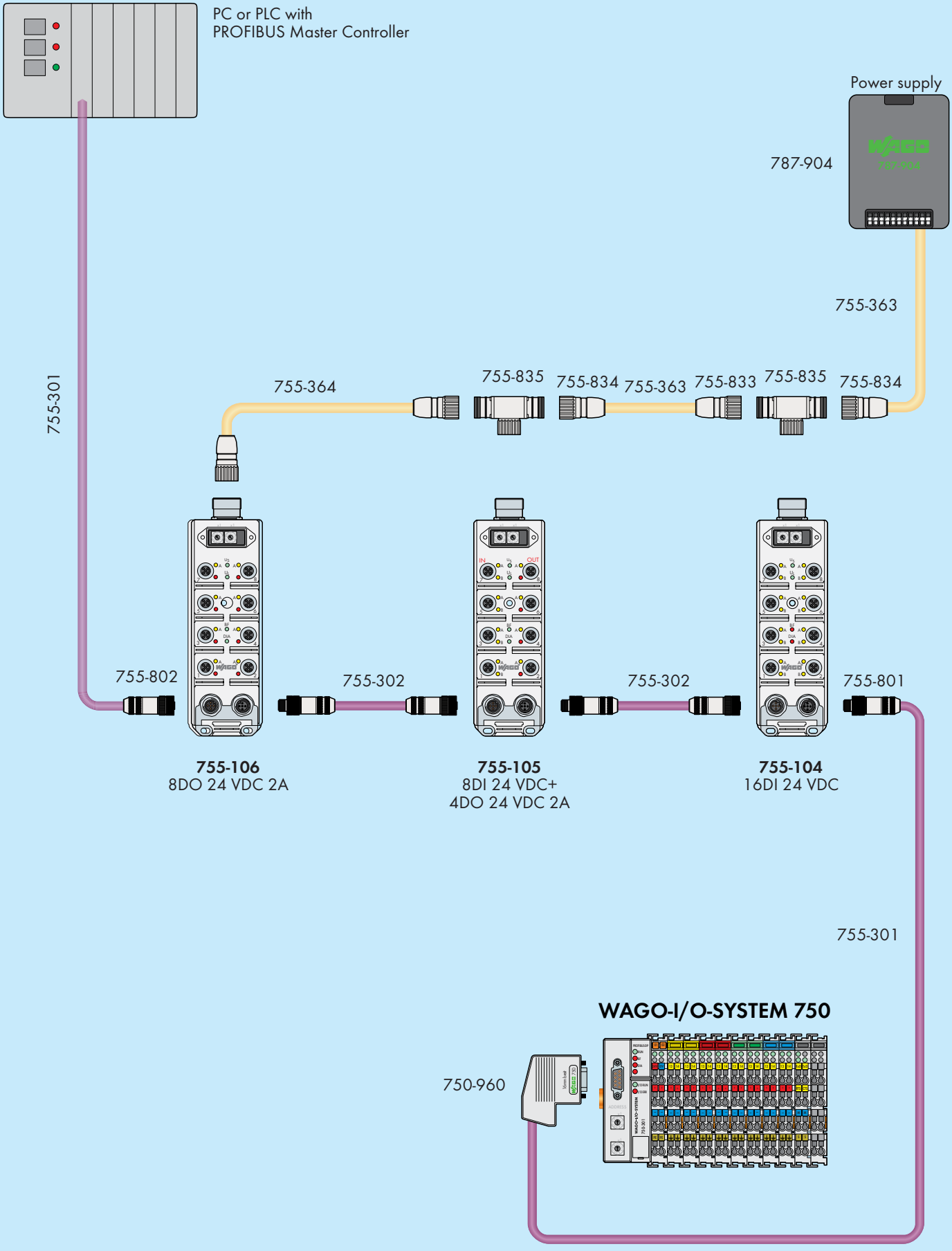
Addressing and implementation

Setting the station address can be done via the address switch, the addressing device (Item No. 755-201) or the master configuration software. The GSD files, that are needed to implement the modules, are available free of charge (diskette, e-mail) or can be directly downloaded from the Internet (wago.com).

Bit assignment

The diagnostic bits of the I/O modules are in byte 7 of the diagnostic message. The message has a maximum length of 13bytes. It corresponds to EN 50170, volume 2, PROFIBUS. The system data (e.g. master address, manufacturer ID) is in bytes 0-5. The device specific diagnostics start with byte 6. For WAGO products this diagnostic consists of 5 bytes. Byte 6 contains information about the number of diagnostic bytes (5). Byte 7 contains the proper diagnostic information. Bytes 8 to 10 don't contain any further information.

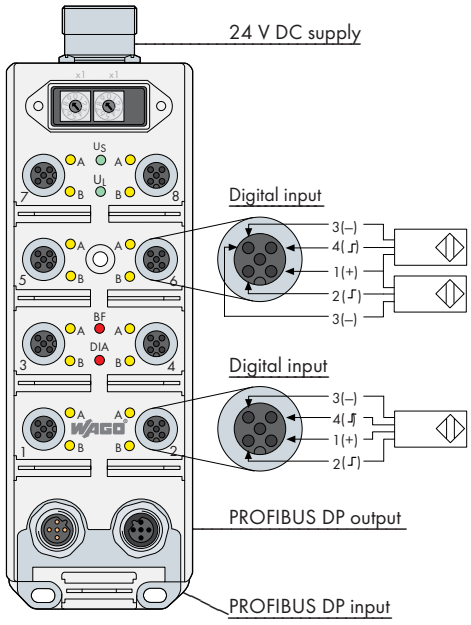
Topology



Cables and accessories see pages 503 ... 506

Profibus DP Slave

16 digital inputs



These items are PROFIBUS DP slaves.

Up to 16 digital inputs (see also item nos. 755-881/755-888) can be used to connect standard 3-conductor PNP sensors. The inputs are connected via M12 circular connectors. As an alternative, up to 8 digital inputs can be used to connect standard 4-conductor PNP sensors. A short circuit is indicated by a collective LED. The status of the inputs is also indicated by LEDs for each channel.

Note: GSD files required

The fieldbus is connected via M12 circular connectors. The status of the fieldbus is indicated by a LED.

The supply voltage is supplied to the module by a M23 circular connector. Various LEDs indicate the channel status.

The power supply of the fieldbus, of the module electronics, and of the sensors are electrically isolated from each other.

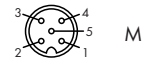
Description	Item No.	Pack. Unit
PROFIBUS DP Slave 16DI 24V DC with address switch	**755-104**	1
PROFIBUS DP Slave 16DI 24V + 24V DC (without illustration)	**755-101**	1

Accessories	Item No.
Addressing device	Page 502
Bus cable, power supply cable	Page 503
Sensor/actuator cable	See section 9, pages 528 ... 541
Other accessories	Page 506
GSD files	Download: www.wago.com

Standards and Approvals	
Standard	EN 50170
Certification	PNO
Conformity marking	CE

System Data	
Total length	depends on baud rate and use of repeater ;
	example:
	400 m for 500 kbaud;
	100 m for 12 Mbaud
Topology	Line structure
No. of couplers connected to Master	32 without repeater
Addressing	Address switch (755-104);
	Addressing device (item no. 755-201);
	Configuration software
Baud rate	9.6 kbaud ... 12 Mbaud
Communication	Master-slave procedure with cyclical
	polling
User hierarchy	Master-slave level
Cycle time	depends on number of devices and baud
	rate
Transmission medium	certified Cu cable
Terminating resistor	yes

Digital input



M 12

Pin	Function
1	+24 V
2	Signal B
3	0 V
4	Signal A
5	Earth

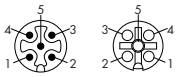
24 VDC supply

M 23

Pin	Function
1	Earth
2	n.c.
3	n.c.
4	+24 V (module supply + sensors)
5	0 V (module supply + sensors)
6	n.c.

PROFIBUS DP

Input Output



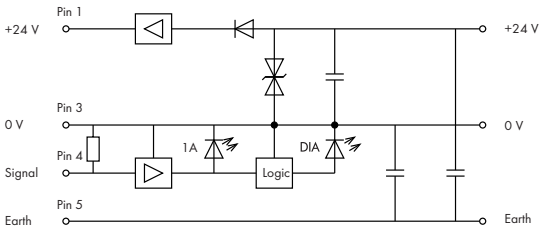
M 12 B-coded

Pin	Function
1	+5 V*
2	Line A
3	GND*
4	Line B
5	Earth

* Internal signals

Basic wiring diagram of an input

Digital input Supply



Technical Data

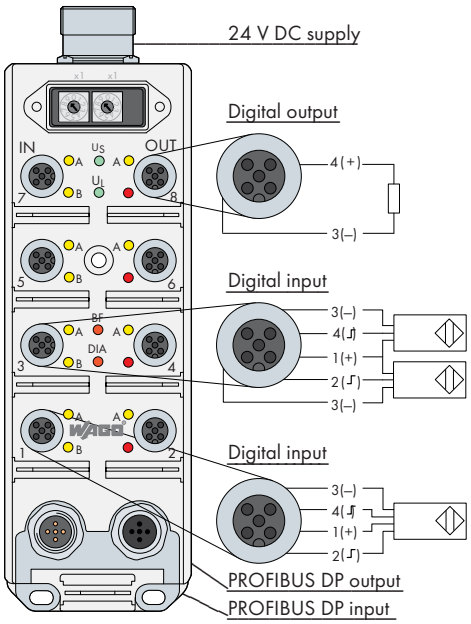
Bus system	
Address range	1...126 dec, default 99 (755-104)
	1...126 dec, default 126 (755-101)
ID	B755 hex
Power supply - electronics	
Nominal voltage	24 V DC
Voltage range	19 V ... 28.8 V DC
Current consumption	max. 60 mA
Reverse voltage protection	yes
Operating indicator (U_L)	LED green
Power supply - sensors	
Nominal voltage (Vs)	24 V DC
Voltage range	19 V ... 28.8 V DC
Total current of all sensors	max. 800 mA
Short circuit protection	yes
Sensor short circuit indication (DIA)	LED red
Sensor supply indication (U_S)	LED green
Inputs	
Nominal input voltage	24 V DC
Input	high-side switching
Number of digital channels	16
Status indication for each channel	LED yellow

Technical Data

General specifications	
Degree of protection	IEC IP 67 (NEMA Type 4-6 P)
Ambient operating temperature	0 °C ... +60 °C
Weight	679 g (755-104)
	540 g (755-101)
Dimensions (mm) W x H x L	60 x 197* x 51 (755-104)
	60 x 170* x 51 (755-101)
	* including flange sockets
Diagnostic indication	
LED 1 ... 8 A/B	Indicator yellow: channel active
LED U_S	Indicator green: sensor supply active
LED U_L	Indicator green: module supply active
LED BF	Indicator red: bus error /
	no data exchange
LED DIA	Indicator red: module diagnosis (e.g.
	sensor short circuit)
Bit assignment	
Byte 0	Bit 0 ... 7 / Sensor 1A ... 8A
Byte 1	Bit 0 ... 7 / Sensor 1B ... 8B
Byte 7 (diagnostic message)	Bit 4 / diagnosis: sensor overload

Profibus DP Slave

8 digital inputs, 4 digital outputs



These items are PROFIBUS DP slaves.

Up to 8 digital inputs (see also item nos. 755-881/755-888) can be used to connect standard 3-conductor PNP sensors. As an alternative, up to 4 digital inputs can be used to connect standard 4-conductor PNP sensors. Furthermore, the module has 4 digital outputs allowing the connection of DC actuators. The inputs and outputs are connected via M12 circular connectors. The current supply of the sensors as well as the outputs are short-circuit-proof. A sensor short circuit is indicated by a collective LED. An actuator short circuit is indicated by LEDs for each channel. The status of the inputs is also indicated by LEDs for each channel.

Note: GSD files required

The fieldbus is connected via M12 circular connectors. The status of the fieldbus is indicated by a LED.

The supply voltage is supplied to the module by a M23 circular connector. Various LEDs indicate the channel status.

The power supply of the fieldbus, of the module electronics, and of the sensors are electrically isolated from each other. The power supply of the actuators is separate.

Description	Item No.	Pack. Unit
PROFIBUS DP Slave 8DI 24V + 4DO 24V DC 2A with address switch	**755-105**	1
PROFIBUS DP Slave 8DI 24V + 4DO 24V DC 2A (without illustration)	**755-102**	1

Accessories	Item No.
Addressing device	Page 502
Bus cable, power supply cable	Page 503
Sensor/actuator cable	See section 9, pages 528 ... 541
Other accessories	Page 506
GSD files	Download: www.wago.com

Standards and Approvals	
Standard	EN 50170
Certification	PNO
Conformity marking	CE

System Data	
Total length	depends on baud rate and use of repeater ; example: 400 m for 500 kbaud; 100 m for 12 Mbaud
Topology	Line structure
No. of couplers connected to Master	32 without repeater
Addressing	Address switch (755-105); Addressing device (item no. 755-201); Configuration software
Baud rate	9.6 kbaud ... 12 Mbaud
Communication	Master-slave procedure with cyclical polling
User hierarchy	Master-slave level
Cycle time	depends on number of devices and baud rate
Transmission medium	certified Cu cable
Terminating resistor	yes

Digital input

Pin	Function
1	+24 V
2	Signal B
3	0 V
4	Signal A
5	Earth

Digital output

M 12

Pin	Function
1	n.c.
2	n.c.
3	0 V
4	Signal
5	Earth

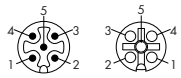
24 VDC supply

M 23

Pin	Function
1	Earth
2	+ 24 V (actuators)
3	0 V (actuators)
4	+24 V (module supply + sensors)
5	0 V (module supply + sensors)
6	n.c.

PROFIBUS DP

Input **Output**

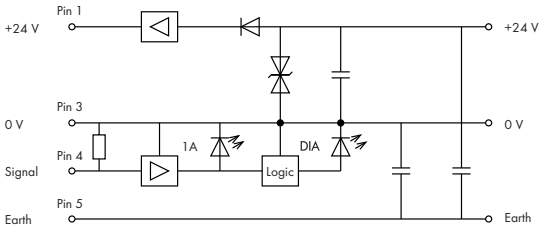


M 12 B-coded

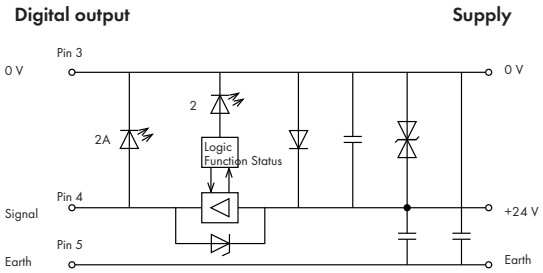
Pin	Function
1	+5 V*
2	Line A
3	GND*
4	Line B
5	Earth

* Internal signals

Basic wiring diagram of an input



Basic wiring diagram of an output



Technical Data

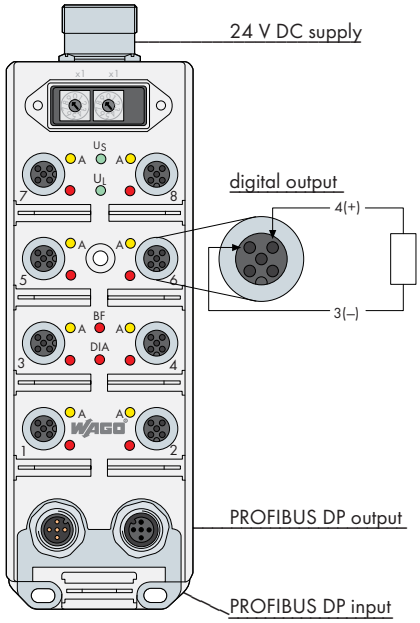
Bus system	
Address range	1...126 dec, default 99 (755-105)
	1...126 dec, default 126 (755-102)
ID	B755 hex
Power supply - electronics	
Nominal voltage	24 V DC
Voltage range	19 V ... 28.8 V DC
Current consumption	max. 60 mA
Reverse voltage protection	yes
Operating indicator (U_L)	LED green
Power supply - sensors	
Nominal voltage (Vs)	24 V DC
Voltage range	19 V ... 28.8 V DC
Total current of all sensors	max. 800 mA
Short circuit protection	yes
Sensor short circuit indication (DIA)	LED red
Inputs	
Nominal input voltage	24 V DC
Input	high-side switching
Number of digital channels	8
Status indication for each channel	LED yellow
Power supply - actuators	
Nominal voltage	24 V DC
Voltage range	15 V ... 30 V DC
Electrical insulation	yes
Reverse voltage protection	yes (unregulated power supply unit
	required, 10 A medium time-lag fuse)
Actuator supply indication (U_S)	LED green
Outputs	
Nominal output current	2 A per channel
Max. current comsumption per module	8 A
Number of channels	4
Type of channel	PNP, positive switched; short circuit proof
Status indication for each channel	LED yellow

Technical Data

General specifications	
Degree of protection	IEC IP 67 (NEMA Type 4-6 P)
Ambient operating temperature	0 °C ... +60 °C
Weight	645,8 g (755-105)
	504 g (755-102)
Dimensions (mm) W x H x L	60 x 197* x 51 (755-105)
	60 x 170* x 51 (755-102)
	* including flange sockets
Diagnostic indication	
LED 1, 3, 5, 7 A/B	Indicator yellow: channel active
LED 2, 4, 6, 8 A	Indicator yellow: channel active
LED 2, 4, 6, 8	Indicator red: actuator short circuit
LED U_S	Indicator green: actuator supply active
LED U_L	Indicator green: module supply active
LED BF	Indicator red: bus error /
	no data exchange
LED DIA	Indicator red: module diagnosis (e.g.
	sensor short circuit)
Bit assignment	
Byte 0	Bit 0 ... 3 / Actuator 2, 4, 6, 8
	(Bit 4 ... 7 / n.c.)
Byte 1	Bit 0 ... 7 / Sensor 1A, 3A, 5A, 7A, 1B,
	3B, 5B, 7B
Byte 7 (diagnostic message)	Bit 4 / Diagnosis: sensor overload,
	Bit 5 / Diagnosis: actuator overload,
	Bit 6 / Diagnosis: low voltage detection

Profibus DP Slave

8 digital outputs;



These items are PROFIBUS DP slaves.

Up to 8 digital outputs can be used to connect DC actuators. The outputs are connected via M12 circular connectors. The outputs are short-circuit-proof. A short circuit is indicated by LEDs for each channel. The status of the inputs is also indicated by LEDs for each channel.

Note: GSD files required

The fieldbus is connected via M12 circular connectors. The status of the fieldbus is indicated by a LED.

The supply voltage is supplied to the module by a M23 circular connector. Various LEDs indicate the channel status.

The power supply of the fieldbus and of the module electronics are electrically isolated from each other.

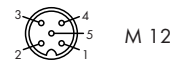
Description	Item No.	Pack. Unit
PROFIBUS DP Slave 8DO 24V DC 2A with address switch	**755-106**	1
PROFIBUS DP Slave 8DO 24V DC 2A (without illustration)	**755-103**	1

Accessories	Item No.
Addressing device	Page 502
Bus cable, power supply cable	Page 503
Sensor/actuator cable	See section 9, pages 528 ... 541
Other accessories	Page 506
GSD files	Download: www.wago.com

Standards and Approvals	
Standard	EN 50170
Certification	PNO
Conformity marking	CE

System Data	
Total length	depends on baud rate and use of repeater ; example: 400 m for 500 kbaud; 100 m for 12 Mbaud
Topology	Line structure
No. of couplers connected to Master	32 without repeater
Addressing	Address switch (755-106); Addressing device (item no. 755-201); Configuration software
Baud rate	9.6 kbaud ... 12 Mbaud
Communication	Master-slave procedure with cyclical polling
User hierarchy	Master-slave level
Cycle time	depends on number of devices and baud rate
Transmission medium	certified Cu cable
Terminating resistor	yes

Digital output



M 12

Pin	Function
1	n.c.
2	n.c.
3	0 V
4	Signal
5	Earth

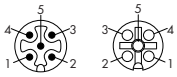
24 VDC supply

M 23

Pin	Function
1	Earth
2	+ 24 V (actuators)
3	0 V (actuators)
4	+24 V (module supply + sensors)
5	0 V (module supply + sensors)
6	n.c.

PROFIBUS DP

Input Output



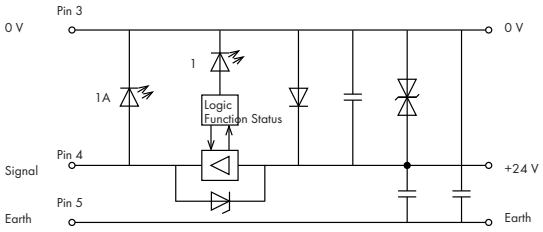
M 12 B-coded

Pin	Function
1	+5 V*
2	Line A
3	GND*
4	Line B
5	Earth

* Internal signals

Basic wiring diagram of an output

Digital output Supply

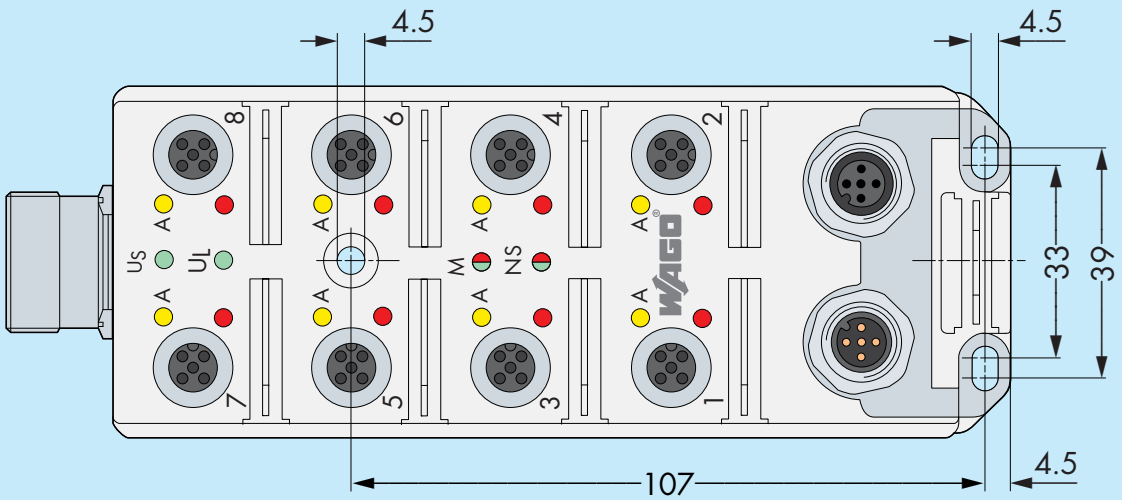


Technical Data

Bus system	
Address range	1...126 dec, default 99 (755-106)
	1...126 dec, default 126 (755-103)
ID	B755 hex
Power supply - electronics	
Nominal voltage	24 V DC
Voltage range	19 V ... 28.8 V DC
Current consumption	max. 60 mA
Reverse voltage protection	yes
Operating indicator (U_L)	LED green
Power supply - actuators	
Nominal voltage	24 V DC
Voltage range	15 V ... 30 V DC
Electrical insulation	yes
Reverse voltage protection	yes (unregulated power supply unit
	required, 10 A medium time-lag fuse)
Actuator supply indication (U_S)	LED green
Outputs	
Nominal output current	2 A per channel
Max. current comsumption per module	15 A
Number of channels	8
Type of channel	PNP, positive switched; short circuit proof
Status indication for each channel	LED yellow

Technical Data

General specifications	
Degree of protection	IEC IP 67 (NEMA Type 4-6 P)
Ambient operating temperature	0 °C ... +60 °C
Weight	635,2 g (755-106)
	500 g (755-103)
Dimensions (mm) W x H x L	60 x 197* x 51 (755-106)
	60 x 170* x 51 (755-103)
	* including flange sockets
Diagnostic indication	
LED 1 ... 8 A	Indicator yellow: channel active
LED 1 ... 8	Indicator red: actuator short circuit
LED U_S	Indicator green: actuator supply active
LED U_L	Indicator green: module supply active
LED BF	Indicator red: bus error /
	no data exchange
LED DIA	Indicator red: module diagnosis (e.g.
	sensor short circuit)
Bit assignment	
Byte 0	Bit 0 ... 7 / Actuator 1 ... 8
Byte 7 (diagnostic message)	Bit 5 / Diagnosis: actuator overload,
	Bit 6 / Diagnosis: low voltage detection



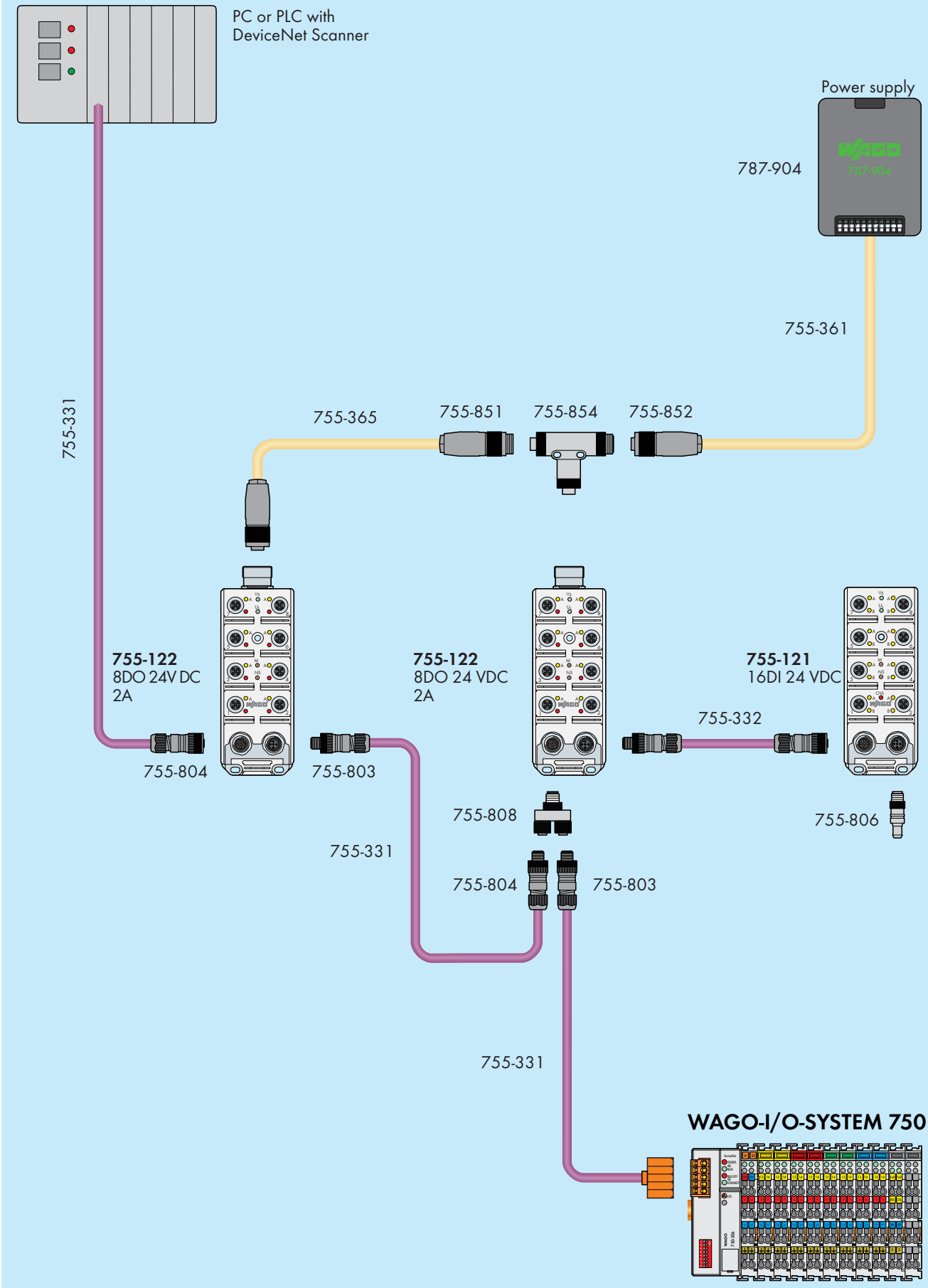
Assembly dimensions (mm)

System description
DeviceNet uses a trunk cable/drop cable topology. It utilizes the Controller Area Network (CAN) as a back bone.
Depending on the line length, different baud rates are possible. It has to be taken into account though, that the total length of all drop cables also depends on the baud rate. DeviceNet supports various messaging formats which allows reduced response times and increases the efficiency of the data exchange:

- Explicit Message Connection
  In this mode direct data exchange between master and slave takes place without address priority.
- Polled I/O Message Connection
  When requested, slaves transmit I/O data to the master.
- Bit Strobed I/O Message Connection
  The master sends a 'Bit-Strobe' message to all slaves. The slaves respond sending their input data or output status.
- Change of State / Cyclic Message Connection
  Due to a certain event (e.g. change of input state) a device sends the current date.
  In order to avoid data collision on the bus, devices are prioritized.
  If several devices try to send a message at the same time, the device having the highest priority will be allowed to send first.

Addressing
Module addressing can either be done via a master manufacturer's configuration software (e.g. DeviceNet Manager, RS Networx) or via the WAGO software tool (WAGO DeviceNet Node Commissioning). When addressing is done via the master, the modules are first added to the network. The modules will then carry out a self test to find out if there is another module with the same address in the fieldbus network. If so, the module is deactivated. Factory set module addresses are required to set own addresses.
Addressing done via the WAGO software tool occurs in connection to the WAGO-I/O-SYSTEM. The module is addressed via the fieldbus coupler's configuration interface and the connected fieldbus. Bus network scanning will find out the addresses that have already been used.

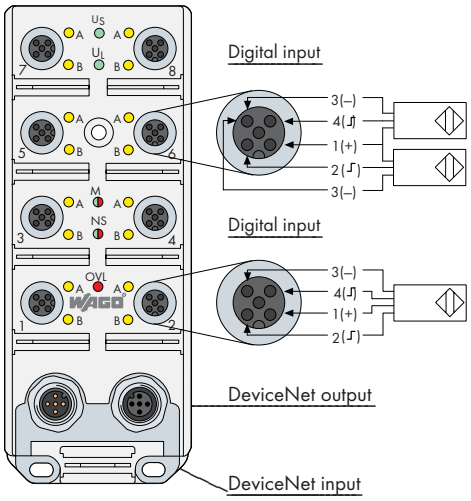
Topology



Cable and accessories see pages 503 ... 506

DeviceNet Slave

16 digital inputs



This item is a DeviceNet slave.
The maximum distance between two modules and the maximum line length of the entire network depends on the baud rate. Up to 16 digital inputs (see also item nos. 755-881/755-887) can be used to connect standard 3-conductor PNP sensors. The inputs are connected via M12 circular connectors. As an alternative, up to 8 digital inputs can be used to connect standard 4-conductor PNP sensors. The current supply of the sensors is short-circuit-proof.

Note: EDS files required

A short circuit is indicated by a collective LED. The status of the inputs is also indicated by LEDs for each channel. The fieldbus is connected via M12 circular connectors. The status of the fieldbus is indicated by a LED. The supply voltage for the module and for the sensors is derived from the fieldbus connection. Various LEDs indicate thecurrent status.

The power supply of the fieldbus, of the module electronics, and of the sensors are electrically isolated from each other.

Description	Item No.	Pack. Unit
DeviceNet Slave 16DI 24V DC	**755-121**	1

Accessories	Item No.
Bus cable, power supply cable	Page 504
Sensor/actuator cable	See section 9, pages 528 ... 541
Other accessories	Page 506
EDS files and software tool	Download: www.wago.com

Approvals	
Certification	ODVA
Conformity marking	CE

System Data	
Total length	max. 500 m trunk cable (depends on baud rate); max. 6 m drop cable
Topology	Line structure with drop cables
No. of couplers connected to Master	63
Addressing	via master; via software tool (WAGO DeviceNet Node Commissioning)
Baud rate	500 kbaud
Communication	Explicit Message Connection Polled I/O Message Connection Bit Strobed I/O Message Connection Change of State / Cyclic Message Connection
User hierarchy	Multi-Master
Cycle time	depends on number of devices and baud rate
Transmission medium	certified DeviceNet cable
Terminating resistor	yes

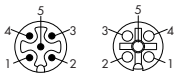
Digital input

M 12

Pin	Function
1	+24 V
2	Signal B
3	0 V
4	Signal A
5	Earth

DeviceNet

Input **Output**

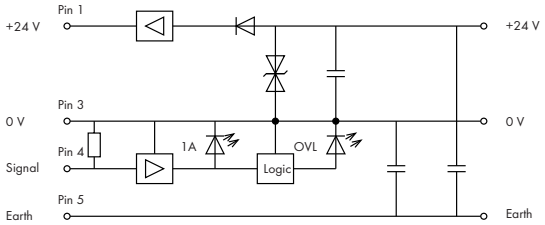


M 12

Pin	Function
1	Drain
2	V+
3	V-
4	CHA_H
5	CHA_L

Basic wiring diagram of an input

Digital input **Supply**



Technical Data

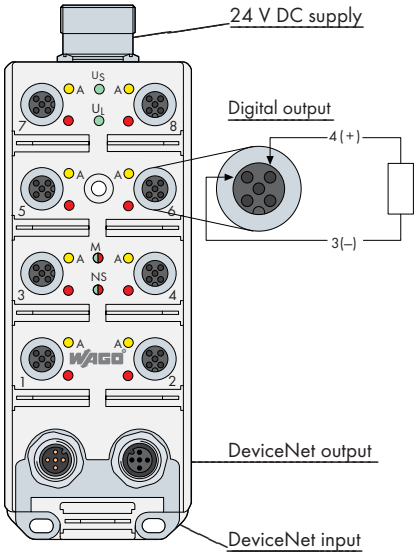
Bus system	
Type of module	Group 2 only, Server
Baud rate programmable via DN	
master	125 kbaud, 250 kbaud, 500 kbaud
MAC ID programmable via DN master	0 ... 63 dec.
MAC ID preset address	63 dec.
Power supply - electronics	
Nominal voltage	24 V DC
Voltage range	15 V ... 30 V DC
Current consumption	max. 80 mA
Reverse voltage protection	yes
Operating indicator (U_L)	LED green
Power supply - sensors	
Nominal voltage (Vs)	> Bus voltage ... 1.5 V
Total current of all sensors	max. 800 mA
Short circuit protection	yes
Sensor short circuit indication (OVL)	LED red
Sensor supply indication (U_S)	LED green
Inputs	
Nominal input voltage	24 V DC
Input	high-side switching
Number of digital channels	16
Status indication for each channel	LED yellow

Technical Data

General specifications	
Degree of protection	IEC IP 67 (NEMA Type 4-6 P)
Ambient operating temperature	0 °C ... +60 °C
Weight	596 g
Dimensions (mm) W x H x L	60 x 152* x 51
	* including flange sockets
Diagnostic indication	
LED 1 ... 8 A/B	Indicator yellow: channel active
LED U_S	Indicator green: sensor supply active
LED U_L	Indicator green: module supply active
LED MS (module status)	1) Indicator green: module ready,
	2) Indicator red blinking: non-critical error,
	3) Indicator red: critical error
LED NS (network status)	1) Indicator green: online, connected with
	master,
	2) Indicator green, blinking: online, no
	connection with master,
	3) Indicator red, blinking: time out status for
	the last I/O connection,
	4) Indicator red: BUS OFF status,
	redundant Mac ID
LED OVL	Indicator red: sensor short circuit
Bit assignment	
Byte 0	Bit 0 ... 7 / Sensor 1A ... 8A
Byte 1	Bit 0 ... 7 / Sensor 1B ... 8B
Byte 2	Bit 0 ... 6 / res.,
	Bit 7 / Diagnosis: sensor overload

DeviceNet Slave

8 digital outputs



This item is a DeviceNet slave.

The maximum distance between two modules and the maximum line length of the entire network depends on the baud rate. Up to 8 digital outputs can be used to connect DC actuators. The outputs are connected via M12 circular connectors. The outputs are short-circuit-proof. A short circuit is indicated by LEDs for each channel. The status of the inputs is also indicated by LEDs for each channel. The fieldbus is connected via M12 circular connectors. The status of the fieldbus is indicated by a LED. The actuator supply voltage is supplied to the module by a 7/8" circular connector. Various LEDs indicate the channel status.

Note: EDS files required

The power supply of the fieldbus and of the module electronics are electrically isolated from each other.

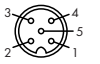
Description	Item No.	Pack. Unit
DeviceNet Slave 8DO 24V DC 2A	**755-122**	1

Accessories	Item No.
Bus cable, power supply cable	Page 504
Sensor/actuator cable	See section 9, pages 528 ... 541
Other accessories	Page 506
EDS files and software tool	Download: www.wago.com

Approvals	
Certification	ODVA
Conformity marking	CE

System Data	
Total length	max. 500 m trunk cable (depends on baud rate); max. 6 m drop cable
Topology	Line structure with drop cables
No. of couplers connected to Master	63
Addressing	via master; via software tool (WAGO DeviceNet Node Commissioning)
Baud rate	500 kbaud
Communication	Explicit Message Connection Polled I/O Message Connection Bit Strobed I/O Message Connection Change of State / Cyclic Message Connection
User hierarchy	Multi-Master
Cycle time	depends on number of devices and baud rate
Transmission medium	certified DeviceNet cable
Terminating resistor	yes

Digital output



M 12

Pin	Function
1	n.c.
2	n.c.
3	0 V
4	Signal
5	Earth

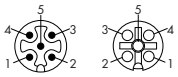
24 V DC supply

7/8"

Pin	Function
1	Earth
2	+ 24 V DC
3	0 V

DeviceNet

Input **Output**

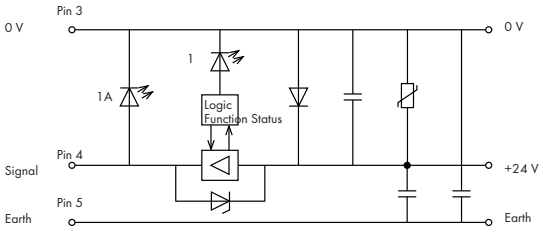


M 12

Pin	Function
1	Drain
2	V+
3	V-
4	CHA_H
5	CHA_L

Basic wiring diagram of an output

Digital output **Supply**

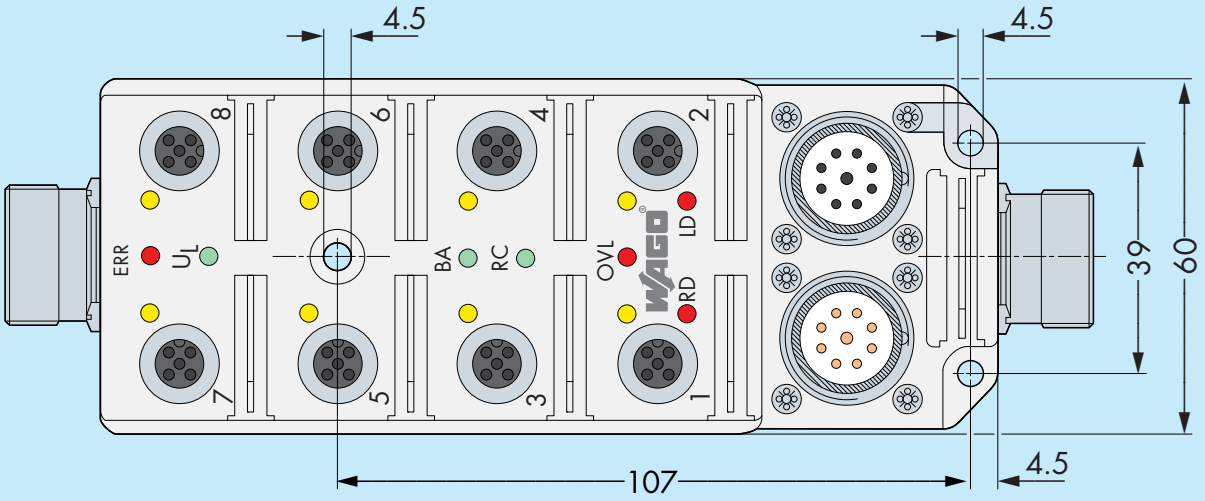


Technical Data

Bus system	
Type of module	Group 2 only, Server
Baud rate programmable via DN	
master	125 kbaud, 250 kbaud, 500 kbaud
MAC ID programmable via DN master	0 ... 63 dec.
MAC ID preset address	63 dec.
Power supply - electronics	
Nominal voltage	24 V DC
Voltage range	15 V ... 30 V DC
Current consumption	max. 100 mA
Reverse voltage protection	yes
Operating indicator (U_L)	LED green
Power supply - actuators	
Nominal voltage	24 V DC
Voltage range	19 V ... 30 V DC
Current consumption (no load	max. 30 mA
Electrical insulation	yes
Reverse voltage protection	yes (unregulated power supply unit
	required, 10 A medium time-lag fuse)
Actuator supply indication (U_S)	LED green
Outputs	
Nominal output current	2 A per channel
Max. current comsumption per module	12 A
Number of channels	8
Type of channel	PNP, positive switched; short circuit proof
Status indication for each channel	LED yellow

Technical Data

General specifications	
Degree of protection	IEC IP 67 (NEMA Type 4-6 P)
Ambient operating temperature	0 °C ... +60 °C
Weight	596,55 g
Dimensions (mm) W x H x L	60 x 172* x 51
	* including flange sockets
Diagnostic indication	
LED 1 ... 8 A	Indicator yellow: channel active
LED 1 ... 8	Indicator red: actuator short circuit
LED U_S	Indicator green: actuator supply active
LED U_L	Indicator green: module supply active
LED MS (module status)	1) Indicator green: module ready,
	2) Indicator red blinking: non-critical error,
	3) Indicator red: critical error
LED NS (network status)	1) Indicator green: online, connected with
	master,
	2) Indicator green, blinking: online, no
	connection with master,
	3) Indicator red, blinking: time out status for
	the last I/O connection,
	4) Indicator red: BUS OFF status,
	redundant Mac ID
Bit assignment	
Byte 0	Input: Bit 0 ... 5, 7 / res.,
	Bit 6 / Diagnosis: actuator status;
	Output: Bit 0 ... 7 / Actuator 1 ... 8



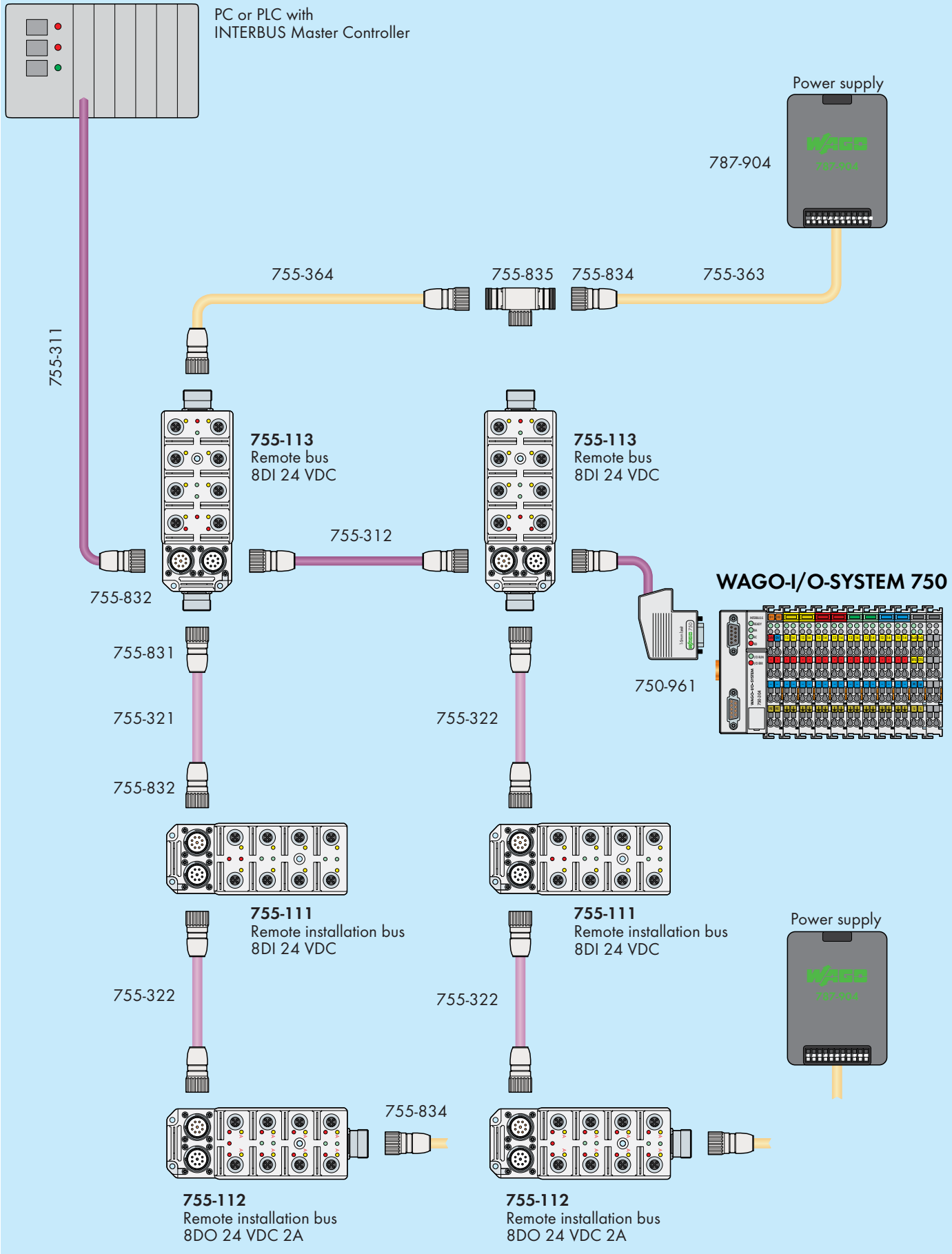
Assembly dimensions (mm)

System description
The INTERBUS fieldbus is characterized by its node to node serial connections. This is a ring topology since sending and returning of data is done within one single cable.
INTERBUS is divided up into several different sections, e.g. remote bus and remote installation bus. The remote bus serves to bridge great distances and achieves a broad network.

The supply voltage of the module electronics and the actuators is carried along which makes the remote installation bus especially suitable for the design of distributed substationswith a direct connection to the field.
The number of I/O modules that can be connected to the remote installation bus is limited by the maximum current consumption of all modules and actuators. A total of 4.5A must not be exceeded.
These features, among others, are the basis for cost effective segmentation and make it possible to separate faulty parts from the bus, thus maintaining or even increasing the capabilities of an installation.

Addressing
The type, number, and sequence of the modules is recognized automatically by the master. Addressing is not necessary!

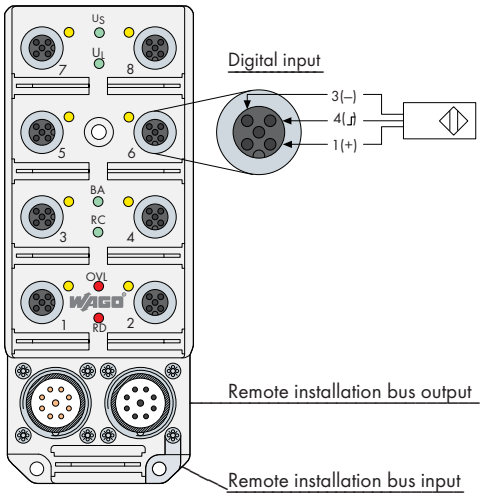
Topology



Cables and accessories see pages 503 ... 506

INTERBUS Remote Installation Bus Slave

8 digital inputs



This item is a remote installation bus slave.

Up to 8 digital inputs can be used to connect standard 3-conductor PNP sensors. The inputs are connected via M12 circular connectors. The current supply of the sensors is short-circuit-proof. A short circuit is indicated by a collective LED. The status of the inputs is also indicated by LEDs for each channel.

The fieldbus is connected via M23 circular connectors. The status of the fieldbus is indicated by LEDs.

The supply voltage for the module and for the sensors is derived from the fieldbus connection. LEDs indicate the current status.

The power supply of the fieldbus, of the module electronics, and of the sensors are electrically isolated from each other.

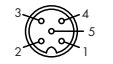
Description	Item No.	Pack. Unit
INTERBUS Remote Installation Bus Slave 8DI 24V DC	**755-111**	1

Accessories	Item No.
Bus cable, power supply cable	Page 505
Sensor/actuator cable	See section 9, pages 528 ... 541
Other accessories	Page 506

Standards and Approvals	
Standard	EN 50254
Certification	INTERBUS CLUB
Conformity marking	CE

System Data	
Total length	Remote bus 13 km / remote installation bus 50 m
Total length	Remote bus 400 m / remote installation bus 50 m
Topology	Ring structure
No. of couplers connected to Master	256
Addressing	automatically
Baud rate	500 kbaud
Communication	Shift register message with all information for all devices
User hierarchy	Mono Master
Cycle time	depends on number of devices
Transmission medium	certified Cu cable
Terminating resistor	no

Digital input



M 12

Pin	Function
1	+24 V
2	n.c.
3	0 V
4	Signal
5	Earth

Remote installation bus Input

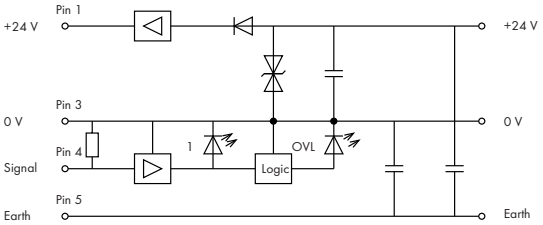
Pin	Function
1	DO
2	DO
3	DI
4	DI
5	GND
6	Earth
7	+ 24 V
8	0 V
9	n.c.
Enclosure	Earth

Remote installation bus Output

M 23

Pin	Function
1	DO
2	DO
3	DI
4	DI
5	GND
6	Earth
7	+ 24 V
8	0 V
9	RBST
Enclosure	Earth

Basic wiring diagram of an input



Technical Data

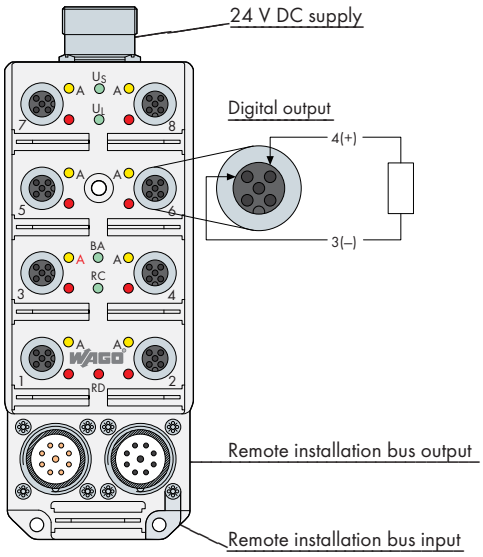
Slave profile	
ID code	10 dec.
Power supply - electronics	
Nominal voltage	24 V DC
Voltage range	19 V ... 30 V DC
Current consumption	max. 70 mA
Reverse voltage protection	yes
Operating indicator (U_L)	LED green
Power supply - sensors	
Nominal voltage (Vs)	24 V DC
Voltage range	19 V ... 30 V DC
Total current of all sensors	max. 400 mA
Short circuit protection	yes
Sensor short circuit indication (OVL)	LED red
Sensor supply indication (U_S)	LED green
Inputs	
Nominal input voltage	24 V DC
Input	high-side switching
Number of digital channels	8
Status indication for each channel	LED yellow

Technical Data

General specifications	
Degree of protection	IEC IP 67 (NEMA Type 4-6 P)
Ambient operating temperature	0 °C ... +60 °C
Weight	500 g
Dimensions (mm) W x H x L	60 x 152* x 48
	* including flange sockets
Diagnostic indication	
LED 1 ... 8	Indicator yellow: channel active
LED U_S	Indicator green: sensor supply active
LED U_L	Indicator green: module supply active
LED BA	Indicator green: bus active
LED RC	Indicator green: remote bus input connected
LED RD	Indicator red: remote bus output disconnected
LED OVL	Indicator red: sensor short circuit
Bit assignment	
Byte 1	Bit 0 ... 7 / Sensor 1 ... 8

INTERBUS Remote Installation Bus Slave

8 digital outputs



This item is a remote installation bus slave.

Up to 8 digital outputs can be used to connect DC actuators. The outputs are connected via M12 circular connectors. The outputs are short-circuit-proof. A short circuit is indicated by LEDs for each channel. The fieldbus is connected via M23 circular connectors. The status of the fieldbus is indicated by LEDs. The supply voltage for the module is derived from the fieldbus connection. The remote installation bus module has an auxiliary power supply (M23 circular connector) for the actuators.

The power supply of the fieldbus and of the module electronics are electrically isolated from each other.

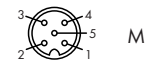
Description	Item No.	Pack. Unit
INTERBUS Remote Installation Bus Slave 8DO 24V DC 2A	**755-112**	1

Accessories	Item No.
Bus cable, power supply cable	Page 505
Sensor/actuator cable	See section 9, pages 528 ... 541
Other accessories	Page 506

Standards and Approvals	
Standard	EN 50254
Certification	INTERBUS CLUB
Conformity marking	CE

System Data	
Total length	Remote bus 13 km / remote installation bus 50 m
Total length	Remote bus 400 m / remote installation bus 50 m
Topology	Ring structure
No. of couplers connected to Master	256
Addressing	automatically
Baud rate	500 kbaud
Communication	Shift register message with all information for all devices
User hierarchy	Mono Master
Cycle time	depends on number of devices
Transmission medium	certified Cu cable
Terminating resistor	no

Digital output



M 12

Pin	Function
1	n.c.
2	n.c.
3	0 V
4	Signal
5	Earth

24 V DC supply

M 23

Pin	Function
1	Earth
2	+ 24 V
3	0 V
4	n.c.
5	n.c.
6	n.c.

Remote installation bus Input

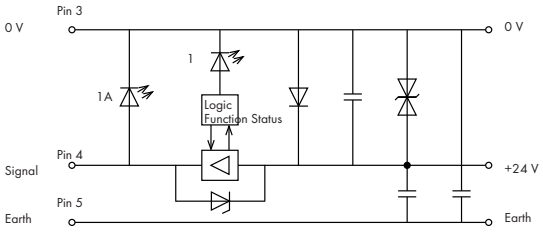
Pin	Function
1	DO
2	DO
3	DI
4	DI
5	GND
6	Earth
7	+ 24 V
8	0 V
9	n.c.
Enclosure	Earth

Remote installation bus Output

M 23

Pin	Function
1	DO
2	DO
3	DI
4	DI
5	GND
6	Earth
7	+ 24 V
8	0 V
9	RBST
Enclosure	Earth

Basic wiring diagram of an output



Technical Data

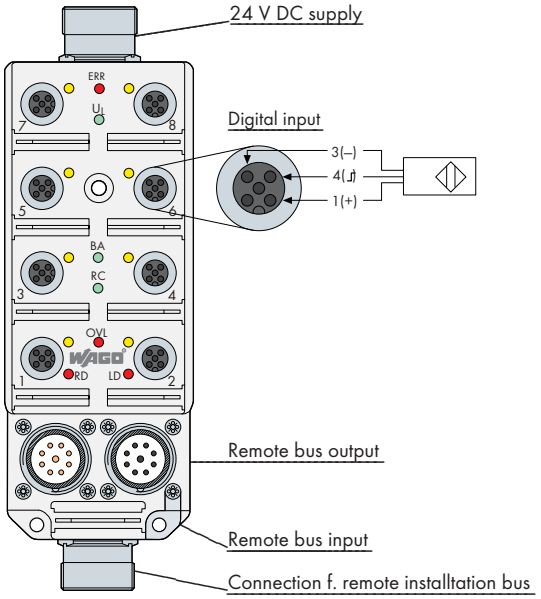
Slave profile	
ID code	09 dec.
Power supply - electronics	
Nominal voltage	24 V DC
Voltage range	19 V ... 30 V DC
Current consumption	max. 70 mA
Reverse voltage protection	yes
Operating indicator (U_L)	LED green
Power supply - actuators	
Nominal voltage	24 V DC
Voltage range	19 V ... 30 V DC
Electrical insulation	yes
Reverse voltage protection	yes (unregulated power supply unit required, 10 A medium time-lag fuse)
Actuator supply indication (U_S)	LED green
Outputs	
Nominal output current	2 A per channel
Max. current comsumption per module	15 A
Number of channels	8
Type of channel	PNP, positive switched; short circuit proof
Status indication for each channel	LED yellow

Technical Data

General specifications	
Degree of protection	IEC IP 67 (NEMA Type 4-6 P)
Ambient operating temperature	0 °C ... +60 °C
Weight	580 g
Dimensions (mm) W x H x L	60 x 169* x 48
	* including flange sockets
Diagnostic indication	
LED 1 ... 8 A	Indicator yellow: channel active
LED 1 ... 8	Indicator red: actuator short circuit
LED U_S	Indicator green: actuator supply active
LED U_L	Indicator green: module supply active
LED BA	Indicator green: bus active
LED RC	Indicator green: remote bus input connected
LED RD	Indicator red: remote bus output disconnected
Bit assignment	
Byte 1	Bit 0 ... 7 / Actuator 1 ... 8

INTERBUS Remote Bus Slave

integrated connection for remote installation bus



This item is a remote bus slave with an integrated connection for a remote installation bus.

Up to 8 digital inputs can be used to connect standard 3-conductor PNP sensors. The inputs are connected via M12 circular connectors. The current supply of the sensors is short-circuit-proof. A short circuit is indicated by a collective LED. The status of the inputs is also indicated by LEDs for each channel.

The fieldbus is connected via M23 circular connectors. The status of the fieldbus is indicated by LEDs.

The supply voltage is supplied to the module by a M23 circular connector. Another LED indicates the status.

The power supply of the fieldbus, of the module electronics, and of the sensors are electrically isolated from each other.

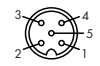
Description	Item No.	Pack. Unit
INTERBUS Remote Bus Slave 8DI 24V DC	**755-113**	1

Accessories	Item No.
Bus cable, power supply cable	Page 505
Sensor/actuator cable	See section 9, pages 528 ... 541
Other accessories	Page 506

Standards and Approvals	
Standard	EN 50254
Certification	INTERBUS CLUB
Conformity marking	CE

System Data	
Total length	Remote bus 13 km / remote installation bus 50 m
Total length	Remote bus 400 m / remote installation bus 50 m
Topology	Ring structure
No. of couplers connected to Master	256
Addressing	automatically
Baud rate	500 kbaud
Communication	Shift register message with all information for all devices
User hierarchy	Mono Master
Cycle time	depends on number of devices
Transmission medium	certified Cu cable
Terminating resistor	no

Digital input



M 12

Pin	Function
1	+ 24 V
2	n.c.
3	0 V
4	Signal
5	Earth

24 V DC supply

M 23

Pin	Function
1	Earth
2	+ 24 V (remote installation bus)
3	0 V (remote installation bus)
4	+ 24 V (module supply+sensors)
5	0 V (module supply+sensors)
6	n.c.

Remote bus Input

Pin	Function
1	DO
2	DO
3	DI
4	DI
5	GND
6	n.c.
7	n.c.
8	n.c.
9	n.c.
Enclosure	Earth

Remote bus Output

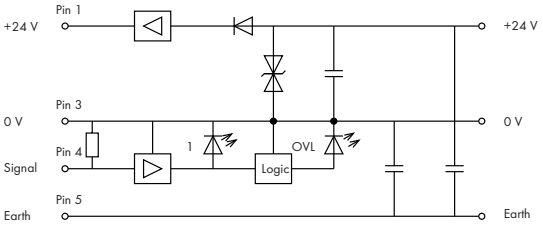
Pin	Function
1	DO
2	DO
3	DI
4	DI
5	GND
6	n.c.
7	n.c.
8	n.c.
9	RBST
Enclosure	Earth

Remote installation bus Connection

M 23

Pin	Function
1	DO
2	DO
3	DI
4	DI
5	GND
6	Earth
7	+ 24 V
8	0 V
9	LBST
Enclosure	Earth

Basic wiring diagram of an input



Technical Data

Slave profile	
ID code	11 dec.
Power supply - electronics	
Nominal voltage	24 V DC
Voltage range	19 V ... 30 V DC
Current consumption	max. 120 mA
Reverse voltage protection	yes
Operating indicator (U_L)	LED green
Power supply - sensors	
Nominal voltage (Vs)	24 V DC
Voltage range	19 V ... 30 V DC
Total current of all sensors	max. 400 mA
Short circuit protection	yes
Sensor short circuit indication (OVL)	LED red
Inputs	
Nominal input voltage	24 V DC
Input	high-side switching
Number of digital channels	8
Status indication for each channel	LED yellow

Technical Data

General specifications	
Degree of protection	IEC IP 67 (NEMA Type 4-6 P)
Ambient operating temperature	0 °C ... +60 °C
Weight	580 g
Dimensions (mm) W x H x L	60 x 186* x 48
	* including flange sockets
Diagnostic indication	
LED 1 ... 8	Indicator yellow: channel active
LED ERR	Indicator red: remote installation bus
LED U_L	Indicator green: module supply active
LED BA	Indicator green: bus active
LED RC	Indicator green: remote bus input connected
LED RD	Indicator red: remote bus output disconnected
LED LD	Indicator red: remote installation bus disconnected
LED OVL	Indicator red: sensor short circuit
Bit assignment	
Byte 0	0 ... 7 / n.c.)
Byte 1	8 ... 15 / Sensor 1 ... 8
Note:	Depending on the master card a "byteswap" may occur, resulting in a reversion of the data byte order!

PROFIBUS DP

Addressing device

The addressing device serves to address the PROFIBUS DP slaves.
Operation:
1. Connect the addressing device to module socket 8 (The output must be switched off and remain off during this procedure).
2. Read address: Keep READ button pushed, count flashes of the ADDRESS LEDs for 1's, 10's and 100's.
3. Write address: Set the requested address via coding switches (3-digit decimal number). Keep WRITE button pushed (W/R LED on) until W/R LED goes off!

Description	Item No.	Pack. Unit
Profibus DP addressing device	**755-201**	1

Technical Data	
Write /Read function	Button Read: read address, Button Write: write address
Address assignment (decimal)	Coding switches, Left: hundreds digit, Middle: tens digit, Right: units digit
Address indication (decimal)	LED, yellow, left: hundreds place; LED, yellow, middle: tens place; LED yellow, right: units place
Status indication of the device	LED "ON" is on: device OK; Getting dimmer or going off: battery voltage too low LED "W/R" is on: telegram transfer via connecting cable LED "ERROR" is on: general error; blinking: invalid address; 1 ... 126 dec)

Bus cable

Description		Item No.	Pack. Unit
PROFIBUS cable (fitted with M12 connectors)	both ends of cable are fitted with M12 plug/M12 socket	755-302/000-xxx *	1
PROFIBUS cable (not fitted with connectors)		755-301/000-xxx *	1

* xxx = cable length given in m (e.g.: 10 m = 755-302/000-010)

Connectors for bus cables

Terminating resistor

Description		Item No.	Pack. Unit
M12 PROFIBUS plug	5-pole screw clamp connection	755-801	1
M12 PROFIBUS socket	5-pole screw clamp connection	755-802	1
M12 PROFIBUS terminating resistor	5-pole	755-805	1

Power supply cable

Description		Item No.	Pack. Unit
Power supply cable, twin power supply (fitted with M23 connectors)	both ends of cable are fitted with M23 plug/M23 socket	755-364/000-xxx *	1
Power supply cable, twin power supply (not fitted with connectors)		755-363/000-xxx *	1

* xxx = cable length given in m (e.g.: 10 m = 755-364/000-010)

Connectors for power supply cables

T-piece for power supply cable

Description		Item No.	Pack. Unit
M23 power supply plug	6-pole solder contact	755-833	1
M23 supply socket	6-pole solder contact	755-834	1
M23 supply T-piece	6-pole	755-835	1

M23 assembly key (755-836)

DeviceNet Cables and Connectors for Fieldbus Systems

Bus cable

Description		Item No.	Pack. Unit
DeviceNet drop cable (fitted with M12 connectors)	both ends of cable are fitted with M12 plug/M12 socket	755-332/000-xxx *	1
DeviceNet drop cable (not fitted with connectors)		755-331/000-xxx *	1

* xxx = cable length given in m (e.g.: 10 m = 755-332/000-010)

Connectors for bus cables

T-piece for bus cable

Terminating resistor

Description		Item No.	Pack. Unit
M12 DeviceNet drop plug	5-pole screw clamp connection	755-803	1
M12 deviceNet drop socket	5-pole screw clamp connection	755-804	1
M12 DeviceNet drop T-piece	5-pole	755-808	1
M12 DeviceNet terminating resistor plug		755-806	1
M12 DeviceNet terminating resistor socket		755-807	1

Power supply cable

Description		Item No.	Pack. Unit
Power supply cable, single power supply (fitted with 7/8" connectors)	both ends of cable are fitted with 7/8" plug/7/8" socket	755-365/000-xxx *	1
Power supply cable, single power supply (not fitted with connectors)		755-361/000-xxx *	1

* xxx = cable length given in m (e.g.: 10 m = 755-365/000-010)

Connectors for power supply cables

T-piece for bus cable

Description		Item No.	Pack. Unit
7/8" supply plug	3-pole screw clamp connection	755-851	1
7/8" supply socket	3-pole screw clamp connection	755-852	1
7/8" supply T-piece	3-pole	755-854	1

Bus cable

Description		Item No.	Pack. Unit
Remote bus cable (fitted with M23 connectors)	both ends of cable are fitted with M23 plug/M23 socket	755-312/000-xxx *	1
Remote bus cable (not fitted with connectors)		755-311/000-xxx *	1
Remote installation bus cable (fitted with M23 connectors)	both ends of cable are fitted with M23 plug/M23 socket	755-322/000-xxx *	1
Remote installation bus cable (not fitted with connectors)		755-321/000-xxx *	1

* xxx = cable length given in m (e.g.: 10 m = 755-312/000-010)

Connectors for bus cables

Description		Item No.	Pack. Unit
M23 INTERBUS plug	9-pole solder contact	755-831	1
M23 INTERBUS socket	9-pole solder contact	755-832	1

M23 assembly key (755-836)

Power supply cable

Description		Item No.	Pack. Unit
Power supply cable, single power supply (fitted with M23 connectors), for output modules	both ends of cable are fitted with M23 plug/M23 socket	755-362/000-xxx *	1
Power supply cable, single power supply (not fitted with connectors), for output modules		755-361/000-xxx *	1
Power supply cable, twin power supply (fitted with M23 connectors)	both ends of cable are fitted with M23 plug/M23 socket	755-364/000-xxx *	1
Power supply cable, twin power supply (not fitted with connectors)		755-363/000-xxx *	1

* xxx = cable length given in m (e.g.: 10 m = 755-362/000-010)

Connectors for power supply cables

T-piece for power supply cable

Description		Item No.	Pack. Unit
M23 power supply plug	6-pole solder contact	755-833	1
M23 supply socket	6-pole solder contact	755-834	1
M23 supply T-piece	6-pole	755-835	1

M23 assembly key (755-836)

Accessories for Fieldbus Modules

Mounting accessories

M23

Description		Item No.	Pack. Unit
M23 assembly key	for easy installation	755-836	1
M23 protective cap (fieldbus/supply)	for unused connectors	755-837	1

7/8"

Description		Item No.	Pack. Unit
7/8" protective cap (supply)	for unused fieldbus module sockets	755-853	1

M12

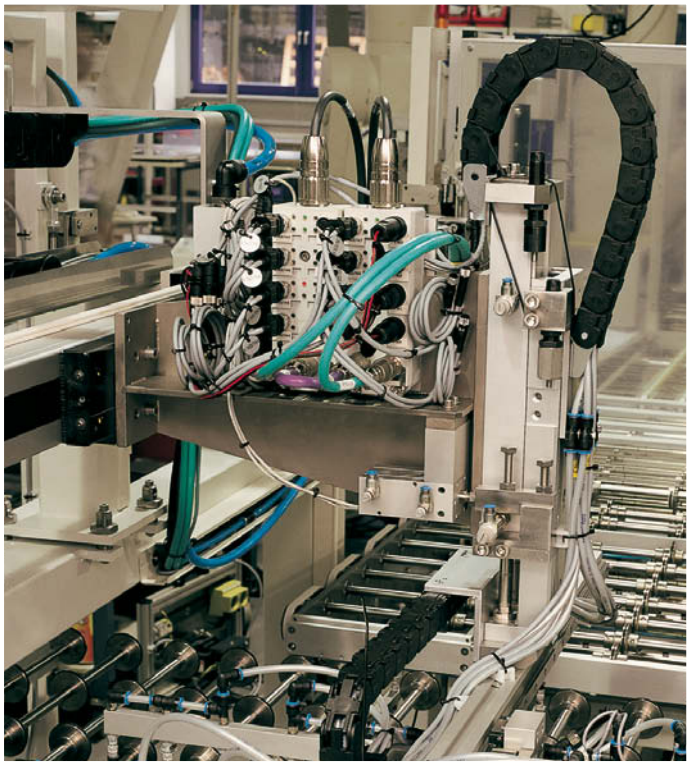
Description		Item No.	Pack. Unit
M12 protective cap (fieldbus)	for unused fieldbus module sockets	755-809	1

Marking cards

Description	Item No.	Pack. Unit
Marker card (40 tags)	755-891	10 cards
Marking software and printer/plotter see section 11		

WAGO Application: Sieghard Schiller GmbH & Co. KG
Assembly line for the production of flat panel displays

WAGO Products:
WAGO-I/O-SYSTEM 755 for connection to PROFIBUS.



WAGO Application: Danone Group, Ochsenfurt Plant, Germany
Producer of yogurt and other dairy-based products

WAGO Products:
WAGO-I/O-SYSTEM with PROFIBUS Couplers

Illustration: Sensor / Actuator boxes with spacer module

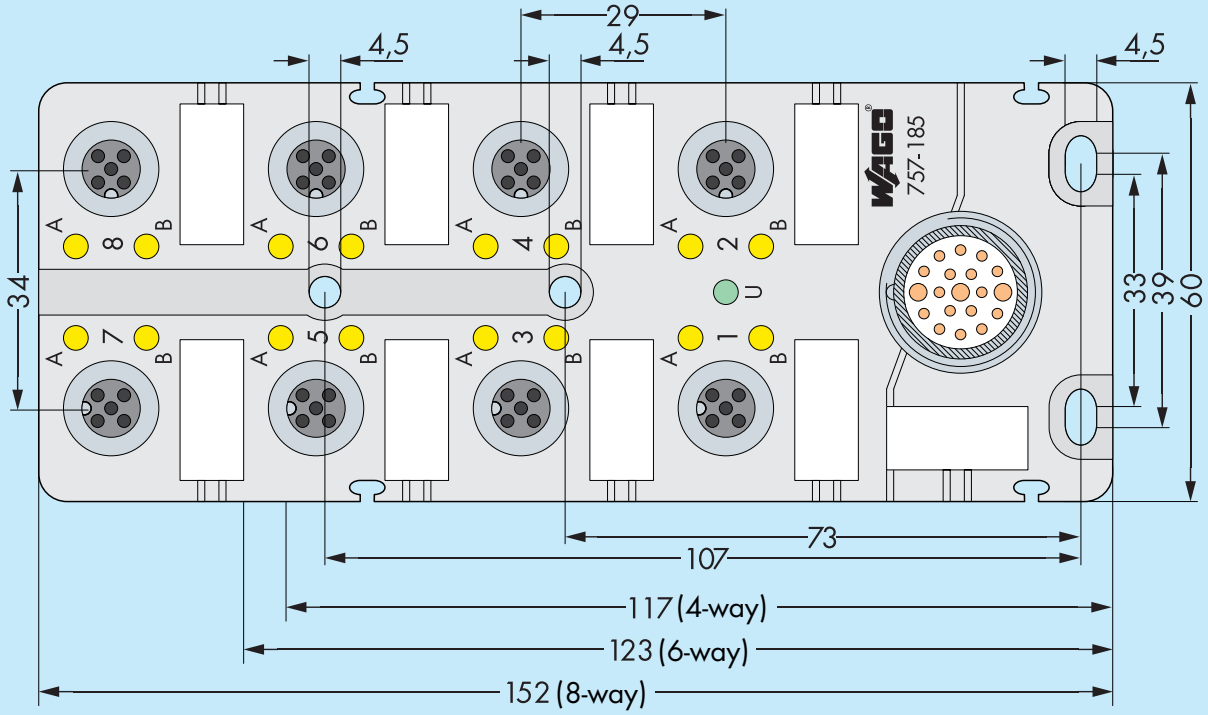
Sensor / Actuator Boxes

Converting completely from IP20 to IP67 automation is usually not an option for the user, because IP67 fieldbus technology does not offer the flexibility and efficiency required my most applications. Combining IP67 and IP20 technologies is typically the most appealing solution. The new M12 sensor/actuator boxes from WAGO offer IP67 degree of protection allowing the signals to be collected local to the machine. Connecting these M12 boxes to the WAGO-I/O-SYSTEM 750, which is mounted inside a switchgear cabinet (IP20 degree of protection), offers the best possible effectiveness, flexibility and convenience (fieldbus technology, scalabality, programmability, etc.) to the user. As a result, installation and service costs can be reduced since switchgear cabinets and cable materials can be saved. Also, commercially available M12/M23 connectors allow for simple and safe connection during installation. With this solution, even complex automation requirements can be easily and economically accomplished using the WAGO-I/O-SYSTEM product range.

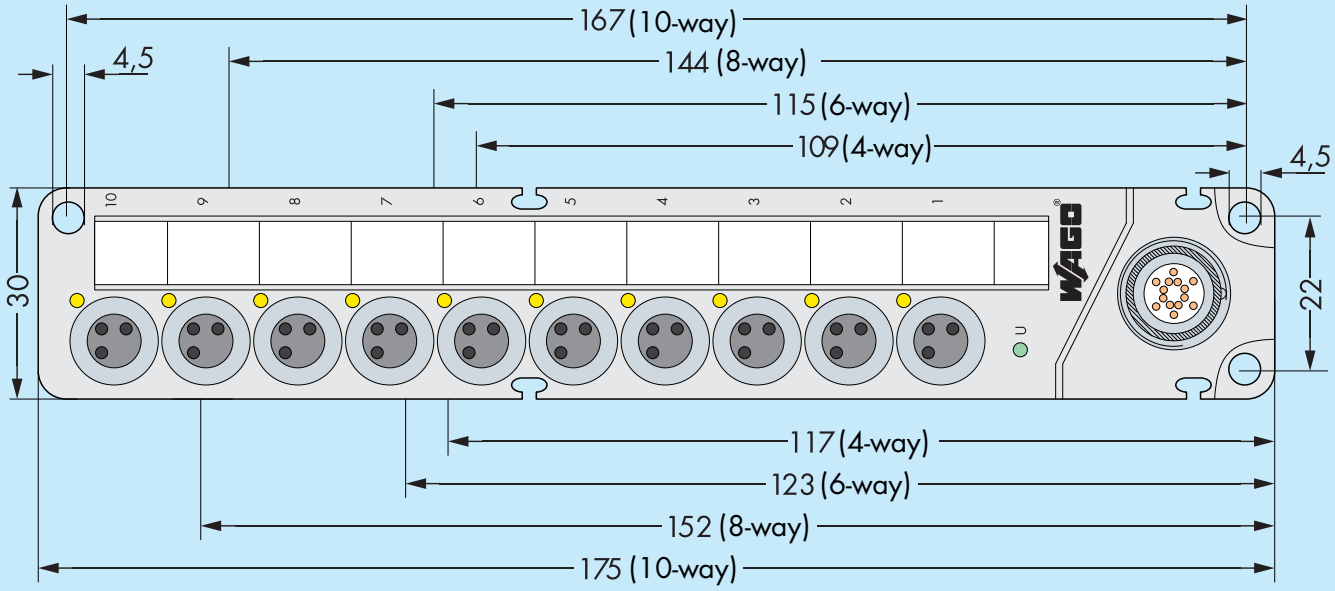
Two different versions of M12 sensor/actuator boxes are available. One version is equipped with M23 connectors and is ideal when the installation or machine needs to be transported or a quick disconnection is required in the event of maintenance (e.g. a defective cable). The version comes with preassembled cable is best suited for installations when the laying of cables equipped with connectors is not possible due to difficulties in the cable routing.
The M12 sensor /actuator boxes from WAGO have an extremely small, robust design, and fulfill the requirements of the IP67 protection degree. Boxes with cable connection even comply with IP68 protection (1 meter water depth for 72 hours). Furthermore, individual adjacent boxes can be clipped to one another using spacer modules, which allow for safe, practical, easy handling and maintenance.

Dimensions and Mounting Dimensions of Sensor / Actuator Boxes
(also valid for M12 or M8 sensor / actuator boxes with cable connection)

M12 Sensor/Actuator box with M23 connector



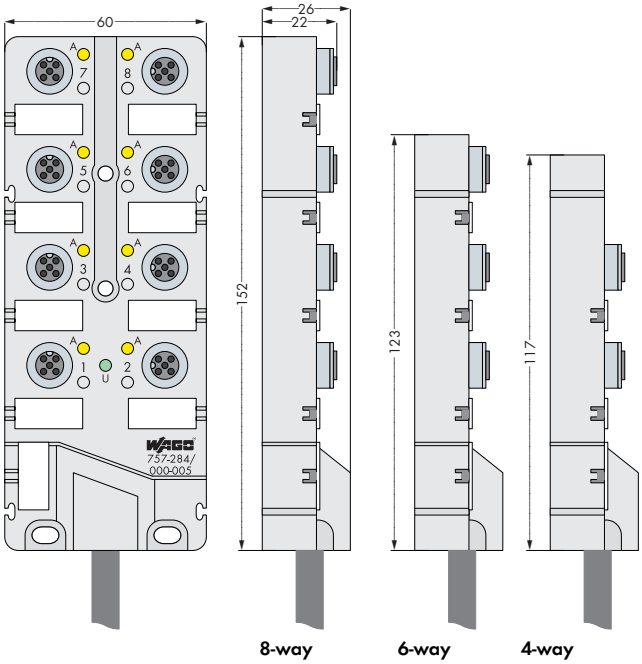
M8 Sensor/Actuator box with M16 connector



Dimensions in mm

M12 Sensor/Actuator Boxes

4-pole, with cable connection



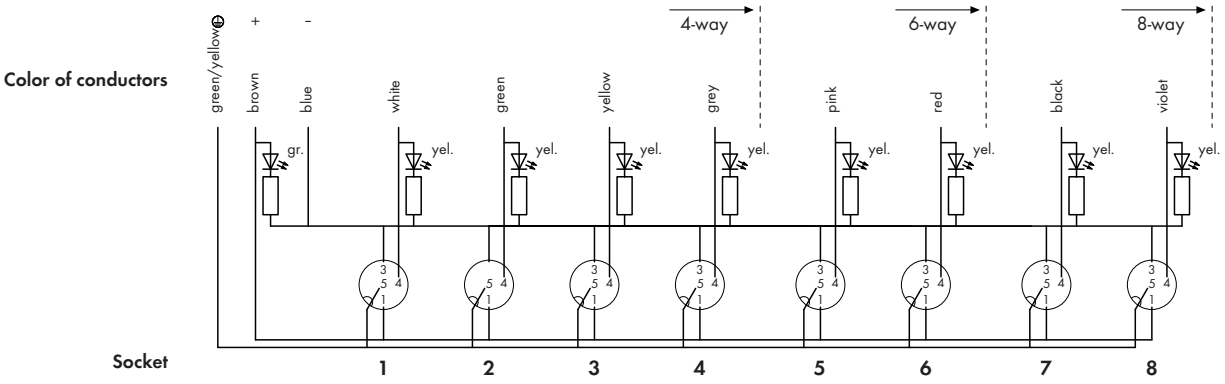
- 4-, 6- and 8-way sensor/actuator boxes
- 4 poles (1 signal per contact)
- Cable length 5 and 10 m
- Green LED operating indicator
- Yellow LED status indicator
- incl. markers (10 pcs)
- incl. M12 protective caps (2 pcs)

Description	Item No.	Pack. unit
M12 sensor/actuator box		
4-way, 4-pole, 5m connecting cable	**757-244/000-005**	1
4-way, 4-pole, 10m connecting cable	**757-244/000-010**	1
6-way, 4-pole, 5m connecting cable	**757-264/000-005**	1
6-way, 4-pole, 10m connecting cable	**757-264/000-010**	1
8-way, 4-pole, 5m connecting cable	**757-284/000-005**	1
8-way, 4-pole, 10m connecting cable	**757-284/000-010**	1
8-way, 4-pole, 25m connecting cable	**757-284/000-010**	1

Accessories	Item No.
Marker card, marking pen, spacer module and protective cap	see page 524
IP67 cables and connectors	see pages 528 ... 541

Approvals	
UL 508	E 175199, UL 508, Class 2 Equipment Components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585

Electrical data:	
Contact resistance	≤ 10 mΩ
Operating voltage	10 V ... 30 V DC
Current carrying capacity	2 A per signal; 9 A per SA box
Rated voltage	32 V ~ eff.
Insulation voltage	1 kV / 3 s
Insulation resistance	> 10^9 Ω
Degree of pollution	3 acc. to VDE 0110
Switching function	PNP



Mechanical Data

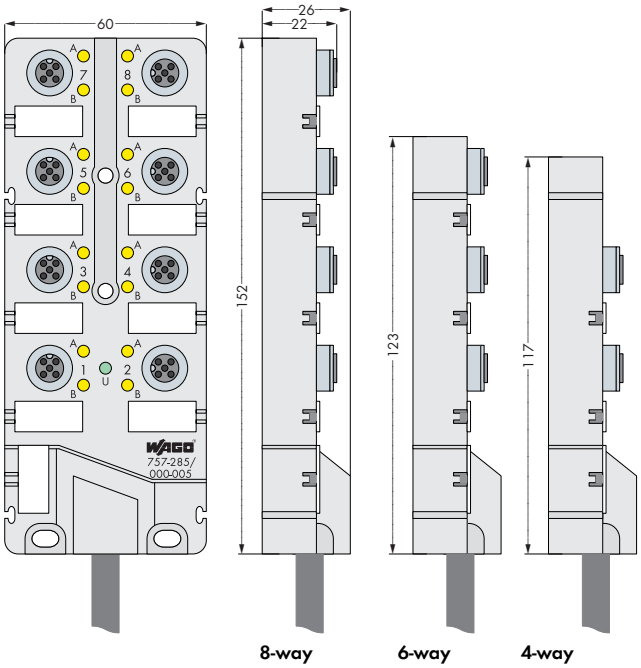
Degree of protection	IP68 (1 meter water depth for 72 hours) acc. to EN 60529 In fully locked position with the appropriate plugs or protective caps
Operating temperature	-25 °C ... +80 °C (current load according to derating curve)
Mounting	Screw mounting
Dimensions (mm) W x H x L	4-way: 60 x 26 x 117 6-way: 60 x 26 x 123 8-way: 60 x 26 x 152
Weight	4-way: 165 g 6-way: 180 g 8-way: 215 g without cable
Mounting position	any
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27

Material Data

General	Silicon and halogen free
Potting	Fully encapsulated with conformal coating (UL 94 V0)
Enclosure	PA 66 (UL 94 V0); RAL 7035
Contacts	
I/O slot	Socket, M12 x 1, 4-pole incl. PE
Contact	CuSn, pre-nickeled and 0.8 µm gold-plated
Tapped bush	Zn diecast nickel-plated
Seal	Viton
Connection cycles	50
Connecting cable	
Cable design	Outer sheath PUR halogen-free Black Cable end 100 mm stripped
Cable Ø	7.5 mm SA box 4-way 7.8 mm SA box 6-way 8.2 mm SA box 8-way
Conductor design	n x 0.34 mm² + 3 x 1.00 mm² conductor 0.34 mm² extra-fine stranded 43 x 0.1 mm conductor 1.00 mm² extra-fine stranded 55 x 0.15 mm
Suitable for drag chain applications	
bending radius	min. 10 x cable Ø
amb. temperature range	-40 °C ... +90 °C stagnant; -5 °C ... +80 °C moving

M12 Sensor/Actuator Boxes

5-pole, with cable connection



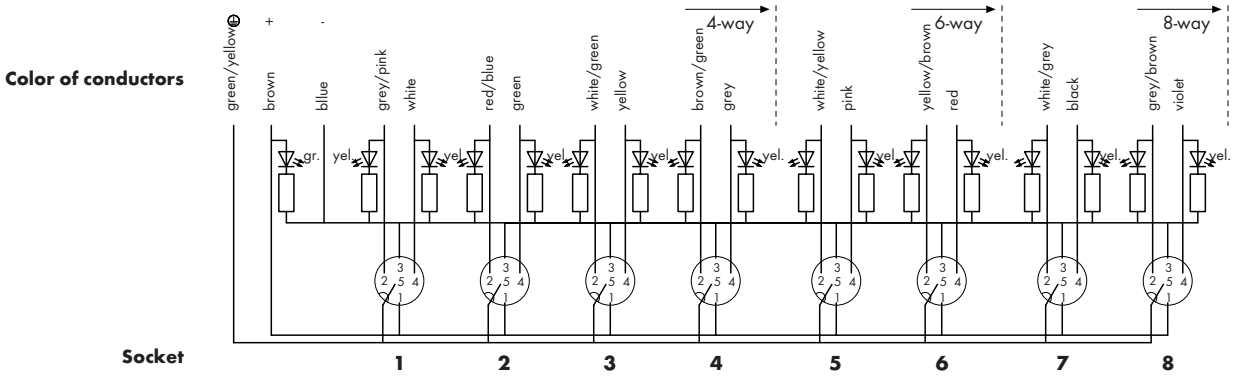
- 4-, 6- and 8-way sensor/actuator boxes
- 5 poles (2 signals per contact)
- Cable length 5 and 10 m
- Green LED operating indicator
- Yellow LED status indicator
- incl. markers (10 pcs)
- incl. M12 protective caps (2 pcs)

Description	Item No.	Pack. unit
M12 sensor/actuator box		
4-way, 5-pole, 5m connecting cable	**757-245/000-005**	1
4-way, 5-pole, 10m connecting cable	**757-245/000-010**	1
6-way, 5-pole, 5m connecting cable	**757-265/000-005**	1
6-way, 5-pole, 10m connecting cable	**757-265/000-010**	1
8-way, 5-pole, 5m connecting cable	**757-285/000-005**	1
8-way, 5-pole, 10m connecting cable	**757-285/000-010**	1
8-way, 5-pole, 25m connecting cable	**757-285/000-010**	1

Accessories	Item No.
Marker card, marking pen, spacer module and protective cap	see page 524
IP67 cables and connectors	see pages 528 ... 541

Approvals	
UL 508	E 175199, UL 508, Class 2 Equipment Components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585

Electrical data:	
Contact resistance	≤ 10 mΩ
Operating voltage	10 V ... 30 V DC
Current carrying capacity	2 A per signal; 9 A per SA box
Rated voltage	32 V ~ eff.
Insulation voltage	1 kV / 3 s
Insulation resistance	> 10^9 Ω
Degree of pollution	3 acc. to VDE 0110
Switching function	PNP



Mechanical Data

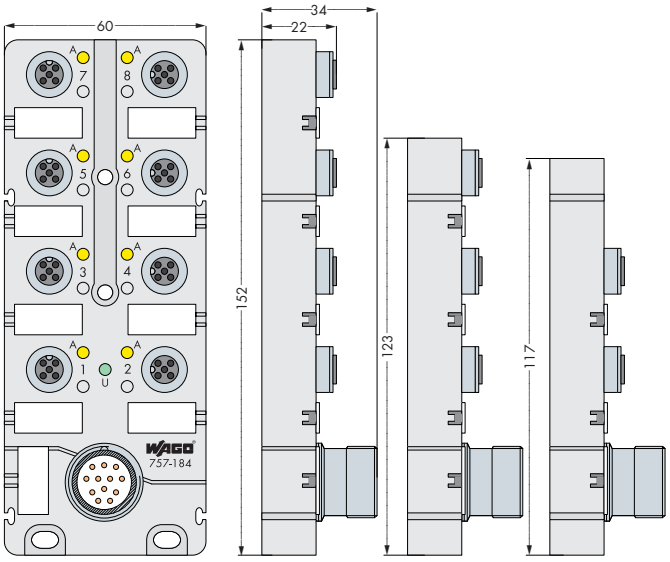
Degree of protection	IP68 (1 meter water depth for 72 hours)
	acc. to EN 60529 In fully locked position
	with the appropriate plugs or protective
	caps
Operating temperature	-25 °C ... +80 °C (current load according
	to derating curve)
Mounting	Screw mounting
Dimensions (mm) W x H x L	4-way: 60 x 26 x 117
	6-way: 60 x 26 x 123
	8-way: 60 x 152 x 26
Weight	4-way: 165 g
	6-way: 185 g
	8-way: 225 g
	without cable
Mounting position	any
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27

Material Data

General	Silicon and halogen free
Potting	Fully encapsulated with conformal coating
	(UL 94 V0)
Enclosure	PA 66 (UL 94 V0); RAL 7035
Contacts	
I/O slot	Socket, M12 x 1, 5-pole incl. PE
Contact	CuSn, pre-nickeled and 0.8 µm gold-plated
Tapped bush	Zn diecast nickel-plated
Seal	Viton
Connection cycles	50
Connecting cable	
Cable design	Outer sheath PUR halogen-free
	Black
	Cable end 100 mm stripped
Cable Ø	8.2 mm SA box 4-way
	8.8 mm SA box 6-way
	9.7 mm SA box 8-way
Conductor design	n x 0.34 mm^2 + 3 x 1.00 mm^2
	conductor 0.34 mm^2 extra-fine stranded
	43 x 0.1 mm
	conductor 1.00 mm^2 extra-fine stranded
	55 x 0.15 mm
Suitable for drag chain applications	
bending radius	min. 10 x cable Ø
amb. temperature range	-40 °C ... +90 °C stagnant;
	-5 °C ... +80 °C moving

M12 Sensor/Actuator Boxes

4-pole, with M23 connection



8-way **6-way** **4-way**

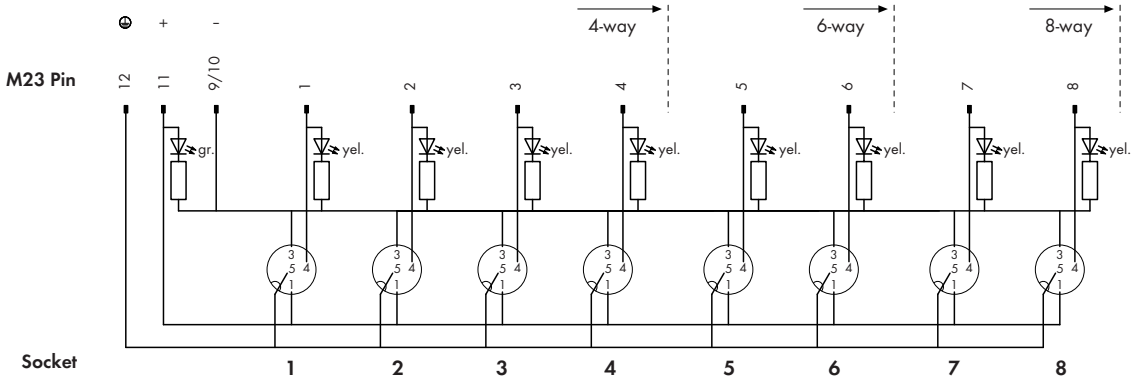
- 4-, 6- and 8-way sensor/actuator boxes
- 4 poles (1 signal per contact)
- M23 connector (12 poles)
- Green LED operating indicator
- Yellow LED status indicator
- incl. markers (10 pcs)
- incl. M12 protective caps (2 pcs)

Description	Item No.	Pack. unit
M12 sensor/actuator box		
4-way, 4-pole, M23 connector	**757-144**	1
6-way, 4-pole, M23 connector	**757-164**	1
8-way, 4-pole, M23 connector	**757-184**	1

Accessories	Item No.
Marker card, marking pen, spacer module and protective cap	see page 524
IP67 cables and connectors	see pages 528 ... 541

Approvals	
UL 508	E 175199, UL 508, Class 2 Equipment Components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585

Electrical data:	
Contact resistance	≤ 10 mΩ
Operating voltage	10 V ... 30 V DC
Current carrying capacity	2 A per signal; 9 A per SA box
Rated voltage	32 V ~ eff.
Insulation voltage	1 kV / 3 s
Insulation resistance	> 10^9 Ω
Degree of pollution	3 acc. to VDE 0110
Switching function	PNP



Mechanical Data

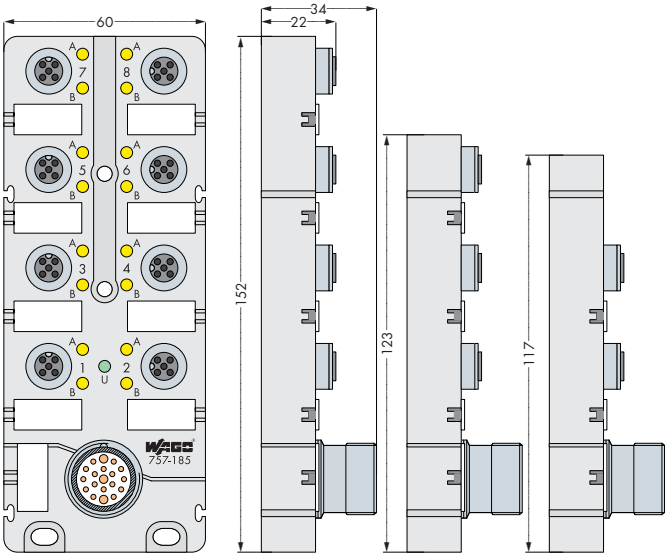
Degree of protection	IP67 acc. to EN 60529 (NEMA 6 & 6P)
	In fully locked position with the appropriate plugs or protective caps
Operating temperature	-25 °C ... +80 °C (current load according to derating curve)
Mounting	Screw mounting
Dimensions (mm) W x H x L	4-way: 60 x 34 x 117
	6-way: 60 x 34 x 123
	8-way: 60 x 34 x 152
Weight	4-way: 180 g
	6-way: 195 g
	8-way: 235 g
Mounting position	any
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27

Material Data

General	Silicon and halogen free
Potting	Fully encapsulated with conformal coating (UL 94 V0)
Enclosure	PA 66 (UL 94 V0); RAL 7035
Contacts	
I/O slot	Socket, M12 x 1, 4-pole incl. PE
Contact	CuSn, pre-nickeled and 0.8 µm gold-plated
Tapped bush	Zn diecast nickel-plated
Seal	Viton
Connection cycles	50

M12 Sensor/Actuator Boxes

5-pole, with M23 connection



8-way **6-way** **4-way**

- 4-, 6- and 8-way sensor/actuator boxes
- 5 poles (2 signals per contact)
- M23 connector (19 poles)
- Green LED operating indicator
- Yellow LED status indicator
  (does not apply for modules marked as “without LED”)
- incl. markers (10 pcs)
- incl. M12 protective caps (2 pcs)

Note: Modules without status LED can also be used to transmit analog signals

Description	Item No.	Pack. unit
M12 sensor/actuator box		
4-way, 5-pole, M23 connector	**757-145**	1
6-way, 5-pole, M23 connector	**757-165**	1
8-way, 5-pole, M23 connector	**757-185**	1
8-way, 5-pole, without LED, M23	**757-185**	1

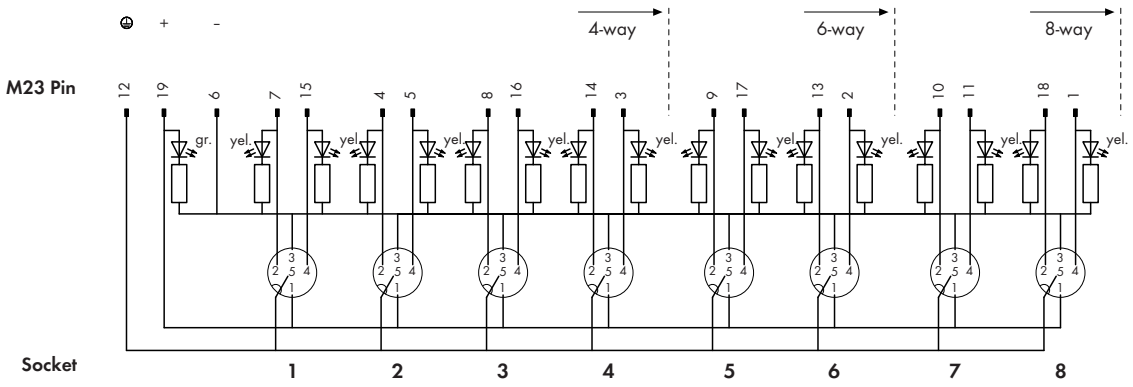
Accessories	Item No.
Marker card, marking pen, spacer module and protective cap	see page 524
IP67 cables and connectors	see pages 528 ... 541

Approvals

UL 508	E 175199, UL 508, Class 2 Equipment Components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585

Electrical data:

Contact resistance	≤ 10 mΩ
Operating voltage	10 V ... 30 V DC
Current carrying capacity	2 A per signal; 9 A per SA box
Rated voltage	32 V ~ eff.
Insulation voltage	1 kV / 3 s
Insulation resistance	> 10^9 Ω
Degree of pollution	3 acc. to VDE 0110
Switching function	PNP



Mechanical Data

Degree of protection	IP67 acc. to EN 60529 (NEMA 6 & 6P)
	In fully locked position with the appropriate plugs or protective caps
Operating temperature	-25 °C ... +80 °C (current load according to derating curve)
Mounting	Screw mounting
Dimensions (mm) W x H x L	4-way: 60 x 34 x 117
	6-way: 60 x 34 x 123
	8-way: 60 x 34 x 152
Weight	4-way: 180 g
	6-way: 200 g
	8-way: 245 g
Mounting position	any
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27

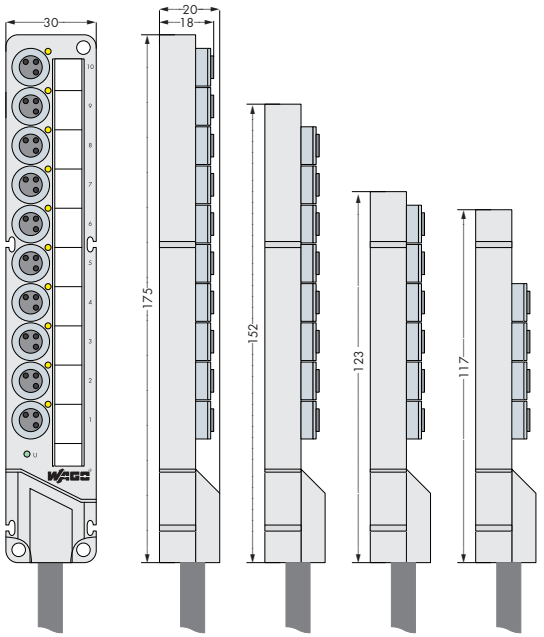
Material Data

General	Silicon and halogen free
Potting	Fully encapsulated with conformal coating (UL 94 V0)
Enclosure	PA 66 (UL 94 V0); RAL 7035
Contacts	
I/O slot	Socket, M12 x 1, 5-pole incl. PE
Contact	CuSn, pre-nickeled and 0.8 µm gold-plated
Tapped bush	Zn diecast nickel-plated
Seal	Viton
Connection cycles	50

M8 Sensor/Actuator Boxes

3-pole, with cable connection

M8 sensor / actuator box with marker strips



- M8 sensor/actuator boxes, 4-, 6-, 8- and 10-way
- 3-pole (1 signal per contact)
- Cable length 5 m or 10 m (cable end 100 mm stripped), 4-way sensor/actuator box with 2 m connecting cable (cable end 200 mm stripped)
- Green LED operating indicator
- Yellow LED status indicator
- incl. marker strips (note: WMB markers can also be used)
- incl. M8 protective caps (2 pcs)

Description	Item No.	Pack. unit
M8 sensor/actuator box		
4-way, 3-pole, 2m connecting cable	**757-443/000-002**	1
4-way, 3-pole, 5m connecting cable	**757-443/000-005**	1
4-way, 3-pole, 10m connecting cable	**757-443/000-010**	1
6-way, 3-pole, 5m connecting cable	**757-463/000-005**	1
6-way, 3-pole, 10m connecting cable	**757-463/000-010**	1
8-way, 3-pole, 5m connecting cable	**757-483/000-005**	1
8-way, 3-pole, 10m connecting cable	**757-483/000-010**	1
10-way, 3-pole, 5m connecting cable	**757-403/000-005**	1
10-way, 3-pole, 10m connecting cable	**757-403/000-010**	1

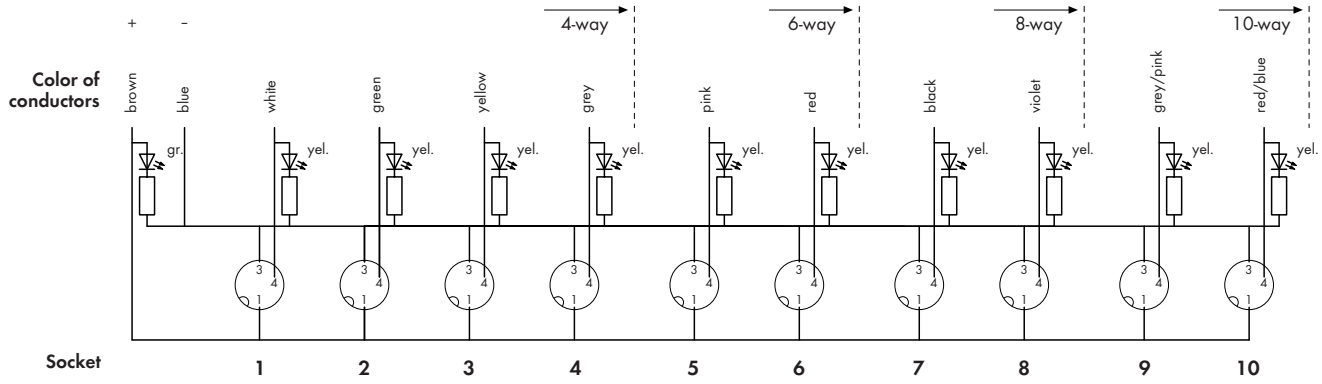
Accessories	Item No.
Marker strips, marking pen, spacer module and protective cap	see page 524
IP67 cables and connectors	see pages 528 ... 541

Approvals

UL 508	E 175199, UL 508, Class 2 Equipment Components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585

Electrical data:

Contact resistance	≤ 10 mΩ
Operating voltage	10 V ... 30 V DC
Current carrying capacity	2 A per signal; 6 A per SA box
Rated voltage	32 V ~ eff.
Insulation voltage	1 kV / 3 s
Insulation resistance	> 10^9 Ω
Degree of pollution	3 acc. to VDE 0110
Switching function	PNP



Mechanical Data

Degree of protection	IP68 (1 meter water depth for 72 hours) acc. to EN 60529 In fully locked position with the appropriate plugs or protective caps
Operating temperature	-25 °C ... +80 °C (current load according to derating curve)
Mounting	Screw mounting
Dimensions (mm) W x H x L	4-way: 30 x 20 x 117 6-way: 30 x 20 x 123 8-way: 30 x 20 x 152 10-way: 30 x 20 x 175
Weight	4-way: 85 g 6-way: 95 g 8-way: 110 g 10-way: 130 g without cable
Mounting position	any
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27

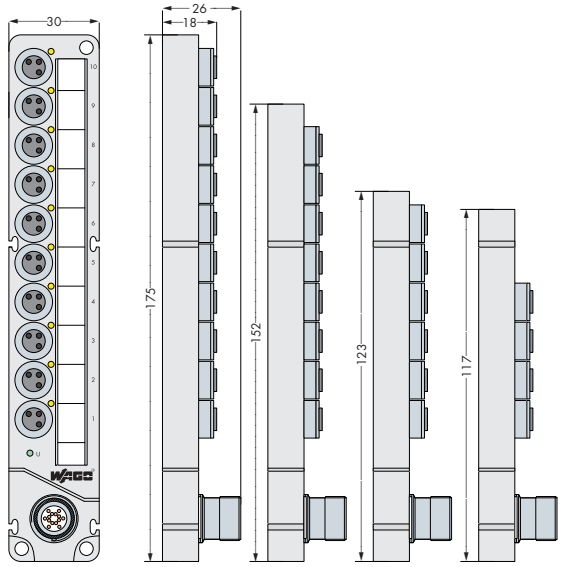
Material Data

General	Silicon and halogen free
Potting	Fully encapsulated with conformal coating (UL 94 V0)
Enclosure	PA 66 (UL 94 V0); RAL 7035
Contacts	
I/O slot	Socket, M8 x 1, 3-pole
Contact	CuSn, pre-nickeled and 0.8 µm gold-plated
Tapped bush	Zn diecast nickel-plated
Seal	Viton
Connection cycles	50
Connecting cable	
Cable design	Outer sheath PUR halogen-free Black Cable end 100 mm stripped 757-443/000-002: Cable end 200 mm stripped
Cable Ø	6.4 mm SA box 4-way 7.2 mm SA box 6-way 7.4 mm SA box 8-way 7.6 mm SA box 10-way
Conductor design	n x 0.34 mm² + 2 x 0.75 mm² conductor 0.34 mm² extra-fine stranded 43 x 0.1 mm conductor 0.75 mm² extra-fine stranded 21 x 0.205 mm
Suitable for drag chain applications	
bending radius	min. 10 x cable Ø
amb. temperature range	-40 °C ... +90 °C stagnant; -5 °C ... +80 °C moving

M8 Sensor/Actuator Boxes

3-pole, with M16 connection

M8 sensor / actuator box with marker strips



10-way 8-way 6-way 4-way

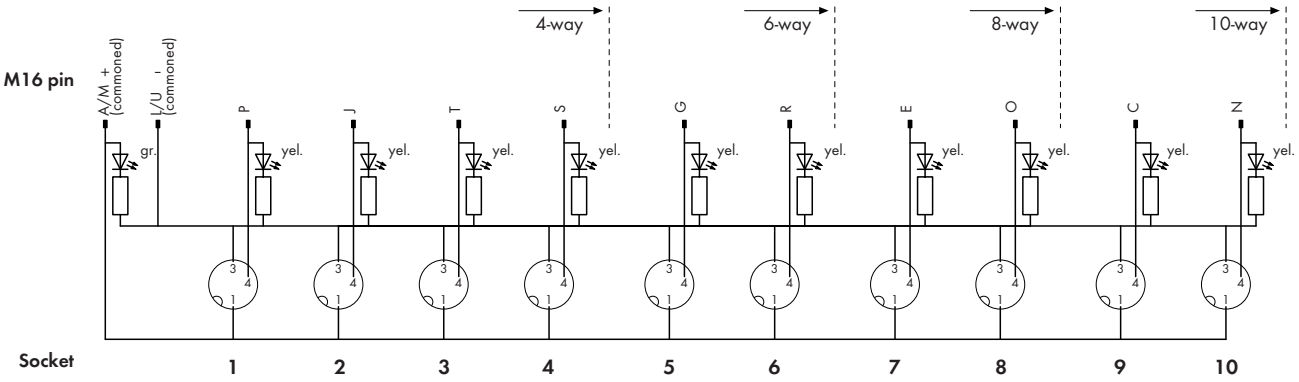
- M8 sensor/actuator boxes, 4-, 6-, 8- and 10-way
- 3-pole (1 signal per contact)
- M16 connector (14-pole)
- Green LED operating indicator
- Yellow LED status indicator
- incl. marker strips (note: WMB markers can also be used)
- incl. M8 protective caps (2 pcs)

Description	Item No.	Pack. unit
M8 sensor/actuator box		
4-way, 3-pole, M23 connector	**757-343**	1
6-way, 3-pole, M23 connector	**757-363**	1
8-way, 3-pole, M23 connector	**757-383**	1
10-way, 3 poles, M23 connector	**757-303**	1

Accessories	Item No.
Marker strips, marking pen, spacer module and protective cap	see page 524
IP67 cables and connectors	see pages 528 ... 541

Approvals	
UL 508	E 175199, UL 508, Class 2 Equipment Components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585

Electrical data:	
Contact resistance	≤ 10 mΩ
Operating voltage	10 V ... 30 V DC
Current carrying capacity	2 A per signal; 6 A per SA box
Rated voltage	32 V ~ eff.
Insulation voltage	1 kV / 3 s
Insulation resistance	> 10^9 Ω
Degree of pollution	3 acc. to VDE 0110
Switching function	PNP



Mechanical Data

Degree of protection	IP67 acc. to EN 60529 (NEMA 6 & 6P)
	In fully locked position with the appropriate plugs or protective caps
Operating temperature	-25 °C ... +80 °C (current load according to derating curve)
Mounting	Screw mounting
Dimensions (mm) W x H x L	4-way: 30 x 26 x 117
	6-way: 30 x 26 x 123
	8-way: 30 x 26 x 152
	10-way: 30 x 26 x 175
Weight	4-way: 100 g
	6-way: 110 g
	8-way: 120 g
	10-way: 145 g
Mounting position	any
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27

Material Data

General	Silicon and halogen free
Potting	Fully encapsulated with conformal coating (UL 94 V0)
Enclosure	PA 66 (UL 94 V0); RAL 7035
Contacts	
I/O slot	Socket, M8 x 1, 3-pole
Contact	CuSn, pre-nickeled and 0.8 µm gold-plated
Tapped bush	Zn diecast nickel-plated
Seal	Viton
Connection cycles	50

Accessories for the WAGO-I/O-SYSTEM 757

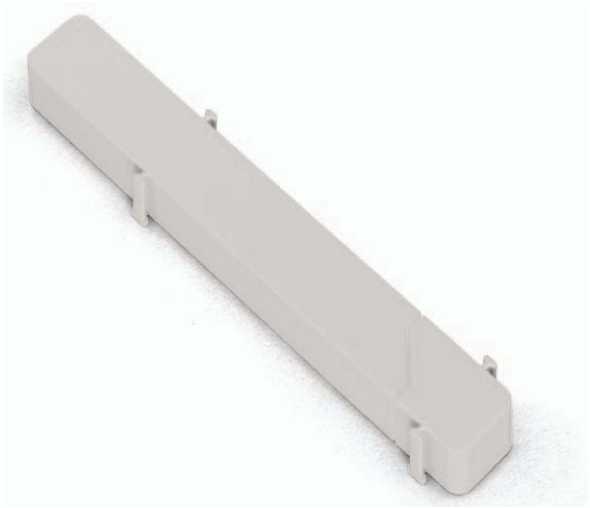
Marking cards

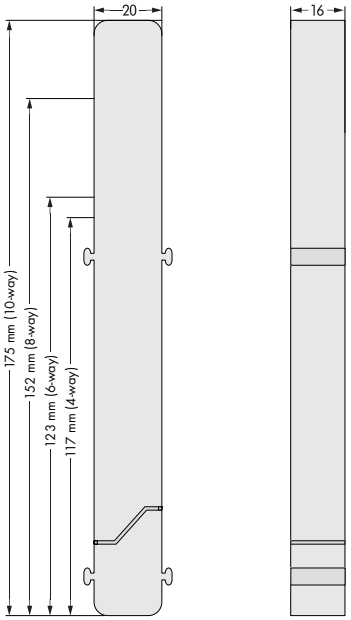
Marker strips for Series 757

Marking pen with fibre tip

Description		Item No.	Pack. Unit
Marker card (40 tags)	for M12 sensor/actuator box	755-891	10 cards
Marker strips for M8 sensor/actuator box			
4-way		757-041	100
6-way		757-061	100
8-way		757-081	100
10-way		757-001	100
Marking pen		210-110	1

Spacer module



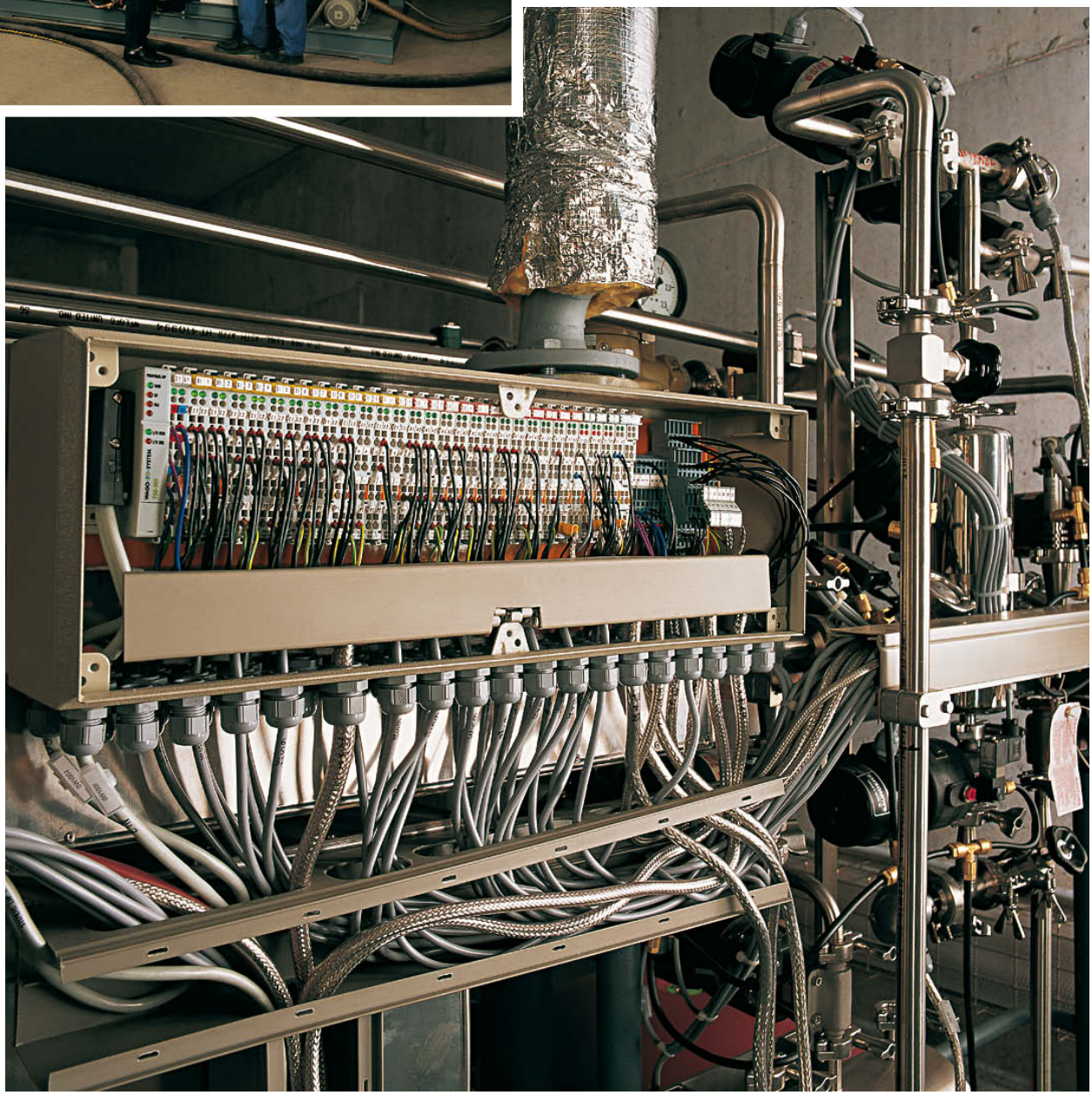


Description		Item No.	Pack. Unit
Spacer module for sensor/actuator box 4-way		757-040	10
Spacer module for sensor/actuator box 6-way		757-060	10
Spacer module for sensor/actuator box 8-way	(see illustration)	757-080	10
Spacer module for sensor/actuator box 10-way		757-000	10

WAGO Application: Amsco/Finn-Aqua (now GEA Lyophil GmbH)

Manufacturer of freeze drying systems

WAGO Products:
WAGO-I/O-SYSTEM with PROFIBUS connection



9

WAGO-I/O-SYSTEM 756

IP67 Cables and Connectors

Series 756 offers a wide range of accessories for the connection of inductive or capacitive proximity switches, light barriers, flow control devices, push buttons etc. to the WAGO-I/O-SYSTEMS 751 (IP67 AS-Interface), 755 (IP67 fieldbus technology), 757 (IP67 sensor/actuator boxes) and WAGO-Speedway 767 (modular IO system IP67). The cables are not only a protection against dust and water, the design of their coupling nuts also provides protectionagainst mechanical loosening when exposed to vibrations. In addition to that, fixed cables offer bend protection.

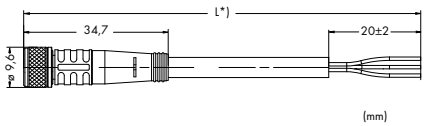
Cables with one or two preassembled wire ends are used. Cables with one preassembled wire end are often used when the length of the cable cannot be predetermined exactly or when the cable assembly with connectors proves to be difficult. Cables with one free wire end can therefore be adapted to individual prerequisites. Cables with two preassembled wire ends drastically reduce assembly and installation time.

WAGO-I/O-SYSTEM 756

Sensor/actuator cables, with one end of cable fitted

M8 Socket

M8 Socket



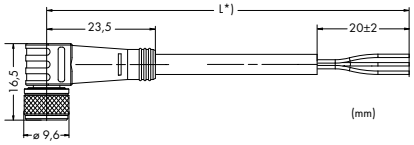
Pin 1 - 4: 0.25 mm²

1 brown (+)
3 blue (-)
4 black (S)

M8 Sensor/actuator cables, with one end of cable fitted		Cable Ø	Item No.	Pack. Unit
3-pole,	M8 socket, straight, one free cable end, 1.5 m	4.1 mm ± 0.2	**756-5101/030-015**	10
	M8 socket, straight, one free cable end, 5.0 m	4.1 mm ± 0.2	**756-5101/030-050**	10
	M8 socket, straight, one free cable end, 10 m	4.1 mm ± 0.2	**756-5101/030-100**	10

M8 Socket

M8 Socket



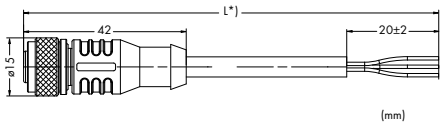
Pin 1 - 4: 0.25 mm²

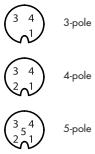
1 brown (+)
3 blue (-)
4 black (S)

M8 Sensor/actuator cables, with one end of cable fitted		Cable Ø	Item No.	Pack. Unit
3-pole,	M8 socket, right angle, one free cable end, 1.5 m	4.1 mm ± 0.2	**756-5102/030-015**	10
	M8 socket, right angle, one free cable end, 5.0 m	4.1 mm ± 0.2	**756-5102/030-050**	10
	M8 socket, right angle, one free cable end, 10 m	4.1 mm ± 0.2	**756-5102/030-100**	10

M12 Socket

M12 Socket





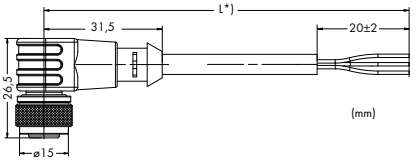
Pin 1 - 5: 0.34 mm²

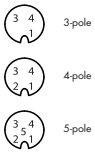
1 brown (+)
2 white (Ö)
3 blue (-)
4 black (S)
5 gray

M8 Sensor/actuator cables, with one end of cable fitted		Cable Ø	Item No.	Pack. Unit
3-pole,	M8 socket, straight, one free cable end, 1.5 m	4.3 mm ± 0.2	**756-5301/030-015**	10
	M8 socket, straight, one free cable end, 5.0 m	4.3 mm ± 0.2	**756-5301/030-050**	10
	M12 socket, straight, one free cable end, 10 m	4.3 mm ± 0.2	**756-5301/030-100**	10
4-pole,	M8 socket, straight, one free cable end, 1.5 m	4.7 mm ± 0.2	**756-5301/040-015**	10
	M8 socket, straight, one free cable end, 5.0 m	4.7 mm ± 0.2	**756-5301/040-050**	10
	M12 socket, straight, one free cable end, 10 m	4.7 mm ± 0.2	**756-5301/040-100**	10
5-pole,	M8 socket, straight, one free cable end, 1.5 m	5.0 mm ± 0.2	**756-5301/050-015**	10
	M8 socket, straight, one free cable end, 5.0 m	5.0 mm ± 0.2	**756-5301/050-050**	10
	M12 socket, straight, one free cable end, 10 m	5.0 mm ± 0.2	**756-5301/050-100**	10
5-pole, shielded	M8 socket, straight, one free cable end, 1.5 m	6.5 mm ± 0.2	**756-5301/060-015**	10
	M8 socket, straight, one free cable end, 5.0 m	6.5 mm ± 0.2	**756-5301/060-050**	10
	M12 socket, straight, one free cable end, 10 m	6.5 mm ± 0.2	**756-5301/060-100**	10

M12 Socket

M12 Socket





Pin 1 - 5: 0.34 mm²

1 brown (+)
2 white (Ö)
3 blue (-)
4 black (S)
5 gray

M8 Sensor/actuator cables, with one end of cable fitted		Cable Ø	Item No.	Pack. Unit
3-pole,	M8 socket, right angle, one free cable end, 1.5 m	4.3 mm ± 0.2	**756-5302/030-015**	10
	M8 socket, right angle, one free cable end, 5.0 m	4.3 mm ± 0.2	**756-5302/030-050**	10
	M12 socket, right angle, one free cable end, 10 m	4.3 mm ± 0.2	**756-5302/030-100**	10
4-pole,	M8 socket, right angle, one free cable end, 1.5 m	4.7 mm ± 0.2	**756-5302/040-015**	10
	M8 socket, right angle, one free cable end, 5.0 m	4.7 mm ± 0.2	**756-5302/040-050**	10
	M12 socket, right angle, one free cable end, 10 m	4.7 mm ± 0.2	**756-5302/040-100**	10
5-pole,	M8 socket, right angle, one free cable end, 1.5 m	5.0 mm ± 0.2	**756-5302/050-015**	10
	M8 socket, right angle, one free cable end, 5.0 m	5.0 mm ± 0.2	**756-5302/050-050**	10
	M12 socket, right angle, one free cable end, 10 m	5.0 mm ± 0.2	**756-5302/050-100**	10
5-pole, shielded	M8 socket, right angle, one free cable end, 1.5 m	6.5 mm ± 0.2	**756-5302/060-015**	10
	M8 socket, right angle, one free cable end, 5.0 m	6.5 mm ± 0.2	**756-5302/060-050**	10
	M12 socket, right angle, one free cable end, 10 m	6.5 mm ± 0.2	**756-5302/060-100**	10

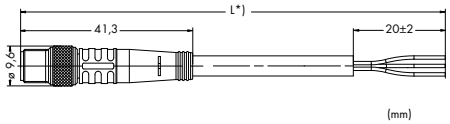
* Cable length

Custom cable lengths upon request

WAGO-I/O-SYSTEM 756

Sensor/actuator cables, with one end of cable fitted

M8 Plug **M8 Plug**



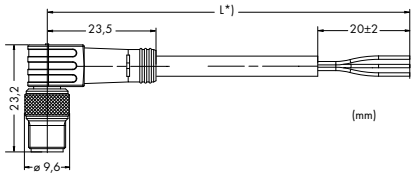
(mm)

Pin 1 - 4: 0.25 mm²

1 brown (+)
3 blue (-)
4 black (S)

M8 Sensor/actuator cables, with one end of cable fitted		Cable Ø	Item No.	Pack. Unit
3-pole	M8 plug, straight, one free cable end, 1.5 m	4.1 mm ± 0.2	**756-5111/030-015**	10
	M8 plug, straight, one free cable end, 5 m	4.1 mm ± 0.2	**756-5111/030-050**	10
	M8 plug, straight, one free cable end, 10 m	4.1 mm ± 0.2	**756-5111/030-100**	10

M8 Plug **M8 Plug**



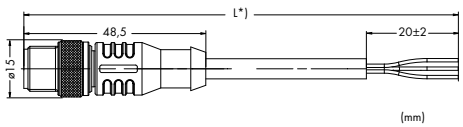
(mm)

Pin 1 - 4: 0.25 mm²

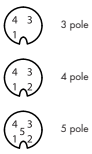
1 brown (+)
3 blue (-)
4 black (S)

M8 Sensor/actuator cables, with one end of cable fitted		Cable Ø	Item No.	Pack. Unit
3-pole	M8 plug, right angle, one free cable end, 1.5 m	4.1 mm ± 0.2	**756-5112/030-015**	10
	M8 plug, right angle, one free cable end, 5 m	4.1 mm ± 0.2	**756-5112/030-050**	10
	M8 plug, right angle, one free cable end, 10 m	4.1 mm ± 0.2	**756-5112/030-100**	10

M12 Plug **M12 Plug**



(mm)

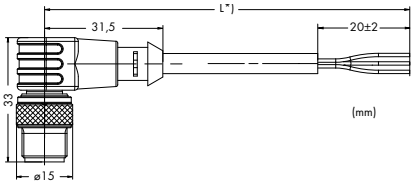


Pin 1 - 5: 0.34 mm²

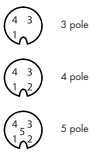
1 brown (+)
2 white (Ö)
3 blue (-)
4 black (S)
5 gray

M12 Sensor/actuator cables, with one end of cable fitted		Cable Ø	Item No.	Pack. Unit
3-pole	M12 plug, straight, one free cable end, 1.5 m	4.3 mm ± 0.2	**756-5311/030-015**	10
	M12 plug, straight, one free cable end, 5 m	4.3 mm ± 0.2	**756-5311/030-050**	10
	M12 plug, straight, one free cable end, 10 m	4.3 mm ± 0.2	**756-5311/030-100**	10
4-pole	M12 plug, straight, one free cable end, 1.5 m	4.7 mm ± 0.2	**756-5311/040-015**	10
	M12 plug, straight, one free cable end, 5 m	4.7 mm ± 0.2	**756-5311/040-050**	10
	M12 plug, straight, one free cable end, 10 m	4.7 mm ± 0.2	**756-5311/040-100**	10
5-pole	M12 plug, straight, one free cable end, 1.5 m	5.0 mm ± 0.2	**756-5311/050-015**	10
	M12 plug, straight, one free cable end, 5 m	5.0 mm ± 0.2	**756-5311/050-050**	10
	M12 plug, straight, one free cable end, 10 m	5.0 mm ± 0.2	**756-5311/050-100**	10
5-pole, shielded	M12 plug, straight, one free cable end, 1.5 m	6.5 mm ± 0.2	**756-5311/060-015**	10
	M12 plug, straight, one free cable end, 5 m	6.5 mm ± 0.2	**756-5311/060-050**	10
	M12 plug, straight, one free cable end, 10 m	6.5 mm ± 0.2	**756-5311/060-100**	10

M12 Plug **M12 Plug**



(mm)



Pin 1 - 5: 0.34 mm²

1 brown (+)
2 white (Ö)
3 blue (-)
4 black (S)
5 gray

M12 Sensor/actuator cables, with one end of cable fitted		Cable Ø	Item No.	Pack. Unit
3-pole	M12 plug, right angle, one free cable end, 1.5 m	4.3 mm ± 0.2	**756-5312/030-015**	10
	M12 plug, right angle, one free cable end, 5 m	4.3 mm ± 0.2	**756-5312/030-050**	10
	M12 plug, right angle, one free cable end, 10 m	4.3 mm ± 0.2	**756-5312/030-100**	10
4-pole	M12 plug, right angle, one free cable end, 1.5 m	4.7 mm ± 0.2	**756-5312/040-015**	10
	M12 plug, right angle, one free cable end, 5 m	4.7 mm ± 0.2	**756-5312/040-050**	10
	M12 plug, right angle, one free cable end, 10 m	4.7 mm ± 0.2	**756-5312/040-100**	10
5-pole	M12 plug, right angle, one free cable end, 1.5 m	5.0 mm ± 0.2	**756-5312/050-015**	10
	M12 plug, right angle, one free cable end, 5 m	5.0 mm ± 0.2	**756-5312/050-050**	10
	M12 plug, right angle, one free cable end, 10 m	5.0 mm ± 0.2	**756-5312/050-100**	10
5-pole, shielded	M12 plug, right angle, one free cable end, 1.5 m	6.5 mm ± 0.2	**756-5312/060-015**	10
	M12 plug, right angle, one free cable end, 5 m	6.5 mm ± 0.2	**756-5312/060-050**	10
	M12 plug, right angle, one free cable end, 10 m	6.5 mm ± 0.2	**756-5312/060-100**	10

* Cable length

Custom cable lengths upon request

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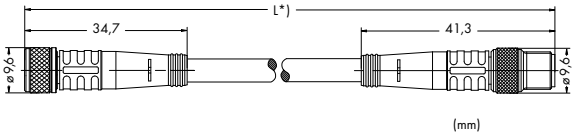
Sensor/actuator cables, both ends of the cable are fitted with plug/socket

M8 Socket M8 Plug

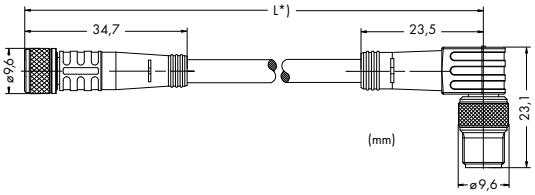


Pin 1 - 4: 0.25 mm²

1 brown (+)
3 blue (-)
4 black (S)

M8/M8 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M8 socket, straight/M8 plug, straight, 1.0 m	4.0 mm ± 0.1	**756-5201/030-010**	10
	M8 socket, straight/M8 plug, straight, 2.0 m	4.0 mm ± 0.1	**756-5201/030-020**	10

M8 Socket M8 Plug

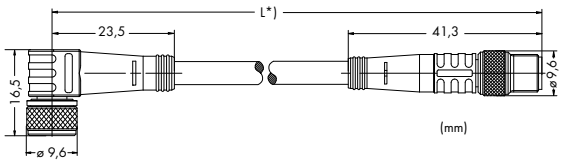


Pin 1 - 4: 0.25 mm²

1 brown (+)
3 blue (-)
4 black (S)

M8/M8 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M8 socket, straight/M8 plug, right angle, 1.0 m	4.3 mm ± 0.2	**756-5202/030-010**	10
	M8 socket, straight/M8 plug, right angle, 2.0 m	4.3 mm ± 0.2	**756-5202/030-020**	10

M8 Socket M8 Plug

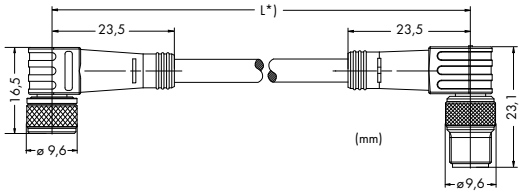


Pin 1 - 4: 0.25 mm²

1 brown (+)
3 blue (-)
4 black (S)

M8/M8 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M8 socket, right angle/M8 plug, straight, 1.0 m	4.0 mm ± 0.1	**756-5203/030-010**	10
	M8 socket, right angle/M8 plug, straight, 1.0 m	4.0 mm ± 0.1	**756-5203/030-020**	10

M8 Socket M8 Plug



Pin 1 - 4: 0.25 mm²

1 brown (+)
3 blue (-)
4 black (S)

M8/M8 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M8 socket, right angle/M8 plug, right angle, 1.0m	4.3 mm ± 0.2	**756-5204/030-010**	10
	M8 socket, right angle/M8 plug, right angle, 2.0m	4.3 mm ± 0.2	**756-5204/030-020**	10

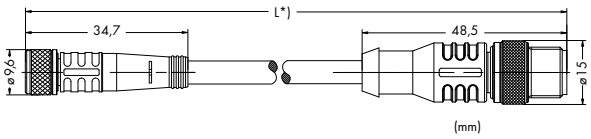
* Cable length

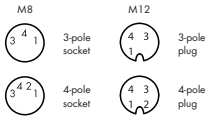
Custom cable lengths upon request

WAGO-I/O-SYSTEM 756

Sensor/actuator cables, both ends of the cable are fitted with plug/socket

M8 Socket **M12 Plug**



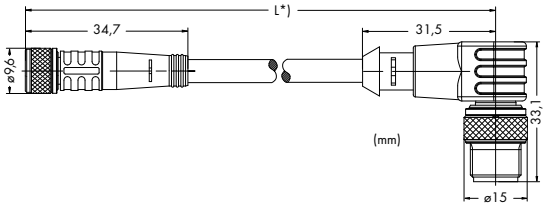


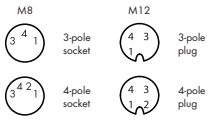
Pin 1 - 4: 0.25 mm²

1 brown (+)
2 white (Ö)
3 blue (-)
4 black (S)

M8/M12 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M8 socket, straight/M12 plug, straight, 1.0 m	4.0 mm ± 0.1	**756-5507/030-010**	10
	M8 socket, straight/M12 plug, straight, 2.0 m	4.0 mm ± 0.1	**756-5507/030-020**	10
4-pole,	M8 socket, straight/M12 plug, straight, 1.0 m	4.0 mm ± 0.1	**756-5507/040-010**	10
	M8 socket, straight/M12 plug, straight, 2.0 m	4.0 mm ± 0.1	**756-5507/040-020**	10

M8 Socket **M12 Plug**



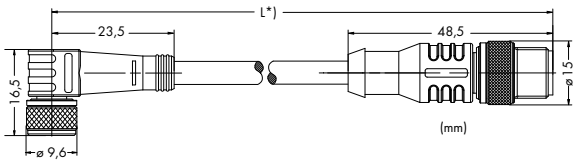


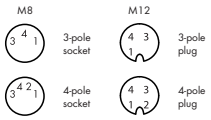
Pin 1 - 4: 0.25 mm²

1 brown (+)
2 white (Ö)
3 blue (-)
4 black (S)

M8/M12 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M8 socket, straight/M12 plug, right angle, 1.0 m	4.0 mm ± 0.1	**756-5508/030-010**	10
	M8 socket, straight/M12 plug, right angle, 2.0 m	4.0 mm ± 0.1	**756-5508/030-020**	10
4-pole,	M8 socket, straight/M12 plug, right angle, 1.0 m	4.0 mm ± 0.1	**756-5508/040-010**	10
	M8 socket, straight/M12 plug, right angle, 2.0 m	4.0 mm ± 0.1	**756-5508/040-020**	10

M8 Socket **M12 Plug**



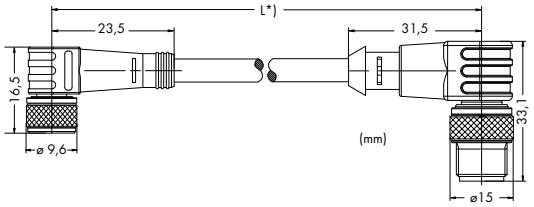


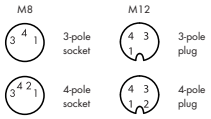
Pin 1 - 4: 0.25 mm²

1 brown (+)
2 white (Ö)
3 blue (-)
4 black (S)

M8/M12 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M8 socket, right angle/M12 plug, straight, 1.0 m	4.0 mm ± 0.1	**756-5509/030-010**	10
	M8 socket, right angle/M12 plug, straight, 2.0 m	4.0 mm ± 0.1	**756-5509/030-020**	10
4-pole,	M8 socket, right angle/M12 plug, straight, 1.0 m	4.0 mm ± 0.1	**756-5509/040-010**	10
	M8 socket, right angle/M12 plug, straight, 2.0 m	4.0 mm ± 0.1	**756-5509/040-020**	10

M8 Socket **M12 Plug**





Pin 1 - 4: 0.25 mm²

1 brown (+)
2 white (Ö)
3 blue (-)
4 black (S)

M8/M12 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M8 socket, right angle/M12 plug, right angle, 1.0 m	4.0 mm ± 0.1	**756-5510/030-010**	10
	M8 socket, right angle/M12 plug, right angle, 2.0m	4.0 mm ± 0.1	**756-5510/030-020**	10
4-pole,	M8 socket, right angle/M12 plug, right angle, 1.0 m	4.0 mm ± 0.1	**756-5510/040-010**	10
	M8 socket, right angle/M12 plug, right angle, 2.0 m	4.0 mm ± 0.1	**756-5510/040-020**	10

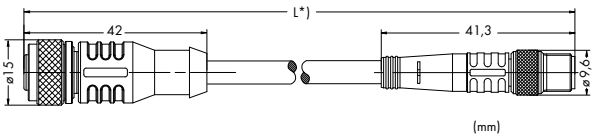
* Cable length

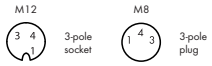
Custom cable lengths upon request

WAGO-I/O-SYSTEM 756

Sensor/actuator cables, both ends of the cable are fitted with plug/socket

M12 Socket — M8 Plug



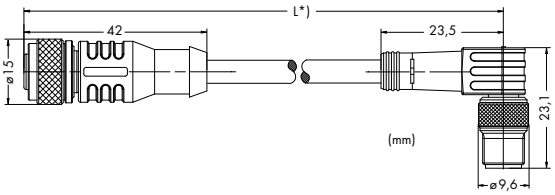


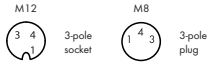
Pin 1 - 4: 0.25 mm²

1 brown (+)
3 blue (-)
4 black (S)

M12/M8 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M12 socket, straight/M8 plug, straight, 1.0 m	4.0 mm ± 0.1	**756-5501/030-010**	10
	M12 socket, straight/M8 plug, straight, 2.0 m	4.0 mm ± 0.1	**756-5501/030-020**	10

M12 Socket — M8 Plug



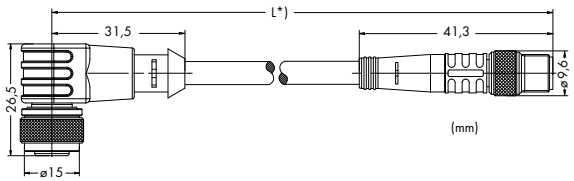


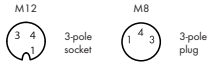
Pin 1 - 4: 0.25 mm²

1 brown (+)
3 blue (-)
4 black (S)

M12/M8 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M12 socket, straight/M8 plug, right angle, 1.0 m	4.3 mm ± 0.2	**756-5502/030-010**	10
	M12 socket, straight/M8 plug, right angle, 2.0 m	4.3 mm ± 0.2	**756-5502/030-020**	10

M12 Socket — M8 Plug



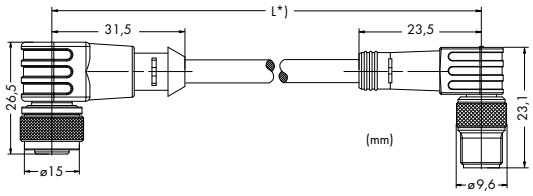


Pin 1 - 4: 0.25 mm²

1 brown (+)
3 blue (-)
4 black (S)

M12/M8 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M12 socket, right angle/M8 plug, straight, 1.0 m	4.0 mm ± 0.1	**756-5503/030-010**	10
	M12 socket, right angle/M8 plug, straight, 2.0 m	4.0 mm ± 0.1	**756-5503/030-020**	10

M12 Socket — M8 Plug



Pin 1 - 4: 0.25 mm²

1 brown (+)
3 blue (-)
4 black (S)

M12/M8 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M12 socket, right angle/M8 plug, right angle, 1.0 m	4.3 mm ± 0.2	**756-5504/030-010**	10
	M12 socket, right angle/M8 plug, right angle, 2.0 m	4.3 mm ± 0.2	**756-5504/030-020**	10

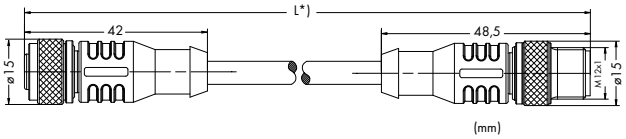
* Cable length

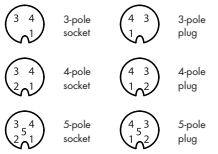
Custom cable lengths upon request

WAGO-I/O-SYSTEM 756

Sensor/actuator cables, both ends of the cable are fitted with plug/socket

M12 Socket **M12 Plug**



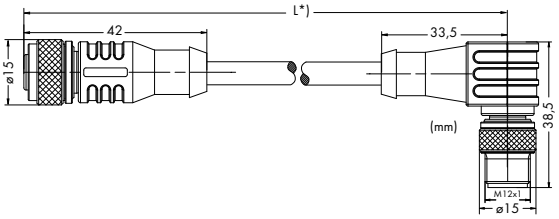


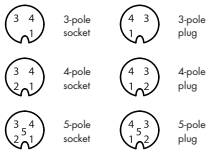
Pin 1 - 5: 0.34 mm²

1 brown (+)
2 white (Ö)
3 blue (-)
4 black (S)
5 gray

M12/M12 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M12 socket, straight/M12 plug, straight, 1.0 m	4.3 mm ± 0.2	**756-5401/030-010**	10
	M12 socket, straight/M12 plug, straight, 2.0 m	4.3 mm ± 0.2	**756-5401/030-020**	10
4-pole,	M12 socket, straight/M12 plug, straight, 1.0 m	4.7 mm ± 0.2	**756-5401/040-010**	10
	M12 socket, straight/M12 plug, straight, 2.0 m	4.7 mm ± 0.2	**756-5401/040-020**	10
5-pole,	M12 socket, straight/M12 plug, straight, 1.0 m	5.0 mm ± 0.2	**756-5401/050-010**	10
	M12 socket, straight/M12 plug, straight, 2.0 m	5.0 mm ± 0.2	**756-5401/050-020**	10
5-pole, shielded	M12 socket, straight, M12 plug, straight, 1.0 m	6.5 mm ± 0.2	**756-5401/060-010**	10
	M12 socket, straight, M12 plug, straight, 2.0 m	6.5 mm ± 0.2	**756-5401/060-020**	10

M12 Socket **M12 Plug**



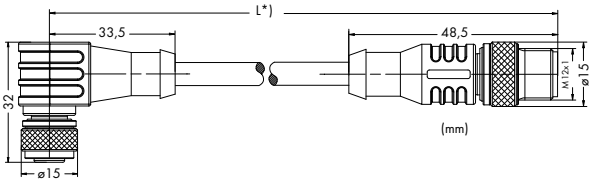


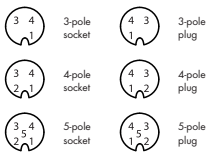
Pin 1 - 5: 0.34 mm²

1 brown (+)
2 white (Ö)
3 blue (-)
4 black (S)
5 gray

M12/M12 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M12 socket, straight/M12 plug, right angle, 1.0 m	4.3 mm ± 0.2	**756-5402/030-010**	10
	M12 socket, straight/M12 plug, right angle, 2.0 m	4.3 mm ± 0.2	**756-5402/030-020**	10
4-pole,	M12 socket, straight/M12 plug, right angle, 1.0 m	4.7 mm ± 0.2	**756-5402/040-010**	10
	M12 socket, straight/M12 plug, right angle, 2.0 m	4.7 mm ± 0.2	**756-5402/040-020**	10
5-pole,	M12 socket, straight/M12 plug, right angle, 1.0 m	5.0 mm ± 0.2	**756-5402/050-010**	10
	M12 socket, straight/M12 plug, right angle, 2.0 m	5.0 mm ± 0.2	**756-5402/050-020**	10
5-pole, shielded	M12 socket, straight, M12 plug, right angle, 1.0 m	6.5 mm ± 0.2	**756-5402/060-010**	10
	M12 socket, straight, M12 plug, right angle, 2.0 m	6.5 mm ± 0.2	**756-5402/060-020**	10

M12 Socket **M12 Plug**





Pin 1 - 5: 0.34 mm²

1 brown (+)
2 white (Ö)
3 blue (-)
4 black (S)
5 gray

M12/M12 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M12 socket, right angle/M12 plug, straight, 1.0 m	4.3 mm ± 0.2	**756-5403/030-010**	10
	M12 socket, right angle/M12 plug, straight, 2.0 m	4.3 mm ± 0.2	**756-5403/030-020**	10
4-pole,	M12 socket, right angle/M12 plug, straight, 1.0 m	4.7 mm ± 0.2	**756-5403/040-010**	10
	M12 socket, right angle/M12 plug, straight, 2.0 m	4.7 mm ± 0.2	**756-5403/040-020**	10
5-pole,	M12 socket, right angle/M12 plug, straight, 1.0 m	5.0 mm ± 0.2	**756-5403/050-010**	10
	M12 socket, right angle/M12 plug, straight, 2.0 m	5.0 mm ± 0.2	**756-5403/050-020**	10
5-pole, shielded	M12 socket, right angle, M12 plug, straight, 2.0 m	6.5 mm ± 0.2	**756-5403/060-010**	10
	M12 socket, right angle, M12 plug, straight, 2.0 m	6.5 mm ± 0.2	**756-5403/060-020**	10

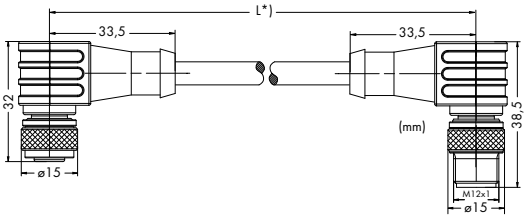
* Cable length

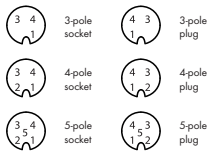
Custom cable lengths upon request

WAGO-I/O-SYSTEM 756

Sensor/actuator cables, both ends of the cable are fitted with plug/socket

M12 Socket **M12 Plug**





Pin 1 - 5: 0.34 mm²

1 brown (+)
2 white (Ö)
3 blue (-)
4 black (S)
5 gray

M12/M12 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M12 socket, right angle/M12 plug, right angle, 1.0 m	4.3 mm ± 0.2	**756-5404/030-010**	10
	M12 socket, right angle/M12 plug, right angle, 2.0 m	4.3 mm ± 0.2	**756-5404/030-020**	10
4-pole,	M12 socket, right angle/M12 plug, right angle, 1.0 m	4.7 mm ± 0.2	**756-5404/040-010**	10
	M12 socket, right angle/M12 plug, right angle, 2.0 m	4.7 mm ± 0.2	**756-5404/040-020**	10
5-pole,	M12 socket, right angle/M12 plug, right angle, 1.0 m	5.0 mm ± 0.2	**756-5404/050-010**	10
	M12 socket, right angle/M12 plug, right angle, 2.0 m	5.0 mm ± 0.2	**756-5404/050-020**	10
5-pole, shielded	M12 socket, right angle, M12 plug, right angle, 1.0 m	6.5 mm ± 0.2	**756-5404/060-010**	10
	M12 socket, right angle, M12 plug, right angle, 2.0 m	6.5 mm ± 0.2	**756-5404/060-020**	10

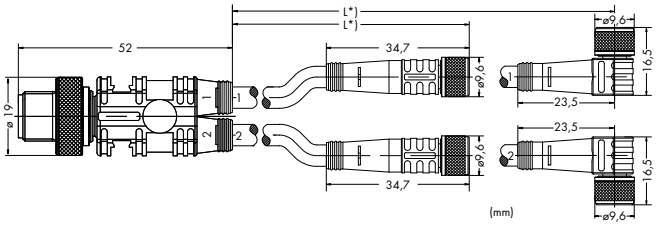
* Cable length

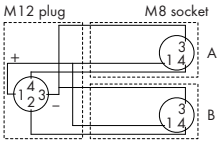
Custom cable lengths upon request

WAGO-I/O-SYSTEM 756

Sensor/actuator distribution components

M12 Distribution Plug

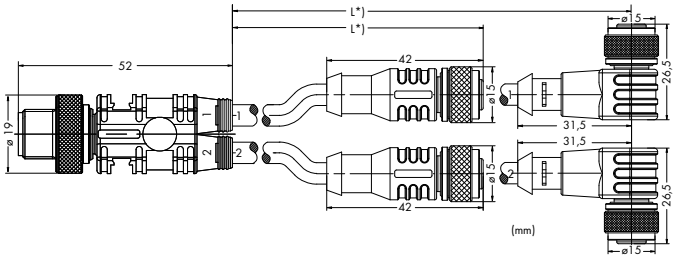


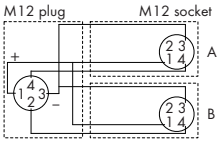


Pin 1 - 4: 0.25 mm²

M8/M12 Sensor/actuator distribution cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
4-pole,	2 x M8 socket, straight/M12 plug, straight, 1.0 m	4.1 mm ± 0.2	**756-5513/040-010**	10
	2 x M8 socket, straight/M12 plug, straight, 2.0 m	4.1 mm ± 0.2	**756-5513/040-020**	10
	2 x M8 socket, right angle/M12 plug, straight, 1.0 m	4.1 mm ± 0.2	**756-5514/040-010**	10
	2 x M8 socket, right angle/M12 plug, straight, 2.0 m	4.1 mm ± 0.2	**756-5514/040-020**	10

M12 Distribution Plug



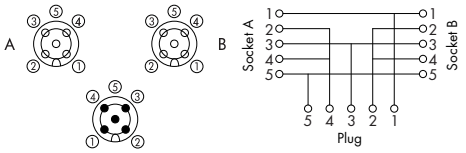


Pin 1 - 4: 0.34 mm²

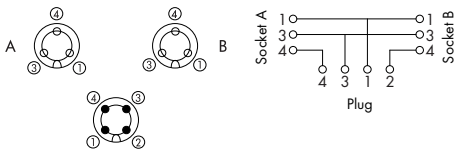
M12/M12 Sensor/actuator distribution cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
4-pole,	2 x M12 socket, straight/M12 plug, straight, 1.0 m	4.7 mm ± 0.2	**756-5516/040-010**	10
	2 x M12 socket, straight/M12 plug, straight, 2.0 m	4.7 mm ± 0.2	**756-5516/040-020**	10
	2 x M12 socket, right angle/M12 plug, straight, 1.0 m	4.7 mm ± 0.2	**756-5517/040-010**	10
	2 x M12 socket, right angle/M12 plug, straight, 2.0 m	4.7 mm ± 0.2	**756-5517/040-020**	10

Custom cable lengths upon request

M12/M12



M8/M12



Sensor/actuator twin distribution connector	Item No.	Pack. Unit
M12/M12 twin distribution connector	**756-9301/050-000**	10
M8/M12 twin distribution connector	**756-9301/040-000**	10

M8

M12

Protective caps (for covering unused sensor/actuator connectors)	Item No.	Pack. Unit
M8 protective cap	**756-8101**	10
M12 protective cap	**756-8102**	10

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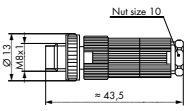
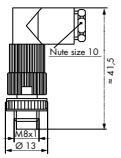
Connectors for self assembly

M8 Plug

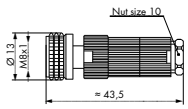


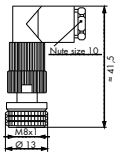


Conductor sizes
Ø 4 ... 5 mm/0.14 ... 0.34 mm²

M8 Plug, for self assembly		Item No.	Pack. Unit
3-pole	M8 plug, straight, pin penetration	756-9102/030-000	5
	M8 plug, right angle, pin penetration	756-9105/030-000	5

M8 Socket

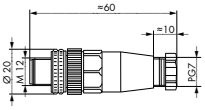


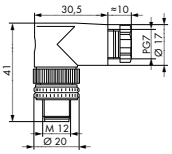


Conductor sizes
Ø 4 ... 5 mm/0.14 ... 0.34 mm²

M8 Socket, for self assembly		Item No.	Pack. Unit
3-pole	M8 socket, straight, pin penetration	756-9112/030-000	5
	M8 socket, right angle, pin penetration	756-9115/030-000	5

M12 Plug

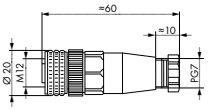


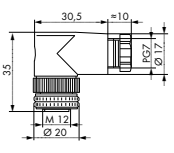


Conductor sizes
Ø 4 ... 6 mm/max. 0.75 mm²
(screw clamp connection)
Ø 4 ... 6 mm/max. 0.50 mm²
(spring clamp connection)

M12 Plug, for self assembly		Item No.	Pack. Unit
4-pole	M12 plug, straight, screw clamp connection	756-9201/040-000	5
	M12 plug, right angle, screw clamp connection	756-9204/040-000	5
	M12 plug, straight, spring clamp technology	756-9202/040-000	5
	M12 plug, right angle, spring clamp technology	756-9205/040-000	5
5-pole	M12 plug, straight, screw clamp connection	756-9201/050-000	5
	M12 plug, right angle, screw clamp connection	756-9204/050-000	5
	M12 plug, straight, spring clamp technology	756-9202/050-000	5
	M12 plug, right angle, spring clamp technology	756-9205/050-000	5

M12 Socket





Conductor sizes
Ø 4 ... 6 mm/max. 0.75 mm²
(screw clamp connection)
Ø 4 ... 6 mm/max. 0.50 mm²
(spring clamp connection)

M12 Socket, for self assembly		Item No.	Pack. Unit
4-pole	M12 socket, straight, screw clamp connection	756-9211/040-000	5
	M12 socket, right angle, screw clamp connection	756-9214/040-000	5
	M12 socket, straight, spring clamp technology	756-9212/040-000	5
	M12 socket, right angle, spring clamp technology	756-9215/040-000	5
5-pole	M12 socket, straight, spring clamp technology	756-9212/050-000	5
	M12 socket, right angle, spring clamp technology	756-9215/050-000	5

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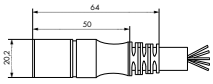
Distribution cables for the WAGO-I/O-SYSTEM 757

M16 Socket



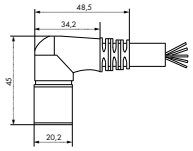
14-pole

Pin A, L: 0.75 mm²
Pin C - J, N - T: 0.34 mm²

A	brown	N	pink-brown
C	white-pink	O	violet
E	black	P	white
G	pink	R	red
J	green	S	gray
L	blue	T	yellow
M	commoned with A	U	commoned with L

M16 Distribution cables for connecting M8 sensor /actuator boxes		Cable Ø	Item No.	Pack. Unit
14-pole,	M16 socket, straight, one free wire end, 5 m	9.1 mm ± 0.2	**756-3205/140-050**	1
	M16 socket, straight, one free wire end, 10 m	9.1 mm ± 0.2	**756-3205/140-100**	1
	M16 socket, straight, one free wire end, 15 m	9.1 mm ± 0.2	**756-3205/140-150**	1

M16 Socket



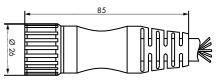
14-pole

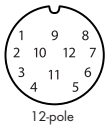
Pin A, L: 0.75 mm²
Pin C - J, N - T: 0.34 mm²

A	brown	N	pink-brown
C	white-pink	O	violet
E	black	P	white
G	pink	R	red
J	green	S	gray
L	blue	T	yellow
M	commoned with A	U	commoned with L

M16 Distribution cables for connecting M8 sensor /actuator boxes		Cable Ø	Item No.	Pack. Unit
14-pole,	M16 socket, right angle, one free wire end, 5 m	9.1 mm ± 0.2	**756-3206/140-050**	1
	M16 socket, right angle, one free wire end, 10 m	9.1 mm ± 0.2	**756-3206/140-100**	1
	M16 socket, right angle, one free wire end, 15 m	9.1 mm ± 0.2	**756-3206/140-150**	1

M23 Socket





12-pole

19-pole

Pin 9, 11, 12: 1.00 mm²; Pin 1 - 8: 0.34 mm²

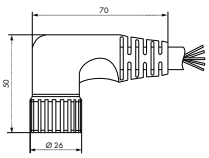
1	white	5	pink	9	blue
2	green	6	red	10	commoned with 9
3	yellow	7	black	11	brown
4	gray	8	violet	12	green-yellow

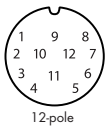
Pin 6, 12, 19: 1.00 mm²; Pin 1 - 5, 7 - 11, 13 - 19: 0.34 mm²

1	violet	8	white-green	15	white
2	red	9	white-yellow	16	yellow
3	gray	10	white-gray	17	pink
4	red-blue	11	black	18	gray-brown
5	green	12	green-yellow	19	brown
6	blue	13	yellow-brown		
7	gray-pink	14	brown-green		

M23 Distribution cables for connecting M8 sensor /actuator boxes		Cable Ø	Item No.	Pack. Unit
12-pole,	M23 socket, straight, one free wire end, 5 m	8.6 mm ± 0.3	**756-3201/120-050**	1
	M23 socket, straight, one free wire end, 10 m	8.6 mm ± 0.3	**756-3201/120-100**	1
	M23 socket, straight, one free wire end, 15 m	8.6 mm ± 0.3	**756-3201/120-150**	1
19-pole,	M23 socket, straight, one free wire end, 5 m	9.7 mm ± 0.3	**756-3203/190-050**	1
	M23 socket, straight, one free wire end, 10 m	9.7 mm ± 0.3	**756-3203/190-100**	1
	M23 socket, straight, one free wire end, 15 m	9.7 mm ± 0.3	**756-3203/190-150**	1

M23 Socket





12-pole

19-pole

Pin 9, 11, 12: 1.00 mm²; Pin 1 - 8: 0.34 mm²

1	white	5	pink	9	blue
2	green	6	red	10	commoned with 9
3	yellow	7	black	11	brown
4	gray	8	violet	12	green-yellow

Pin 6, 12, 19: 1.00 mm²; Pin 1 - 5, 7 - 11, 13 - 19: 0.34 mm²

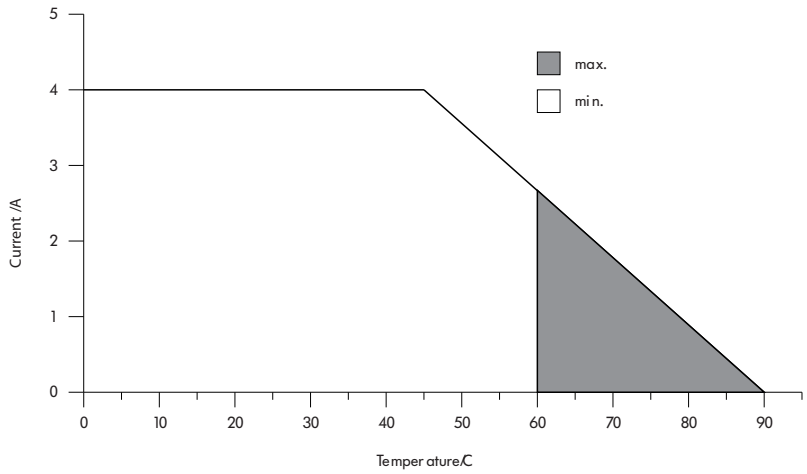
1	violet	8	white-green	15	white
2	red	9	white-yellow	16	yellow
3	gray	10	white-gray	17	pink
4	red-blue	11	black	18	gray-brown
5	green	12	green-yellow	19	brown
6	blue	13	yellow-brown		
7	gray-pink	14	brown-green		

M23 Distribution cables for connecting M8 sensor /actuator boxes		Cable Ø	Item No.	Pack. Unit
12-pole,	M23 socket, right angle, one free wire end, 5 m	8.6 mm ± 0.3	**756-3202/120-050**	1
	M23 socket, right angle, one free wire end, 10 m	8.6 mm ± 0.3	**756-3202/120-100**	1
	M23 socket, right angle, one free wire end, 15 m	8.6 mm ± 0.3	**756-3202/120-150**	1
19-pole,	M23 socket, right angle, one free wire end, 5 m	9.7 mm ± 0.3	**756-3204/190-050**	1
	M23 socket, right angle, one free wire end, 10 m	9.7 mm ± 0.3	**756-3204/190-100**	1
	M23 socket, right angle, one free wire end, 15 m	9.7 mm ± 0.3	**756-3204/190-150**	1

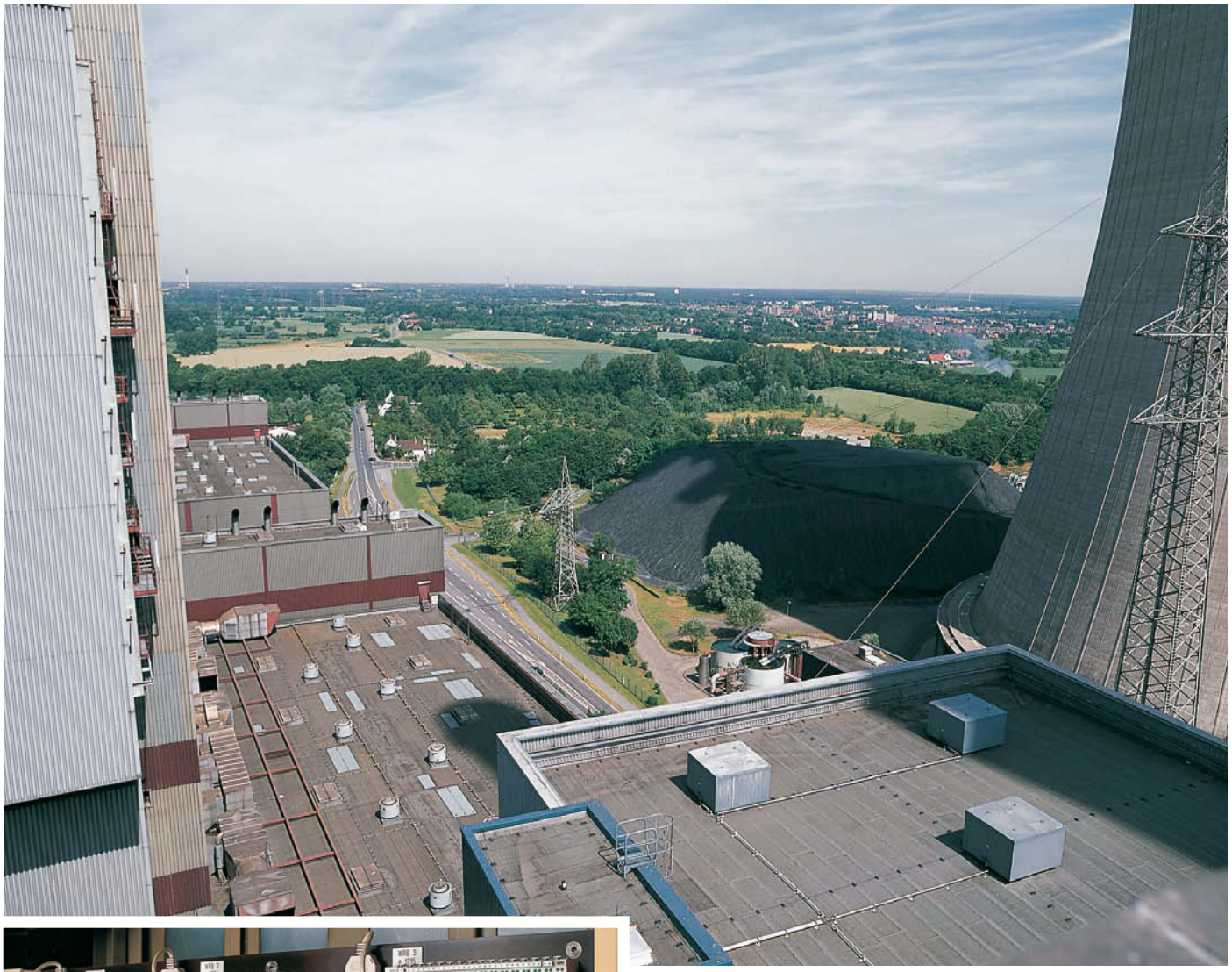
Custom cable lengths upon request

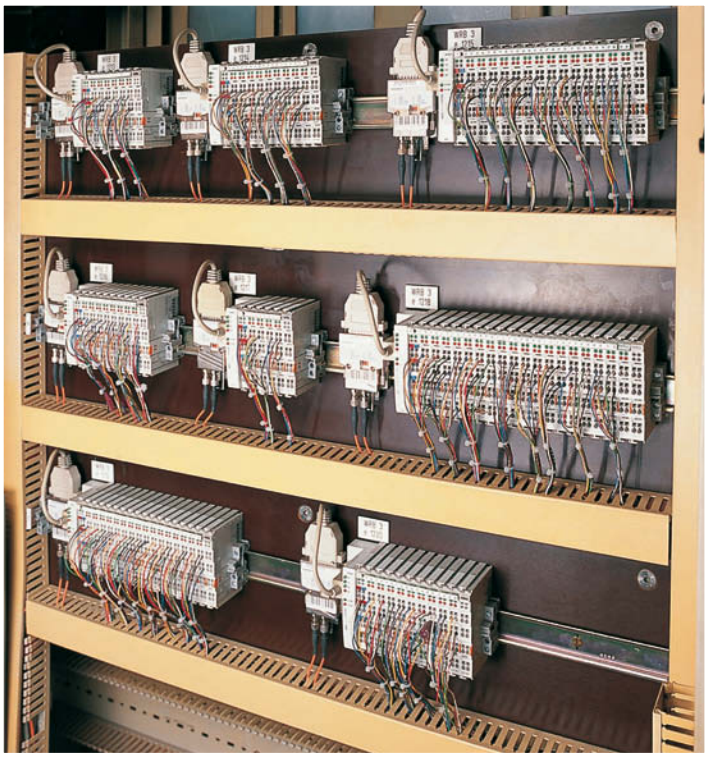
Technical Data	M8 connecting cable		M12 connecting cable
General			
Operating voltage			
3-pole	60 V AC/DC		250 V AC/DC
4-pole	60 V AC/DC		250 V AC/DC
5-pole	-/-		50 V AC/DC
Operating current (see also derating curve)		max. 4 A	
Rated surge voltage (IEC 61076-2-101)			
3-pole (0.25 mm^2 and 0.34 mm^2 conductors)	3.0 kV bzw. 2.5 kV		-/-
4-pole	3.0 kV		2.5 kV
5-pole	-/-		1.5 kV
Insulation resistance (IEC 61076-2-101		≥ 10^9 Ω	
Contact resistance (IEC 61076-2-101		≤ 10 mΩ	
Resistance of conductor		≤ 60 Ω/km	
Degree of pollution (VDE 0110)		III	
Degree of protection (IEC 60529)		IP68 (in fully locked position)	
Operating temperature (see also derating curve)			
moved		-25 °C ... +90 °C [1+2]	
static		-50 °C ... +90 °C [1]	
		[1] according to UL max. 80 °C	
		[2] in drag chains or under high mechanical stress +60 °C	
Suitable for drag chain applications			
Bending radius		min. 10 x cable ∅	
Bending cycles		≥ 2 million	
Acceleration		max. 5 m/s^2	
Path feed rate		max. 200 m/min	
Path		max. 5 m horizontal, max. 2 m vertical	
		± 180° per meter length	
		Silicone and CFC free, resistant to oil, hydrolysis and microbes	
Cables			
Designation (0.25 mm^2 and 0.34 mm^2 conductors)	LiF9Y11Y and Li9YH-11YH		Li9YH-11YH
Comment		designed according to UL + CSA, UL AWM style 21198, core style 10493	
Conductor (3/4/5 conductor 0.25 mm^2 and 0.34 mm^2)		fine-stranded bare copper conductors, (32 x 0.1 mm and 43 x 0.1 mm)	
Conductor insulation		PP9Y or TPM, halogen free	
Outer jacket		Polyurethane (OPUR) halogen free acc. to DIN VDE 0472 part 815	
		flame retardant acc. to IEC 332-2, self-extinguishing	
		color: black (≈ RAL 9005)	
Cable ∅ 3-pole (0.25 mm^2 and 0.34 mm^2 conductors)	∅ 4.0 mm ± 0.1 and ∅ 4.3 mm ± 0.2		∅ 4.3 mm ± 0.2
Cable ∅ 4-pole	∅ 4.0 mm ± 0.1		∅ 4.7 mm ± 0.2
Cable ∅ 5-pole	-/-		∅ 5.0 mm ± 0.2
Connectors			
Moulded body/housing material		PA, Polyurethane (PUR), black (≈ RAL 9005)	
Contact material		CuSn (BZ4)	
Contact plating		Cu/Au 0.6	
Knurled nut		Zinc die cast (ZnAlCu)	
Knurled nut (surface)		Zn/CuNi	
Sealing ring		Viton	

Derating curve (DIN IEC 512 part 2: 5/94)



Technical Data	M16 connecting cable	M23 connecting cable
General		
Operating voltage		
12-pole	-/-	300 V
14-pole	150 V	-/-
19-pole	-/-	150 V
Operating current		
12-pole	-/-	8 A
14-pole	4 A (0.34mm²); 6 A (0.75 mm²)	-/-
19-pole	-/-	10 A (contacts 6, 12, 19); 8 A (other contacts)
Rated surge voltage		
12-pole	-/-	2.5 kV AC
14-pole	1.2 kV	-/-
19-pole	-/-	1.5 kV AC
Insulation resistance	-/-	≥ 10^{12} Ω
Contact resistance	-/-	≤ 3 mΩ
Resistance of conductor		
0.34 mm²	≤ 53.5 mΩ/km	≤ 54.1 mΩ/km
0.75 mm²	≤ 26.0 mΩ/km	-/-
1.0 mm²	-/-	≤ 18.7 mΩ/km
Degree of pollution (VDE 0110)	II/III	III
Degree of protection (IEC 60529)	IP67 (in fully locked position)	
Operating temperature		
moved	-30 °C ... +90 °C	-5 °C ... +80 °C
static	-40 °C ... +90 °C	
Suitable for drag chain applications		
Bending radius	min 10 x Cable ∅	
Bending cycles	≥ 2 million	
Acceleration	max. 5 m/s²	
Path feed rate	max. 200 m/min	
Path	max. 5 m horizontal, max. 2 m vertical	
Other characteristics	Oil resistant acc. to DIN/VDE 0472 part 803	Silicone/PVC free, resistant to oil, chemicals, hydrolysis and microbes
Cables		
Designation	LifYwYw11Y	Li9YH-11Y
Comment	designed according to UL style 21198, core style 10493	
		100 mm stripped wire end
Conductor	fine-stranded bare copper conductors	
12-polig (8 wires 0.34 mm²; 3 wires 1.0 mm²)	-/-	43 x 0.1 mm; 128 x 0.1 mm
14-polig (10 wires 0.34 mm²; 2 wires 0.75 mm²)	42 x 0.1 mm; 95 x 0.1 mm	-/-
19-polig (16 wires 0.34 mm²; 3 wires 1.0 mm²)	-/-	43 x 0.1 mm; 55 x 0.1 mm
Conductor insulation	PVC YI 8 acc. to DIN VDE 0207	PP9Y halogen free
Core wrapping		Fleece
Outer jacket	PUR Polyurethane	Polyurethane (PUR) halogen free
		flame retardant acc. to DIN VDE 0472, part 804
		color: black (≈ RAL 9005)
Cable ∅ 12-pole	-/-	∅ 8.6 mm ± 0.3
Cable ∅ 14-pole	∅ 9.1 mm ± 0.2	-/-
Cable ∅ 19-pole	-/-	∅ 9.7 mm ± 0.3
Connectors		
Mechanical life	50 mating cycles	
Moulded body	Polyamide (PA)/UL 94 V0	Thermoplastic Polyester (PBT), Polyamide (PA 66)/UL 94 V0
Housing material	CuZn/Ni	Machined part of Copper-Zinc alloy (CuZn), Die cast part of Zinc (GD-Zn)
		Polyurethane (PUR), plastic injection moulding
Contact material	CuZn	
Contact plating	Gold (Au)	Nickel (Ni) with gold plating (Au) or passivated finish
Sealing and O-ring	CR (Neoprene)	Fluorocarbon rubber (FPM)





WAGO Application: Steag, Power Plant in Voerde, Germany

WAGO Products:
WAGO-I/O-SYSTEM with Modbus Couplers

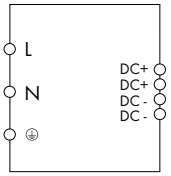
10

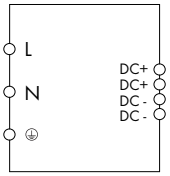
Primary Switch Mode Power Supplies

***EPSITRON* - PRO - Power**

	Output voltage 24 V DC; 5 A, open circuit and short-circuit protected, adjustable output voltage, LED status indication, PowerBoost	**Output voltage 24 V DC; 10 A, open circuit and short-circuit protected, adjustable output voltage, LED status indication, PowerBoost**

- Primary switch mode power supply with PowerBoost and TopBoost
- Stand-by input for switching off the output and minimizing power consumption
- Parallel operation, series connection possible
- Prepared for class I equipment
- Natural convection cooling when horizontally mounted
- Enclosed for use in switchgear cabinets

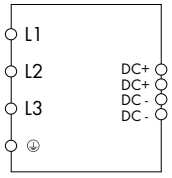


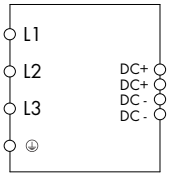


Description	**Vo nom**	**Item No.**	**Pack. Unit**	**Vo nom**	**Item No.**	**Pack. Unit**
Primary switch mode power supplies, for DIN 35 rail	24 V DC, SELV	**787-822**	1	24 V DC, SELV	**787-832**	1
Technical Data						
Nominal input voltage Vi nom	100 V ... 240 V AC			100 V ... 240 V AC		
Input voltage range	85 V ... 264 V AC (120 V ... 373 V DC)			85 V ... 264 V AC (120 V ... 373 V DC)		
Frequency	44 Hz ... 66 Hz			44 Hz ... 66 Hz		
Input current Ii	0.97 A at 230 V AC and 5 A DC			1.2 A at 230 V AC and 10 A DC		
Inrush current	< 15 A			≤ Ie (active inrush current limitation)		
Mains failure hold-up time	35 ms typ. at 230 V AC			24 ms typ. at 230 V AC		
Internal/external fuse	4 AT			6.3 AT		
Nominal output voltage Vo nom	24 V DC, SELV			24 V DC, SELV		
Output voltage range	22 V... 29.5 V DC adjustable			22 V... 29.5 V DC adjustable		
Output current Io	5 A at 24 V DC			10 A at 24 V DC		
PowerBoost	10 A DC (for 4 sec.); 7.5 A DC (for another 2 sec.)			20 A DC (for 4 sec.); 15 A DC (for another 2 sec.)		
TopBoost	23 A DC (for 25 ms)			60 A DC (for 25 ms)		
Residual ripple	< 70 mVpp			< 70 mVpp		
Derating	-2.5 % / K (> 55 °C)			-2.5 % / K (> 55 °C)		
Adjustment accuracy	1 %			1 %		
Current limitation	1.1 x Io typ.			1.1 x Io typ.		
Efficiency	87.8 % typ.			91.8 % typ.		
Test voltage pri.-gr./pri.-sec./sec.-gr.	- / 4.2 kV / -			- / 4.2 kV / -		
Degree of protection	IP20			IP20		
Operational indication	LED green (Vo), LED red (error)			LED green (Vo), LED red (error)		
Power loss P_V	0.5 W (stand-by) / 5.0 W (no load) / 14.6 W (rated load)			0.8 W (stand-by) / 3.5 W (no load) / 19.7 W (rated load)		
Signaling	Relay contact DC O.K. (changeover contact)			Relay contact DC O.K. (changeover contact)		
Type of mounting	DIN-rail mounting (EN 60715) in 2 positions			DIN-rail mounting (EN 60715) in 2 positions		
Ambient operating temperature	-10 °C ... +70 °C			-10 °C ... +70 °C		
Storage temperature	-25 °C ... +85 °C			-25 °C ... +85 °C		
Dimensions (mm) W x H x L	57 x 163 x 163			57 x 163 x 179		
	Height from upper-edge of DIN 35 rail			Height from upper-edge of DIN 35 rail		
Wire connection	Input/Output: WAGO 231 Series / WAGO 231 Series			Input/Output: WAGO 231 Series / WAGO 231 Series		
	Signalising: WAGO 733 Series			Signalising: WAGO 733 Series		
Cross sections	Input: 0.08 mm² ... 2.5 mm² / AWG 28 ... 12			Input: 0.08 mm² ... 2.5 mm² / AWG 28 ... 12		
	Output: 0.08 mm² ... 2.5 mm² / AWG 28 ... 12			Output: 0.08 mm² ... 2.5 mm² / AWG 28 ... 12		
	Signalising: 0.08 mm² ... 0.5 mm² / AWG 28 ... 20			Signalising: 0.08 mm² ... 0.5 mm² / AWG 28 ... 20		
Stripped lengths	Input: 8 ... 9 mm / 0.33 in			Input: 8 ... 9 mm / 0.33 in		
	Output: 8 ... 9 mm / 0.33 in			Output: 8 ... 9 mm / 0.33 in		
	Signalising: 5 ... 6 mm / 0.22 in			Signalising: 5 ... 6 mm / 0.22 in		
Weight	1100 g			1300 g		
Approvals	EN 60950, EN 61204-3, UL 60950*, UL 508*,			EN 60950, EN 61204-3, UL 60950*, UL 508*,		
	EN 61000-6-2, EN 61000-6-3 (* pending)			EN 61000-6-2, EN 61000-6-3 (* pending)		

	Output voltage 24 V DC; 10 A open circuit and short-circuit protected, adjustable output voltage, LED status indication; PowerBoost	Output voltage 24 V DC; 10 A open circuit and short-circuit protected, adjustable output voltage, LED status indication; PowerBoost; LineMonitor

- Primary switch mode power supply with PowerBoost and TopBoost
- Line monitor for parameter setting and monitoring
- prepared for class I equipment
- natural convection cooling when horizontally mounted
- encapsulated, for use in switchgear cabinets





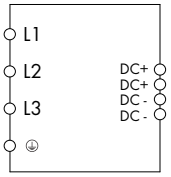
Description	Vo nom	Item No.	Pack. Unit	Vo nom	Item No.	Pack. Unit
Primary switch mode power supplies, for DIN 35 rail	24 V DC, SELV	**787-840**	1	24 V DC, SELV	**787-850**	1
Technical Data						
Nominal input voltage Vi nom	3x (2x) 400 V ... 500 V AC			3x (2x) 400 V ... 500 V AC		
Input voltage range	340 V ... 550 V AC / 480 V ... 780 V DC			340 V ... 550 V AC / 480 V ... 780 V DC		
Frequency	50 Hz ... 60 Hz			50 Hz ... 60 Hz		
Input current Ii	3 x 0.6 A at 340 V AC and 10 A DC			3 x 0.6 A at 340 V AC and 10 A DC		
Inrush current	< 30 A			< 30 A		
Mains failure hold-up time	22 ms typ. at 3 x 400 V AC			22 ms typ. at 3 x 400 V AC		
Internal/external fuse	3 x 1.6 AT / -			3 x 1.6 AT / -		
Nominal output voltage Vo nom	24 V DC, SELV			24 V DC, SELV		
Output voltage range	22.8 V ... 28.8 V DC adjustable			22.8 V ... 28.8 V DC adjustable		
Output current Io	10 A at 24 V DC			10 A at 24 V DC		
PowerBoost	20 A DC (for 4 s); 15 A DC (for 8 s)			20 A DC (for 4 s); 15 A DC (for 8 s)		
TopBoost	70 A DC (for 50 ms)			70 A DC (for 50 ms)		
Residual ripple	< 70 mVpp			< 70 mVpp		
Derating	-3 % / K (> 50 °C)			-3 % / K (> 50 °C)		
Adjustment accuracy	1 %			1 %		
Current limitation	1.1 x Io typ.			1.1 x Io typ.		
Efficiency	91.7 % typ.			91.7 % typ.		
Test voltage pri.-gr./pri.-sec./sec.-gr.	- / 4.2 kV / -			- / 4.2 kV / -		
Degree of protection	IP20			IP20		
Operational indication	LED green (Vo), LED red (error)			LED green (Vo), LED yellow (warning), LED red (error)		
Signaling				LED, LCD, 4 x signal output 24 V DC, 25 mA		
LineMonitor, parameter setting				via LCD and RS-232 serial interface		
Type of mounting	DIN-rail mounting (EN 60715) in 2 positions			DIN-rail mounting (EN 60715) in 2 positions		
Ambient operating temperature	-10 °C ... +70°C			-10 °C ... +70°C		
Storage temperature	-25 °C ... +85 °C			-25 °C ... +85 °C		
Dimensions (mm) W x H x L	57 x 163 x 179			57 x 163 x 179		
	Height from upper-edge of DIN 35 rail			Height from upper-edge of DIN 35 rail		
Wire connection	Input/Output: WAGO 231 Series / WAGO 231 Series			Input/Output: WAGO 231 Series / WAGO 231 Series		
				Signalising: WAGO 733 Series		
Cross sections	Input: 0.08 mm² ... 2.5 mm² / AWG 28 ... 12			Input: 0.08 mm² ... 2.5 mm² / AWG 28 ... 12		
	Output: 0.08 mm² ... 2.5 mm² / AWG 28 ... 12			Output: 0.08 mm² ... 2.5 mm² / AWG 28 ... 12		
				Signalising: 0.08 mm² ... 0.5 mm² / AWG 28 ... 20		
Stripped lengths	Input: 8 ... 9 mm / 0.33 in			Input: 8 ... 9 mm / 0.33 in		
	Output: 8 ... 9 mm / 0.33 in			Output: 8 ... 9 mm / 0.33 in		
				Signalising: 5 ... 6 mm / 0.22 in		
Weight	1000 g			1000 g		
Approvals	EN 60950, EN 61204-3, UL 60950, UL 508,			EN 60950, EN 61204-3, UL 60950, UL 508,		
	EN 61000-6-2, EN 61000-6-3			EN 61000-6-2, EN 61000-6-3		

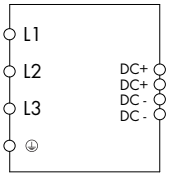
Primary Switch Mode Power Supplies

***EPSITRON* - PRO - Power**

	Output voltage 24 V DC; 10 A open circuit and short-circuit protected, adjustable output voltage, LED status indication; PowerBoost	**Output voltage 24 V DC; 10 A open circuit and short-circuit protected, adjustable output voltage, LED status indication; PowerBoost; LineMonitor**

- Primary switch mode power supply with PowerBoost and TopBoost
- Line monitor for parameter setting and monitoring
- prepared for class I equipment
- natural convection cooling when horizontally mounted
- encapsulated, for use in switchgear cabinets

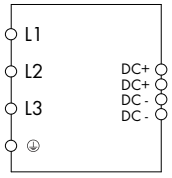


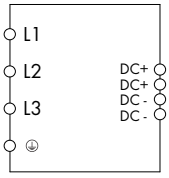


Description	**Vo nom**	**Item No.**	**Pack. Unit**	**Vo nom**	**Item No.**	**Pack. Unit**
Primary switch mode power supplies, for DIN 35 rail	24 V DC, SELV	**787-842**	1	24 V DC, SELV	**787-852**	1
Technical Data						
Nominal input voltage Vi nom	3x (2x) 400 V ... 500 V AC			3x (2x) 400 V ... 500 V AC		
Input voltage range	340 V ... 550 V AC / 480 V ... 780 V DC			340 V ... 550 V AC / 480 V ... 780 V DC		
Frequency	50 Hz ... 60 Hz			50 Hz ... 60 Hz		
Input current Ii	3 x 1.0 A at 340 V AC and 20 A DC			3 x 1.0 A at 340 V AC and 20 A DC		
Inrush current	< 30 A			< 30 A		
Mains failure hold-up time	13 ms typ. at 3 x 400 V AC			13 ms typ. at 3 x 400 V AC		
Internal/external fuse	3 x 2.5 AT / -			3 x 2.5 AT / -		
Nominal output voltage Vo nom	24 V DC, SELV			24 V DC, SELV		
Output voltage range	22.8 V ... 28.8 V DC adjustable			22.8 V ... 28.8 V DC adjustable		
Output current Io	20 A at 24 V DC			20 A at 24 V DC		
PowerBoost	40 A DC (for 4 s); 30 A DC (for 8 s)			40 A DC (for 4 s); 30 A DC (for 8 s)		
TopBoost	80 A DC (for 50 ms)			80 A DC (for 50 ms)		
Residual ripple	< 70 mVpp			< 70 mVpp		
Derating	-3 % / K (> 50 °C)			-3 % / K (> 50 °C)		
Adjustment accuracy	1 %			1 %		
Current limitation	1.1 x Io typ.			1.1 x Io typ.		
Efficiency	92.9 % typ.			92.9 % typ.		
Test voltage pri.-gr./pri.-sec./sec.-gr.	- / 4.2 kV / -			- / 4.2 kV / -		
Degree of protection	IP20			IP20		
Operational indication	LED green (Vo), LED red (error)			LED green (Vo), LED yellow (warning), LED red (error)		
Signaling				LED, LCD, 4 x signal output 24 V DC, 25 mA		
LineMonitor, parameter setting				via LCD and RS-232 serial interface		
Type of mounting	DIN-rail mounting (EN 60715) in 2 positions			DIN-rail mounting (EN 60715) in 2 positions		
Ambient operating temperature	-10 °C ... +70°C			-10 °C ... +70°C		
Storage temperature	-25 °C ... +85 °C			-25 °C ... +85 °C		
Dimensions (mm) W x H x L	77 x 171 x 179			77 x 171 x 179		
	Height from upper-edge of DIN 35 rail			Height from upper-edge of DIN 35 rail		
Wire connection	Input/Output: WAGO 231 Series / WAGO 831 Series			Input/Output: WAGO 231 Series / WAGO 831 Series		
				Signalising: WAGO 733 Series		
Cross sections	Input: 0.08 mm² ... 2.5 mm² / AWG 28 ... 12			Input: 0.08 mm² ... 2.5 mm² / AWG 28 ... 12		
	Output: 0.5 mm² ... 10 mm² / AWG 20 ... 8			Output: 0.5 mm² ... 10 mm² / AWG 20 ... 8		
				Signalising: 0.08 mm² ... 0.5 mm² / AWG 28 ... 20		
Stripped lengths	Input: 8 ... 9 mm / 0.33 in			Input: 8 ... 9 mm / 0.33 in		
	Output: 13 ... 15 mm / 0.55 in			Output: 13 ... 15 mm / 0.55 in		
				Signalising: 5 ... 6 mm / 0.22 in		
Weight	1300 g			1300 g		
Approvals	EN 60950, EN 61204-3, UL 60950, UL 508,			EN 60950, EN 61204-3, UL 60950, UL 508,		
	EN 61000-6-2, EN 61000-6-3			EN 61000-6-2, EN 61000-6-3		

	Output voltage 24 V DC; 10 A open circuit and short-circuit protected, adjustable output voltage, LED status indication; PowerBoost	Output voltage 24 V DC; 10 A open circuit and short-circuit protected, adjustable output voltage, LED status indication; PowerBoost; LineMonitor

- Primary switch mode power supply with PowerBoost and TopBoost
- Line monitor for parameter setting and monitoring
- prepared for class I equipment
- natural convection cooling when horizontally mounted
- encapsulated, for use in switchgear cabinets





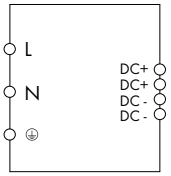
Description	Vo nom	Item No.	Pack. Unit	Vo nom	Item No.	Pack. Unit
Primary switch mode power supplies, for DIN 35 rail	24 V DC, SELV	**787-844**	1	24 V DC, SELV	**787-854**	1
Technical Data						
Nominal input voltage Vi nom	3x (2x) 400 V ... 500 V AC			3x (2x) 400 V ... 500 V AC		
Input voltage range	340 V ... 550 V AC / 480 V ... 780 V DC			340 V ... 550 V AC / 480 V ... 780 V DC		
Frequency	50 Hz ... 60 Hz			50 Hz ... 60 Hz		
Input current Ii	3 x 2.0 A at 340 V AC and 40 A DC			2.0 A at 340 V AC		
Inrush current	< 30 A			< 30 A		
Mains failure hold-up time	15 ms typ. at 3 x 400 V AC			15 ms typ. at 3 x 400 V AC		
Internal/external fuse	3 x 3.2 AT / -			3 x 3.2 AT / -		
Nominal output voltage Vo nom	24 V DC, SELV			24 V DC, SELV		
Output voltage range	22.8 V ... 28.8 V DC adjustable			22.8 V ... 28.8 V DC adjustable		
Output current Io	40 A at 24 V DC			40 A at 24 V DC		
PowerBoost	60 A DC (for 4 s); 50 A DC (for 8 s)			60 A DC (for 4 s); 50 A DC (for 8 s)		
TopBoost	100 A DC (for 50 ms)			100 A DC (for 50 ms)		
Residual ripple	< 70 mVpp			< 70 mVpp		
Derating	-5 % / K (> 45 °C)			-5 % / K (> 45 °C)		
Adjustment accuracy	1 %			1 %		
Current limitation	1.1 x Io typ.			1.1 x Io typ.		
Efficiency	93.6 % typ.			93.6 % typ.		
Test voltage pri.-gr./pri.-sec./sec.-gr.	- / 4.2 kV / -			- / 4.2 kV / -		
Degree of protection	IP20			IP20		
Operational indication	LED green (Vo), LED red (error)			LED green (Vo), LED yellow (warning), LED red (error)		
Signaling				LED, LCD, 4 x signal output 24 V DC, 25 mA		
LineMonitor, parameter setting				via LCD and RS-232 serial interface		
Type of mounting	DIN-rail mounting (EN 60715) in 2 positions			DIN-rail mounting (EN 60715) in 2 positions		
Ambient operating temperature	-10 °C ... +55°C			-10 °C ... +55°C		
Storage temperature	-25 °C ... +85 °C			-25 °C ... +85 °C		
Dimensions (mm) W x H x L	128 x 171 x 205			128 x 171 x 205		
	Height from upper-edge of DIN 35 rail			Height from upper-edge of DIN 35 rail		
Wire connection	Input/Output: WAGO 231 Series / WAGO 831 Series			Input/Output: WAGO 231 Series / WAGO 831 Series		
				Signalising: WAGO 733 Series		
Cross sections	Input: 0.08 mm² ... 2.5 mm² / AWG 28 ... 12			Input: 0.08 mm² ... 2.5 mm² / AWG 28 ... 12		
	Output: 0.5 mm² ... 10 mm² / AWG 20 ... 8			Output: 0.5 mm² ... 10 mm² / AWG 20 ... 8		
				Signalising: 0.08 mm² ... 0.5 mm² / AWG 28 ... 20		
Stripped lengths	Input: 8 ... 9 mm / 0.33 in			Input: 8 ... 9 mm / 0.33 in		
	Output: 13 ... 15 mm / 0.55 in			Output: 13 ... 15 mm / 0.55 in		
				Signalising: 5 ... 6 mm / 0.22 in		
Weight	2500 g			2500 g		
Approvals	EN 60950, EN 61204-3, UL 60950, UL 508,			EN 60950, EN 61204-3, UL 60950, UL 508,		
	EN 61000-6-2, EN 61000-6-3			EN 61000-6-2, EN 61000-6-3		

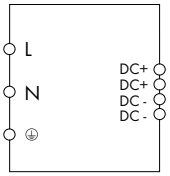
Primary Switch Mode Power Supplies

***EPSITRON* - CLASSIC - Power**

	Output voltage 12 V DC; 2 A **open circuit and short-circuit protected,** **adjustable output voltage,** **LED status indication**	**Output voltage 12 V DC; 4 A** **open circuit and short-circuit protected,** **adjustable output voltage,** **LED status indication,** **parallel connection possible,** **thermal overload protection**

- prepared for class I equipment
- natural convection cooling when horizontally mounted
- encapsulated, for use in switchgear cabinets

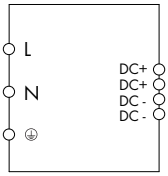


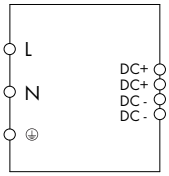


Description	**Vo nom**	**Item No.**	**Pack. Unit**	**Vo nom**	**Item No.**	**Pack. Unit**
Primary switch mode power supplies, for DIN 35 rail	12 V DC, SELV	**787-601**	1	12 V DC, SELV	**787-611**	1
Technical Data						
Nominal input voltage Vi nom	110 V ... 230 V AC			110 V ... 230 V AC		
Input voltage range	90 V ... 264 V AC; 130 V ... 300 V DC			90 V ... 264 V AC; 130 V ... 300 V DC		
	(use of DC requires external protection)			(use of DC requires external protection)		
Frequency	50 Hz ... 60 Hz			50 Hz ... 60 Hz		
Input current Ii	0.3 A typ. at 230 V AC			0.6 A typ. at 230 V AC		
Inrush current	< 10 A			< 15 A		
Mains failure hold-up time	> 20 ms at 230 V AC			> 20 ms at 230 V AC		
Nominal output voltage Vo nom	12 V DC, SELV			12 V DC, SELV		
Output voltage range	11 V ... 15 V DC adjustable			11 V ... 15 V DC adjustable		
Output current Io	2 A at 12 V DC			4 A at 12 V DC		
Residual ripple	< 100 mVpp to 20 MHz			< 100 mVpp to 20 MHz		
Derating	-3 % / K (>50 °C)			-3 % / K (>50 °C)		
Adjustment accuracy	1.5 %			2 %		
Current limitation	from approx. 1.5 x Io			from approx. 1.1 x Io		
Efficiency	78 % typ.			84 % typ.		
Test voltage pri.-gr./pri.-sec./sec.-gr.	- / 4.2 kV / -			- / 4.2 kV / -		
Degree of protection	IP20			IP20		
Operational indication	LED green (12 V o.k.)			LED green (12 V o.k.)		
Type of mounting	DIN-rail mounting (DIN EN 50022)			DIN-rail mounting (DIN EN 50022)		
Ambient operating temperature	-10 °C ... +70 °C			-10 °C ... +70 °C		
Storage temperature	-25 °C ... +85 °C			-25 °C ... +85 °C		
Dimensions (mm) W x H x L	40 x 95 x 90			51 x 133 x 120		
	Height from upper-edge of DIN 35 rail			Height from upper-edge of DIN 35 rail		
Wire connection	CAGE CLAMP® (WAGO 231 Series)			CAGE CLAMP® (WAGO 231 Series)		
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)			0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)		
Stripped lengths	8 ... 9 mm / 0.33 in			8 ... 9 mm / 0.33 in		
Weight	300 g			690 g		
Approvals	EN 60950-1, EN 61204-3, EN 61204-7			EN 60950-1, EN 61204-3, EN 61204-7		

	Output voltage 12 V DC; 8 A open circuit and short-circuit protected, adjustable output voltage, LED status indication, parallel connection possible, thermal overload protection	Output voltage 24 V DC; 1 A open circuit and short-circuit protected, adjustable output voltage, LED status indication

- prepared for class I equipment
- Natural convection cooling when horizontally mounted
- encapsulated, for use in switchgear cabinets





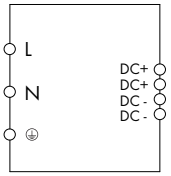
Description	Vo nom	Item No.	Pack. Unit	Vo nom	Item No.	Pack. Unit
Primary switch mode power supplies, for DIN 35 rail	12 V DC, SELV	**787-621**	1	24 V DC, SELV	**787-602**	1
Technical Data						
Nominal input voltage Vi nom	110 V ... 230 V AC			110 V ... 230 V AC		
Input voltage range	90 V ... 264 V AC; 130 V ... 300 V DC			90 V ... 264 V AC; 130 V ... 300 V DC		
	(use of DC requires external protection)			(use of DC requires external protection)		
Frequency	50 Hz ... 60 Hz			50 Hz ... 60 Hz		
Input current Ii	1.2 A typ. at 230 V AC			0.3 A typ. at 230 V AC		
Inrush current	< 15 A			< 10 A		
Discharge current				900 µA typ.		
Mains failure hold-up time	> 20 ms at 230 V AC			> 20 ms at 230 V AC		
Nominal output voltage Vo nom	12 V DC, SELV			24 V DC, SELV		
Output voltage range	11 V ... 15 V DC adjustable			21.6 V ... 26.4 V DC adjustable		
Output current Io	8 A at 12 V DC			1.3 A at 24 V DC		
Residual ripple	< 100 mVpp to 20 MHz			< 100 mVpp to 20 MHz		
Derating	-3 % / K (>50 °C)			-3 % / K (>50 °C)		
Adjustment accuracy	2 %			1.5 %		
Current limitation	from approx. 1.1 x Io			from approx. 1.5 x Io		
Efficiency	85 % typ.			81 % typ.		
Test voltage pri.-gr./pri.-sec./sec.-gr.	- / 4.2 kV / -			- / 4.2 kV / -		
Degree of protection	IP20			IP20		
Operational indication	LED green (12 V o.k.)			LED green (24 V o.k.)		
Type of mounting	DIN-rail mounting (DIN EN 50022)			DIN-rail mounting (DIN EN 50022)		
Ambient operating temperature	-10 °C ... +70 °C			-10 °C ... +70 °C		
Storage temperature	-25 °C ... +85 °C			-25 °C ... +85 °C		
Dimensions (mm) W x H x L	67 x 133 x 120			40 x 95 x 90		
	Height from upper-edge of DIN 35 rail			Height from upper-edge of DIN 35 rail		
Wire connection	CAGE CLAMP® (WAGO 231 Series)			CAGE CLAMP® (WAGO 231 Series)		
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)			0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)		
Stripped lengths	8 ... 9 mm / 0.33 in			8 ... 9 mm / 0.33 in		
Weight	952 g			300 g		
Approvals	EN 60950-1, EN 61204-3, EN 61204-7			EN 60950-1, EN 61204-3, EN 61204-7, UL 60950, UL 508		

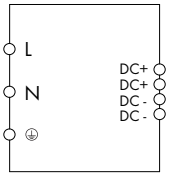
Primary Switch Mode Power Supplies

***EPSITRON* - CLASSIC - Power**

	Output voltage 24 V DC; 2.5 A **open circuit and short-circuit protected,** **adjustable output voltage,** **LED status indication,** **parallel connection possible,** **thermal overload protection**	**Output voltage 24 V DC; 5 A** **open circuit and short-circuit protected,** **adjustable output voltage,** **LED status indication,** **parallel connection possible,** **thermal overload protection**

- prepared for class I equipment
- natural convection cooling when horizontally mounted
- encapsulated, for use in switchgear cabinets

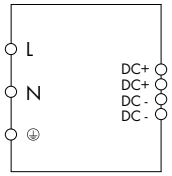


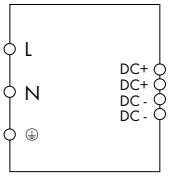


Description	**Vo nom**	**Item No.**	**Pack. Unit**	**Vo nom**	**Item No.**	**Pack. Unit**
Primary switch mode power supplies, for DIN 35 rail	24 V DC, SELV	**787-612**	1	24 V DC, SELV	**787-622**	1
Technical Data						
Nominal input voltage Vi nom	110 V ... 230 V AC			110 V ... 230 V AC		
Input voltage range	90 V ... 264 V AC; 130 V ... 300 V DC			90 V ... 264 V AC; 130 V ... 300 V DC		
	(use of DC requires external protection)			(use of DC requires external protection)		
Frequency	50 Hz ... 60 Hz			50 Hz ... 60 Hz		
Input current Ii	0.6 A typ. at 230 V AC			1.2 A typ. at 230 V AC		
Inrush current	< 10 A			< 50 A		
Discharge current	940 µA typ.			550 µA typ.		
Mains failure hold-up time	> 20 ms at 230 V AC			> 20 ms at 230 V AC		
Nominal output voltage Vo nom	24 V DC, SELV			24 V DC, SELV		
Output voltage range	22 V ... 28.8 V DC adjustable			22 V ... 28.8 V DC adjustable		
Output current Io	2.5 A at 24 V DC			5 A at 24 V DC		
Residual ripple	< 100 mVpp to 20 MHz			< 100 mVpp to 20 MHz		
Derating	-3 % / K (>55 °C)			-3 % / K (>55 °C)		
Adjustment accuracy	1.5 %			1.5 %		
Current limitation	from approx. 1.1 x Io			from approx. 1.1 x Io		
Efficiency	88 % typ.			89 % typ.		
Test voltage pri.-gr./pri.-sec./sec.-gr.	- / 4.2 kV / -			- / 4.2 kV / -		
Degree of protection	IP20			IP20		
Operational indication	LED green (24 V o.k.)			LED green (24 V o.k.)		
Type of mounting	DIN-rail mounting (DIN EN 50022)			DIN-rail mounting (DIN EN 50022)		
Ambient operating temperature	-10 °C ... +70 °C			-10 °C ... +70 °C		
Storage temperature	-25 °C ... +85 °C			-25 °C ... +85 °C		
Dimensions (mm) W x H x L	51 x 133 x 120			67 x 133 x 120		
	Height from upper-edge of DIN 35 rail			Height from upper-edge of DIN 35 rail		
Wire connection	CAGE CLAMP® (WAGO 231 Series)			CAGE CLAMP® (WAGO 231 Series)		
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)			0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)		
Stripped lengths	8 ... 9 mm / 0.33 in			8 ... 9 mm / 0.33 in		
Weight	622 g			790 g		
Approvals	EN 60950-1, EN 61204-3, EN 61204-7,			EN 60950-1, EN 61204-3, EN 61204-7,		
	UL 60950, UL 508			UL 60950, UL 508		

	Output voltage 24 V DC; 10 A open circuit and short-circuit protected, adjustable output voltage, LED status indication, parallel connection possible, thermal overload protection	Output voltage 48 V DC; 1 A open circuit and short-circuit protected, adjustable output voltage, LED status indication, parallel connection possible

- prepared for class I equipment
- natural convection cooling when horizontally mounted
- encapsulated, for use in switchgear cabinets





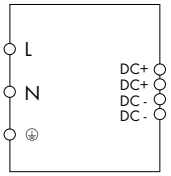
Description	Vo nom	Item No.	Pack. Unit	Vo nom	Item No.	Pack. Unit
Primary switch mode power supplies, for DIN 35 rail	24 V DC, SELV	**787-632**	1	48 V DC, SELV	**787-613**	1
Technical Data						
Nominal input voltage Vi nom	110 V ... 230 V AC			110 V ... 230 V AC		
Input voltage range	85 V ... 264 V AC; 90 V ... 350 V DC			90 V ... 264 V AC; 130 V ... 300 V DC		
				(use of DC requires external protection)		
Frequency	50 Hz ... 60 Hz			50 Hz ... 60 Hz		
Input current Ii	2.8 A at 230 V AC (6 A at 115 V AC)			0.6 A typ. at 230 V AC		
Inrush current	< 30 A			< 50 A		
Discharge current	1 mA typ.					
Mains failure hold-up time	>20 ms at 230 V AC, 24 V DC, 10 A			> 20 ms at 230 V AC		
Internal/external fuse	6.3 A / 16 A recommended					
Nominal output voltage Vo nom	24 V DC, SELV			48 V DC, SELV		
Output voltage range	22.8 V ... 28.8 V DC adjustable			43.2 V ... 52.8 V DC adjustable		
Output current Io	10 A at 24 V DC			1 A at 48 V DC		
Residual ripple	< 100 mVpp			< 200 mVpp at 20 MHz		
Derating	-3 % / K (>50 °C)			-3 % / K (>60 °C)		
Adjustment accuracy	3 %			2 %		
Current limitation	from 1.2 x Ia			from 1.1 x Ia		
Efficiency	88 % typ.			85 % typ.		
Test voltage pri.-gr./pri.-sec./sec.-gr.	1.5 kV / 4.2 kV / 0.5 kV			- / 4.2 kV / -		
Degree of protection	IP20 (EN 60529, 1991)			IP20		
Operational indication	LED green at Vo > DC 18 V /LED red at overcurrent			LED green (48 V o.k.)		
Type of mounting	DIN-rail mounting (DIN EN 50022)			DIN-rail mounting (DIN EN 50022)		
Ambient operating temperature	-10 °C ... +70 °C			-10 °C ... +70 °C		
Storage temperature	-25 °C ... +85 °C			-25 °C ... +85 °C		
Dimensions (mm) W x H x L	115 x 87 x 140			51 x 133 x 120		
	Height from upper-edge of DIN 35 rail			Height from upper-edge of DIN 35 rail		
Wire connection	CAGE CLAMP® (WAGO 231 Series)			CAGE CLAMP® (WAGO 231 Series)		
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)			0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)		
Stripped lengths	8 ... 9 mm / 0.33 in			8 ... 9 mm / 0.33 in		
Weight	950 g			690 g		
Approvals	EN 60950-1, EN 61204-3, EN 61204-7, UL 60950, UL 508			EN 60950-1, EN 61204-3, EN 61204-7		

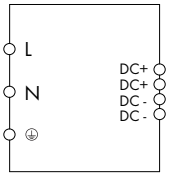
Primary Switch Mode Power Supplies

***EPSITRON* - CLASSIC - Power**

	Output voltage 48 V DC; 2 A **open circuit and short-circuit protected,** **adjustable output voltage,** **LED status indication,** **parallel connection possible**	**Output voltage 48 V DC; 5 A** **open circuit and short-circuit protected,** **adjustable output voltage,** **LED status indication,** **parallel connection possible**

- Thermal overload protection
- Parallel connection possible
- Prepared for class I equipment
- Natural convection cooling when horizontally mounted
- Encapsulated, for use in switchgear cabinets

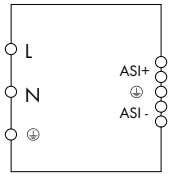




Description	**Vo nom**	**Item No.**	**Pack. Unit**	**Vo nom**	**Item No.**	**Pack. Unit**
Primary switch mode power supplies, for DIN 35 rail	48 V DC, SELV	**787-623**	1	48 V DC	**787-633**	1
Technical Data						
Nominal input voltage Vi nom	110 V ... 230 V AC			110 V ... 230 V AC		
Input voltage range	90 V ... 264 V AC; 130 V ... 300 V DC			176 V ... 264 V AC / 90 V ... 132 V		
	(use of DC requires external protection)					
Frequency	50 Hz ... 60 Hz			50 Hz ... 60 Hz		
Input current Ii	1.2 A typ. at 230 V AC			2.8 A typ. at 230 V AC / 6.0 A typ. at 115 V AC		
Inrush current	< 50 A			< 50 A		
Mains failure hold-up time	> 20 ms at 230 V AC			> 20 ms at 230 V AC		
Nominal output voltage Vo nom	48 V DC, SELV			48 V DC		
Output voltage range	42 V ... 52.8 V DC adjustable			43.2 V ... 52.8 V DC adjustable		
Output current Io	2 A at 48 V DC			5 A at 48 V DC		
Residual ripple	< 200 mVpp at 20 MHz			< 200 mVpp at 20 MHz		
Derating	-3 % / K (>55 °C)			-3 % / K (>50 °C)		
Adjustment accuracy	2 %			3 %		
Current limitation	from 1.1 x Ia			from 1.2 x Ia		
Efficiency	90 % typ.			85 % typ.		
Test voltage pri.-gr./pri.-sec./sec.-gr.	- / 4.2 kV / -			- / 4.2 kV / -		
Degree of protection	IP20			IP20		
Operational indication	LED green (48 V o.k.)			LED green (48 V o.k.)		
Type of mounting	DIN-rail mounting (DIN EN 50022)			DIN-rail mounting (DIN EN 50022)		
Ambient operating temperature	-10 °C ... +70 °C			-10 °C ... +70 °C		
Storage temperature	-25 °C ... +85 °C			-25 °C ... +85 °C		
Dimensions (mm) W x H x L	67 x 133 x 120			115 x 87 x 140		
	Height from upper-edge of DIN 35 rail			Height from upper-edge of DIN 35 rail		
Wire connection	CAGE CLAMP® (WAGO 231 Series)			CAGE CLAMP® (WAGO 231 Series)		
Cross sections	0.1 mm² ... 2.5 mm² / AWG 28 ... 12			0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)		
	0.5 mm² ... 10 mm² / AWG 20 ... 8 (THHN, THWN)					
Stripped lengths	8 ... 9 mm / 0.33 in			8 ... 9 mm / 0.33 in		
Weight	800 g			940 g		
Approvals	EN 60950-1, EN 61204-3, EN 61204-7			EN 60950-1, EN 61204-3, EN 61204-7		

	Power supply for AS-Interface; Input 115V/230V AC; Output 30.5V DC; 3A	

- Min. cond. cross section acc. to AS-Interface specification: 1.5 mm²
- natural convection cooling when horizontally mounted
- encapsulated, for use in switchgear cabinets



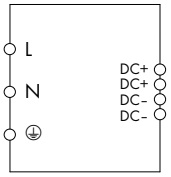
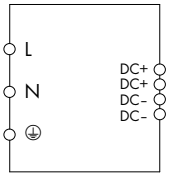
Description	Vo nom	Item No.	Pack. Unit	
Primary switch mode power supply, for DIN 35 rail	30.5 V DC (PELV)	**787-692**	1	

Technical Data

Nominal input voltage Vi nom	110 V ... 230 V AC	
Input voltage range	90 V ... 264 V AC; 130 V ... 300 V DC	
	(use of DC requires external protection)	
Frequency	50 Hz ... 60 Hz	
Input current Ii	2 A at 115 V AC / 1 A at 230 V AC	
Inrush current	< 50 A (cold)	
Mains failure hold-up time	> 15 ms at 115 V AC / > 50 ms at 230 V AC	
Internal/external fuse	4 AT	
Nominal output voltage Vo nom	30.5 V DC (PELV)	
Output voltage range	26 V ... 33 V DC	
Output current Io	3 A at 30.5 V DC; 2.5 A at Vi < 97 V AC	
Residual ripple	< 300 mVpp to 20 MHz	
Mains / load regulation	< 750 mV	
Derating	-3 % / K (>55 °C)	
Current limitation	3.4 A typ.	
Efficiency	89 % typ.	
Test voltage pri.-gr./pri.-sec./sec.-gr.	- / 4.2 kV / -	
Degree of protection	IP20	
Operational indication	LED green (operating condition at Vo)	
Type of mounting	DIN-rail mounting (DIN EN 50022)	
Ambient operating temperature	-10 °C ... +70 °C	
Storage temperature	-25 °C ... +85 °C	
Dimensions (mm) W x H x L	51 x 133 x 120	
	Height from upper-edge of DIN 35 rail	
Wire connection	CAGE CLAMP® (WAGO 231 Series)	
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)	
Stripped lengths	8 ... 9 mm / 0.33 in	
Weight	690 g	
Approvals	EN 60950-1, EN 61204-3, EN 61204-7, UL 60950, UL 508	

Primary Switch Mode Power Supplies

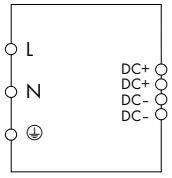
***EPSITRON* - ECO - Power**

	Output voltage 24 V DC; 2.5 A open circuit and short-circuit protected, adjustable output voltage, LED status indication	**Output voltage 24 V DC; 5 A open circuit and short-circuit protected, adjustable output voltage, LED status indication**
		
• prepared for class I equipment • natural convection cooling when horizontally mounted • encapsulated, for use in switchgear cabinets		

Description	**Vo nom**	**Item No.**	**Pack. Unit**	**Vo nom**	**Item No.**	**Pack. Unit**
Primary switch mode power supplies, for DIN 35 rail	24 V DC, SELV	**787-712**	1	24 V DC, SELV	**787-722**	1
Technical Data						
Nominal input voltage Vi nom	230 V AC			230 V AC		
Input voltage range	85 V ... 264 V AC*			85 V ... 264 V AC*		
	*with derating -3 % / V (< 90 V)			*with derating -0.8 % / V (< 110 V)		
Frequency	47 Hz ... 63 Hz			47 Hz ... 63 Hz		
Input current Ii	0.7 A typ. at 230 V AC			1.0 A typ. at 230 V AC		
Inrush current	< 30 Ap			< 30 Ap		
Mains failure hold-up time	> 20 ms at 230 V AC			> 20 ms at 230 V AC		
Nominal output voltage Vo nom	24 V DC, SELV			24 V DC, SELV		
Output voltage range	22 V ... 28 V DC adjustable			22 V ... 28 V DC adjustable		
Output current Io	2.5 A at 24 V DC			5 A at 24 V DC		
Residual ripple	< 100 mVpp to 20 MHz			< 100 mVpp to 20 MHz		
Derating	-3.3 % / K (>55 °C at 230 V AC)			-2.67 % / K (> 40 °C)		
Adjustment accuracy	1 %			1 %		
Current limitation	from 1.15 to 1.4 x Io			from 1.15 to 1.4 x Io		
Efficiency	82 % typ.			82 % typ.		
Test voltage pri.-gr./pri.-sec./sec.-gr.	1.5 kV / 3 kV / 0.5 kV			1.5 kV / 3 kV / 0.5 kV		
Degree of protection	IP20			IP20		
Operational indication	LED green (24 V DC o.k.), LED red (overload)			LED green (24 V DC o.k.), LED red (overload)		
Type of mounting	DIN-rail mounting (DIN EN 50022)			DIN-rail mounting (DIN EN 50022)		
Ambient operating temperature	-10 °C ... +70°C			-10 °C ... +70°C		
Storage temperature	-25 °C ... +85 °C			-25 °C ... +85 °C		
Dimensions (mm) W x H x L	50 x 92 x 136			75 x 92 x 136		
	Height from upper-edge of DIN 35 rail			Height from upper-edge of DIN 35 rail		
Wire connection	CAGE CLAMP® (WAGO 745 Series)			CAGE CLAMP® (WAGO 745 Series)		
Cross sections	0.08 mm² ... 4 mm² / AWG 28 ... 12 (THHN, THWN)			0.08 mm² ... 4 mm² / AWG 28 ... 12 (THHN, THWN)		
Stripped lengths	8 ... 9 mm / 0.33 in			8 ... 9 mm / 0.33 in		
Weight	470 g			740 g		
Approvals	EN 60950, EN 61000-6-2, EN 61000-6-3			EN 60950, EN 61000-6-2, EN 61000-6-3		
	UL 60950, UL 508* (* pending)			UL 60950, UL 508* (* pending)		

	Output voltage 24 V DC; 10 A open circuit and short-circuit protected, adjustable output voltage, LED status indication	

- prepared for class I equipment
- natural convection cooling when horizontally mounted
- encapsulated, for use in switchgear cabinets



Description	Vo nom	Item No.	Pack. Unit	
Primary switch mode power supply, for DIN 35 rail	24 V DC, SELV	**787-732**	1	
Technical Data				
Nominal input voltage Vi nom	230 V AC			
Input voltage range	85 V ... 264 V AC*			
	*with derating -0.8 % / V (< 110 V)			
Frequency	47 Hz ... 63 Hz			
Input current Ii	1.5 A typ. at 230 V AC			
Inrush current	< 30 Ap			
Mains failure hold-up time	> 20 ms at 230 V AC			
Nominal output voltage Vo nom	24 V DC, SELV			
Output voltage range	22 V ... 28 V DC adjustable			
Output current Io	10 A at 24 V DC			
Residual ripple	< 100 mVpp to 20 MHz			
Derating	-2.67 % / K (>55 °C at 230 V AC)			
Adjustment accuracy	1 %			
Current limitation	from 1.15 to 1.4 x Io			
Efficiency	82 % typ.			
Test voltage pri.-gr./pri.-sec./sec.-gr.	1.5 kV / 3 kV / 0.5 kV			
Degree of protection	IP20			
Operational indication	LED green (24 V DC o.k.), LED red (overload)			
Type of mounting	DIN-rail mounting (DIN EN 50022)			
Ambient operating temperature	-10 °C ... +70°C			
Storage temperature	-25 °C ... +85 °C			
Dimensions (mm) W x H x L	110 x 92 x 136			
	Height from upper-edge of DIN 35 rail			
Wire connection	CAGE CLAMP® (WAGO 745 Series)			
Cross sections	0.08 mm² ... 4 mm² / AWG 28 ... 12 (THHN, THWN)			
Stripped lengths	8 ... 9 mm / 0.33 in			
Weight	1030 g			
Approvals	EN 60950, EN 61000-6-2, EN 61000-6-3			
	UL 60950, UL 508* (* pending)			

EPSITRON - Electronic Circuit Breakers

	Electronic circuit breaker 4-channel, 1 A ... 6 A DC, parametrizable	**Electronic circuit breaker 4-channel, 1 A ... 10 A DC, parametrizable**

- Electronic circuit breaker with 4 channels, parametrizable
- Time-delayed switching of channels
- Floating switch contact
- Current and voltage monitoring via RS-232 interface and LCD
- Watchdog functions with active signal ports

Description	**Vo nom**	**Item No.**	**Pack. Unit**	**Vo nom**	**Item No.**	**Pack. Unit**
Electronic circuit breakers, for DIN 35 rail	4 x 24 V DC	**787-860**	1	4 x 24 V DC	**787-862**	1
Technical Data						
Nominal input voltage Vi nom	24 V DC			24 V DC		
Input voltage range	18 ... 30 V DC			18 ... 30 V DC		
Internal/external fuse	6.3 AT			15 AT		
Nominal output voltage Vo nom	4 x 24 V DC			4 x 24 V DC		
Nominal current	4 x 1 ... 6 A DC			4 x 1 ... 10 A DC		
	(adjustable for each channel in 1 A steps)			(adjustable for each channel in 1 A steps)		
Voltage drop	120 mV at 6 A			120 mV at 6 A, 240 mV at 10 A		
Trip time	100 s (100 ms .. 600 s; adjustable)			100 s (100 ms .. 600 s; adjustable)		
Switch-on capacity	1000 µF per 1 A DC (max. 7000 µF)			1000 µF per 1 A DC (max. 7000 µF)		
Switch-on behavior	time-delayed channel switching (250 ms each)			time-delayed channel switching (250 ms each)		
Parallel operation of single channels	not permitted			not permitted		
Series connection of several devices	not permitted			not permitted		
Degree of protection	IP20			IP20		
Operational indication	LED green (all channels o.k.), LED yellow (warning),			LED green (all channels o.k.), LED yellow (warning),		
	LED red (at least one channel has tripped)			LED red (at least one channel has tripped)		
Signaling	LCD, 4 x signal output 24 V DC, 25 mA and			LCD, 4 x signal output 24 V DC, 25 mA and		
	1 x floating relay contact 60 V DC, 3 A			1 x floating relay contact 60 V DC, 3 A		
Remote input	Reactivation of all tripped channels via 18 V ... 30 V DC			Reactivation of all tripped channels via 18 V ... 30 V DC		
	impulse for min. 50 ms			impulse for min. 50 ms		
LineMonitor, parameter setting	via LCD and RS-232 serial interface			via LCD and RS-232 serial interface		
Type of mounting	DIN-rail mounting (EN 60715) in 2 positions			DIN-rail mounting (EN 60715) in 2 positions		
Ambient operating temperature	-10 °C ... +60°C			-10 °C ... +60°C		
Storage temperature	-25 °C ... +85 °C			-25 °C ... +85 °C		
Dimensions (mm) W x H x L	40 x 171 x 163			40 x 171 x 163		
	Height from upper-edge of DIN 35 rail			Height from upper-edge of DIN 35 rail		
Wire connection	Input: (WAGO 831 Series)			Input: (WAGO 831 Series)		
	Output: (WAGO 231 Series)			Output: (WAGO 231 Series)		
Cross sections	Input: 0.5 mm² ... 10 mm² / AWG 20 ... 8			Input: 0.5 mm² ... 10 mm² / AWG 20 ... 8		
	Output: 0.08 mm² ... 2.5 mm² / AWG 28 ... 12			Output: 0.08 mm² ... 2.5 mm² / AWG 28 ... 12		
Stripped lengths	Input: 13 ... 15 mm / 0.55 in			Input: 13 ... 15 mm / 0.55 in		
	Output: 8 ... 9 mm / 0.33 in			Output: 8 ... 9 mm / 0.33 in		
Weight	800 g			800 g		
Approvals	EN 60950, UL 508*, EN 61000-6-2,			EN 60950, UL 508*, EN 61000-6-2,		
	EN 61000-6-3 (* pending)			EN 61000-6-3 (* pending)		

	Electronic circuit breaker 4-channel, 1 A ... 8 A DC, parametrizable, active current limitation	

- Electronic circuit breaker with 4 channels, parametrizable
- Features active current limitation, reliably prevents voltage drops
- Time-delayed switching of channels
- Current and voltage monitoring via RS-232 interface and LCD
- Watchdog functions with active signal ports

Description	**Vo nom**	**Item No.**	**Pack. Unit**	
Electronic circuit breakers, for DIN 35 rail	4 x 24 V DC	**787-861**	1	

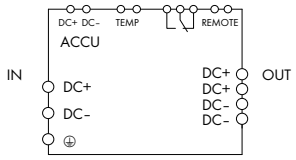
Technical Data

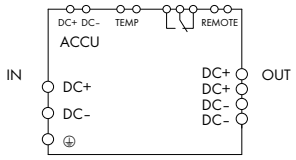
Nominal input voltage Vi nom	24 V DC
Input voltage range	18 ... 30 V DC
Internal/external fuse	15 AT
Nominal output voltage Vo nom	4 x 24 V DC
Nominal current	4 x 1 ... 8 A DC
	(adjustable for each channel in 1 A steps)
Voltage drop	240 mV at 8 A
Trip time	100 ms (100 ms .. 1.5 s;
	adjustable, depending on nominal current)
Switch-on capacity	max. 20,000 µF
Switch-on behavior	time-delayed channel switching (250 ms each)
Parallel operation of single channels	not permitted
Series connection of several devices	not permitted
Trip current	1.1 x nominal current typ.
Current limitation	1.5 x nominal current typ.
Degree of protection	IP20
Operational indication	LED green (all channels o.k.), LED yellow (warnings),
	LED red (at least one channel has tripped)
Signaling	LCD, 4 x signal output 24 V DC, 25 mA
LineMonitor, parameter setting	via LCD and RS-232 serial interface
Type of mounting	DIN-rail mounting (EN 60715) in 2 positions
Ambient operating temperature	-10 °C ... +60°C
Storage temperature	-25 °C ... +85 °C
Dimensions (mm) W x H x L	40 x 171 x 163
	Height from upper-edge of DIN 35 rail
Wire connection	Input: (WAGO 831 Series)
	Output: (WAGO 231 Series)
Cross sections	Input: 0.5 mm² ... 10 mm² / AWG 20 ... 8
	Output: 0.08 mm² ... 2.5 mm² / AWG 28 ... 12
Stripped lengths	Input: 13 ... 15 mm / 0.55 in
	Output: 8 ... 9 mm / 0.33 in
Weight	800 g
Approvals	EN 60950, UL 2367*, EN 61000-6-2,
	EN 61000-6-3 (* pending)

EPSITRON - UPS Charger and Controller

	UPS charger and controller 24 V DC, 10 A, parametrizable	**UPS charger and controller 24 V DC, 20 A parametrizable**

- Charger and controller for uninterruptible power supply (UPS)
- Current and voltage monitoring, as well as parameter setting via LCD and RS-232 interface
- Active signal outputs for watchdog functions
- Remote input for switching off buffered output
- Input for temperature control of connected battery





Description	**Vo nom**	**Item No.**	**Pack. Unit**	**Vo nom**	**Item No.**	**Pack. Unit**
UPS charger and controller, for DIN 35 rail	24 V DC	**787-870**	1	24 V DC	**787-875**	1

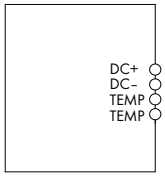
Technical Data

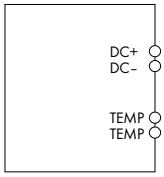
Nominal input voltage Vi nom	24 V DC	24 V DC
Input voltage range	20.4 V ... 28.8 V DC	20.4 V ... 28.8 V DC
Input current Ii	0.1 A (no-load running); 0.8 A (charging); 10.8 A (max.)	0.1 A (no-load running); 1.5 A (charging); 21.5 A (max.)
Inrush current	< 4 A (no load)	< 4 A (no load)
Switch-on threshold (adjustable)	20 V ... 25.5 V DC	20 V ... 25.5 V DC
Internal/external fuse	15 AT / -	15 AT / -
Nominal output voltage Vo nom	24 V DC	24 V DC
Output voltage range	Vi - 0.5 V DC (below switch-on threshold);	Vi - 1 V DC (below switch-on threshold);
	20 V ... 25.5 V DC (during buffer operation)	20 V ... 25.5 V DC (buffer mode)
Output current Io	10 A	20 A
Current limitation	typ. 11 A ... 14 A	typ. 22 A ... 26 A
Buffer time	10 s ... 600 s or constant (adjustable)	10 s ... 600 s or constant (adjustable)
Final load voltage	26 V ... 29.5 V DC or temperature controlled (adjustable)	26 V ... 29.5 V DC or temperature controlled (adjustable)
Charging current	max. 0.6 A	max. 1.0 A
Degree of protection	IP20	IP20
Operational indication	LED green (Vo), LED yellow (warning), LED red (error)	LED green (Vo), LED yellow (warning), LED red (error)
Signaling	LCD, 3 x signal output 24 V DC, 25 mA and	LCD, 3 x signal output 24 V DC, 25 mA and
	1x floating relay contact 30 V DC, 1 A	1 x floating relay contact 30 V DC, 1 A
Remote input	to switch off buffer operation	to switch off buffer operation
LineMonitor, parameter setting	via LCD and RS-232 serial interface	via LCD and RS-232 serial interface
Type of mounting	DIN-rail mounting (EN 60715) in 2 positions	DIN-rail mounting (EN 60715) in 2 positions
Ambient operating temperature	-10 °C ... +60°C	-10 °C ... +60 °C
Storage temperature	-25 °C ... +85 °C	-25 °C ... +85 °C
Dimensions (mm) W x H x L	40 x 163 x 163	57 x 163 x 171
	Height from upper-edge of DIN 35 rail	Height from upper-edge of DIN 35 rail
Wire connection	Input: (WAGO 231 Series)	Intput/Output: (WAGO 831 Series)
	Output: (WAGO 231 Series)	Signalising: (WAGO 733 Series)
Cross sections	Input: 0.08 mm² ... 2.5 mm² / AWG 28 ... 12	Input/Output: 0.5 mm² ... 10 mm² / AWG 20 ... 8
	Output: 0.08 mm² ... 2.5 mm² / AWG 28 ... 12	Signalising: 0.08 mm² ... 0.5 mm² / AWG 28 ... 20
Stripped lengths	Input: 8 ... 9 mm / 0.33 in	Input/Output: 13 ... 15 mm / 0.55 in
	Output: 8 ... 9 mm / 0.33 in	Signalising: 5 ... 6 mm / 0.22 in
Weight	800 g	1200 g
Approvals	EN 60950, UL 60950*, UL 508*,	EN 60950, UL 60950*, UL 508*,
	EN 61000-6-2, EN 61000-6-3 (* pending)	EN 61000-6-2, EN 61000-6-3 (* pending)

EPSITRON - Lead Gel Battery Modules

	Lead gel battery module 24 V DC, 3.2 Ah	Lead gel battery module 24 V DC, 7 Ah

- Lead gel battery module for uninterruptible power supply (UPS)
- Can be connected to 787-873 and 787-875 (only 787-872) UPS Controllers
- Parallel connection to increase the buffer time
- Features built-in NTC K164 temperature sensor



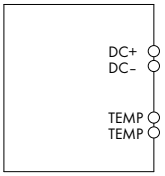


Description	Vo nom	Item No.	Pack. Unit	Vo nom	Item No.	Pack. Unit
Lead gel battery modules	24 V DC	**787-871**	1	24 V DC	**787-872**	1
Technical Data						
Nominal input voltage Vi nom	24 V DC			24 V DC		
Internal/external fuse	15 AT / -			25 AT / -		
Nominal output voltage Vo nom	24 V DC			24 V DC		
Output current Io	12 A			21 A		
Final load voltage	max. 27 V DC (at 25 °C)			max. 27 V DC (at 25 °C)		
Charging current	max. 0.8 A			max. 1.8 A		
Capacity	3.2 Ah			7 Ah		
Temperature sensor	NTC K164 (4.7 kΩ)			NTC K164 (4.7 kΩ)		
Service life	typ. 5/ 4/ 2 years at 20 °C/ 30 °C/ 40 °C			typ. 5/ 4/ 2 years at 20 °C/ 30 °C/ 40 °C		
Degree of protection	IP20			IP20		
Type of mounting	Screw mount			Screw mount		
Ambient operating temperature	-10 °C ... +40 °C			-10 °C ... +40 °C		
Storage temperature	-20 °C ... +40 °C			-20 °C ... +40 °C		
Dimensions (mm) W x H x L	76,2 x 168 x 175,5			86 x 239 x 217,5		
Wire connection	Input/Output: (WAGO 231 Series)			Input/Output: (WAGO 831 Series)		
	Temperature sensor: (WAGO 231 Series)			Temperature sensor: (WAGO 231 Series)		
Cross sections	Input/Output: 0.08 mm² ... 2.5 mm² / AWG 20 ... 12			Input/Output: 0.5 mm² ... 10 mm² / AWG 20 ... 8		
	Temperature sensor: 0.08 mm² ... 2.5 mm² / AWG 28 ...			Temperature sensor: 0.08 mm² ... 2.5 mm² / AWG 28 ...		
Stripped lengths	Input/Output: 8 ... 9 mm / 0.33 in			Input/Output: 13 ... 15 mm / 0.55 in		
	Temperature sensor: 8 ... 9 mm / 0.33 in			Temperature sensor: 8 ... 9 mm / 0.33 in		
Weight	4200 g			6500 g		
Approvals	battery is tested to VdS			battery is tested to VdS		

EPSITRON - Lead Gel Battery Modules

	Lead gel battery module **24 V DC, 12 Ah**	

- Lead gel battery module for uninterruptible power supply (UPS)
- Can be connected to 787-873 and 787-875 UPS Controllers
- Parallel connection to increase the buffer time
- Features built-in NTC K164 temperature sensor



Description	**Vo nom**	**Item No.**	**Pack. Unit**	**Vo nom**	**Item No.**	**Pack. Unit**
Lead gel battery module	24 V DC	**787-873**	1			

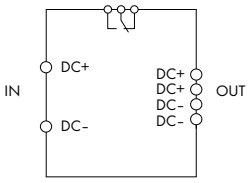
Technical Data

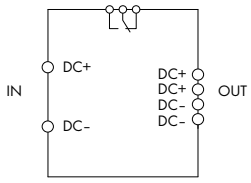
Nominal input voltage Vi nom	24 V DC
Internal/external fuse	25 AT / -
Nominal output voltage Vo nom	24 V DC
Output current Io	21 A
Final load voltage	max. 27 V DC (at 25 °C)
Charging current	max. 3 A
Capacity	12 Ah
Temperature sensor	NTC K164 (4.7 kΩ)
Service life	typ. 5/ 4/ 2 years at 20 °C/ 30 °C/ 40 °C
Degree of protection	IP20
Type of mounting	Screw mount
Ambient operating temperature	-10 °C ... +40 °C
Storage temperature	-20 °C ... +40 °C
Dimensions (mm) W x H x L	120.5 x 239 x 217.5
Wire connection	Input/Output: (WAGO 831 Series)
	Temperature sensor: (WAGO 231 Series)
Cross sections	Input/Output: 0.5 mm² ... 10 mm² / AWG 20 ... 8
	Temperature sensor: 0.08 mm² ... 2.5 mm² / AWG 28 ... 12
Stripped lengths	Input/Output: 13 ... 15 mm / 0.55 in
	Temperature sensor: 8 ... 9 mm / 0.33 in
Weight	10600 g
Approvals	Battery is tested to VdS

EPSITRON - Capacitive Buffer Modules

	Capacitive buffer module 24 V DC, 10 A	Capacitive buffer module 24 V DC, 20 A

- Capacitive buffer module bridges short duration voltage drops
- For uninterruptible power supply
- Potential-free contact for charge condition monitoring





Description	Vo nom	Item No.	Pack. Unit	Vo nom	Item No.	Pack. Unit
Capacitive buffer modules, for DIN 35 rail	24 V DC	**787-880**	1	24 V DC	**787-881**	1
Technical Data						
Nominal input voltage Vi nom	24 V DC			24 V DC		
Input voltage range	20 V ... 30 V DC			20 V ... 30 V DC		
Input current Ii	60 mA (no-load running); 1 A (charging); 11 A (max.)			60 mA (no-load running); 1 A (charging); 22 A (max.)		
Switch-on threshold (adjustable)	20 V ... 24 V DC			20 V ... 24 V DC		
Charging time	typ. 5 minutes			typ. 5 minutes		
Nominal output voltage Vo nom	24 V DC			24 V DC		
Output voltage range	Vi - 0.5 V DC (below switch-on threshold);			Vi - 1 V DC (below switch-on threshold);		
	20.4 V ... 24 V DC (during buffer operation)			20.4 V ... 24 V DC (during buffer operation)		
Output current Io	10 A			20 A		
Current limitation	electronic, typ. 11 A			electronic, typ. 22 A		
Buffer time	0.06 s ... 7.2 s			0.17 s ... 16.5 s		
	(depends on load current and switch-on threshold)			(depends on load current and switch-on threshold)		
Parallel operation	yes			yes		
Power loss P_V	1.5 W open circuit			1.5 W open circuit		
	6.5 W nominal load			15 W nominal load		
Feedback voltage	max. 35 V DC			max. 35 V DC		
Degree of protection	IP20			IP20		
Operational indication	LED green (Va > 20 V), LED yellow (charging),			LED green (Va > 20 V), LED yellow (charging),		
	LED red (Va < 20 V)			LED red (Va < 20 V)		
Signaling	1 x floating relay contact 30 V DC, 1 A			1 x floating relay contact 30 V DC, 1 A		
Type of mounting	DIN-rail mounting (EN 60715) in 2 positions			DIN-rail mounting (EN 60715) in 2 positions		
Ambient operating temperature	-10 °C ... +50°C			-10 °C ... +50°C		
Storage temperature	-10 °C ... +60 °C			-10 °C ... +60 °C		
Dimensions (mm) W x H x L	57 x 179 x 163			57 x 179 x 181		
Wire connection	Input/Output: (WAGO 231 Series)			Input/Output: (WAGO 831 Series)		
	Relay: (WAGO 231 Series)			Relay: (WAGO 231 Series)		
Cross sections	Input/Output: 0.08 mm² ... 2.5 mm² / AWG 28 ... 12			Input/Output: 0.5 mm² ... 10 mm² / AWG 20 ... 8		
	Relay: 0.08 mm² ... 2.5 mm² / AWG 28 ... 12			Relay: 0.08 mm² ... 2.5 mm² / AWG 28 ... 12		
Stripped lengths	Input/Output: 8 ... 9 mm / 0.33 in			Input/Output: 13 ... 15 mm / 0.55 in		
	Relay: 8 ... 9 mm / 0.33 in			Relay: 8 ... 9 mm / 0.33 in		
Weight	1000 g			1000 g		
Approvals	EN 60950, UL 60950*, UL 508*,			EN 60950, UL 60950*, UL 508*,		
	EN 61000-6-2, EN 61000-6-3 (* pending)			EN 61000-6-2, EN 61000-6-3 (* pending)		

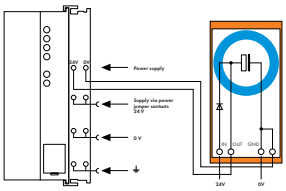
Back-Up Capacitor Module

	Back-up capacitor module smoothes unstable 24 V DC power supplies Mounting carrier for DIN 35 rail	

This module is equipped with a capacitor which smoothes unstable 24VDC power supplies in case the voltage tolerances mentioned in our data sheets cannot be ensured. Reasons for voltage transients could be:

- Voltage disconnections (switching transients) on primary side
- Overloads on secondary side
- Switching of inductive or capacitive loads

The back-up capacitor module is connected between the 24V power supply and the electronic device which has to be protected.
Notice:
If using a non-filtered single-phase power supply, the capacitor causes a voltage increase.



Description	Item No.	Pack. Unit	
Back-up capacitor module	**288-824**	1	

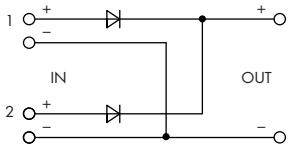
Technical Data

Nominal voltage	24 V DC (+25 %)	
Nominal current	1 A	
Nominal capacity	10000 µF	
Weight	104,4 g	
Dimensions (mm) W x H x L	38 x 81 x 85	
	Height from upper-edge of DIN 35 rail	
Wire connection	CAGE CLAMP® (236 Series)	
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 12	
Stripped lengths	5 ... 6 mm / 0.22 in	
Accessories		
WMB Multi marking system for mounting carrier	see page 595	
Marker strips for mounting carrier	white 709-198 / transparent 709-196	

EPSITRON - Redundancy Module

	Redundancy module **24 V DC, 20 A**	

- Redundancy module with 2 inputs for decoupling 2 power supplies
- For redundant or uninterruptible power supply
- With potential-free contact for input voltage monitoring

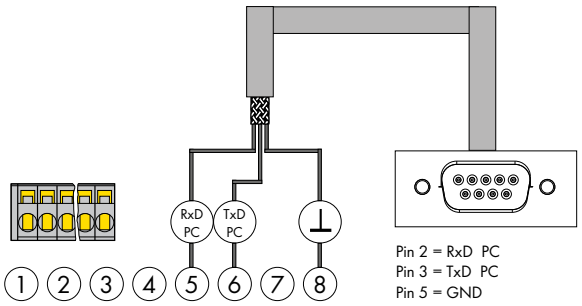


Description	**Vo nom**	**Item No.**	**Pack. Unit**	
Redundancy module, for DIN 35 rail	24 V DC	**787-885**	1	

Technical Data

Nominal input voltage Vi nom	2 x 24 V DC
Input voltage range	18 V ... 30 V DC
Input current Ii	2 x 20 A, max. 1 x 40 A
Nominal output voltage Vo nom	24 V DC
Output current Io	20 A, max. 40 A
Parallel operation	yes
Power loss P_V	1.5 W open circuit
	14 W nominal load (20 A) / 26 W nominal load (40 A)
Efficiency	97 % typ.
Degree of protection	IP20
Operational indication	LED green (Vo), 2 x LED yellow (Vi)
Signaling	1 x floating relay contact 30 V DC, 1 A
Type of mounting	DIN-rail mounting (EN 60715) in 2 positions
Ambient operating temperature	-10 °C ... +60 °C
Storage temperature	-25 °C ... +85 °C
Dimensions (mm) W x H x L	40 x 163 x 181
	Height from upper-edge of DIN 35 rail
Wire connection	Input/Output: (WAGO 831 Series)
	Relay: (WAGO 231 Series)
Cross sections	Input/Output: 0.5 mm² ... 10 mm² / AWG 20 ... 8
	Relay: 0.08 mm² ... 2.5 mm² / AWG 28 ... 12
Stripped lengths	Input/Output: 13 ... 15 mm / 0.55 in
	Relay: 8 ... 9 mm / 0.33 in
Weight	800 g
Approvals	EN 60950, UL 60950*, UL 508*,
	EN 61000-6-2, EN 61000-6-3 (* pending)

EPSITRON - RS-232 Communication Cable



The 787-890 Communication Cable is used for configuration and visualization via PC or controller.
It is suitable for all 787 Series devices equipped with an RS-232 serial interface.
PC software for 787 Series devices can be downloaded at:
www.wago.com/epsitron
Function blocks for communication with WAGO-I/O-SYSTEM 750 are also available.

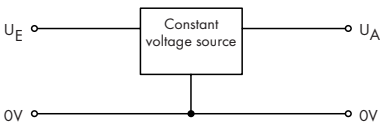
NOTE:
The 787-890 Communication Cable is not electrically isolated.

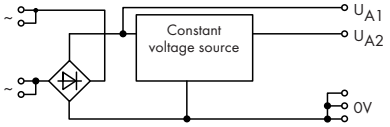
Description	Item No.	Pack. Unit
RS-232 communication cable	**787-890**	1

Technical Data	
Type of signal	RS-232
Connections	1 x 8-pole 231-108 Female Connector with strain relief (787-8xx Module side), 1x 9-pole SUB-D female connector (PC/controller side)
Isolation	No
Cross sections	3 x 0.34 mm² (AWG 22), shielded
Ambient operating temperature	-10 °C ... +70 °C
Degree of protection	IP20
Length	1.8 m

Rail-Mounted Modules - Constant Voltage Sources

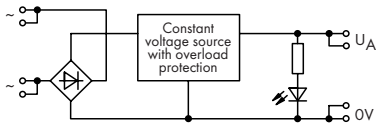
	24 V DC; 3 A Input 27 V ... 35 V DC Mounting feet for DIN 35 rail	24 V DC; 3 A Input 24 V AC +10 %, 50 Hz ... 60 Hz Mounting carrier for DIN 35 rail





Description	Item No.	Pack. Unit	Item No.	Pack. Unit
Constant voltage source 24 V DC	**289-907**	1	**288-800**	1
Technical Data				
Input voltage	27 V ... 35 V DC		24 V AC +10%	
Output voltage	24 V DC (± 10 %)		24 V DC (± 10 %)	
Nominal output current	3 A		3 A	
Ambient operating temperature	-25 °C ... +40 °C		-25 °C ... +40 °C	
Weight	88 g		209 g	
Dimensions (mm) W x H x L	78.5 x 39 x 66		140 x 44 x 85	
	Height from upper-edge of DIN 35 rail		Height from upper-edge of DIN 35 rail	
Wire connection	CAGE CLAMP® (236 Series)		CAGE CLAMP® (236 Series)	
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)		0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)	
Stripped lengths	5 ... 6 mm / 0.22 in		5 ... 6 mm / 0.22 in	
Accessories				
WMB Multi marking system for mounting carrier			see page 595	
Marker strips for mounting carrier			white 709-198 / translucent 709-196	

	24 V DC; 5 A **Input 24 V AC +10 %** **Electronic overload protection** **Output voltage indication by LED** **Mounting carrier for DIN 35 rail**	



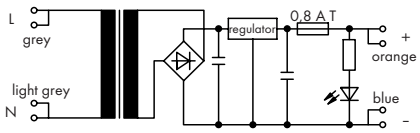
Description	Item No.	Pack. Unit	
Constant voltage source 24 V DC	**288-801**	1	

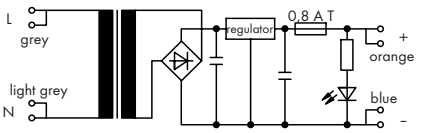
Technical Data

Input voltage	24 V AC +10%	
Output voltage	24 V DC (± 10 %)	
Nominal output current	5 A	
Overload protection	electronic	
Voltage returns after removal of overload	after 4s	
Ambient operating temperature	0 °C ... +30 °C	
Weight	600,5 g	
Dimensions (mm) W x H x L	170 x 85 x 108	
	Height from upper-edge of DIN 35 rail	
Wire connection	CAGE CLAMP® (236 Series)	
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)	
Stripped lengths	5 ... 6 mm / 0.22 in	
Accessories		
WMB Multi marking system for mounting carrier	see page 595	
Marker strips for mounting carrier	white 709-198 / translucent 709-196	

Rail-Mounted Modules - Power Supplies

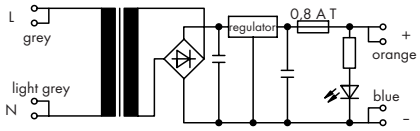
	115 V AC / 24 V DC; 0.5 A Output voltage indication by LED Mounting carrier for DIN 35 rail	230 V AC / 24 V DC; 0.5 A Output voltage indication by LED Mounting carrier for DIN 35 rail

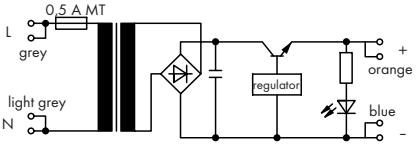




Description	Item No.	Pack. Unit	Item No.	Pack. Unit
Power supply, with universal mounting carrier	**288-809**	1	**288-810**	1
Technical Data				
Nominal input voltage Vi nom	115 V AC		230 V AC	
Input voltage range	± 10 %		± 10 %	
Frequency	50 Hz ... 60 Hz		50 Hz ... 60 Hz	
Power consumption at nominal load	30 VA		30 VA	
Nominal output voltage Vo nom	24 V DC		24 V DC	
Output voltage range	± 4 %		± 4 %	
Output current Io	0.5 A		0.5 A	
Residual ripple	≤ 10 mVss		≤ 10 mVss	
Output fuse	0.8 A slow		0.8 A slow	
Ambient operating temperature	0 °C ... +50 °C		0 °C ... +50 °C	
Weight	579 g		552 g	
Dimensions (mm) W x H x L	77 x 52 x 106		77 x 52 x 106	
	Height from upper-edge of DIN 35 rail		Height from upper-edge of DIN 35 rail	
Wire connection	CAGE CLAMP® (236 Series)		CAGE CLAMP® (236 Series)	
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)		0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)	
Stripped lengths	5 ... 6 mm / 0.22 in		5 ... 6 mm / 0.22 in	
Approvals	Transformer acc. to VDE 0551		Transformer acc. to VDE 0551	
Accessories				
WMB Multi marking system for mounting carrier	see page 595		see page 595	
Marker strips for mounting carrier	white 709-198 / translucent 709-196		white 709-198 / translucent 709-196	

	230 V AC / 12 V DC; 0.5 A Output voltage indication by LED Mounting carrier for DIN 35 rail	115 V AC / 24 V DC; 2 A Output voltage indication by LED Mounting carrier for DIN 35 rail





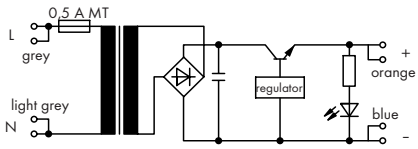
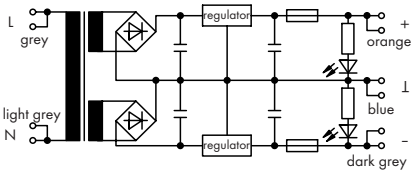
Description	Item No.	Pack. Unit	Item No.	Pack. Unit
Power supply, with universal mounting carrier	**288-808**	1	**288-813**	1

Technical Data

Nominal input voltage Vi nom	230 V AC	115 V AC
Input voltage range	± 10 %	± 10 %
Frequency	50 Hz ... 60 Hz	50 Hz ... 60 Hz
Power consumption at nominal load	23 VA	80 VA
Nominal output voltage Vo nom	12 V DC	24 V DC
Output voltage range	± 4 %	± 10 %
Output current Io	0.5 A	2 A
Residual ripple	≤ 10 mVss	≤ 80 mVss
Input fuse		0.8 A medium-slow
Output fuse	0.8 A slow	electronic, short-circuit protected
Short-circuit current		2.5 A
Ambient operating temperature	0 °C ... +50 °C	0 °C ... +40 °C
Weight	574 g	1969 g
Dimensions (mm) W x H x L	77 x 52 x 106	182 x 98 x 106
	Height from upper-edge of DIN 35 rail	Height from upper-edge of DIN 35 rail
Wire connection	CAGE CLAMP® (236 Series)	CAGE CLAMP® (256 Series)
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)	0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)
Stripped lengths	5 ... 6 mm / 0.22 in	5 ... 6 mm / 0.22 in
Approvals	Transformer acc. to VDE 0551	Transformer acc. to VDE 0551

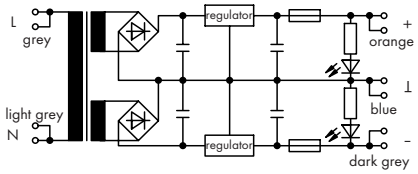
Accessories		
WMB Multi marking system for mounting carrier	see page 595	see page 595
Marker strips for mounting carrier	white 709-198 / translucent 709-196	white 709-198 / translucent 709-196

Rail-Mounted Modules - Power Supplies

	230 V AC / 24 V DC; 2 A Output voltage indication by LED Mounting carrier for DIN 35 rail	230 V AC / ± 12 V DC; 0.5 A 230 V AC / ± 15 V DC; 0.5 A Output voltage indication by LED Mounting carrier for DIN 35 rail
		
		

Description	Item No.	Pack. Unit	Item No.	Pack. Unit
Power supply, with universal mounting carrier	**288-812**	1	**288-814**	1
			288-815	1
Technical Data				
Nominal input voltage Vi nom	230 V AC		230 V AC	
Input voltage range	± 10 %		± 10 %	
Frequency	50 Hz ... 60 Hz		50 Hz ... 60 Hz	
Power consumption at nominal load	80 VA		27 VA	
Nominal output voltage Vo nom	24 V DC		± 12 V DC (288-814)	
			± 15 V DC (288-815)	
Output voltage range	± 10 %		± 4 %	
Output current Io	2 A		2 x 0.5 A	
Residual ripple	≤ 80 mVss		≤ 10 mVss	
Input fuse	0.5 A medium-slow			
Output fuse	electronic, short-circuit protected		2 x 0.8 A slow	
Short-circuit current	2.5 A			
Ambient operating temperature	0 °C ... +40 °C		0 °C ... +40 °C	
Weight	1900 g		675 g (288-814)	
			665 g (288-815)	
Dimensions (mm) W x H x L	182 x 98 x 106		94 x 57 x 106	
	Height from upper-edge of DIN 35 rail		Height from upper-edge of DIN 35 rail	
Wire connection	CAGE CLAMP® (256 Series)		CAGE CLAMP® (256 Series)	
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)		0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)	
Stripped lengths	5 ... 6 mm / 0.22 in		5 ... 6 mm / 0.22 in	
Approvals	Transformer acc. to VDE 0551		Transformer acc. to VDE 0551	
Accessories				
WMB Multi marking system for mounting carrier	see page 595		see page 595	
Marker strips for mounting carrier	white 709-198 / translucent 709-196		white 709-198 / translucent 709-196	

	230 V AC / ± 15 V DC; 2 x 1 A short circuit proof Output voltage indication by LED Mounting carrier for DIN 35 rail	



Description	Item No.	Pack. Unit	
Power supply, with universal mounting carrier	**288-816**	1	

Technical Data

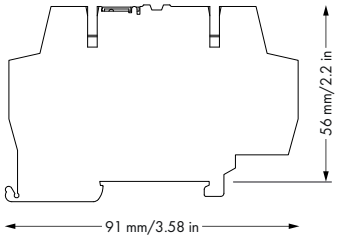
Nominal input voltage Vi nom	230 V AC	
Input voltage range	± 10 %	
Frequency	50 Hz ... 60 Hz	
Power consumption at nominal load	53 VA	
Nominal output voltage Vo nom	± 15 V DC	
Output voltage range	± 4 %	
Output current Io	2 x 1 A	
Residual ripple	≤ 10 mVss	
Short-circuit current	approx. 1.5 A	
Ambient operating temperature	0 °C ... +40 °C	
Weight	1011 g	
Dimensions (mm) W x H x L	138 x 87 x 106	
	Height from upper-edge of DIN 35 rail	
Wire connection	CAGE CLAMP® (256 Series)	
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)	
Stripped lengths	5 ... 6 mm / 0.22 in	
Approvals	Transformer acc. to VDE 0551	

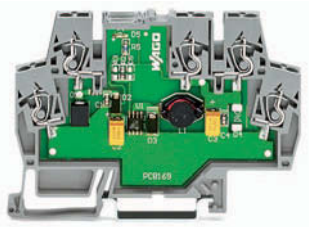
Accessories

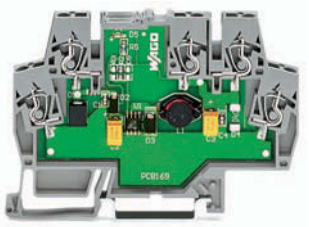
WMB Multi marking system for mounting carrier	see page 595	
Marker strips for mounting carrier	white 709-198 / translucent 709-196	

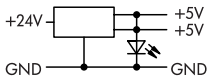
Rail-Mounted Terminal Blocks with DC/DC Converter, 6 mm / 0.236 in Wide

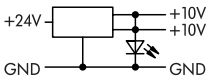
	DC/DC converter 24 V / 5 V, 0.5 A DC	DC/DC converter 24 V / 10 V, 0.5 A DC









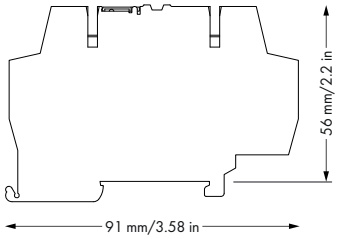


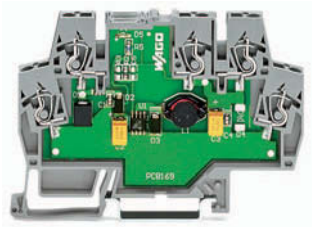
Description	V_N / V_O	Item No.	Pack. Unit	V_N / V_O	Item No.	Pack. Unit
DC/DC converter, for DIN 35 rail	24 V DC / 5 V DC	**859-801**	1	24 V DC / 10 V DC	**859-802**	1

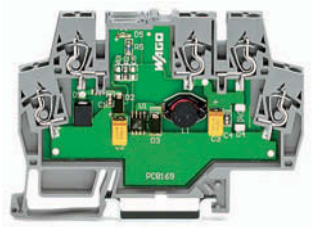
Technical Data

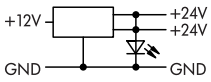
Nominal input voltage (V_N)	24 V DC	24 V DC
Input voltage range	10 V ... 30 V DC	15 V ... 30 V DC
Output voltage	5 V DC ± 2 %	10 V DC ± 2 %
Output current (max.)	500 mA	500 mA
Line regulation, max. (full load, over input voltage range)	2 %	0.5 %
Max. load regulation (no load to full load, nominal input voltage)	0.5 %	0.7 %
Efficiency at full load (24 V DC in)	70 %	85 %
Output noise peak-to-peak max. (20 MHz bandwidth)	150 mV	20 mV
Switching frequency	200 kHz (nominal)	200 kHz (nominal)
Isolation	non-isolated	non-isolated
Reverse voltage protection, input	yes	yes
Minimum load requirement	no	no
Max. transient recovery time (recovery time for load change from 25 % to 75% of full load)	40 µs	500 µs
Max. startup time (24 V DC in, full load)	3 ms	3 ms
Max. hold time (nominal input voltage, full load)	1 ms	500 µs
Input fuse	TVS diode	TVS diode
Output short circuit protection	temporary (short circuit of the output for 1 minute without damage to the device)	temporary (short circuit of the output for 1 minute without damage to the device)
Temperature coefficient	70 ppm/°C	100 ppm/°C
Ambient operating temperature	0 °C ... +40 °C	-25 °C ... +55 °C
Dimensions (mm) W x H x L	6 x 56 x 91	6 x 56 x 91
	Height from upper-edge of DIN 35 rail	Height from upper-edge of DIN 35 rail
Wire connection	CAGE CLAMP®	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	5 ... 6 mm / 0.22 in	5 ... 6 mm / 0.22 in

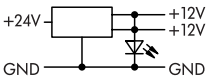
	DC/DC converter 12 V / 24 V, 250 mA DC	DC/DC converter 24 V / 12 V, 0.5 A DC











Description	V_N / V_O	Item No.	Pack. Unit	V_N / V_O	Item No.	Pack. Unit
DC/DC converter, for DIN 35 rail	12 V DC / 24 V DC	**859-804**	1	24 V DC / 12 V DC	**859-805**	1

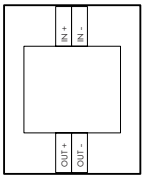
Technical Data

Nominal input voltage (V_N)	12 V DC	24 V DC
Input voltage range	8 V ... 16 V DC	15 V ... 30 V DC
Output voltage	24 V DC ± 1 %	12 V DC ± 2 %
Output current (max.)	250 mA	500 mA
Line regulation, max. (full load, over input voltage range)	0.5 %	0.5 %
Max. load regulation (no load to full load, nominal input voltage)	0.5 %	0.7 %
Efficiency at full load (24 V DC in)	83 %	85 %
Output noise peak-to-peak max. (20 MHz bandwidth)	40 mV	20 mV
Switching frequency	1.2 MHz (nominal)	200 kHz (nominal)
Isolation	non-isolated	non-isolated
Reverse voltage protection, input	yes	yes
Minimum load requirement	no	no
Max. transient recovery time (recovery time for load change from 25 % to 75% of full load)	50 µs	500 µs
Max. startup time (24 V DC in, full load)	8 ms	3 ms
Max. hold time (nominal input voltage, full load)	500 µs	500 µs
Input fuse	TVS diode	TVS diode
Output short circuit protection	fuse	temporary (short circuit of the output for 1 minute without damage to the device)
Temperature coefficient	100 ppm/°C	100 ppm/°C
Ambient operating temperature	-25 °C ... +55 °C	-25 °C ... +55 °C
Dimensions (mm) W x H x L	6 x 56 x 91	6 x 56 x 91
	Height from upper-edge of DIN 35 rail	Height from upper-edge of DIN 35 rail
Wire connection	CAGE CLAMP®	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	5 ... 6 mm / 0.22 in	5 ... 6 mm / 0.22 in

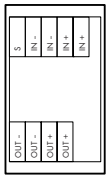
Rail-Mounted Modules - DC/DC Converter

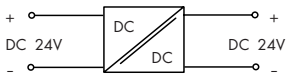
	24 V / 24 V; 0.21 A DC Mounting feet for DIN 35 rail	24 V / 18 V; 0.4 A DC Mounting carrier for DIN 35 rail

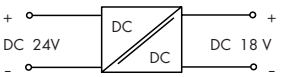
289-913



288-895







Description	Item No.	Pack. Unit	Item No.	Pack. Unit
DC/DC converter	**289-913**	1	**288-895**	1

Technical Data

Input voltage	24 V DC	24 V DC
Input voltage range	± 10 %	18 V ... 36 V DC
Output voltage	24 V DC (± 3 %)	18 V DC (± 1 %)
Nominal output current	210 mA	400 mA
Peak output current	315 mA	
Efficiency	65 % ... 75 %	82 %
Test voltage input/output	500 V DC	1500 V DC
Short circuit protection	Thermal cut-out	permanent
Ambient operating temperature	-25 °C ... +40 °C	-25 °C ... +70 °C
Weight	77 g	75,9 g
Dimensions (mm) W x H x L	83 x 25 x 77	50 x 25 x 85
	Height from upper-edge of DIN 35 rail	Height from upper-edge of DIN 35 rail
Wire connection	CAGE CLAMP® (236 Series)	CAGE CLAMP® (256 Series)
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)	0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)
Stripped lengths	5 ... 6 mm / 0.22 in	5 ... 6 mm / 0.22 in
EMC CE-Immunity to interference		acc. to EN 50082-2 (1996) *
		* Only in conjunction with DALI/DSI Master Module 750-641
EMC CE-Emission of interference		acc. to EN 50081-1 (1993) *
		* Only in conjunction with DALI/DSI Master Module 750-641

Accessories

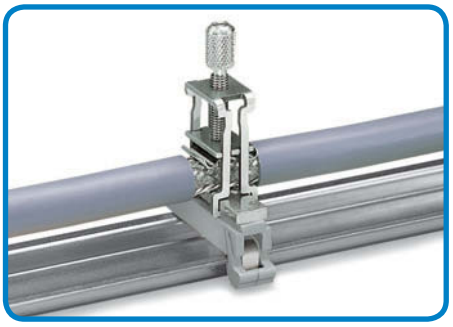
WMB Multi marking system for mounting carrier		see page 595
Marker strips for mounting carrier		white 709-198 / translucent 709-196

WAGO Application: Stockholm-Arlanda Airport, Sweden
Automated Passenger Boarding Bridges

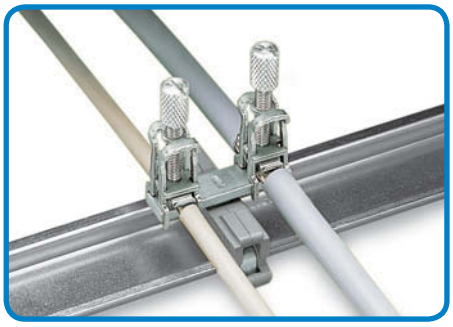
WAGO Products:
WAGO-I/O-SYSTEM with DeviceNet Couplers and Rail-Mounted Terminal Blocks

11

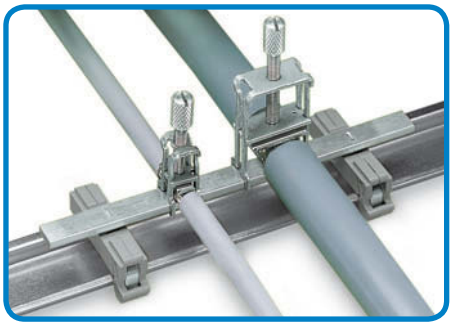
Shield (Screen) Connecting System
Description and Handling



Carrier with grounding foot
45 mm/1.772 in long, busbar 90° to the rail
Item No. 790-113

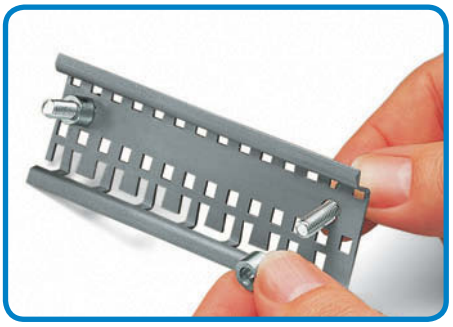


Carrier with grounding foot
45 mm/1.772 in long, busbar parallel to the rail
Item No. 790-114

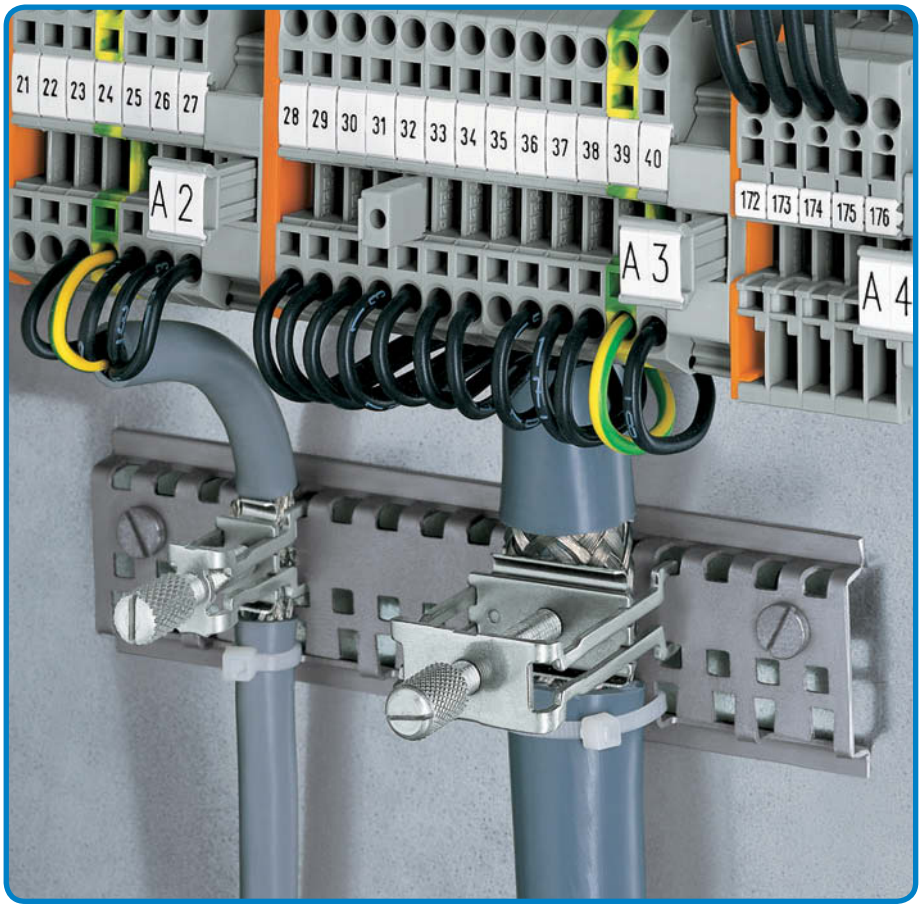


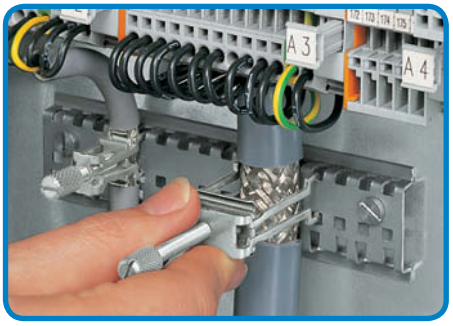
Carrier with 2 grounding feet
125 mm/4.921 in long, busbar parallel to the rail
Item No. 790-115

for all sizes of shield (screen) clamping saddles

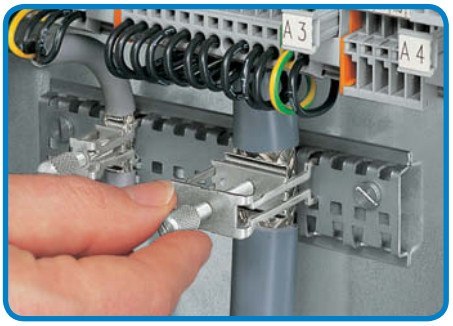


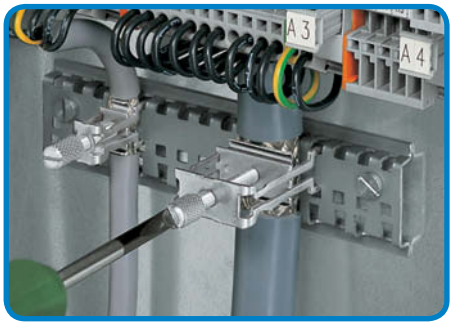
Using a stand off
with a special slotted carrier rail





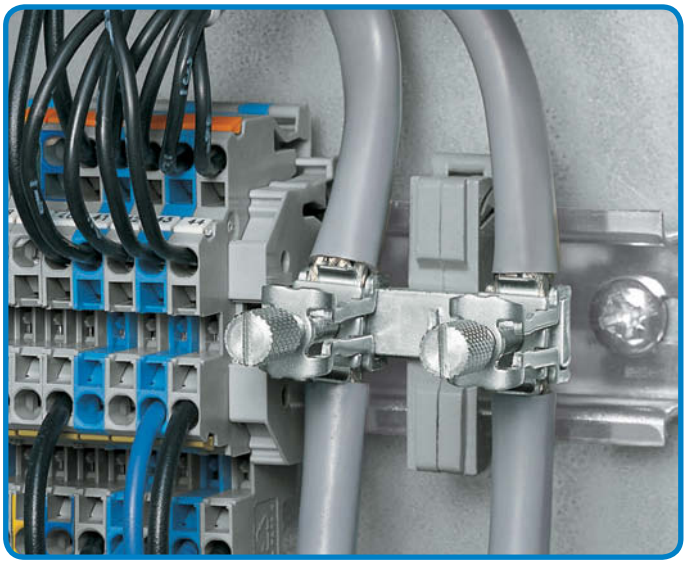
Addition of a shield (screen) clamping saddle.



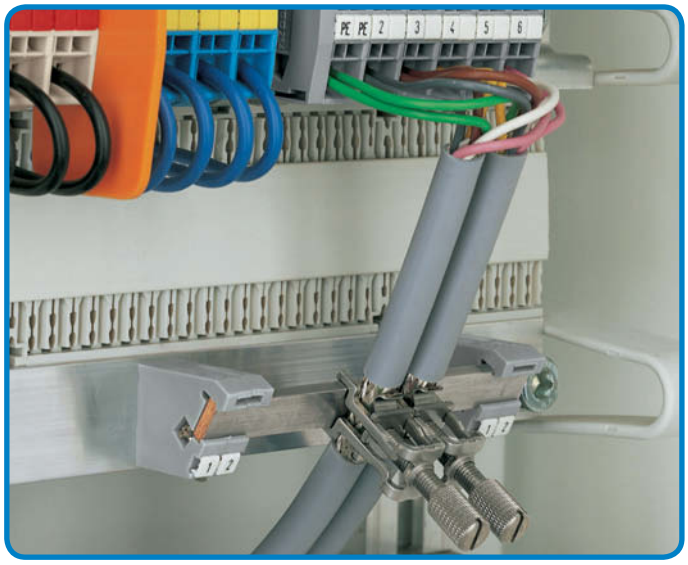


Tightenning/releasing a shield (screen) clamping saddle. To attach the clamping saddle, tighten the knurled screw. To remove, unscrew until ratcheted mechanism is released, then slightly tip saddle and remove the clamping saddle.

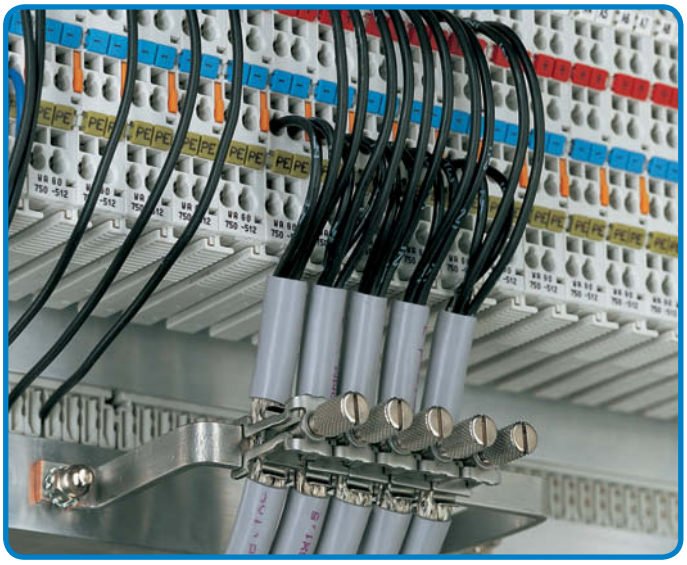
Mounting Options Based on Application



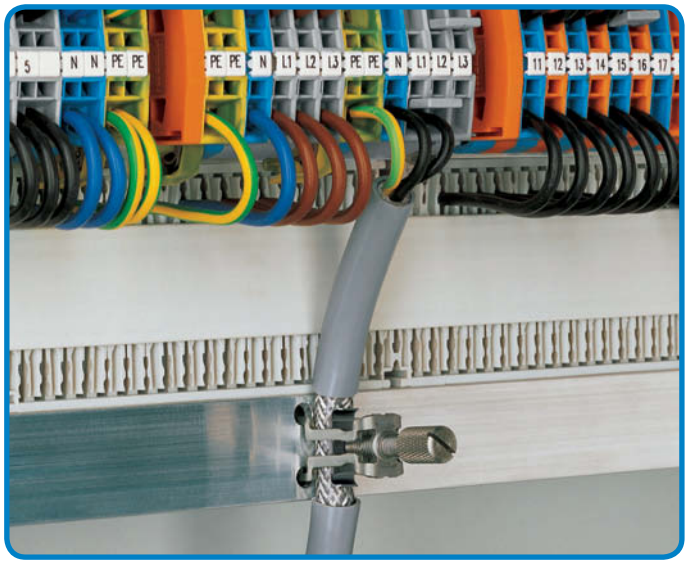
– carrier with grounding foot, busbar parallel to the rail



– isolated mounting carriers for a common shield (screen) reference potential, independent of the housing potential

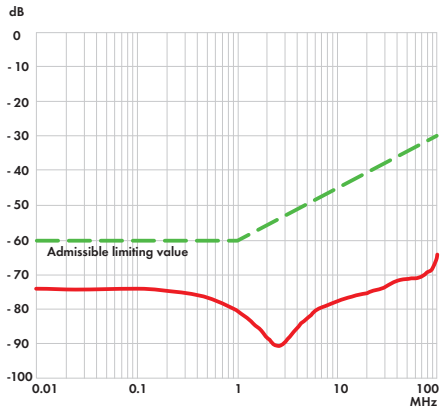


– U-shaped copper busbar 10 mm (0.394 in) x 3 mm (0.118 in)



– snap into any metal plate up to max. thickness 3 mm/0.118 in

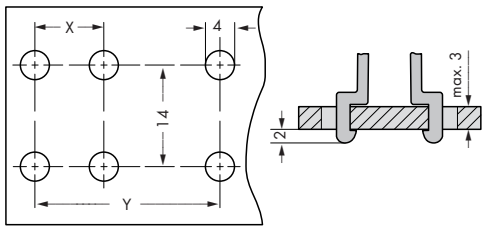
Negative shield (screen) attenuation



Shield (screen) clamping saddle size

Distance X	
11 mm	9.5 mm

Distance Y	
19 mm	17.5 mm
27 mm	25.5 mm
43 mm	41.5 mm



Hole dimensions for panel mounting

The WAGO shield (screen) connecting system is highly effective because the clamping unit can be brought very close to the unshielded part of the cable. Additionally, the spring material is part of the clamping saddle, giving good electrical connection and compensating for any deformation in the braiding. The system also acts as a partial strain relief.

Shield (Screen) Clamping Saddles and Shield (Screen) Clamps

Shield (screen) clamping saddles





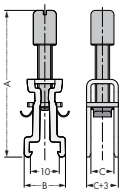
Description		Diameter of Connectable Conductor	Item No.	Pack. Unit
Shield (screen) clamping saddle,	11 mm/0.433 in wide	up to 8 mm/0.315 in	**790-108**	50 (5x10)
incl. knurled screw	19 mm/0.748 in wide	7 mm/0.276 in to 16 mm/0.63 in	**790-116**	50 (5x10)
	27 mm/1.063 in wide	6 mm/0.236 in to 24 m /0.944 in	**790-124**	50 (5x10)
	43 mm/1.693 in wide	22 mm/0.866 in to 40 mm/1.575 in	**790-140**	50 (5x10)

Note: Not for ground connections!
Recommended tightening torque: 0.5 Nm
Assembly: The shield (screen) clamping saddle is shipped ready for direct connection to the busbar 10 mm (0.394 in) x 3 mm (0.118 in) or to a drilled mounting plate. After connection, tighten the knurled screw to complete the installation.
Removal: To remove a shield (screen) clamping saddle, unscrew until ratcheted mechanism is released, then slightly tip saddle and remove the clamping saddle.

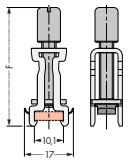
Assembly

Removal

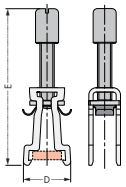
Installation position delivery



Closed position



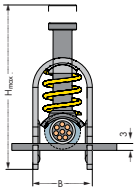
Removal position

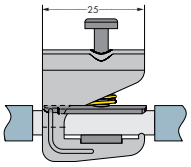


Dimensions in mm

Item No.	A	B	C	D	E	F
790-108	51	15	8	16	55	42
790-116	53	15	16	16	57	45
790-124	78	15	24	16	83	58
790-140	97	15	40	16	100	73

Shield (screen) clamps



Description		Diameter of Connectable Conductor	Item No.	Pack. Unit
Shield (screen) camps	H_{max} 40 mm, B 10 mm	1.5 mm/0.059 in to 6.5 mm/0.256 in	**791-107**	50
	H_{max} 47 mm, B 17 mm	5 mm/0.197 in to 11 mm/0.434 in	**791-111**	50
	H_{max} 63 mm, B 23 mm	10 mm/0.394 in to 17 mm/0.670 in	**791-117**	50
	H_{max} 78 mm, B 30 mm	16 mm/0.631 in to 24 mm/0.946 in	**791-124**	50

Note: Not for ground connections!

Accessories for Shield (Screen) Clamping Saddles and Shield (Screen) Clamps

Carrier with grounding foot

Description		Item No.	Pack. Unit
Carrier with grounding foot	bar 90° to the rail, 10 mm (0.394 in) x 3 mm (0.118 in), bar a. foot – Cu with tin plating, 45 mm/1.774 in long	**790-113**	25
Carrier with grounding foot	bar parallel to the rail, 10 mm (0.394 in) x 3 mm (0.118 in), bar a. foot – Cu with tin plating, 15 mm/0.591 in long	**790-110**	25
Carrier with grounding foot	bar parallel to the rail, 10 mm (0.394 in) x 3 mm (0.118 in), bar a. foot – Cu with tin plating, 25 mm/0.986 in long	**790-112**	25
Carrier with grounding foot	bar parallel to the rail, 10 mm (0.394 in) x 3 mm (0.118 in), bar a. foot – Cu with tin plating, 45 mm/1.774 in long	**790-114**	25
Carrier with 2 grounding feet	bar parallel to the rail, 10 mm (0.394 in) x 3 mm (0.118 in), bar a. foot – Cu with tin plating, 125 mm/4.929 in long	**790-115**	25

Suitable shield (screen) clamping saddle or shield (screen)
clamps for carrier with grounding foot 790-110 = 790-108;
Carrier with grounding foot 790-112 = 790-108, 790-116, 791-111, 791-117;
Carrier with grounding foot 790-114 = 790-108, 790-116, 790-124, 790-140, 791-107, 791-111, 791-117, 791-124

Carrier rail

Stand off

Shield termination

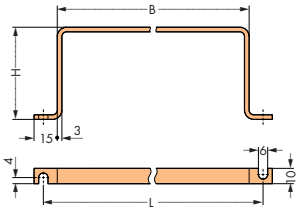
Description		Item No.	Pack. Unit
Carrier rail	special slotted, 1000 mm/3'.3" long, Cu with tin plating, special lengths on request	**790-145**	1
Stand off	for special slotted carrier rail, use M 5 size screw	**790-144**	200 (2x100)
Shield termination including cable tie for shield			
diameter 5 mm /0.197 in to 10 mm /0.394 in	55 mm/2.169 in long	**709-350**	100 (4x25)
	150 mm/ 5.914 in long	**709-352**	100 (4x25)

Straight busbar

Isolated mounting foot

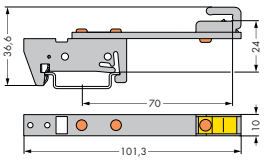
Isolated mounting foot

U-shaped busbar

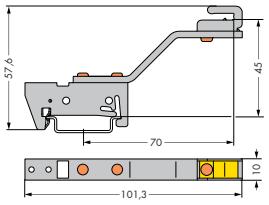


Description		Item No.	Pack. Unit
Straight busbar, 10 mm (0.394 in) x 3 mm (0.118 in), bar – Cu with tin plating	1000 mm/3'.3" long	**210-133**	20 (20x1)
	30 mm/1.181 in long	**790-133**	20 (20x1)
	50 mm/1.969 in long	**790-134**	20 (20x1)
Isolated mounting foot	for busbar, with standard screw M 4 x 8 mm	**790-100**	50 (2x25)
Isolated mounting foot	for busbar, with sheet metal screw (3.5 x 9) mm	**790-101**	50 (2x25)
U-shaped busbar, 10 mm (0.394 in) x 3 mm (0.118 in), Cu with tin plating	Dimensions (W x H x L) mm; 63 x 60 x 83	**790-190**	25 (5x5)
	Dimensions (W x H x L) mm; 100 x 60 x 118	**790-191**	25 (25x1)
	Dimensions (W x H x L) mm; 63 x 35 x 83	**790-192**	25 (5x5)
	Dimensions (W x H x L) mm; 100 x 35 x 118	**790-193**	25 (25x1)

Busbar carrier

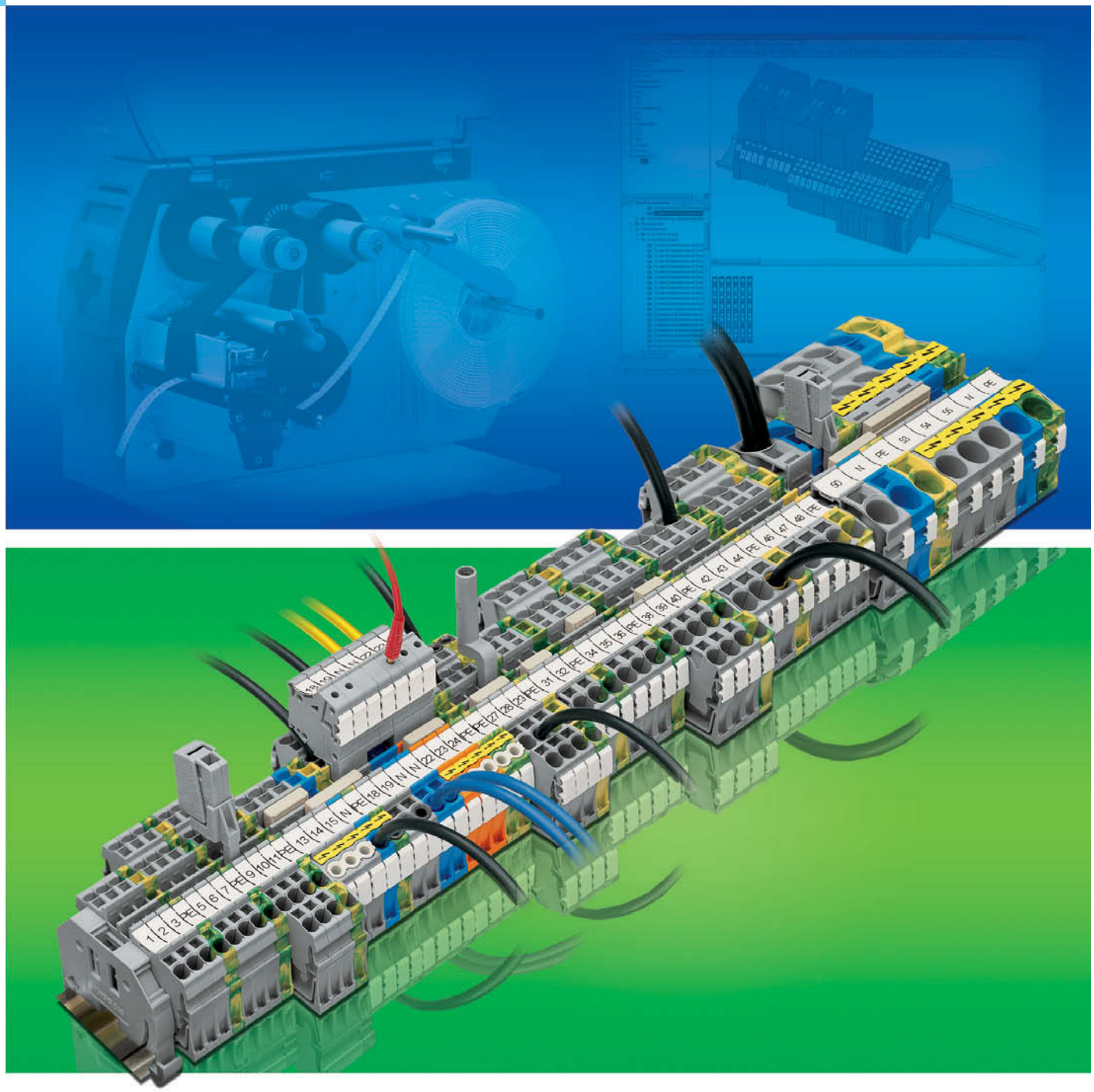


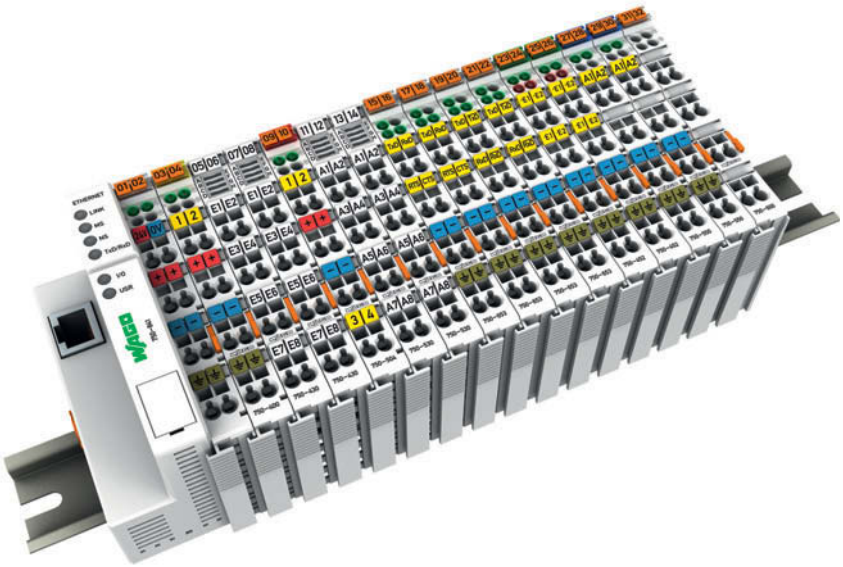
Busbar carrier, angulate



Description		Item No.	Pack. Unit
Busbar carrier	for busbars, 10 mm (0.394 in) x 3 mm (0.118 in) – Cu with tin plating	**790-300**	10
Busbar carrier, angulate	for busbars, 10 mm (0.394 in) x 3 mm (0.118 in) – Cu with tin plating	**790-301**	10

ProServe
Designing, Assembling and Marking



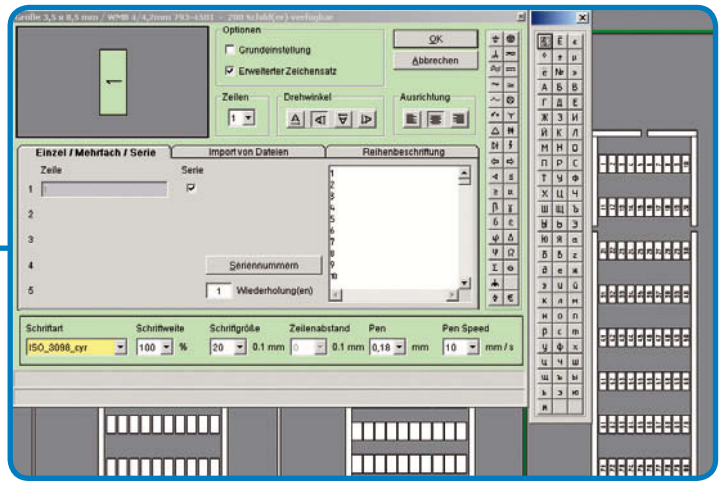


The benefits of ProServe are at your disposal every day. With unique features such as accuracy checking, ProServe does a lot of the work for you, therefore saving you time and money.

Immediate access to professional and sophisticated services allows for error-free applications, higher flexibility in your daily business and better customer service. With 50 years of WAGO expertise at your disposal, put ProServe to work for you in your next application.

ProServe Marking: Now Easier than Ever

Configuration and marking of rail assemblies and I/O nodes, stand-alone or in combination with CAE systems.



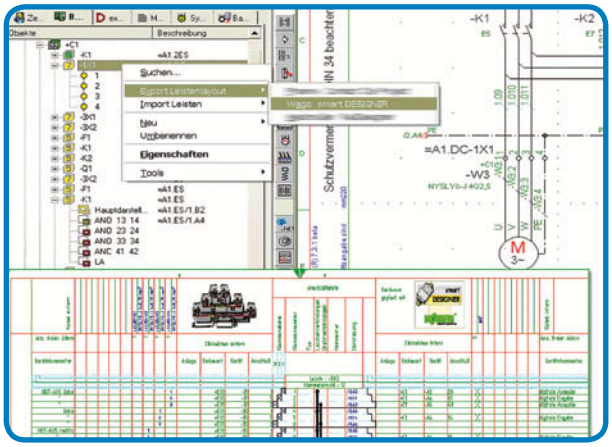
smartMARKING

- Extensive import functions from CAE systems, MS Offi ce and WAGO smartDESIGNER
- WYSIWYG marking
- Automatic plotter calibration
- Extensive library including marker carriers
- Symbol library
- Text length checking
- Diff erent languages available
- Output of East European characters
- Fully compatible with EG 450 engraving unit
- Direct output on thermal transfer printer
- Creation of custom markers for the engraver/plotter

smartMARKING

ProServe: Open for All

One for all: WAGO ProServe has an interface suitable for most of the standard CAD/CAE systems.

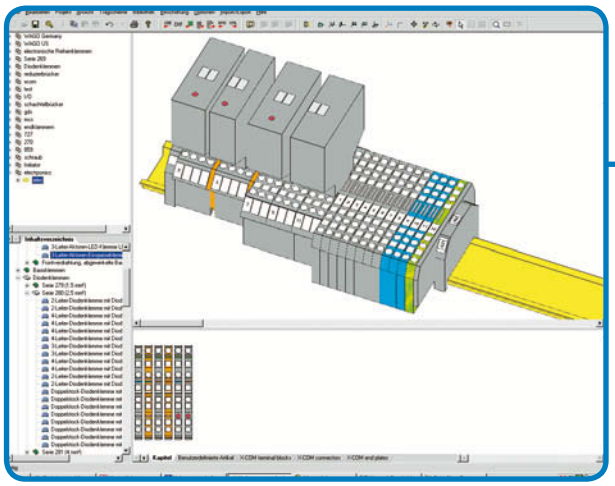


CAE

System	Manufacturer	Article master data	Macros	ASCII data to smart-DESIGNER	XML data to smart-DESIGNER	XML data from smart-DESIGNER	XML data from product-LOCATOR
ELEKTROCAD	Aucos	●	●		●	●	●
Engineering Base	Aucotec	●	●		●	●	●
ELCAD	Aucotec	●	●	●	●	●	●
RUPLAN	Aucotec			●			
E3 series	CIM Team	●	●	●	●	●	
Comos®	Innotec	●			●	●	
ecscad	ECS/MuM	●	●		●	●	
ePLAN	EPLAN	●	●	●	●	●	●
see electrical CADdy++	Ige-xao	●					
TCS	TCS	●			●	●	
WSCAD electronic GmbH	WS CAD	●	●		●		

ProServe: Planning at a New Level

WAGO ProServe means finding instead of searching, drawing instead of scribbling. ProServe navigates safely through the WAGO range of products, generates parts lists and assembly drawings and even 3D views.



smart DESIGNER

smartDESIGNER and productLOCATOR

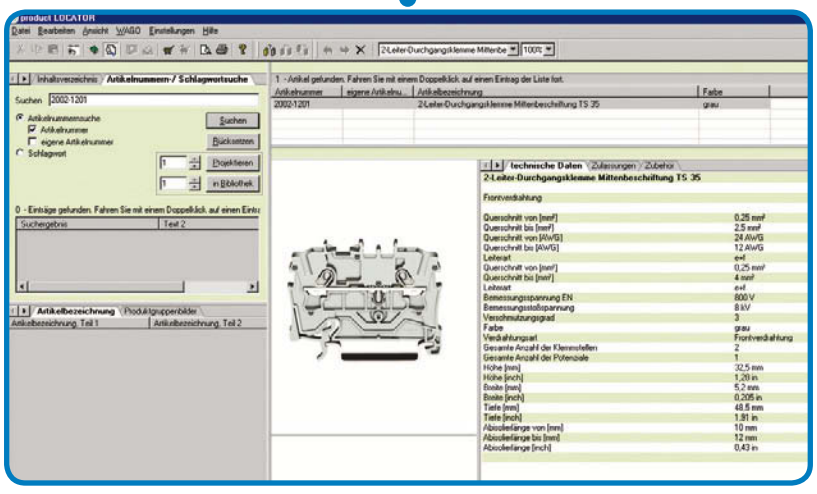
- XML interfaces to CAE and M CAD programs
- Output in PDF and HTML
- Diff erent search functions allow for quick selection of products
- Creation of part lists including product pictures and custom part numbers
- Complex rail assemblies can be easily designed in 3D
- Facility to create custom part numbers
- Creation of custom articles to design third-party products
- Default parts (favourites) can be defi ned individually for time saving design
- Intelligent, user-optimized accuracy check features
- 15 languages available
- 16,000 items

Marking:

- Direct creation and output of marking data to plotter or thermal transfer printer

smart DESIGNER

product LOCATOR

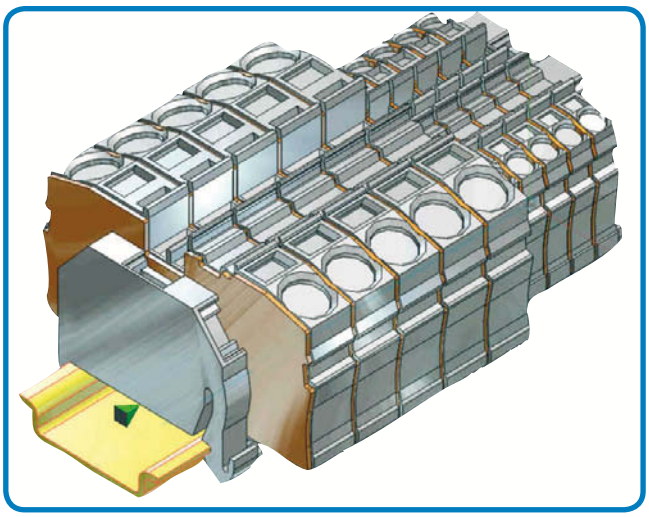


ProServe: Thinking in All Dimensions

Rail-mounted terminal blocks are becoming even more efficient and more complex: Multilevel as well as base receptacle terminal blocks with different conductor entry angles can no longer be represented by a simple view. The 3D view provides a clear representation during planning and assembly.
Use our data in your system – now also online.

DXF - Step - IGS - DWG

CAD



- **Create your 2D or 3D CAD files from WAGO ProServe. Now also online!**

Benefi ts in overview:

- Quick design
- Quick ordering
- User-friendly
- Extensive and user-specific documentation
- Network compatibility
- Several software products on a single CD (smartDESIGNER, productLOCATOR, smartMARKING, WAGO SCRIPT)
- A price list is included

...all for free!

Thermal Transfer Printer

WAGO TP 343 and TP 298

Description	Item No.	Pack. Unit
Thermal Transfer Printer TP 343	**258-343**	1
Resolution 300 dpi, incl. ProServe Software for 2009 and 709 Series marking strips		

Technical Data	
Printing method	Thermal/thermal transfer
Printhead system	Thin-film transfer head
Print resolution	300 dpi
Print speed	up to 76 mm/sec.
Print width	6 - 104 mm (0.25" - 4.09")
Print length	up to 990 mm (39")
RAM memory	2 MB DRAM, 1 MB Flash
Interfaces	Parallel Centronics (LPT), RS-232 (COM), USB, ETHERNET 10/100 Base T
Sensors	Label sensor (material end, foil end, bottom reflective sensor)
Other	2 cardboard cores (104 mm) for ink ribbon rewinder, Operating instructions in German and Englisch
Voltage supply	Universal power supply unit
Operating voltage	100 V ... 240 V AC/ 50 Hz ... 60 Hz
Dimensions (mm) W x H x L	230 x 200 x 290 (Dimension with winder ca. 450 mm)
Enclosure	Double-walled plastic
Weight	1000 g
Safety Approvals	CE, FCC Class A, UL, CUL, TUV
Accessories	1 x USB cable; 1 x ETHERNET cable; unwinder set; marking strips (1 x 2009-110); ink ribbon (1 x 258-145)

Description	Item No.	Pack. Unit
Thermal Transfer Printer TP 298	**258-298**	1
Resolution 300 dpi, incl. ProServe Software and Print Roller (258-178) for WMB Inline and 2009 and 709 Series marking strips		

Technical Data	
Printing method	Thermal/thermal transfer
Printhead system	Thick-film
Print resolution	300 dpi
Print speed	100 mm/sec.
Print width	108.4 mm
See-through/reflective sensor	standard
Processor 32 Bit ColdFire/clock rate	64 MHz
RAM memory	8 MB RAM
Program memory	4 MB Flash
Slot for memory card	CompactFlash Type 1
Interfaces	ETHERNET 10/100 Base T, RS-232 (COM), USB
Accessories (optional)	Cutter, external unwinder, external rewinder, memory card Compact Flash Type 16-512 MB
Operating voltage	100 V ... 240 V AC/ 50 Hz ... 60 Hz, PFC
Dimensions (mm) W x H x L	242 x 274 x 446
Weight	10000 g
Operating temperature	10 °C ... 35 °C
rel. humidity	30 % ... 85 %
Safety Approvals	CE, FCC class 1
Accessories	1 x USB cable; 1 x serial cable; marking strips (1 x 2009-110); ink ribbon (1 x 258-149)

Application table for ink ribbon/marking accessories/printer

Item No.	Width	Ink Ribbon	Marking Accessories	Printer
258-143	60 mm	resin/wax	Labels (paper)	all types
258-144	100 mm	resin/wax	Labels (paper) Wire Marking 211-155 / 211-156	all types
258-145	38 mm	resin	Marking Strip Series 2009 2009-xxx Marking Strip Series 709 709-xxx WMB Inline (not printable with TP 343)	TP 298 & TP 343
258-149	50 mm	resin	Marking Strip Series 2009 2009-xxx Marking Strip Series 709 709-xxx WMB Inline (not printable with TP 343)	TP 298+
258-150	76 mm	resin	Cable Marking 211-111 and 211-121 Labels (polyester) up to 76 mm	all types
258-157	100 mm	resin	Labels (polyester) up to 100 mm	all types

Accessories

Ink ribbon for labels

Ink ribbon for marker strips

Description		Item No.
Ink ribbon for labels	resin/wax, width 60 mm x 300 m	**258-143**
	resin/wax, width 100 mm x 300 m	**258-144**
Ink ribbon for marker strips and WMB Inline	resin, 38 mm x 300 m	**258-145**
	resin, 50 mm x 300 m	**258-149**
Ink ribbon for cable marking	76 mm wide x 300 m	**258-150**
	100 mm wide x 300 m	**258-157**

All ink ribbons are suitable for TP 298 and TP 343 printers. For detailed ordering information, please refer to the **"Application table for ink ribbon/marking accessories/printer".**

External coil mounting system

Cutter TP 298

Spare roller TP 298

Description		Item No.
External coil mounting system	for WMB Inline 8,000 markers (2009-135)	**258-169**
Cutter TP 298		**258-161**
Spare roller TP 298 for labels	(up to item no. 40.000)	**258-162**
Spare roller TP 298 for labels	(up to item no. 40.000)	**258-177**
Spare roller TP 298 for WMB Inline	(up to item no. 40.000)	**258-166**
Spare roller TP 298 for WMB Inline	(up to item no. 40.000)	**258-178**
Carrying case for TP 298		**258-171**
Carrying case for TP 343		**258-342**
Retractable handle for carrying case TP 298 / TP 343		**258-173**

WMB Inline

Marking strips

Description		Item No.
WMB Inline, pitch 4 mm, stretchable, 4 mm ... 4.2 mm, on reel	white, 2000 pieces	**2009-114**
WMB Inline, pitch 5 mm, stretchable, 5 mm ... 5.2 mm, on reel	white, 1500 pieces	**2009-115**
WMB Inline, pitch 5 mm, stretchable, 5 mm ... 5.2 mm, on reel	white, 8000 pieces	**2009-135**
Marking strips for TOPJOB®S Series, white, plain, 11 mm wide	50 m coil	**2009-110**
Marking strips for 870, 869, 862, 270 Series white, plain, 7.5 mm wide	50 m coil	**709-178**
Marking strips for 870, 869, 862, 270 Series transparent, plain, 7.5 mm wide	50 m coil	**709-177**

Accessories

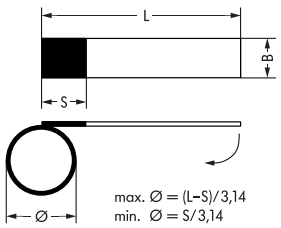
Marker card (12 mm) for TT Printer

Marker card (12 mm) for Plotter

Labels on roll

Labels on DIN A4 sheets

Dimensions of self-laminating label



Description		Item No.
Marker card for TT Printer	23 mm	**211-121**
	12 mm	**211-111**
Marker card for Plotter	23 mm	**211-120**
	(258-370 Carrier Plates are required for plotting)	
	12 mm	**211-110**
	(258-370 Carrier Plates are required for plotting)	
Labels on rollfor thermal transfer printer	Marker surface "S"=8 mm, "B"=18 mm, "L"=35 mm for max. cable Ø 9 mm,	**211-155**
	9.000 labels per roll	
	Marker surface "S"=13 mm, "B"=23 mm, "L"=51 mm for max. cable Ø 12 mm,	**211-156**
	5.000 labels per roll	
Labels on DIN A4 sheetsfor laser printer	Marker surface "S"=9 mm, "B"=17 mm, "L"=35 mm for max. cable Ø 8 mm,	**211-150**
(258-383 Carrier Plates are required for plotting)	70 labels per roll	
	Marker surface "S"=13 mm, "B"=21 mm, "L"=56 mm for max. cable Ø 14 mm,	**211-151**
	32 labels per roll	
Marking sleeve* 12 mm, for wire Ø	1.6 mm ... 3.2 mm or 0.25 mm² ... 1.5 mm²	**211-112**
	2.2 mm ... 4.5 mm or 0.5 mm² ... 4 mm²	**211-113**
	3.7 mm ... 5.9 mm or 2.5 mm² ... 6 mm²	**211-114**
	4.8 mm ... 7.5 mm or 6 mm² ... 16 mm²	**211-115**
Marking sleeve* 23 mm, for wire Ø	1.6 mm ... 3.2 mm or 0.25 mm² ... 1.5 mm²	**211-122**
	2.2 mm ... 4.5 mm or 0.5 mm² ... 4 mm²	**211-123**
	3.7 mm ... 5.9 mm or 2.5 mm² ... 6 mm²	**211-124**
	4.8 mm ... 7.5 mm or 6 mm² ... 16 mm²	**211-125**
Marking sleeve* for cable tie	23 mm, for wires from 10 mm²	**211-129**
Cable tie (2.5 x 100) mm		**807-090/101-100**
Label for I/O marking	Plotter, 12 x 7 mm	**211-211**
	(258-371 Carrier Plates are required for plotting)	
Marking strips	15 mm, white 50 m roll	**210-701**
Receptacle for marking strips	transp. 1 m long	**709-120**
Continuous label	3 mm, white 12 lengths at 25 m	**210-732**
Label roll	70 x 100 mm, white 500 pieces/reel	**210-703**
Label roll	70 x 100 mm, silver 500 pieces/reel	**210-704**
Label roll	6 x 15 mm, white 3000 pieces/reel	**210-705**
Label roll	6 x 15 mm, yellow 3000 pieces/reel	**210-705/000-002**
Label roll	9 x 15 mm, white 3000 pieces/reel	**210-706**
Label roll	9 x 15 mm, yellow 3000 pieces/reel	**210-706/000-002**
Label roll	8 x 20 mm, white 3000 pieces/reel	**210-707**
Label roll	8 x 20 mm, yellow 3000 pieces/reel	**210-707/000-002**
Label roll	9.5 x 25 mm, white 3000 pieces/reel	**210-708**

Engraving Plotter with Engraver EG 450

Plotter IP 350 A3 / Plotter IP 350 A4

Description	Item No.	Pack. Unit
Plotter IP 350 A3	**258-350**	1
incl. ProServe Software		
Plotter IP 350 A4	**258-451**	1
incl. ProServe Software		

Technical Data	
Plot area	440 mm x 305 mm (258-350)
	220 mm x 305 mm (258-451)
Interfaces	paralell (centronics); USB 1.1
Language	based on HP-GL 7475A
Data buffer	16 MB
Speed	max. 400 mm/sec.
Drive system	two phase stepper motor
Pen storage unit	max. 4 pens with best possible sealing system
Plotter pen	Special plotter pens with HP receptacle
Addressable resolution	0.01 mm
Repeatability (accuracy)	0.05 mm
Repeatability when changing the pen	0.05 mm using pens of best quality
Voltage supply	via separate desktop power supply unit
	equipped with exchangeable supply line
Operating voltage	120 V ... 240 V AC / 50 Hz ... 60 Hz
Voltage range	90 V ... 264 V AC
Current consumption (internal)	0.3 A max. at 220 V AC
Dimensions (mm) W x H x L	125 x 660 x 440
Weight	11069 g
Operating temperature	10 °C ... 35 °C
rel. humidity	35 % ... 75 %
Safety Approvals	acc. to UL-UL1950 CSA-950/VDE
	EN60950
Immunity to interference	acc. to FCC Class B FCC Part 15 and VDE
	Class B EN 55022

Description	Item No.	Pack. Unit
EG 450 Engraver	**258-450**	1
as an extension of IP 350 Flat Plotter. Consisting of "EC 450" Control Unit and "VC 450" Vacuum Cleaner, including graver 0.3 mm + 0.4 mm		

Technical Data	
1. Engraving spindle	
Speed	min. 5000 rpm, max. 50000 rpm
Torque	6 Ncm
Frequency	83 Hz ... 830 Hz
Energy consumption max.	60 W
Collets	Diameter of mandrel 3 mm
Tensioning mechanism	Head tension
Run-out with collet	0.03 mm
Motor type	three-phase, asynchronous, brushless
Enclosure	Aluminium
Clamping diameter	25 mm
Type of ball bearing	Steel, permanent lubrication
Cooling system	integrated fan
Field of application	exclusively engraving
Operating time of bearing	min. 1000 hrs if handled properly
Notice: Never clean engraving spindle using compressed air, do not use lubricants when engraving.	
2. Control unit VEB 500	
Operating voltage	100 V ... 240 V AC / 50 Hz ... 60 Hz
3. Vacuum cleaner VC 500	
Vacuum cleaner bag	Typ Y98
General Specifications	
Dimensions (mm) W x H x L	240 x 290 x 315 Control unit + Vacuum cleaner (an top of each other)
Weight	Engraving spindle + Control unit + Vacuum cleaner + Accessories 8000 g

Accessories

Full plotter package

Description		Item No.
Version 1	1 plotter incl. power supply and centronics cable; 1 ProServe Software;	**258-350/000-001**
	4 WMB carrier plates 5 mm/0.197 in; 20 WMB marker cards 5 mm/0.197 in;	
	1 plotter pen, line width 0.25 mm disposable; 1 plotter pen, line width 0.35 mm disposable	
Version 2	1 plotter incl. power supply and centronics cable; 1 ProServe Software;	**258-350/000-002**
	4 WSB carrier plates; 20 WSB marker cards;	
	1 plotter pen, line width 0.25 mm disposable; 1 plotter pen, line width 0.35 mm disposable	
Version 3	1 plotter incl. power supply and centronics cable; 1 ProServe Software;	**258-350/000-003**
	2 WMB (5 mm/0.197 in) carrier plates; 2 miniature WSB carrier plates; 10 WMB (5 mm/0.197 in) marker cards; 10 miniature WSB marker cards;	
	1 plotter pen, line width 0.25 mm disposable; 1 plotter pen, line width 0.35 mm disposable	
Version 4	1 plotter incl. power supply and centronics cable; 1 ProServe Software;	**258-350/000-004**
	1 WMB carrier plate 5 mm/0.197 in; 1 WSB carrier plate 5 mm/0.197 in; 1 miniature WSB carrier plate; 1 WSB carrier plate 4 mm/0.157 in;	
	5 WMB marker cards 5 mm/0.197 in; 5 WSB marker cards 5 mm/0.197 in; 5 miniature WSB marker cards; 5 WMB marker cards 4 mm/0.157 in;	
	1 plotter pen, line width 0.25 mm disposable; 1 plotter pen, line width 0.35 mm disposable	

Plotter is suitable for marking any type of WAGO marker card or competitor's markers. Includes the ProServe DVD-ROM and WAGO smartMARKING software.

WAGO plotter pen (disposable) 0.18 mm line width

WAGO plotter pen (disposable) 0.25 mm line width

WAGO plotter pen (disposable) 0.35 mm line width

Service kit

Description		Item No.
WAGO plotter pen	line width 0.18 mm/0.007 in	**258-226**
	line width 0.25 mm/0.010 in	**258-227**
	line width 0.35 mm/0.014 in	**258-228**
	line width 0.50 mm/0.020 in	**258-229**
WAGO ink cartridges	black, for permanent marking, not refillable (5 x 1 ml)	**258-141**
WAGO plotter pen (disposable)	line width 0.18 mm/0.007 in	**258-326**
	line width 0.25 mm/0.010 in	**258-327**
	line width 0.35 mm/0.014 in	**258-328**
Cover		**258-146**
Service kit	(4 alternative pen storage units)	**258-147**
WAGO cleaning set	suitable for cleaning all EKS Pens	**258-139**
WAGO pen cleaner		**258-140**
Graver set	line width 0.2/0.3/0.4/0.5/0.7/1.0 mm	**258-452**
Graver	line width of graver 0.2 mm	**258-452/000-002**
	line width of graver 0.3 mm	**258-452/000-003**
	line width of graver 0.4 mm	**258-452/000-004**
	line width of graver 0.5 mm	**258-452/000-005**
	line width of graver 0.7 mm	**258-452/000-007**
	line width of graver 1.0 mm	**258-452/000-010**
Vacuum cleaner bag for Engraver EG 450		**258-457**

The WAGO Plotter Pen is suitable for any kind of smooth surfaces. No additional adapter is required.

Accessories

Marker card carrier plates for plotter IP 350

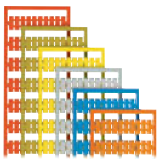
Description		Item No.
Carrier plates for marker cards	WSB 5 mm/0.197 in (209-501)	**258-361**
	WSB 4 mm/0.157 in (209-701)	**258-362**
	Miniature WSB (248-501)	**258-363**
	Group marking carriers (209-112)	**258-364**
	T-marking strips (209-290)	**258-365**
	WCB (249-200)	**258-366**
	WTB (799-501)	**258-367**
	WMB 5/5.2 mm (793-5501); WMB 4/4.2 mm (793-4501)	**258-368**
	Marker tags (209-199 + 209-200)	**258-369**
	Marker strips (2009-110 + 2009-130 and 790-...)	**258-410**
	WMB-Inline (2009-115 + 2009-135)	**258-412**
Carrier plates for murrplastik	MP-400; KS 4/12, 4/18, 4/23, 4/30	**258-370**
	MP-401; KES, KLG, KMR, KPX, KS 15x17/27/49/67, KSA, KSF, KSI, KSK, KSO, KSS, KTE, KWI, SKS, WGO, KAB	**258-371**
	BS 5/6	**258-397**
	KPX	**258-396**
	KSEX; 10/500	**258-470**
	KSEX; 18/500	**258-471**
Carrier plates for Conta-Clip	Universal	**258-398**
Carrier plates for Phoenix	ZBM	**258-372**
	ZB	**258-373**
	ZBN	**258-374**
	ZBFM	**258-375**
	BNZ	**258-377**
	BN-ZB	**258-378**
	SS-ZB	**258-379**
	LBHZ	**258-380**
	PAB	**258-381**
	GPE	**258-382**
Universal Carrier plates	DIN A4	**258-383**
	DIN A3	**258-472**
Carrier plates for Weidmüller	MC Universal	**258-387**
	MC SF4-6	**258-388**
Carrier plates for Wörtz/Allen Bradley	Universal	**258-389**
Carrier plates for Möller	XB M22-XST	**258-390**
Carrier plates for Partex	PA+1	**258-391**
	PA+2	**258-392**
	PK2 PVC	**258-393**
	PA+ 2	**258-399**
Carrier plates for ABB Entrelec	Universal	**258-394**
	Siemens SPS	**258-473**

Marking System

WMB Multi marking system

Miniature quick marking card

Colored marker cards



WMB Inline

Description		Item No.	Item No.	Pack. Unit
WMB Multi marking system for terminal block width 3.5 mm	plain	**793-3501**		5 cards
WMB Multi marking system for terminal block width 4 - 4.2 mm strechable 4 - 4.2 mm	plain	**793-4501**		5 cards
WMB Multi marking system for terminal block width 5 - 17.5 mm strechable 5 - 5.2 mm	plain	**793-5501**		5 cards
Miniature WSB quick marking system for terminal block width 5 - 17.5 mm	plain	**248-501**		5 cards
Additional item no. for colored marker cards	yellow		**.../000-002**	5 cards
	red		**.../000-005**	5 cards
	blue		**.../000-006**	5 cards
	gray		**.../000-007**	5 cards
	orange		**.../000-012**	5 cards
	light green		**.../000-017**	5 cards
	green		**.../000-023**	5 cards
	violet		**.../000-024**	5 cards
WMB Inline, pitch 4 mm, stretchable, 4 mm ... 4.2 mm, on reel	white, 2000 pieces	**2009-114**		
WMB Inline, pitch 5 mm, stretchable, 5 mm ... 5.2 mm, on reel	white, 1500 pieces	**2009-115**		1 Coil
WMB Inline, pitch 5 mm, stretchable, 5 mm ... 5.2 mm, on reel	white, 8000 pieces	**2009-135**		1 Coil

Separation of a strip from the WMB Marker card

Stretching of a strip, stretchable from 4 mm up to 4.2 mm, stretchable from 5 mm up to 5.2 mm

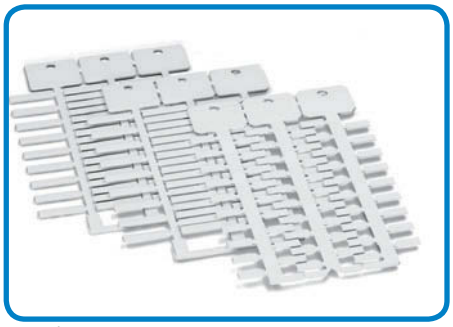
Group marker carrier

Group marker carrier adjustable in height 249-118 for end stops

Description		Item No.	Pack. Unit
Group marker carrier adjustable in height (43.5 mm ... 60 mm), for end stops 249-116 and 249-117	for 1 marker card or self-adhesive label and transparent cover protection	249-119 ❶	50 (2x25)
	for 2 WSB Quick markers or 1 x continuous marking strip	249-118 ❷	100 (4x25)
	with marker surface 41 mm/1.61 in, 6 mm/0.23 in wide	249-120	50 (2x25)
Group marker carrier	for up to 3 WMB markers, 15 mm/0.591 in wide	209-140 ❸	50 (2x25)
Group marker carrier	for snapping into screwless end stops, 10 mm/0.394 in wide	209-112 ❹	50 (1x50)
Marker card	from white cardboard, for self-marking, 100 markers per sheet	209-113 ❺	1 (1x1)
Protection cover	transparent	209-114 ❻	50 (1x50)

WAGO Wire and Cable Marking

Wire marking



The following marker cards are available:
Marker cards for plotter marking ...

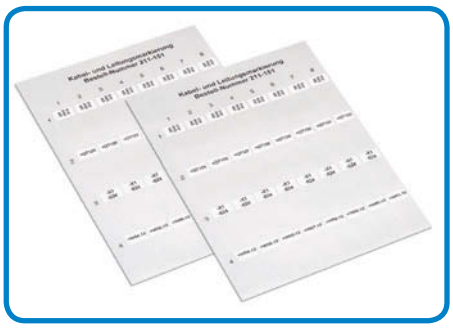
... or marker cards on roll
for thermal transfer printing

Slide the marker card into the marking sleeve receptacle.
Changing the marking is also possible after the wire has been connected

Remove the rest of the card by twisting it off

Fix the 211-129 marking sleeve using cable ties to individual wire or cable

Cable marking



Self-laminating labels are available on A4 sheets for the laser printer (plotter) ...

... or are supplied on roll for the thermal transfer printer

Remove the printed label from the sheet or roll and wrap it around the wire or cable.
The transparent laminate protects the marking

WAGO Wire and Cable Marking

Marking sleeve 12 mm

Marking sleeve 23 mm

Marking sleeve 23 mm, for cable tie

Description		Item No.	Pack. Unit
Marking sleeve 12 mm, for wire Ø	1.6 mm ... 3.2 mm or 0.25 mm² ... 1.5 mm²	**211-112**	2000
	2.2 mm ... 4.5 mm or 0.5 mm² ... 4 mm²	**211-113**	2000
	3.7 mm ... 5.9 mm or 2.5 mm² ... 6 mm²	**211-114**	1000
	4.8 mm ... 7.5 mm or 6 mm² ... 16 mm²	**211-115**	1000
Marking sleeve 23 mm, for wire Ø	1.6 mm ... 3.2 mm or 0.25 mm² ... 1.5 mm²	**211-122**	2000
	2.2 mm ... 4.5 mm or 0.5 mm² ... 4 mm²	**211-123**	2000
	3.7 mm ... 5.9 mm or 2.5 mm² ... 6 mm²	**211-124**	1000
	4.8 mm ... 7.5 mm or 6 mm² ... 16 mm²	**211-125**	1000
Marking sleeve for cable tie	23 mm, for wires from 10 mm²	**211-129**	1000
Cable tie (2.5 x 100) mm		**807-090/101-100**	1000

Marker card (12 mm) for Printer

Marker card (12 mm) for Plotter

Marker card (23 mm) for Printer

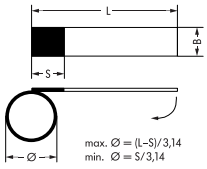
Marker card (23 mm) for Plotter

Description		Item No.	Pack. Unit
Marker card for TT Printer	12 mm	**211-121**	1
	23 mm	**211-111**	1
Marker card for Plotter	12 mm	**211-120**	30
	(258-370 Carrier Plates are required for plotting)		
	23 mm	**211-110**	18
	(258-370 Carrier Plates are required for plotting)		

Labels on roll

Labels on DIN A4 sheets

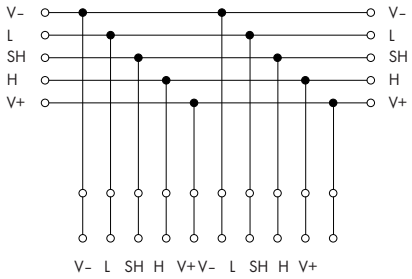
Dimensions of self-laminating label

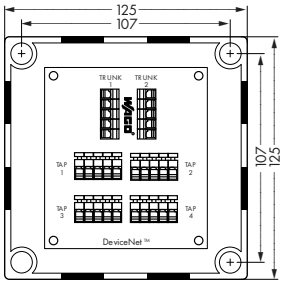


Description		Item No.	Pack. Unit
Labels on roll for thermal transfer printer	Marker surface "S"=8 mm, "B"=18 mm, "L"=35 mm for max. cable Ø 9 mm, 9.000 labels per roll	**211-155**	1
	Marker surface "S"=13 mm, "B"=23 mm, "L"=51 mm for max. cable Ø 12 mm, 5.000 labels per roll	**211-156**	1
Labels on DIN A4 sheets for laser printer (258-383 Carrier Plates are required for plotting)	Marker surface "S"=9 mm, "B"=17 mm, "L"=35 mm for max. cable Ø 8 mm, 70 labels per roll	**211-150**	20
	Marker surface "S"=13 mm, "B"=21 mm, "L"=56 mm for max. cable Ø 14 mm, 32 labels per roll	**211-151**	25

Multi-Port Device Taps

	Multi-port device tap **2 trunk cables (input, output)** **4 drop cables** **IP 65/NEMA 4 enclosure**	





DeviceNet requires a terminating resistor to be installed at each end of the trunk. The resistor (metal fim resistor) requirements are: 121 Ohm ± 1 %, ¼ W.
Termination resistor should not be installed at the end of a drop; only at the two ends of the main trunk, as required.

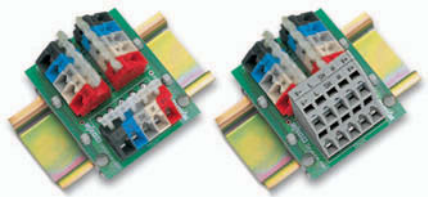
Description		**Item No.**	**Pack. Unit**	
Multi-port device tap	4 drop cables	**810-900/000-001**	1	

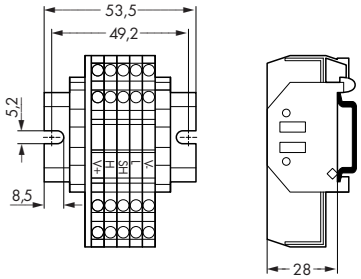
Technical Data

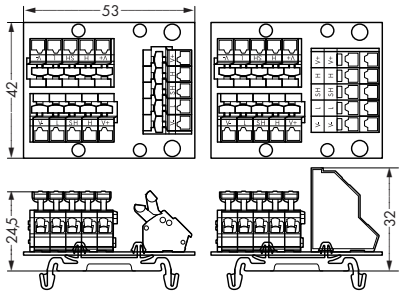
CAGE CLAMP® connections for trunk cable	2 x 256-405 (PCB terminal strips)
CAGE CLAMP® connections for drop cable	4 x 255-405 (PCB terminal strips)
Enclosure	with knockouts for cable grips
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 12
Cable diameter when using cable grips	
(see accessories below)	
- trunk cable	Ø 10 ... 14 mm
- drop cable	Ø 6 ... 12 mm
Degree of protection (enclosure)	IP 65/NEMA 4

Accessories		**Item No.**	**Pack. Unit**	
Test adapter for mini banana plug		**810-900/004-000**	1	
Grips for - trunk cable	Ø 10 ...14 mm	**810-900/001-000**	1	
Grips for - drop cable	Ø 6 ... 12 mm	**810-900/002-000**	1	
Termination resistor		**810-900/003-000**	200	

	Multi-port device tap 2 trunk cables (input, output) 2 drop cables "open-style"	Multi-port device tap 2 trunk cables (input, output) 2 drop cables "open-style"







DeviceNet requires a terminating resistor to be installed at each end of the trunk. The resistor (metal fim resistor) requirements are: 121 Ohm ± 1 %, ¼ W.
Termination resistor should not be installed at the end of a drop; only at the two ends of the main trunk, as required.

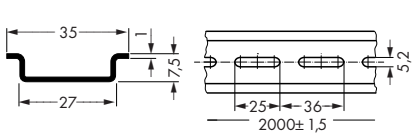
Description		Item No.	Pack. Unit		Item No.	Pack. Unit
Multi-port device tap	2 drop cables	**810-901/000-001**	1	Single tap	**810-902/000-001**	5
				Double taps	**810-902/000-002**	1

Technical Data		
CAGE CLAMP® connections for trunk cable		2 x 5 x 256 Series (PCB terminal strips)
CAGE CLAMP® connections for drop cable		1 x 5 x 256 Series / 1 x 5 x 736 Series (PCB terminal strips)
Terminal blocks	5 x 280-633	
End stops	2 x 249-116	
Mounting rail	DIN 35 rail, slotted as shown	
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 12	0.08 mm² ... 2.5 mm² / AWG 28 ... 12

Accessories	Item No.	Pack. Unit	Item No.	Pack. Unit
Test adapter for mini banana plug	**810-901/001-000**	1	**810-901/001-000**	1
Termination resistor	**810-900/003-000**	200	**810-900/003-000**	200

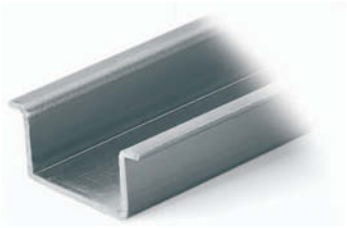
Carrier Rails and Angled Support Bracket

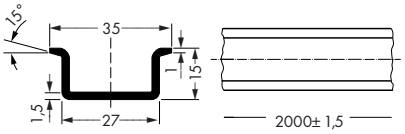
Steel carrier rail acc. to EN 60715



Item No.	Pack. Unit
Steel rail, I_N 76 A (referred to a length of 1 m)	
35 x 7.5 mm, 1 mm/0.039 in thick, 2 m long, unslotted	
210-113	10
Hole width 25 mm; hole spacing 36 mm, slotted	
210-112	10
Hole width 18 mm; hole spacing 25 mm, slotted	
210-115	1

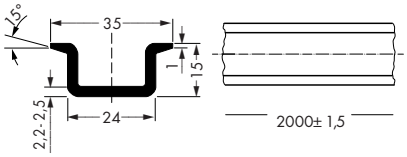
Steel carrier rail





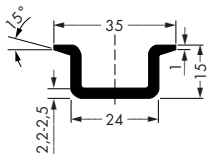
Item No.	Pack. Unit
Steel rail, I_N 125 A (referred to a length of 1 m)	
35 x 15 mm, 1.5 mm/0.059 in thick, 2 m long, unslotted	
210-114	10
Steel rail, I_N 125 A (referred to a length of 1 m)	
35 x 15 mm, 1.5 mm/0.059 in thick, 2 m long, slotted	
210-197	10

Steel carrier rail acc. to EN 60715



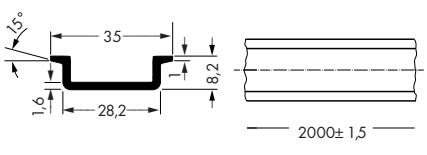
Item No.	Pack. Unit
Steel rail, I_N 125 A (referred to a length of 1 m)	
35 x 15 mm, 2.3 mm/0.091 in thick, 2 m long, unslotted	
210-118	10

Copper carrier rail



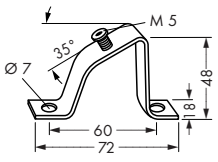
Item No.	Pack. Unit
Copper carrier rail,	
I_N 309 A (referred to a length of 1 m)	
35 x 15 mm, 2.3 mm/0.091 in thick, 2 m long, unslotted	
210-198	10

Aluminum carrier rail



Item No.	Pack. Unit
Aluminum carrier rail,	
I_N 76 A (referred to a length of 1 m)	
35 x 8.2 mm, 1.5 mm/0.059 in thick, 2 m long, unslotted	
210-196	10

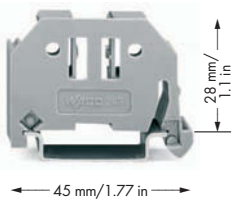
Angled support bracket

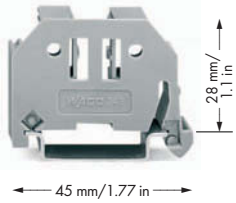


Item No.	Pack. Unit
Angled support bracket,	
without screw	
210-148	10
Screw M 5 x 8	
210-149	100

Screwless End Stops and Rail End Cap for DIN 35 Rail

End stop for DIN 35 rail End stop width 6 mm / 0.236 in	End stop for DIN 35 rail End stop width 10 mm / 0.394 in	Rail end cap, for DIN 35 rail (7.5 mm/0.29 in high)





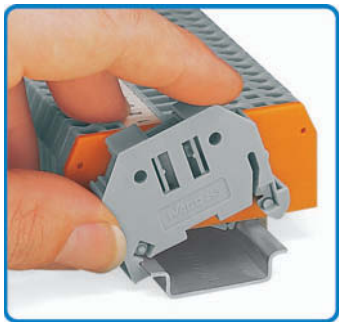
Item No.	Pack. Unit
End stop, for DIN 35 rail 6 mm/0.236 in wide	
249-116	100 (4 x 25)

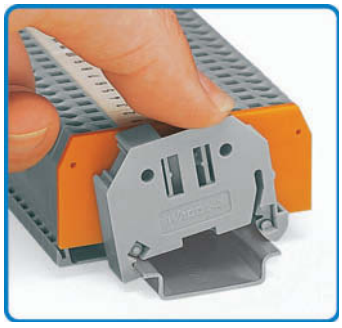
Item No.	Pack. Unit
End stop, for DIN 35 rail 10 mm/0.394 in wide	
249-117	50 (2 x 25)

Item No.	Pack. Unit
Rail end cap, for DIN 35 rail (7.5 mm/0.29 in high)	
209-109	50

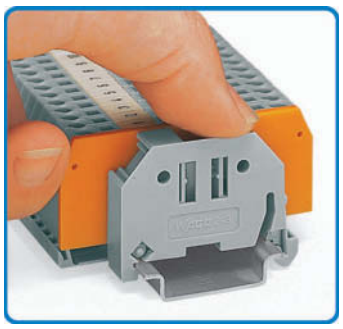
Snap on - That's it!
Assembling the WAGO screwless end stops is as simple and quick as snapping a WAGO railmounted terminal block onto the rail.
Without any tools!
This way rail-mounted terminal blocks are safely secured at low cost against any mouvement on all carrier rails DIN 35 acc. to DIN EN 50022 (35 x 7.5 mm; 35 x 15 mm).
Entirely without screws!
The „secret" of the excellent tight fit lies in the two small clamping plates which keep the end stop in position, even if the rails are mounted vertically.
Simply snap on - and forget!

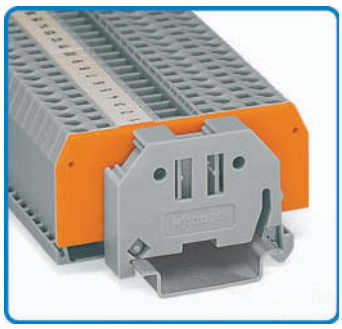
In addition, costs are considerably reduced when using large numbers of end stops.
A further advantage is that three marker receptacles for all WAGO marker systems for rail-mount terminal blocks and a snap-in hole for WAGO adjustable height group marker carriers offer individual marking possibilities.





Snap on ...





... that's it!!

Wire Strippers

Microstrip wire stripper 0.14 mm² ... 1.5 mm²/AWG 24 ... 16 "solid" and "stranded" Wire cutter up to 1.5 mm²/AWG 16 "solid" and "stranded"	Quickstrip 10 wire stripper 0.02 mm² ... 10 mm²/AWG 28 ... 8 "stranded" (6 mm²/AWG 10 "solid") Wire cutter up to 10 mm²/AWG 8 "stranded" (1.5 mm²/AWG 16 "solid")	Quickstrip 16 wire stripper 4 mm² ... 16 mm² Wire cutter up to 10 mm²/AWG 12 ... 6 "stranded" (1.5 mm²/AWG 16 "solid")

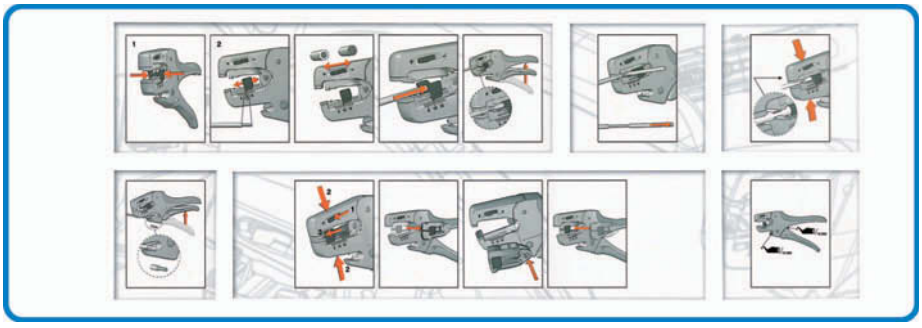
Item No.	Pack. Unit	Item No.	Pack. Unit	Item No.	Pack. Unit
Microstrip wire stripper		**Quickstrip 10 wire stripper**		**Quickstrip 10 wire stripper**	
206-501	1	**206-124**	1	**206-125**	1
Item No.	**Pack. Unit**	**Item No.**	**Pack. Unit**		
Spare stripping unit		**Standard blade cassette**		**Blade cassette 16 mm²**	
complete		0.02 mm² ... 10 mm²/AWG 34 ... 8		4.0 mm² ... 16 mm²/AWG 12 ... 6	
206-502	1	**206-126**	1	**206-128**	1
Spare blade		**"V" blade cassette**			
for wire cutter		0.02 mm² ... 4 mm²/AWG 34 ... 12 for PTFE			
206-503	10	**206-127**	1		

- Automatic adjustment to wire size.
- No damage to wire strands.
- Gripping pressure of jaws adjusts automatically to wire insulation diameter.
- Full cycle strip - jaws open after stripping, ensures no nicked strands.
- Exact strip length may be set by sliding of red setting stop.
- Replaceable stripping jaw assembly.
- Self-sharpening, fully protected wire cutter, also replaceable.*
- Glass fiber reinforced polyamide tool body.

* for Microstrip

Cutting of wire.

Stripping of wire.



Operating instructions are enclosed in the packaging.

Voltage Tester, Testboy and Cable Cutter

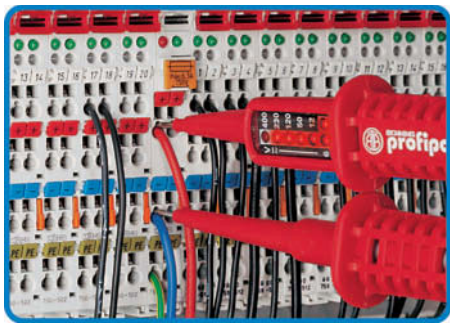
Cable cutter acc. to VDE for copper and aluminum wires up to 35 mm²/AWG 2 Weight 200 g	**Voltage tester "Profipol" 12 V to 400 V AC 12 V to 500 V DC Weight 138 g**	**Testboy**

Item No.	Pack. Unit
Cable cutter	
206-118	1

Item No.	Pack. Unit
Voltage tester "Profipol"	
Voltage range	
12 V to 400 V AC	
12 V to 500 V DC	
LED indication	
12 V, 50 V, 100 V, 230 V, 400 V AC	
12 V, 60 V, 120 V, 280 V, 500 V DC	
Degree of protection IP65	
Operating time 30 s max.	
Temperature range –10° to + 50°C	
206-802	1

Item No.	Pack. Unit
Testboy,	
with integrated flashlight	
Voltage range 120 V to 1000 V AC	
206-804	1

Cutting og cable



Voltage testing at the WAGO-I/O-SYSTEM 750

A device that will reliably detect AC voltages in cables, sockets, fuses, switches, connector boxes, etc.

- LED band provides clear voltage range readings (white scale = AC voltage red scale = DC voltage)
- LED indication of polarity
- double-pole voltage testing
- IP65 type of protection
- switching is not necessary
- 85 cm long highly flexible and nonskid test cable

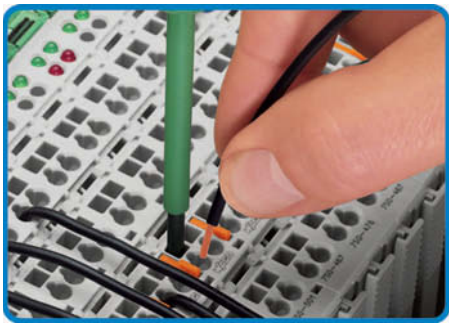
The following can be detected by the WAGO Testboy:

- Live conductors
- Line breaks
- Blown fuses (in cartridges or holders)
- Defective switches
- Defective lamps in strings of lights

Operating tool

Operating tool with partially insulated shaft for optimum handling of terminal blocks	Operating tool with partially insulated shaft – Set –	

Item No.	Pack. Unit	Item No.	Pack. Unit	
Operating tool, with partially insulated shaft, type 1, blade (2.5 x 0.4) mm for 279, 726, 727, 2000, 2001 Series		Operating tool, with partially insulated shaft, – Set –		
210-719	1	**210-722**	1	
Operating tool, with partially insulated shaft, type 2, blade (3.5 x 0.5) mm for 260, 261, 262, 264, 270, 280, 281, 290, 775, 776, 777, 769, 780, 781, 869, 870, 880, 2002, 2003, 2004, 2005, 2022 Series				
210-720	1			
Operating tool, with partially insulated shaft, type 3, blade (5.5 x 0.8) mm for 282, 283, 284, 285, 782, 783, 784, 785, 2006, 2010, 2016 Series				
210-721	1			



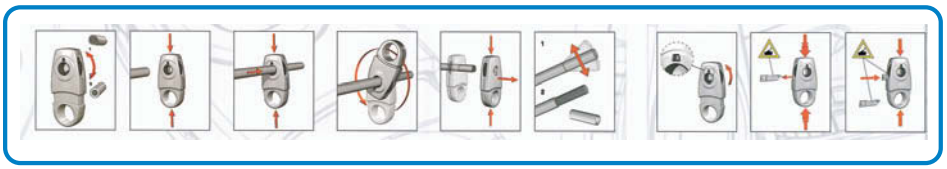
Wiring example showing WAGO-I/O-SYSTEM 750

The operating tool are particularly appropriate for the operation of front-entry terminal blocks and connectors. (The picture shows the WAGO-I/O-SYSTEM 750)

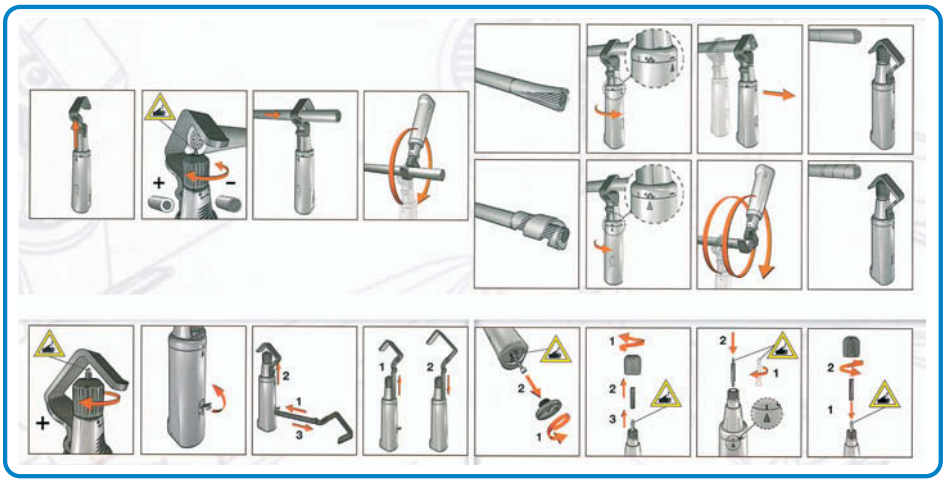
Cable Strippers

Cable stripper for round cables with an outer diameter from 2.5 mm to 11 mm Ø	Cable stripper for round cables with an outer diameter from 4.5 mm to 40 mm Ø	

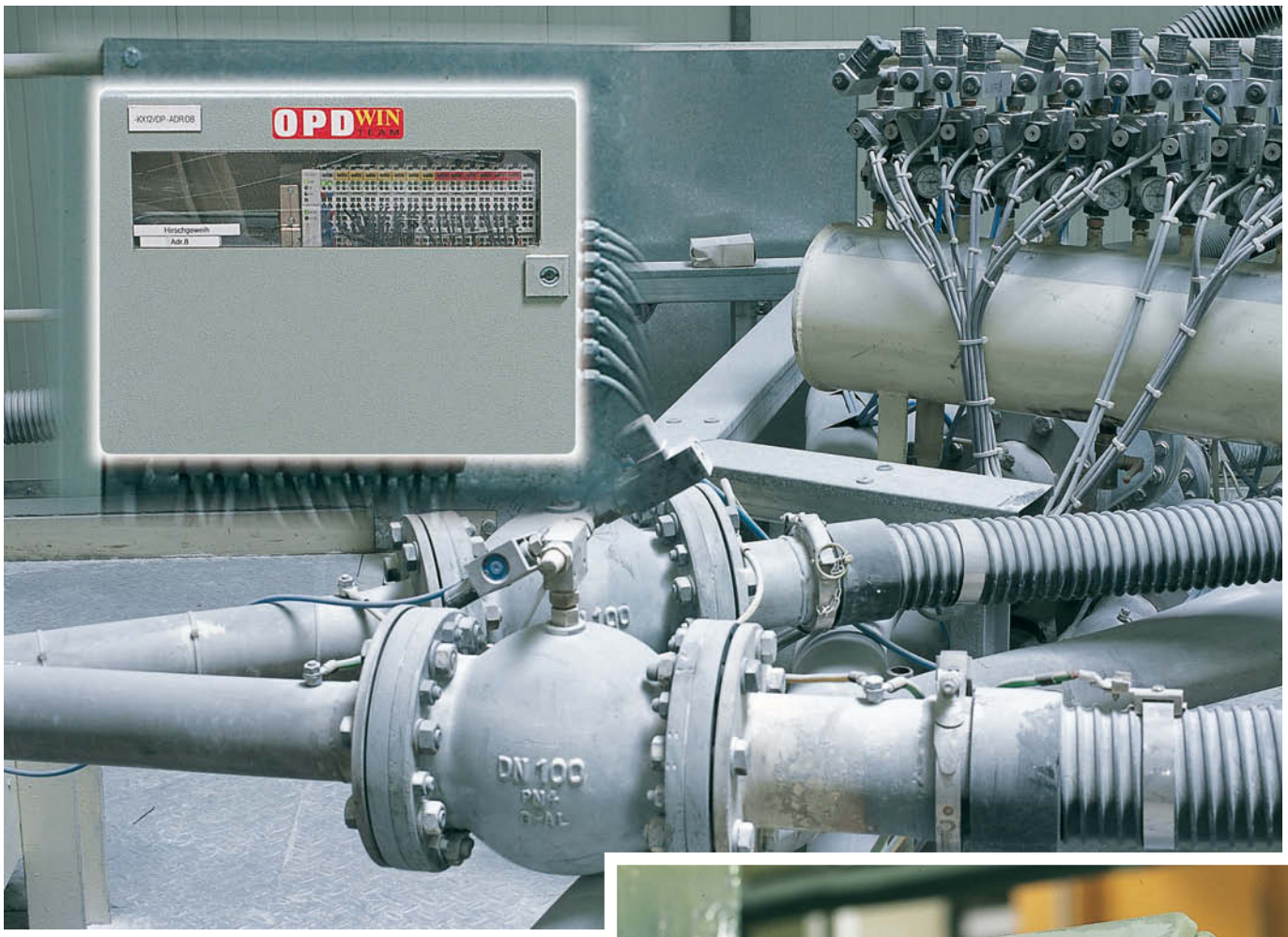
Item No.	Pack. Unit	Item No.	Pack. Unit	
Cable stripper		Cable stripper		
for round cables with an outer diameter		for round cables with an outer diameter		
from 2.5 mm to 11 mm Ø		from 4.5 mm to 40 mm Ø		
206-171	1	**206-174**	1	
Spare blade for 2.5 mm to 11 mm Ø		Spare blade for 4.5 mm to 40 mm Ø		
206-170	1	**206-173**	1	



Handling instructions for 206-171 cable stripper



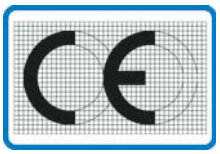
Handling instructions for 206-174 cable stripper



WAGO Application: Opdenhoff Technologie GmbH in Hennef, Germany
Control Systems for Weighing, Mixing and Conveyance of Bulk Material and Liquids

WAGO Products:
WAGO-I/O-SYSTEM with PROFIBUS Couplers, Rail-Mounted Terminal Blocks

12



Product Support From

Consulting Services

- Selection of the fieldbus
- Use of components
- Combination of components
- Cooperation with other suppliers

- Contact:

  Your national WAGO company or distributor.

The Very Beginning...

Experienced

- Trained staff
- PLC & PC control
- Multiple fieldbuses
- Programming languages
- Projects:

  Automotive industry
  Machine building
  Chemical industry
  Food processing
  Building automation
  Process engineering
  Process control
  and many more

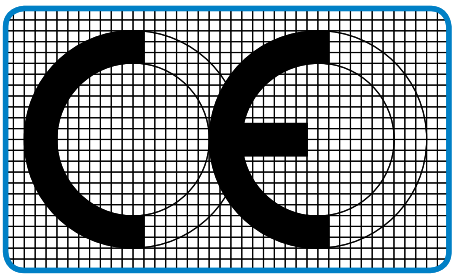
We will help you

- Product documentation
- Manuals
- Application notes
- By telephone
- On-site

CE Marking and EC Directives

CE conformity marking:

The CE conformity marking consists of the characters "CE", with the following script:



Communauté Européenne (European Community)

The CE marking shall be affixed to the electrical equipment, or if that is not possible, to the smallest packing unit. With the CE marking, manufacturers attest conformity of their products to the relevant directives.

In addition to the CE marking, the manufacturer provides an EC "Declaration of Conformity" for the product. This EC "Declaration of Conformity" must be retained and submitted to a national surveillance authority upon request. EC directives are binding legal regulations of the European Community. Their goal is the harmonization of legal and administrative regulations in the various EC member states, in order to prevent trade obstructions due to different national regulations.
In order to "market" a product, it must comply with the relevant directives. The product may be subject to several directives, e.g. the EMC and the low voltage directives.

The **EC directives** are legally binding specifications of the European Union. Their aim is the alignment of legal and administrative specifications in the various EC member states, in order to prevent trading hindrances arising from different national specifications.
In order to launch a product on the market it has to comply with the relevant directives. Several directives may apply to a product, for example the EMC and the low voltage directives.

2006/95/EC
– Low Voltage Directive
The safety of electrical equipment is guaranteed by the Low Voltage Directive. This directive covers 'complete' electrical equipment designed for use with a voltage rating of between 50 and 1000V for alternating current and between 75 and 1500V for direct current. Products falling within the scope of the Low Voltage Directive that are designed in such a way that they can be used in other electrical devices and whose safety, for the most part, is dependant on how these components were built into the end product and what features the end product has are defined as basic components in accordance with the Low Voltage Directive.* The Low Voltage Directive doesn't apply to basic components.

2004/108/EC
– EMC Directive
The EMC Directive implies that a product must meet the limits of the radiated electromagnetic disturbance and also requires that a product must be immune to electromagnetic interference. Electromagnetic passive components or components with no direct function, like resistors, diodes, capacitors, switching relays or cables (in the form of passive printed circuit boards) are not considered as apparatus within the meaning of the EMC Directive.

Machinery Directive
The Machinery Directive does not apply to WAGO products.

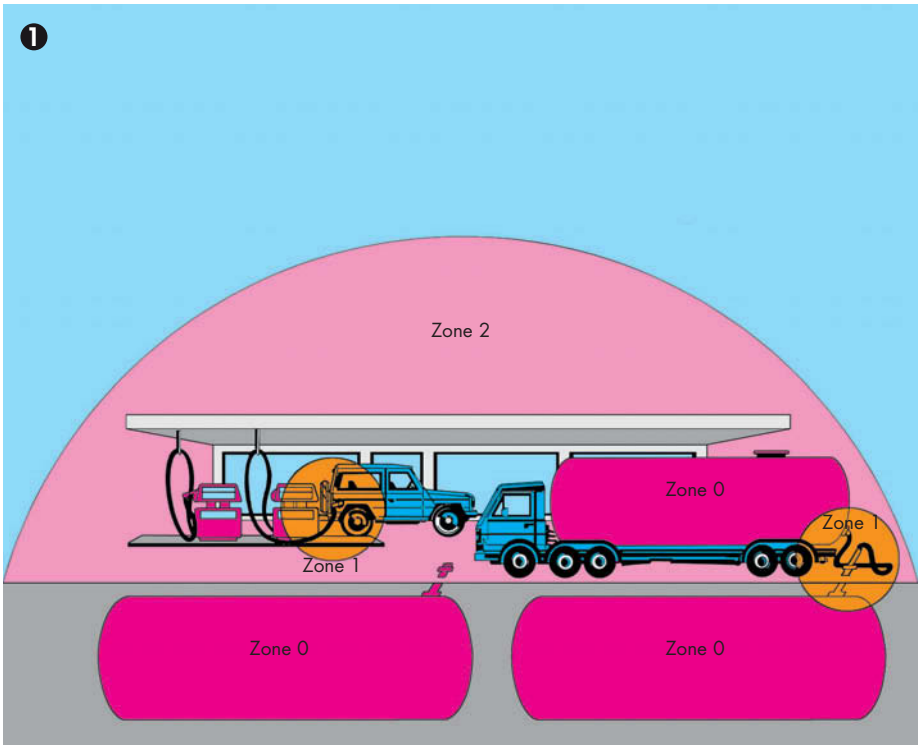
94/9/EC Ex Protection Directive, ATEX 100a

General technical information for electrical equipment in hazardous environments.

General Technical Information for Electrical Equipment in Hazardous Environments

Harzardous Environments
Hazardous environments are areas in which the atmosphere may become explosive. Explosive atmosphere is defined as a mixture of ignitable substances in the form of gases, vapors or mixtures with air under atmospheric conditions in critically mixed ratios such that excessive high temperature, arcs or sparks may cause an explosion.

DIN EN 1127-1 and all other related standards that are commonly known divide up hazardous areas according to the likelihood of the occurrence of an explosive atmosphere into the following zones:

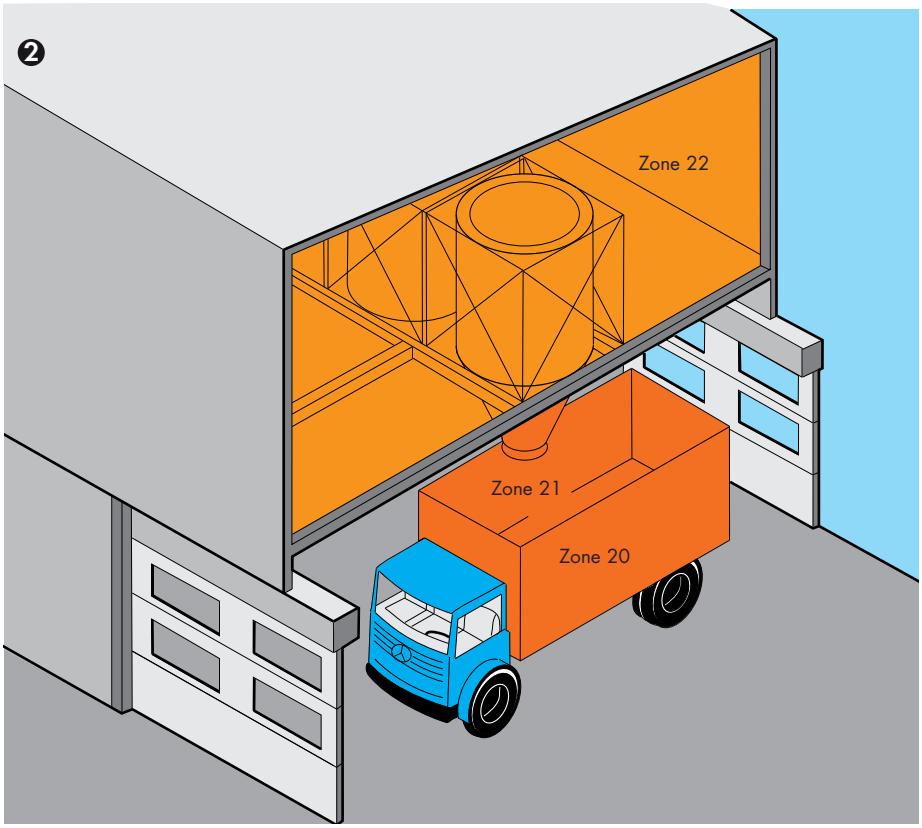


❶ Hazardous environments as a result of combustible gases, vapors or mist.

Zone 0:
Area in which an explosive gas/air mixture is continuously present or present for long periods.

Zone 1:
Area in which an explosive atmosphere can occur during normal operation.

Zone 2:
Area in which an explosive atmosphere is unlikely to occur under normal operation and if it does it will be for a short period.



❷ Hazardous areas caused by combustible dust

Zone 20:
Area in which an explosive dusty atmosphere is present "permanently", for "long periods" or "frequently" and in which deposits of combustible dust of unknown or excessive thickness may be formed. Dust deposits alone are not grounds for classification as Zone 20.

Zone 21:
Area in which an explosive dusty atmosphere is present "occasionally" under normal operating conditions and in which deposits or layers of combustible dust can generally be present.

Zone 22:
Area in which an explosive dusty atmosphere is not likely to occur during normal operation and, if it occurs, will only exist for a "short period", or in which accumulations or layers of combustible dust are present.

Please refer to the manuals for more information on explosion protection.

Electromagnetic Compatibility and Mechanical Strength (Industrial and Residential Areas)

Immunity to interference for industrial areas acc. to EN 61000-6-2 (2005)

Test Specification		Test Values	Evaluation Criteria *)
EN 61000-4-2	ESD	4 kV/8 kV (contact/air)	B
EN 61000-4-3	electromagnetic fields	10 V/m: 80 MHz ... 1 GHz	A
		3V/m: 1.4 GHz ... 2.0 GHz	A
		1V/m: 2.0 GHz ... 2.7 GHz	A
EN 61000-4-4	burst	1 kV/2 kV (data/supply)	B
EN 61000-4-5	surge	Data: - / 1 kV (line : line / line : earth)	B
		DC supply: 0.5 kV / 0.5 kV (line : line / line : earth)	B
		AC supply: 1 kV / 2 kV (line : line / line : earth)	B
EN 61000-4-6	RF distrurbances	10 V/m 80 % AM (0.15 MHz ... 80 MHz)	A
EN 61000-4-8	Magnetic field	30 A/m 50/60Hz	A
*)	Criteria A: The device must work in accordance with the regulations during and after the test.		
	Criteria B: The device must work in accordance with the regulations after the test.		

Emission of interference for residential areas acc. to EN 61000-6-3 (2007)

Test Specification		Limit Values/ Quasi Peak	Frequency Range	Distance
EN 55016-2-1	AC supply, conducted	66 ... 56 dB(µV)	150 kHz ... 500 kHz	
EN 55016-1-2		56 dB(µV)	500 kHz ... 5 MHz	
		60 dB(µV)	5 MHz ... 30 MHz	
EN 55016-2-1	DC supply/	79 dB(µV)	150 kHz ... 500 kHz	
EN 55016-1-2	data, conducted	73 dB(µV)	500 kHz ... 30 MHz	
EN 55016-2-3	radiated	30 dB(µV/m)	30 MHz ... 230 MHz	10 m
		37 dB(µV/m)	230 MHz ... 1 GHz	10 m
EN 55022	Telecommunications/	84 ... 74 dB(µV)	150 kHz ... 500 kHz	
	Mains connection	74 dB(µV)	500 kHz ... 30 MHz	

Emission of interference for industrial areas acc. to EN 61000-6-4 (2007)

Test Specification		Limit Values/ Quasi Peak	Frequency Range	Distance
EN 55016-2-1	AC supply, conducted	79 dB(µV)	150 kHz ... 500 kHz	
EN 55016-1-2		73 dB(µV)	500 kHz ... 30 MHz	
EN 55016-2-3	radiated	40 dB(µV/m)	30 MHz ... 230 MHz	10 m
		47 dB(µV/m)	230 MHz ... 1 GHz	10 m
EN 55022	Telecommunications/	97 ... 87 dB(µV)	150 kHz ... 500 kHz	
	Mains connection	87 dB(µV)	500 kHz ... 30 MHz	

Mechanical strength acc. to IEC 61131-2 (2007)

Test Specification		Frequency Range	Limit Values
IEC 60068-2-6	vibration	5 Hz ≤ f < 9 Hz	1.75 mm amplitude (permanent)
			3.5 mm amplitude (short term)
		9 Hz ≤ f < 150 Hz	0.5 g (permanent)
			1 g (short term)
		Note on vibration test:	
		a) Frequency change: max. 1 octave/minute	
		b) Vibration direction: 3 axes	
IEC 60068-2-27	shock		15 g
		Note on shock test:	
		a) Type of shock: half sine	
		b) Shock duration: 11 ms	
		c) Shock direction: 3x in positve and 3x in negative direction for each of the three mutually perpendicular axes of the test specimen	

Electromagnetic Compatibility and Mechanical Strength (Ship Building Area)

Immunity to interference acc. to Germanischer Lloyd (2003)

Test Specification		Test Values	Evaluation Criteria *)
IEC 61000-4-2	ESD	6 kV/8 kV (contact/air)	B
IEC 61000-4-3	electromagnetic fields	10 V/m 80 MHz ... 2 GHz	A
IEC 61000-4-4	burst	1 kV /2 kV (data/supply)	A
IEC 61000-4-5	surge, DC supply	0,5 kV /1 kV (line : line / line : earth)	A
	surge, AC supply	0,5 kV /1 kV (line : line / line : earth)	A
IEC 61000-4-6	RF distrurbances	10 V 80 % AM (0.15 ... 80 MHz)	A
Type Test	AF distrurbances (harmonic waves)	3 V, 2 W	A
Type Test	high voltage	755 V DC	-
		1500 V AC	-
*)	Criteria A: The device must work in accordance with the regulations during and after the test.		
	Criteria B: The device must work in accordance with the regulations after the test.		

Emission of interference acc. to Germanischer Lloyd (2003)

Test Specification		Limit Values/ Quasi Peak	Frequency Range	Distance
Type Test	EMC 1, conducted	96 ... 50 dB(µV)	10 kHz ... 150 kHz	
	(allows for ship bridge	60 ... 50 dB(µV)	150 kHz ... 350 kHz	
	control applications)	50 dB(µV)	350 kHz ... 30 MHz	
Type Test	EMC 1, radiated	80 ... 52 dB(µV/m)	150 kHz ... 300 kHz	3 m
	(allows for ship bridge	52 ... 34 dB(µV/m)	300 kHz ... 30 MHz	3 m
	control applications)	54 dB(µV/m)	30 MHz ... 2 GHz	3 m
	except for:	24 dB(µV/m)	156 MHz ... 165 MHz	3 m
Type Test	EMC 2, conducted	120 ... 69 dB(µV)	10 kHz ... 150 kHz	
	(allows for machine room	79 dB(µV)	150 kHz ... 350 kHz	
	applications)	73 dB(µV)	350 kHz ... 30 MHz	
Type Test	EMC 2, radiated	80 ... 50 dB(µV/m)	150 kHz ... 30 MHz	3 m
	(allows for machine room	60 ... 54 dB(µV/m)	30 MHz ... 100 MHz	3 m
	applications)	54 dB(µV/m)	100 MHz ... 2 GHz	3 m
	except for:	24 dB(µV/m)	156 MHz ... 165 MHz	3 m

Mechanical strength acc. to Germanischer Lloyd (2003)

Test Specification		Frequency Range	Limit Values
IEC 60068-2-6	vibration (category A, C)	2 Hz ≤ f < 13,2 Hz	±1.0 mm Amplitude (permanent)
		13.2 Hz ≤ f < 100 Hz	0.7 g (permanent)
		Note on vibration test: a) Frequency change: max. 1 octave/minute b) Vibration direction: 3 axes	
IEC 60068-2-6	vibration (category A-D)	2 Hz ≤ f < 25 Hz	±1.6 mm Amplitude (permanent)
		25 Hz ≤ f < 100 Hz	4 g (permanent)
		Note on vibration test: a) Frequency change: max. 1 octave/minute b) Vibration direction: 3 axes	

Specifications and Test Results

In particular the following standards apply to the design and the application of the terminal blocks and connectors contained in this catalog:

DIN VDE 0100:1982-11
Construction of high current installations with nominal voltages up to 1000V

EN 50110-1:2004
VDE 0105-1:2005-06
Operation of electrical installations

IEC 61140:2001/A1:2004 (modified)
EN 61140:2002/A1:2006
VDE 0140-1:2007-03
Protection against electric shock - Common aspects for installation and equipment

IEC 60664-1:2007
EN 60664-1:2007
VDE 0110-1:2008-01
Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests

IEC 60204-1:2005 (modified)
EN 60204-1:2006
VDE 0113-1:2007-06
Safety of machinery - Electrical equipment of machines - Part 1: General requirements

EN 50178:1997
VDE 0160:1998-04
Electronic equipment for use in power installations

IEC 62305-1:2006
EN 62305-1:2006
VDE 0185-305-1:2006-10
Protection against lightning - Part 1: General principles

IEC 60060-1:1989 +
corrigendum March 1990
HD 588.1 S1:1991
VDE 0432-1:1994-06
High voltage test techniques; part 1: general specifications and test requirements

IEC 60085:2007
EN 60085:2008
VDE 0301-1:2008-08
Electrical insulation - Thermal evaluation and designation

IEC 60529:1989 + A1:1999
EN 60529:1991 + A1:2000
VDE 0470-1:2000-09
Degrees of protection provided by enclosures (IP code)

IEC 60603-1:1991 + A1:1992
EN 60603-1:1998
Connectors for frequencies below 3 MHz for use with printed boards - Part 1: Generic specification: General requirements and guide for the preparation of detail specifications, with assessed quality

IEC 61984:2001
EN 61984:2001
VDE 0627:2002-09
Connectors - Safety requirements and tests

IEC 60999-1:1999
EN 60999-1:2000
VDE 0609-1:2000-12
Connecting devices - Electrical copper conductors; Safety requirements for screw-type and screwless-type clamping units - Part 1: General requirements and particular requirements for clamping units for conductors 0.2 mm^2 up to 35 mm^2

IEC 60617-2:1996
EN 60617-2:1996
Graphical symbols for diagrams - Part 2: Symbol elements, qualifying symbols and other symbols having general application

IEC 61558-1:2005
EN 61558-1:2005
VDE 0570-1:2006-07
Safety of power transformers, power supplies, reactors and similar products - Part 1: General requirements and tests

IEC 60669-2-1:2002
EN 60669-2-1:2004
VDE 0632-2-1:2005-08
Switches for household and similar fixed electrical installations - Part 2-1: Particular requirements - Electronic switches

IEC 60947-7-1:2002 +
Corrigendum 1:2003
EN 60947-7-1:2002
VDE 0611-1:2003-07
Low-voltage switchgear and controlgear - Part 7-1: Ancillary equipment - Terminal blocks for copper conductors

IEC 60998-2-2:2002, modified
EN 60998-2-2:2004
VDE 0613-2-2:2005-03
Connecting devices for low-voltage circuits for household and similar purposes - Part 2-2: Particular requirements for connecting devices as separate entities with screwless-type clamping units

IEC 60947-1:2007
EN 60947-1:2007
VDE 0660-100:2008-04
Low-voltage switchgear and controlgear - Part 1: General rules

IEC 60947-5-6:1999
EN 60947-5-6:2000
VDE 0660-212:2000-12
Low-voltage switchgear and controlgear - Part 5-6: Control circuit devices and switching elements, DC interface for proximity sensors and switching amplifiers (NAMUR)

IEC 60439-1:1999 + A1:2004
EN 60439-1:1999 + A1:2004
VDE 0660-500:2005-01
Low-voltage switchgear and controlgear assemblies - Part 1: Type-tested and partially type-tested assemblies

IEC 60555-1:1982 - 1st edition
EN 60555 part 1, edition 1987
VDE 0838-1:1987-06
Disturbances in supply systems caused by household appliances and similar electrical equipment; part 1: definitions

IEC 60715:1981 + A1:1995
EN 60715:2001
Dimensions of low-voltage switchgear and controlgear - Standardized mounting on rails for mechanical support of electrical devices in switchgear and controlgear installations

IEC 60950-1:2005, modified
EN 60950-1:2006
VDE 0805-1:2006-11
Information technology equipment - Safety - Part 1: General requirements

IEC 60127-6:1994 + A1:1996 +
A2:2002
EN 60127-6:1994 + A1:1996 + A2:2003
VDE 0820-6:2003-10
Miniature fuses - Part 6: Fuse-holders for miniature fuse-links

EN 50155:2007
VDE 0115-200:2008-03
Railway applications - Electronic equipment used on rolling stock

EN 50090-2-2:1996 + Corrigendum:1997 + A1:2002 + A2:2007
VDE 0829-2-2:2007-11
Home and Building Electronic Systems (HBES) - Part 2-2: System overview - General technical requirements; German version

IEC 60099-1:1991 + A1:1999
EN 60099-1:1994 + A1:1999
VDE 0675-1:2000-08
Surge arresters - Part 1: Non-linear resistor type gapped surge arresters for a.c. systems

IEC 61643-1:1998 + Corrigendum 1998, modified
EN 61643-11:2002 + A11:2007
VDE 0675-6-11:2007-08
Low-voltage surge protective devices - Part 11: Surge protective devices connected to low-voltage power systems - Requirements and tests

IEC 61643-21:2000 + Corrigendum: 2001
EN 61643-21:2001
VDE 0845-3-1:2002-03
Low voltage surge protective devices - Part 21: Surge protective devices connected to telecommunications and signalling networks; Performance requirements and testing methods

IEC 61508-1:1998 + Corrigendum 1999
EN 61508-1:2001
VDE 0803-1:2002-11
Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 1: General requirements

IEC 62061:2005
EN 62061:2005
VDE 0113-50:2005-10
Safety of machinery - Functional safety of safety-related electrical, electronic and programmable electronic control systems

Interfaces - Fieldbuses

DIN 66259-1:1981-05
Electrical characteristics for unbalanced double-current interchange circuits

EN 50325-1:2002
Industrial communications subsystem based on ISO 11898 (CAN) for controller-device interfaces - Part 1: General requirements

IEC 61784-1:2007
EN 61784-1:2008
Industrial communication networks - Profiles - Part 1: Fieldbus profiles

IEC 61158-2:2007
EN 61158-2:2008
Industrial communication networks - Fieldbus specifications - Part 2: Physical layer specification and service definition

IEC 61158-6-x
EN 61158-6-x
DIN EN 61158-6-x
Industrial communication networks - Fieldbus specifications - Part 6-x

Explosion Protection

IEC 60079-0:2004, modified
EN 60079-0:2006
VDE 0170-1:2007-05
Electrical apparatus for explosive gas atmospheres - Part 0: General requirements

IEC 60079-7:2006
EN 60079-7:2007
VDE 0170-6:2007-08
Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

IEC 60079-11:2006
EN 60079-11:2007
VDE 0170-7:2007-08
Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

IEC 60079-14:2007
EN 60079-14:2008
VDE 0165-1:2009-05
Explosive atmospheres - Part 14: Electrical installations design, selection and erection

IEC 60079-15:2005
EN 60079-15:2005
VDE 0170-16:2006-05
Electrical apparatus for explosive gas atmospheres - Part 15: Construction, test and marking of type of protection "n" electrical apparatus

IEC 61241-0:2004, modified + Corrigendum Nov. 2005
EN 61241-0:2006
VDE 0170-15-0:2007-07
Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements

IEC 61241-1:2004
EN 61241-1:2004
VDE 0170-15-1:2005-06
Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosures "tD"

IEC 61241-11:2005 + Corrigendum February 2006
EN 61241-11:2006
VDE 0170-15-11:2007-07
Electrical apparatus for use in the presence of combustible dust - Part 11: Protection by intrinsic safety "iD"

Specifications and Test Results (continued)

Environmental Testing

IEC 60068-2-6:2007
EN 60068-2-6:2008
VDE 0468-2-6:2008-10
Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)

IEC 60068-2-27:1987
EN 60068-2-27:1993
Basic environmental testing procedures - Part 2: Tests; test Ea and guidance: Shock

IEC 60068-2-42:2003
EN 60068-2-42:2003
Environmental testing - Part 2-42: Tests - Test Kc: Sulphur dioxide test for contacts and connections

IEC 60068-2-43:2003
EN 60068-2-43:2003
Environmental testing - Part 2-43: Tests - Test Kd: Hydrogen sulphide test for contacts and connections

EMC Requirements

IEC 61000-6-1:2005
EN 61000-6-1:2007
VDE 0839-6-1:2007-10
Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity for residential, commercial and light-industrial environments

IEC 61000-6-2:2005
EN 61000-6-2:2005
VDE 0839-6-2:2006-03
Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments

IEC 61000-6-3:2006
EN 61000-6-3:2007
VDE 0839-6-3:2007-09
Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments

IEC 61000-6-4:2006
EN 61000-6-4:2007
VDE 0839-6-4:2007-09
Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments

IEC 61000-3-2:2005
EN 61000-3-2:2006
VDE 0838-2:2006-10
Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)

IEC/CISPR 11:2003 + A1:2004, modified + A2:2006
EN 55011:2007 + A2:2007
VDE 0875-11:2007-11
Industrial scientific and medical (ISM) radio-frequency equipment - Electromagnetic disturbance characteristics - Limits and methods of measurement

IEC/CISPR 22:2005, modified + A1:2005
EN 55022:2006 + A1:2007
VDE 0878-22:2008-05
Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement

IEC/CISPR 24:1997, modified + A1:2001 + A2:2002
EN 55024:1998 + A1:2001 + A2:2003
VDE 0878-24:2003-10
Information technology equipment - Immunity characteristics - Limits and methods of measurement

IEC 61326-3-1:2008
EN 61326-3-1:2008
VDE 0843-20-3-1:2008-11
Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 3-1: Immunity requirements for safety-related systems and for equipment intended to perform safety-related functions (functional safety) - General industrial applications

PLC

IEC 61131-1:2003
EN 61131-1:2003
Programmable controllers -
Part 1: General information

IEC 61131-2:2007
EN 61131-2:2007
VDE 0411-500:2008-04
Programmable controllers -
Part 2: Equipment requirements and tests

IEC 61131-3:2003
EN 61131-3:2003
Programmable controllers -
Part 3: Programming languages

Relays

IEC 61810-1:2008
EN 61810-1:2008
VDE 0435-201:2009-02
Electromechanical elementary relays -
Part 1: General requirements

IEC 61810-2:2005
EN 61810-2:2005
VDE 0435-120:2006-01
Electromechanical elementary relays -
Part 2: Reliability

IEC 61810-5:1998
EN 50205:2002
VDE 0435-2022:2003-01
Electromechanical non-specified time all-or-nothing relays - Part 5: Insulation coordination

IEC 60255-5:2000
EN 60255-5:2001
VDE 0435-130:2001-12
Electrical relays - Part 5: Insulation coordination for measuring relays and protection equipment - Requirements and tests

UL Directives

UL 1059; ANSI 1059:2001-12
Terminal blocks

UL 486E:2009-05
Equipment wiring terminals for use with aluminum and/or copper conductors

UL 508:1999-01
Industrial control equipment

ANSI/ISA12.12.01:2007
Nonincendive electrical equipment for use in Class I and Class II, Division 2 and Class III, Divisions 1 and 2 hazardous (classified) locations

Ship Classifications

ABS (American Bureau of Shipping)
Steel Vessels 2008
Part 4: Vessel Systems and Machinery

BV (Bureau Veritas)
Rules for the classification of steel ships and offshore units

DNV (Det Norsk Veritas)
Det Norsk Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norsk Veritas' Offshore Standards: 2007

GL (Germanischer Lloyd) 2003
Rules for Classification and Construction
VI Additional Rules and Guidelines
7 Guidelines for the Performance of Type Test
2 Test Requirements for Electrical/Electronic Devices and Systems

LR (Lloyds Register) 2002
Type Approval System
Test Specification Number1-1996

RINA (Registro Italiano Navale)
Rules for the classification of ships
Part C – Machinery, systems and fire protection Ch.3, Sect.6, Table1
Edition 2008

BSH (Federal Maritime and Hydrographic Agency) 2005
Certificate on measurement of safe distance to the standard magnetic and steering magnetic compass in accordance with ISO R 695 and DIN EN 60945 Section 11.2

KR (Korean Register of Shipping)
List of Approved Manufacturers and Type Approved Equipment; Pt. 6, Ch. 1, Sec. 3 of the Rules for Classification of Steel Ships

NKK (Nippon Kaiji Kyokai) Edition 2009
Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use

PRS (Polski Rejestr Statkow) 2002
Publication No. 11/P
Enviromental Tests on Marine Equipment

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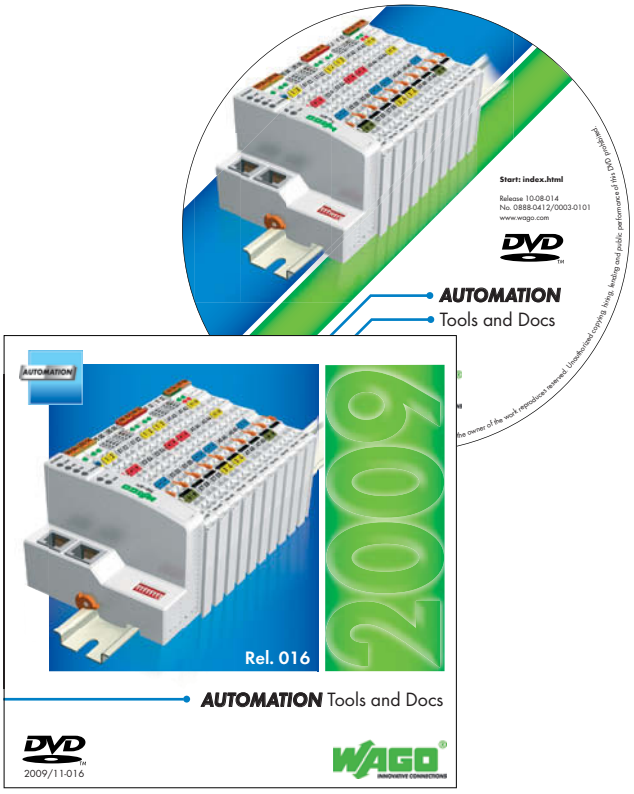

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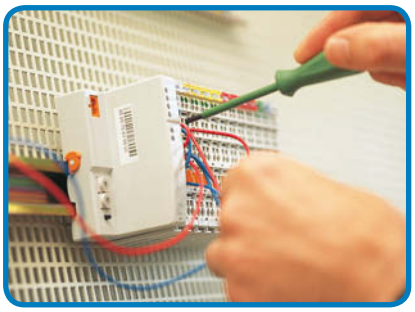

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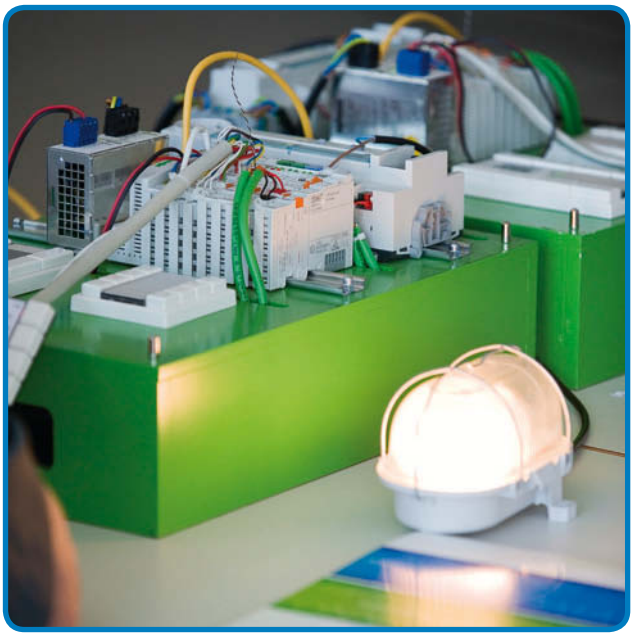

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Version: 06/2009
Current addresses at www.wago.com

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INNOVATIVE CONNECTIONS

0888-6003/0002-3601 · I/O-SYSTEM · 2010/2011 · GB · 02/10 · Printed in Germany · Subject to design changes