



HELUKABEL[®]

GREEN LINE

HELUWIND[®] WK-SERIE



Cables & Accessories for Wind Turbines

2013/2014

Welcome to HELUKABEL®



The logistic centre Hemmingen



Cables & Wires

HELUKABEL® is a global manufacturer and supplier of cables, wires & accessories. Founded in 1978, we are a recognized and trusted brand with an industry leading reputation for designing flexible, continuous flex and torsional cables.

Based on our strong and dedicated R&D team and continuous investments in our factory's machinery, we are able to offer high-performance products featuring advanced technologies and – whenever an option – customized engineering for a variety of applications such as automation & material handling, in particular robotic applications, renewable energy and infrastructure facilities.



Custom Cables

The HELUKABEL® Distribution Centre in Germany, housing more than 33.000 products and having more than 40.000 pallet storage space available, warehouse locations in more than 50 countries and over 650 employees around the world make sure that your shipment arrives right on time and wherever needed.

In this catalog we compiled our products for wind energy applications. HELUKABEL® offers the benefit of over 15 years of expertise in manufacturing wind power cables. Our HELUWIND® WK-Series comprises a perfectly coordinated line of cables, wires and accessories to equip the entire turbine.

For more information, please contact our Product Manager at the German Headquarters (+49 7150 9209 135) or your local representative.



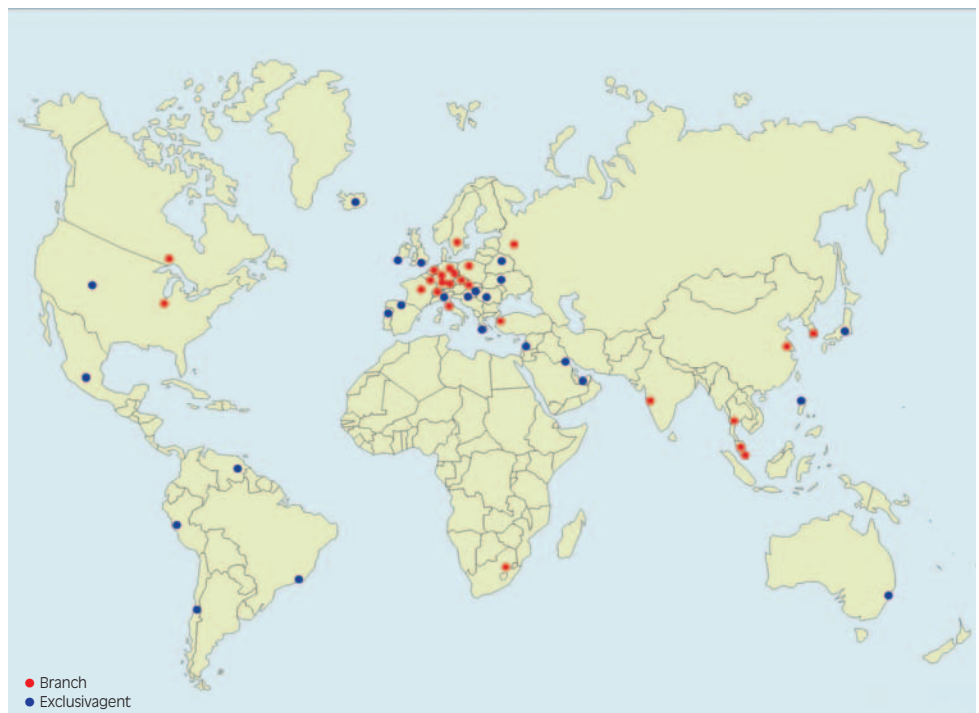
Media Technology



Data, Network & Bus Technology



Cable Accessories



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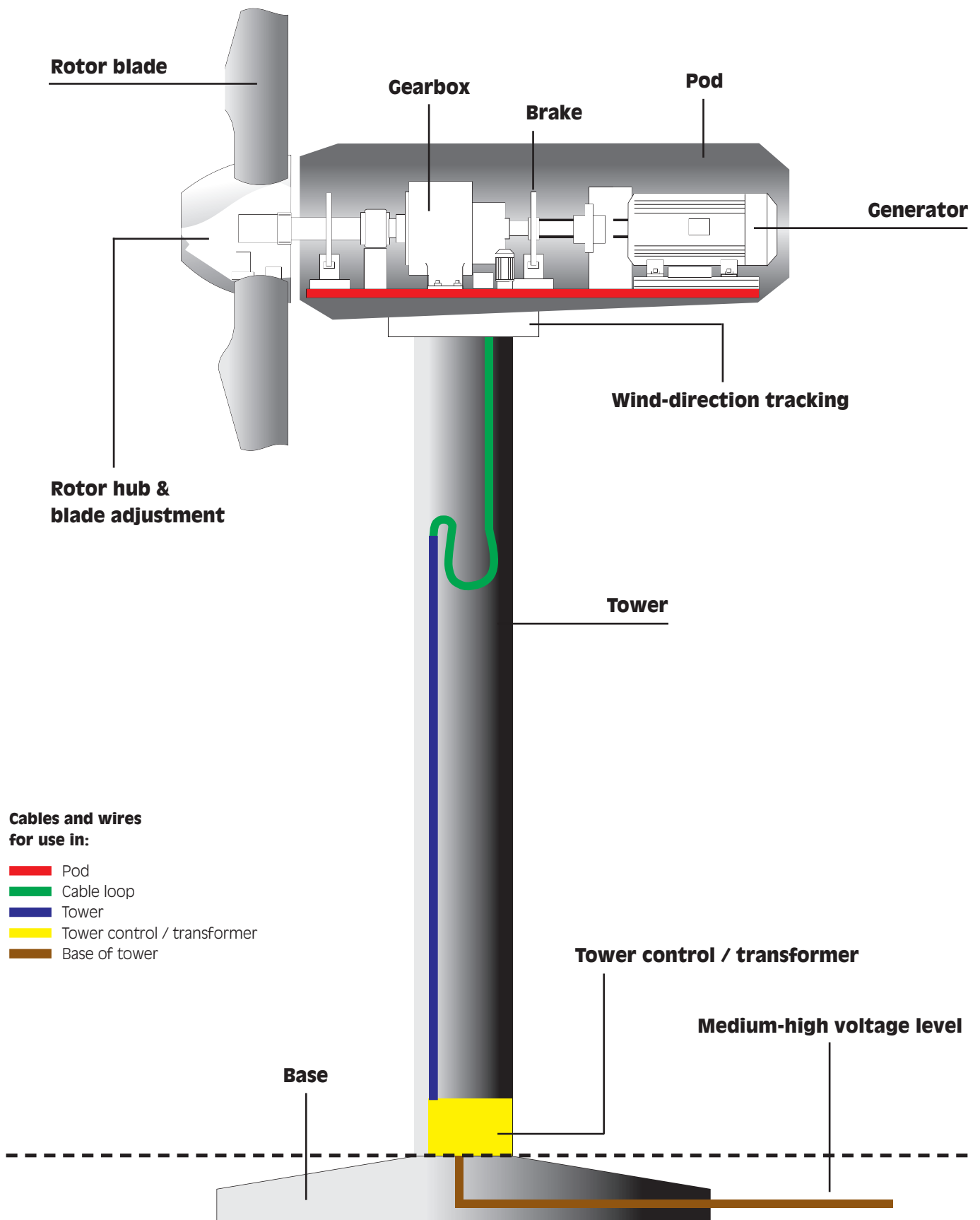
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Functional view of Wind Power Station



Selection table Cables & Wires

Torsion Cables	Usage, see chart on page 5																				
	UL-Style	CSA	CE	VDE*	fire tests FT4/60332-3	fire tests FT1 (with FT2)/60332-1	nominal voltage according to UL	nominal voltage according to VDE	halogen-free	oil resistant II**	oil resistant	UV-resistant	offshore employment	temp. non-flexing from (in °C)	temp. non-flexing to (in °C)	temp. flexing from (in °C)	temp. flexing to (in °C)	twistable +/- 150° per meter	twistable +/- 140° per meter	twistable +/- 100° per meter	can be found on page
WK 103w-T	10678 21179	cRUus	X			X	1000V	0,6/ 1kV		X (*)	X	X		-40	+90	-35	+90		X		12
WK 103w EMV D-T	10678 21179	cRUus	X			X	1000V	0,6/ 1kV		X (*)	X	X		-40	+90	-35	+90		X		14
WK 103k-T	10269 2570	cRUus	X			X	1000V	0,6/ 1kV			X	X		-40	+80	-40	+80		X		16
WK 103k EMV D-T	10269 2570	cRUus	X			X	1000V	0,6/ 1kV			X	X		-40	+80	-40	+80		X		18
WK 135-T	10553 20234	cRUus	X	X	60332 -3		1000V	0,6/ 1kV	X	X	X	X	X	-40	+90	-40	+90	X			20
WK 135 EMV D-T	10553 20234	cRUus	X	X	60332 -3		1000V	0,6/ 1kV	X	X	X	X	X	-40	+90	-40	+90	X			22
WK 137-T FT4	10553 20234	cRUus	X	X	X		1000V	0,6/ 1kV	X	X	X	X	X	-40	+90	-40	+90	X			24
WK 137 EMV D-T FT4	10553 20234	cRUus	X	X	X		1000V	0,6/ 1kV	X	X	X	X	X	-40	+90	-40	+90	X			26
WK Fire Alarm Cable-T			X			X		300/ 500V	X	X	X			-50	+90	-40	+80	+/- 216°			28
WK 101 H			X					0,6/ 1kV	X		X	X		-50	+100	-40	+90				29
WK H07BN4-F WIND-T			X					450/ 750V				X		-45	+90	-35	+90	X			30
WK Thermflex 145			X		60332 -3			0,6/ 1kV	X		X	X		-55	+145	-20	+120				31
WK 300w-T						60332 -1		1,8/ 3kV			X	X		-40	+90	-35	+90		X		32
WK 303w-T 1,8/3kV, UL 2kV	X	X				X	2000V	1,8/ 3kV			X	X		-40	+90	-35	+90		X		33
WK 305-T			X		60332 -3			1,8/ 3kV	X	X	X	X	X	-40	+90	-40	+90		X		34
WK 335-T 2,0/3,3kV, UL 2kV	X	X				X	2000V	1,8/ 3,3kV	X	X	X	X	X	-40	+90	-40	+90		X		35
WK MS-Single-T								3,6- 20kV			X	X		-40	+90	-40	+90		X		36
WK MS-Single-T UL/CSA	X	X						3,6- 20kV			X	X		-40	+90	-40	+90		X		37
WK MS-Multi-T								3,6- 38kV			X	X		-40	+90	-40	+90		X		38
WK MS-Multi-T UL/CSA	X	X						3,6- 38kV			X	X		-40	+90	-40	+90		X		39
WK DLO 2kV	UL 44	X			X	X	2000V					X		-40	+90						40
WK RHH/RHW-2 ALU	X						2000V					X		-40	+90						41
WK Powerline ALU 105°C, 0,6/1kV			X		60332 -1			0,6/ 1kV			X	X		-40	+105	-20	+90				43
WK Powerline ALU robust 105°C, 0,6/1kV			X		60332 -1			0,6/ 1kV			X	X		-40	+105	-20	+90				44
WK Powerline ALU 105°C, 1,8/3kV					60332 -1			1,8/ 3kV			X	X		-40	+105	-20	+90				45
WK Powerline ALU robust 105°C, 1,8/3kV					60332 -1			1,8/ 3kV			X	X		-40	+105	-20	+90				46
WK Powerline ALU halogen- free 105°C, 1,8/3kV								1,8/ 3kV			X	X		-40	+105	-20	+90				47
WK Powerline Copper Tower			X					0,6/ 1kV			X	X		-40	+90	-25	+50				48
WK Powerline ALU Tower			X					0,6/ 1kV			X	X		-40	+90	-25	+50				49
WK Powerline Blade Copper			X					0,6/ 1kV				X		-40	+80						50
WK Powerline Blade ALU			X					0,6/ 1kV				X		-40	+80						51

Selection table Cables & Wires

Control Cables	Usage, see chart on page 5	UL-Style	CSA	CE	HAR	with VDE Reg.-No.	FT1 equivalent to IEC 60332-1	nominal voltage according to UL	nominal voltage according to VDE	halogen-free	largely oil resistant	UV-resistant	temp. non-flexing from (in °C)	temp. non-flexing to (in °C)	temp. flexing from (in °C)	temp. flexing to (in °C)	Cu-Shield	can be found on page
JZ-500				X		X	X		300/500V	X			-40	+80	-15	+80		62
JZ-500 COLD				X			X		300/500V		X	X	-40	+80	-30	+80		64
F-CY-JZ				X		X	X		300/500V	X			-40	+80	-40	+80		65
Y-CY-JZ				X		X	X		300/500V				-40	+80	-5	+80	X	67
JZ-500 HMH JZ-500 HMH-C				X			60332-3		300/500V	X	X		-40	+70	-15	+70	X	69 71
MEGAFLEX 500 MEGAFLEX 500-C	X	X	X	X			60332-3	300/600V	300/500V	X	X	X	-40	+80	-30	+90	X	73 75
JZ-600 JZ-600-Y-CY				X			X		0,6/1kV		X	X	-40	+80	-5	+80	X	77 79
Single 600-J/-O Single 600-CY -J/-O	X	X	X	X			X	600 V	0,6/1kV			X	-40	+90	-5	+90	X	81 82
JZ-600 HMH JZ-600 HMH-C				X			60332-3		0,6/1kV	X	X	X	-40	+70	-15 -5	+70	X	83 85
JZ-600-UL/CSA JZ-600-Y-CY-UL/CSA	X	X	X	X			X	1kV	0,6/1kV		X	in sw	-40	+80	-5	+80	X	87 89
JZ-602 JZ-602-CY	X	X	X	X			X	600V			X		-40	+90	-5	+90	X	91 93
JZ-603 JZ-603-CY	X	X	X	X	X		X	600V	300/500V		X		-40	+70	-5	+70	X	95 96
H07RN-F H07RN-F/SOOW	X	X	X	X	X			600V	450/750V			X	-40	+90				97 99
HELUTHERM 145 MULTI HELUTHERM 145 MULTI-C				X			60332-3		300/500V to 1,0 mm ² 450/750V from 1,5 mm ²	X	X	X	-55	+145	-35	+120	X	100 102
LiYY-TP-UL	X	X	X	X				300V			X		-20	+80	-10	+80	X	115 116
JZ-604 TC TRAY CABLE	X	X	X	X			FT4	600V				X	-25	+90	-5	+90		142
Data Cables																		
PAAR-TRONIC-CY				X			X		350/500V		X		-30	+80	-5	+80	X	110
DATAFLAMM DATAFLAMM-C				X			X		350/500V	X			-40	+70	-5	+70	X	112 113
DATAFLAMM-C-PAAR				X			X		350/500V	X			-40	+70	-5	+70	X	114
UL (LiYY)	X	X	X	X				300V			X		-20	+80	-10	+80	X	115
UL (LiYCY)	X	X	X	X			X	300V			X		-20	+80	-10	+80	X	116
UL (LiYY-TP)	X	X	X	X			X	300V			X		-20	+80	-10	+80		118
UL (LiYCY-TP)	X	X	X	X			X	300V			X		-20	+80	-10	+80	X	120
SUPERTRONIC®-PURÖ SUPERTRONIC®-C-PURÖ				X					350V		X		-40	+70	-5	+70	X	122 123
SUPERTRONIC®-330 PURÖ SUPERTRONIC®-330-C-PURÖ	X	X	X	X			X	300V	300V	X	X		-50	+80	-40	+80	X	124 125
SUPER-PAAR-TRONIC-C-PUR® SUPER-PAAR-TRONIC 340-C-PUR®	X	X	X	X			X	300V	350V	X	X		-50	+70	-40	+70	X	126 127

Selection table Cables & Wires

Single Conductors	Usage, see chart on page 5	UL-Style	CSA	CE	HAR	with VDE Reg.-No.	FT1 equivalent to IEC 60332-1	nominal voltage according to UL	nominal voltage according to VDE	halogen-free	largely oil resistant	UV-resistant	temp. non-flexing from (in °C)	temp. non-flexing to (in °C)	temp. flexing from (in °C)	temp. flexing to (in °C)	Cu-Shield	can be found on page
H07 V-K/(H)07 V-K H05Z-K/H07Z-K				X			X			X			-30 -40	+80 +90	-5	+70		104 105
FIVENORM		X	X	X			X			X			-40 -55	+90 +145	-5 -35	+90 +120		106
HELUTHERM 145 600V HELUTHERM 145 600V UL		X	X	X						X	X		-55	+125	-35	+120		107 108
THHN/THWN		X		X				600V			X	X						109
TC TRAY CABLES USA																		
TRAYCONTROL 300		X	X	X			FT4	300V			X		-25	+105	-25	+105		130
TRAYCONTROL 300-C		X	X	X			FT4	300V			X		-25	+105	-25	+105	X	132
TRAYCONTROL 300 TP		X	X	X			FT4	300V			X		-25	+105	-25	+105		134
TRAYCONTROL 300-C TP		X	X	X			FT4	300V			X		-25	+105	-25	+105	X	136
TRAYCONTROL 500		1277	X	X			FT4	1000V			X		-40	+90	-5	+90		138
TRAYCONTROL 500-C		1277	X	X			FT4	1000V			X		-40	+90	-5	+90	X	140
JZ-604 TC TRAY CABLE		1277	X	X			FT4	600V			X	X	-25	+90	-5	+90		142
JZ-604-YCY TC TRAY CABLE		1277	X				FT4	600V			X	X	-25	+90	-5	+90	X	144
TRAYCONTROL 600		1277	X	X			FT4	1000V			X	X	-40	+90	-5	+90		145
TRAYCONTROL 600-C		1277	X	X			FT4	1000V			X	X	-40	+90	-5	+90	X	147
TRAYCONTROL 610 OIL RES II		2277	X				FT4	1000V			X	X	-40	+90	-5	+90		148
MULTIFLEX 600		X	X	X			X	600V		X	X	X	-40	+90	-5	+90		150
MULTIFLEX 600-C		X	X	X			X	600V		X	X	X	-40	+90	-5	+90	X	151
TOPFLEX 600 VFD		X	X	X				600V			X	X	-25	+90			X	152
TOPFLEX 650 VFD		X	X	X				600V			X	X	-25	+90			X	153
Communication Cables																		
Industrial Ethernet 105°C Torsion		X	X	X			60332-1	300V	100V	X	X	X	-40	+105	-40	+105	X	166
Industrial Ethernet S-FTP TORDIERFLEX		X	X	X			60332-1	300V	100V	X	X	X	-20	+80	-20	+80	X	167
BUS Cable HELUWIND WK CAN BUS 105°C		X	X	X			X	600V	100V	X	X	X	-40	+105	-20	+60	X	168
BUS Cable Profibus SK indoor outdoor		X	X	X			X	600V	100V	-	-	X	-40	+70	-5	+60	X	169
BUS Cable Profibus L2 Torsion Festoon		X	CMX	X			X	300V	100V	X	X	X	-40	+75	-25	+75	X	170
BUS Cable Profibus SK FRNC industry		X	X	X			FT4 FT1	300V 300V	100V 100V	X	X	X	-25 -40	+70 +70	-25 -40	+70 +70	X X	171
AT-V(ZN)Y(ZN)Y AT-V(ZN)H(ZN)11Y		submitted	submitted				FT4 submitted			X	X	X	-40 -40	+90 +90	-40 -40	+90 +90		172
LWL-Cable mobile, trailing A-V(ZN)11Y							60332-1			X	X	X	-30	+70	-20	+70		173
LWL-Cable mobile A-V(ZN)Y		X	X				FT4				X	X	-30	+80	-20	+80		174

Selection table Cables & Wires

Communication Cables	Usage, see chart on page 5	UL-Style	CSA	CE	HAR	with VDE Reg.-No.	FT1 equivalent to IEC 60332-1	nominal voltage according to UL	nominal voltage according to VDE	halogen-free	largely oil resistant	UV-resistant	temp. non-flexing from (in °C)		temp. flexing from (in °C)		Cu-Shield	can be found on page
													-	+	-	+		
Fibre Optic Breakout Cable industry HCS I-V(ZN)YY		X	X				FT4				X	X	-30	+85	-20	+85		175
Fibre Optic Breakout Cable industry HCS I-V(ZN)Y11Y										X	X		-20	+80	-20	+80		176
Plastic-fibre Optic cable industry POF/PE I-V2Y, I-V2Y(ZN)11Y							60332-1				X	X	-20	+80	-20	+80		177
Fibre Optic Universal Cable A/I-DQ(ZN)BH							60332-1			X	X	X	-20	+60	-5	+50		178
Fibre Optic Outdoor Cable A-DQ(ZN)B2Y (central)										X		X	-20	+60	-5	+50		179
Fibre Optic Outdoor Cable A-DQ(ZN)B2Y (central)		-	-							X		X	-20	+60	-5	+50		180
Fibre Optic Outdoor Cable A-DQ(ZN)B2Y (stranded)										X		X	-20	+60	-5	+50		181
Fibre Optic Outdoor Cable A-DQ(ZN)B2Y (stranded, Multifibre)										X		X	-20	+60	-5	+50		182
Tower & Infrastructure Cables																		
NYY-J/-0				X			X		0,6/1kV				-40	+70	-5	+50		52
NAYY				X			X		0,6/1kV				-40	+70	-5	+50		54
NA2XY				X			X		0,6/1kV				-40	+70	-5	+50		55
N2XH				X			X		0,6/1kV	X			-30	+90	-5	+50		56
WK (N)A2XH				X			60332-3		0,6/1kV	X		X	-40	+90	-5	+50		57
N2XS2Y									6-30kV			X	-40	+90			X	58
NA2XS2Y									6-30kV			X	-40	+90			X	59
N2XS(F)2Y									6-30kV			X	-40	+90			X	60
NA2XS(F)2Y									6-30kV			X	-40	+90			X	61

Our Berlin Warehouse

Direct burial and medium voltage cables available for immediate delivery from stock



- 50.000 m² storage area in Berlin
- Various types and cross-sections available
- VDE-certified, DIN VDE 0276
- On-time delivery on the construction site; on disposable drums if required
- Deliveries at short notice, including cuts to length and follow-up deliveries



Our Handling

- Your individual requirements are important
- Unless otherwise requested, the cable is cut to length and coiled on drums automatically
- Cutting is performed with 10 tons cut to length machines

Research & Development

Torsion test centre at German production site



For several years HELUKABEL® has been testing its torsional wind turbine cables in an 8m/26ft-high research tower at the German production site. The acquired findings had a significant effect on the development of the latest generation of HELUWIND® WK-cables.

HELUKABEL® is the only manufacturer that replicated the cable loop of a wind turbine 1:1 and is able to perform tests under realistic conditions.

Up to 20 cables with outer diameters from 5 mm up to 100 mm can be mounted and tested simultaneously in the girder mast where these cables are exposed to sun, rain, wind, snow and UV-radiation at the same time.

A special drive and control software allows HELUKABEL's engineers to repeatedly run 1200°-torsion cycles in each direction.

The HELUWIND® WK-torsion series have been tested successfully for more than 16.000 torsion cycles. This operational reliability is significantly longer than the standard lifetime of a wind turbine (5000 – 10000 cycles).

HELUWIND® WK 103w-Torsion

UV-resistant, UL/CSA-Style 10678/21179 Single-/Multiconductor



Technical data

- **Temperature range**
flexing -35°C to +90°C
fixed installation -40°C to +90°C
installation -20°C to +90°C
- **Operating temperature at conductor**
max. +90°C
- **Nominal voltage**
acc. to VDE U₀/U 0,6/1kV
acc. to UL 1000V
- **Test voltage 50 Hz:**
4000 V
- **Minimum bending radius**
8 x cable diameter
(4 x for fixed installation)
- **Torsion application**
+/-140° per 1m
- **Approvals**
UL-Style 10678 Singleconductor <400mm²
UL-Style 21179 Multiconductor
cRUus
- **Flame test**
FT1, VW-1, IEC 60332-1

Cable structure

- Special bare copper conductors, fine stranded according to IEC 60228
- Special heat-resistant insulation
- Core identification JZ: black with white numbers + Gn/YI ground
- Multiconductors cabled
- Jacket special heat-resistant compound
- Black jacket

Properties

- UV-resistant
- multi-climate operation
- torsion tested
- flame-retardant
- oil-resistant
- recyclable
- **easy to assemble**

Note

Other diameters, part-no. and prices on request.

Please contact us with your individual requirements via fax +49 7150 9209 5135.

Highest permissible Voltage

- DC:
Conductor/Conductor 1,8kV
Conductor/Earth 0,9kV
- AC: Conductor/Earth 0,7kV
- Three phase: Conductor/Conductor 1,2kV

Application

The WK 103w was designed for flexible use, especially to accommodate the torsional stress in the cable loop of a wind turbine. The cable is designed for a voltage level for 0.6/1kV for all dimensions, whereby individual cables can also be routed in parallel for standard conformity according to UL. A spatial separation of the cable routes is no longer necessary. The WK series was successfully tested with over 18,000 torsion cycles and thus offers optimal functional safety well beyond the service life of the wind turbine.

CE = The product conforms to the EC Low Voltage Directive 2006/95/EC

Continuation ►

HELWIND® WK 103w-Torsion

UV-resistant, UL/CSA-Style 10678/21179 Single-/Multiconductor



Core identification JZ

Part no.	No.cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
704809	4 G 0,34	22	7,1	29,0	86,0
704810	4 G 0,5	20	7,4	33,4	99,0
704811	6 G 0,5	20	8,6	51,2	121,0
704812	10 G 0,5	20	10,8	48,0	165,0
704813	12 G 0,5	20	11,1	84,0	208,0
704814	3 G 0,75	19	6,5	22,0	67,8
704815	4 G 0,75	19	7,9	29,0	100,0
704816	5 G 0,75	19	8,6	36,0	120,0
704817	7 G 0,75	19	10,0	51,0	137,4
704818	10 G 0,75	19	11,0	72,0	200,0
704819	12 G 0,75	19	11,8	87,0	220,0
704820	14 G 0,75	19	12,5	101,0	238,0
704821	16 G 0,75	19	13,2	116,0	271,0
704822	18 G 0,75	19	13,9	130,0	310,0
704823	21 G 0,75	19	15,2	152,0	380,0
704824	25 G 0,75	19	16,9	180,0	490,0
704825	32 G 0,75	19	18,2	231,0	560,0
704826	36 G 0,75	19	19,1	260,0	620,0
704827	40 G 0,75	19	20,5	288,0	729,0
704828	41 G 0,75	19	20,8	296,0	750,0
704829	50 G 0,75	19	23,5	441,0	990,0
704830	4 G 1	18	8,3	39,0	100,0
704831	5 G 1	18	9,0	48,0	110,0
704832	7 G 1	18	10,5	68,0	140,0
704833	10 G 1	18	13,0	96,0	220,0
704834	12 G 1	18	13,2	116,0	240,0
704835	14 G 1	18	13,4	135,0	280,0
704836	16 G 1	18	14,1	154,0	310,0
704837	18 G 1	18	15,1	173,0	360,0
704838	21 G 1	18	16,7	202,0	410,0
704839	25 G 1	18	18,4	240,0	500,0
704840	32 G 1	18	19,8	308,0	590,0
704841	36 G 1	18	20,6	346,0	700,0
704842	40 G 1	18	22,4	384,0	800,0
704843	41 G 1	18	22,4	394,0	810,0
704844	50 G 1	18	24,6	480,0	980,0
704845	2 G 1,5	16	7,9	29,0	75,0
703920	3 G 1,5	16	8,0	44,0	104,9
703921	4 G 1,5	16	8,9	58,0	132,0
703922	5 G 1,5	16	9,7	72,0	157,1
704366	7 G 1,5	16	12,0	101,0	230,8
704846	10 G 1,5	16	13,1	144,0	270,0
704847	12 G 1,5	16	14,3	173,0	360,0
704848	14 G 1,5	16	14,9	202,0	420,0
704849	16 G 1,5	16	15,7	231,0	450,0
704850	18 G 1,5	16	16,8	260,0	510,0
704851	21 G 1,5	16	17,8	303,0	590,0
704852	25 G 1,5	16	20,6	360,0	700,0
704853	32 G 1,5	16	22,2	460,0	900,0
704854	36 G 1,5	16	23,1	519,0	980,0

Core identification JZ

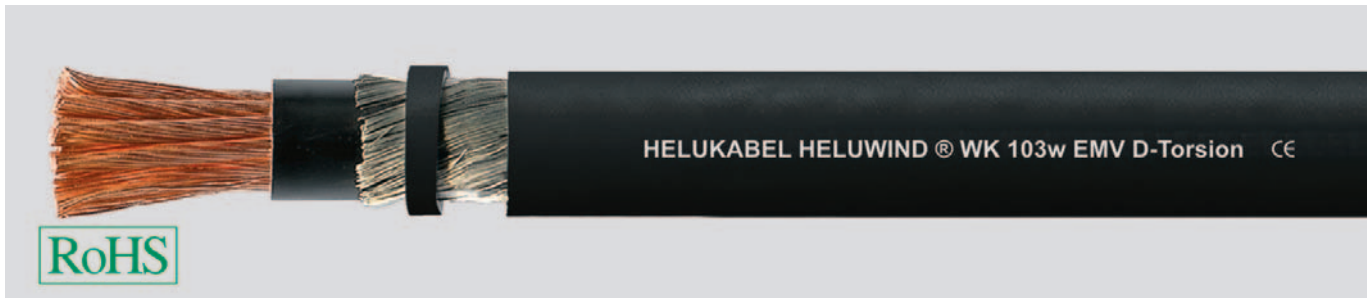
Part no.	No.cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
704855	40 G 1,5	16	25,0	576,0	1030,0
704856	41 G 1,5	16	25,0	591,0	1050,0
704857	50 G 1,5	16	27,7	720,0	1200,0
704267	3 G 2,5	14	8,9	72,0	150,8
703925	4 G 2,5	14	9,7	96,0	230,0
703926	5 G 2,5	14	10,9	120,0	237,9
704858	7 G 2,5	14	14,4	168,0	360,0
704859	10 G 2,5	14	15,8	240,0	480,0
704367	12 G 2,5	14	16,3	288,0	527,0
705040	19 G 2,5	14	21,0	456,0	590,0
704368	3 G 4	12	10,8	116,0	227,5
703930	4 G 4	12	12,0	154,0	286,8
704269	5 G 4	12	13,6	192,0	365,7
704860	7 G 4	12	15,9	269,0	489,0
704861	12 G 4	12	19,6	461,0	740,0
704862	3 G 6	10	13,1	173,0	340,0
704863	4 G 6	10	14,6	231,0	460,0
704864	5 G 6	10	16,3	288,0	566,4
704865	7 G 6	10	19,6	404,0	780,0
706318	3 G 10	8	16,4	228,0	540,0
704866	4 G 10	8	17,4	384,0	670,0
703932	5 G 10	8	20,1	480,0	851,2
704867	7 G 10	8	23,5	672,0	1150,0
704868	4 G 16	6	20,7	615,0	1180,7
703933	5 G 16	6	25,4	768,0	1348,1
704869	4 G 25	4	26,4	960,0	1576,2
704870	5 G 25	4	28,2	1200,0	1900,0
704871	4 G 35	2	31,4	1344,0	286,8
704872	5 G 35	2	35,4	1680,0	2770,6
704873	4 G 50	1	36,7	1920,0	2800,0

Part no.	No.cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
704287	1 x 35	2	12,9	336,0	454,4
704288	1 x 50	1	15,6	480,0	630,2
704289	1 x 70	2/0	17,9	672,0	876,8
704874	1 x 95	3/0	21,9	912,0	1230,0
704291	1 x 120	4/0	23,1	1152,0	1535,1
704875	1 x 150	300 kcmil	27,2	1440,0	2966,8
704293	1 x 185	350 kcmil	27,5	1776,0	2284,0
704294	1 x 240	500 kcmil	31,2	2304,0	2966,8
704295	1 x 300	600 kcmil	34,2	2880,0	3672,0
704876	1 x 400	750 kcmil	39,3	3840,0	4500,0

Dimensions and specifications may be changed without prior notice.

HELUWIND® WK 103w EMV D-Torsion

shielded, UV-resistant, UL/CSA-Style 10678/21179 Single-/Multiconductor, 0,6/1kV



Technical data

- **Temperature range**
flexing -35°C to +90°C
fixed installation -40°C to +90°C
installation -20°C to +90°C
- **Operating temperature at conductor**
max. +90°C
- **Nominal voltage**
acc. to VDE U₀/U 0,6/1kV
acc. to UL 1000V
- **Test voltage 50 Hz:**
4000 V
- **Minimum bending radius**
8 x cable diameter
(4 x for fixed installation)
- **Torsion application**
+/-140° per 1m
- **Approvals**
UL-Style 10678 Singleconductor <400mm²
UL-Style 21179 Multiconductor
cRUus
- **Flame test**
FT1, VW-1, IEC 60332-1

Cable structure

- Special bare copper conductors, fine stranded according to IEC 60228
- Special heat-resistant insulation
- Core identification JZ: black with white numbers + Gn/YI ground or color code DIN 47100
- Multiconductors cabled
- EMV-shielded types have tinned copper wrapping
- Jacket special heat-resistant compound
- Black jacket

Properties

- UV-resistant
- multi-climate operation
- torsion tested
- flame-retardant
- oil-resistant
- recyclable
- **easy to assemble**

Note

Other diameters, part-no. and prices on request.

Please contact us with your individual requirements via fax +49 7150 9209 5135.

Highest permissible Voltage

- DC:
Conductor/Conductor 1,8kV
Conductor/Earth 0,9kV
- AC: Conductor/Earth 0,7kV
- Three phase: Conductor/Conductor 1,2kV

Application

The WK 103w EMC was designed for flexible use, especially to accommodate the torsional stress in the cable loop of a wind turbine. The cable is designed for a voltage level for 0.6/1kV for all dimensions, whereby individual cables can also be routed in parallel for standard conformity according to UL. A spatial separation of the cable routes is no longer necessary. The WK series was successfully tested with over 18,000 torsion cycles and thus offers optimal functional safety well beyond the service life of the wind turbine.

CE= The product conforms to the EC Low Voltage Directive 2006/95/EC.

Continuation ▶

HELUWIND® WK 103w EMV D-Torsion

shielded, UV-resistant, UL/CSA-Style 10678/21179 Single-/Multiconductor, 0,6/1kV



Core identification JZ

Part no.	No.cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
704752	4 G 0,34	22	7,7	32,0	91,0
704755	4 G 0,5	20	8,0	37,8	105,0
704758	6 G 0,5	20	9,2	53,6	130,0
704762	10 G 0,5	20	11,4	73,0	170,0
704763	12 G 0,5	20	11,7	88,4	220,0
704764	3 G 0,75	19	7,7	43,2	97,0
704765	4 G 0,75	19	8,3	52,6	122,0
704767	5 G 0,75	19	9,0	63,0	145,0
704369	7 G 0,75	19	9,7	82,8	162,6
704769	4 x 2 x 0,75	19	12,7	91,0	211,0
704768	8 G 0,75	19	10,7	95,0	220,0
704771	12 G 0,75	19	12,2	126,9	257,5
704774	18 G 0,75	19	14,4	179,0	400,0
704775	12 x 2 x 0,75	19	17,6	223,0	520,0
704268	25 G 0,75	19	17,8	256,0	547,2
704778	41 G 0,75	19	21,2	370,8	795,0
704779	50 G 0,75	19	23,5	441,0	900,0
704784	2 G 1,5	16	6,8	44,0	86,0
704785	3 G 1,5	16	8,8	68,1	133,0
704786	4 G 1,5	16	9,4	87,9	159,0
704788	5 G 1,5	16	10,3	104,0	195,0
704790	7 G 1,5	16	11,9	140,8	247,0
704792	12 G 1,5	16	14,7	226,8	410,0
704793	3 G 2,5	14	10,4	104,4	210,0
704794	4 G 2,5	14	10,5	132,7	218,4
704795	5 G 2,5	14	12,3	161,1	288,0
704796	7 G 2,5	14	13,5	223,1	355,1
704797	12 G 2,5	14	16,7	350,6	560,0
705039	19 G 2,5	14	21,7	561,0	638,0
704798	5 G 4	12	13,6	237,4	382,0
704799	7 G 4	12	16,3	325,0	582,0
704800	12 G 4	12	20,0	532,1	806,0
704801	5 G 6	10	17,4	341,0	640,0
704802	4 G 10	8	17,8	445,6	727,0
704803	5 G 10	8	20,7	550,2	935,0
704804	4 G 16	6	21,1	692,2	1072,0
704805	5 G 16	6	26,2	881,0	1667,3
704806	4 G 25	4	26,0	1059,0	1664,0
704807	5 G 25	4	28,6	1327,0	2014,0
704808	4 G 50	1	37,0	2080,0	3200,0

Part no.	No.cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
703147	1 x 70	2/0	19,8	739,0	950,0
703148	1 x 95	3/0	22,5	989,0	1280,0
703041	1 x 120	4/0	23,0	1242,0	1742,6
703149	1 x 150	300 kcmil	27,8	1534,0	2000,0
703150	1 x 185	350 kcmil	27,8	1904,0	2395,8
703151	1 x 240	500 kcmil	33,0	2451,0	3150,0
703152	1 x 300	600 kcmil	34,4	3027,0	3920,0

Core identification DIN 47100

Part no.	No.cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
704749	2 x 2 x 0,25	24	8,9	27,0	90,0
704750	4 x 2 x 0,25	24	9,9	39,0	115,0
704751	5 x 2 x 0,25	24	11,1	46,0	130,0
704753	2 x 2 x 0,34	22	9,6	35,0	110,0
704754	4 x 2 x 0,34	22	11,0	47,0	130,0
704756	2 x 2 x 0,5	20	9,8	39,0	115,0
704757	4 x 0,5	20	8,0	37,8	105,0
704759	6 x 0,5	20	9,2	53,6	130,0
704761	4 x 2 x 0,5	20	11,3	69,5	184,1
705829	3 x 2 x 0,75	19	11,5	73,0	172,0
704766	2 x 2 x 0,75	19	10,4	54,0	130,0
704770	4 x 2 x 0,75	19	12,7	91,0	214,5
704772	12 x 0,75	19	12,2	126,9	257,5
704773	8 x 2 x 0,75	19	17,1	170,0	410,0
704776	12 x 2 x 0,75	19	17,6	223,0	520,0
704777	32 x 0,75	19	18,8	294,0	610,0
704780	4 x 1	18	8,7	56,0	110,0
704781	6 x 1	18	10,2	82,0	150,0
704782	8 x 1	18	11,7	106,0	210,0
704783	12 x 1	18	13,3	150,0	280,0
704787	2 x 2 x 1,5	16	12,1	90,0	180,0
704789	3 x 2 x 1,5	16	14,0	120,0	235,0
704791	4 x 2 x 1,5	16	14,6	150,0	210,0

Dimensions and specifications may be changed without prior notice.

HELUWIND® WK 103k-Torsion

UV-resistant, UL/CSA-Style 10269/2570 Single-/Multiconductor, 0,6/1kV



Technical data

- **Temperature range**
flexing -40 °C to +80 °C
fixed installation -40 °C to +80 °C
installation -40 °C to +80 °C
- **Nominal voltage**
acc. to VDE U₀/U 0,6/1kV,
acc. to UL 1000V
- **Test voltage 50 Hz**
4000 V
- **Minimum bending radius**
8 x cable diameter
(4 x for fixed installation)
- **Torsion application**
+/-140° per 1 m
- **Approvals**
UL-Style 10269 to 400mm² Singleconductor
UL-Style 2570 Multiconductor,
cRUus*
- **Flame test**
FT1, VW-1, IEC 60332-1

Cable structure

- Special bare copper conductors, fine stranded according to IEC 60228
- Special flexible insulation material for low temperatures
- Core identification JZ: black with white numbers + Gn/YI ground or color code DIN 47100
- Multiconductors cabled
- Jacket special heat-resistant compound
- Black jacket

Properties

- UV-resistant
- multi-climate operation
- torsion tested
- flame-retardant
- oil-resistant
- recyclable
- **easy to assemble**

Note

Other diameters, part-no. and prices on request.

Please contact us with your individual requirements via
fax +49 7150 9209 5135.

Highest permissible Voltage

- DC:
Conductor/Conductor 1,8kV
Conductor/Earth 0,9kV
- AC: Conductor/Earth 0,7kV
- Three phase: Conductor/Conductor 1,2kV

Application

The WK 103k was designed for flexible use, especially to accommodate the torsional stress in the cable loop of a wind turbine. The cable is designed for a voltage level for 0.6/1kV for all dimensions, whereby individual cables can also be routed in parallel for standard conformity according to UL. A spatial separation of the cable routes is no longer necessary. The WK series was successfully tested with over 18,000 torsion cycles and thus offers optimal functional safety well beyond the service life of the wind turbine.

CE= The product conforms to the EC Low Voltage Directive 2006/95/EC.

Continuation ▶

HELUWIND® WK 103k-Torsion

UV-resistant, UL/CSA-Style 10269/2570 Single-/Multiconductor, 0,6/1kV



Core identification JZ

Part no.	No.cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
704941	4 G 0,5	20	7,4	33,4	99,0
704942	6 G 0,5	20	8,6	51,2	121,0
704943	10 G 0,5	20	10,8	48,0	165,0
704944	12 G 0,5	20	11,1	84,0	208,0
704945	3 G 0,75	19	7,3	22,0	77,0
704946	4 G 0,75	19	7,9	29,0	100,0
704947	5 G 0,75	19	8,6	36,0	120,0
704948	7 G 0,75	19	10,0	51,0	170,0
704949	10 G 0,75	19	11,0	72,0	200,0
704950	12 G 0,75	19	11,8	87,0	220,0
704951	14 G 0,75	19	12,5	101,0	238,0
704952	16 G 0,75	19	13,2	116,0	271,0
704953	18 G 0,75	19	13,9	130,0	310,0
704954	21 G 0,75	19	15,2	152,0	380,0
704955	25 G 0,75	19	16,9	180,0	490,0
704956	32 G 0,75	19	18,2	231,0	560,0
704957	36 G 0,75	19	19,1	260,0	620,0
704958	40 G 0,75	19	20,5	288,0	729,0
704959	41 G 0,75	19	20,8	296,0	729,0
704960	50 G 0,75	19	23,5	441,0	990,0
704961	4 G 1	18	8,3	39,0	100,0
704962	5 G 1	18	9,0	48,0	110,0
704963	7 G 1	18	10,5	68,0	140,0
704964	10 G 1	18	13,0	96,0	220,0
704965	12 G 1	18	13,2	116,0	240,0
704966	14 G 1	18	13,4	135,0	280,0
704967	16 G 1	18	14,1	154,0	310,0
704968	18 G 1	18	15,1	173,0	360,0
704969	21 G 1	18	16,7	202,0	410,0
704970	25 G 1	18	18,4	240,0	500,0
704971	32 G 1	18	19,8	308,0	590,0
704972	36 G 1	18	20,6	346,0	700,0
704973	40 G 1	18	22,4	384,0	800,0
704974	41 G 1	18	22,4	394,0	810,0
704975	50 G 1	18	24,6	480,0	980,0
704976	2 G 1,5	16	7,9	29,0	75,0
704977	3 G 1,5	16	8,0	44,0	110,0
704978	4 G 1,5	16	8,9	58,0	131,0
704979	5 G 1,5	16	9,7	72,0	165,0
704980	7 G 1,5	16	12,0	101,0	210,0
704981	10 G 1,5	16	13,1	144,0	270,0
704982	12 G 1,5	16	14,3	173,0	360,0
704983	14 G 1,5	16	14,9	202,0	420,0
704984	16 G 1,5	16	15,7	231,0	450,0
704985	18 G 1,5	16	16,8	260,0	510,0
704986	21 G 1,5	16	17,8	305,0	590,0
704987	25 G 1,5	16	20,6	360,0	700,0
704988	32 G 1,5	16	22,2	460,0	900,0
704989	36 G 1,5	16	23,1	519,0	980,0
704990	40 G 1,5	16	25,0	576,0	1030,0

Core identification JZ

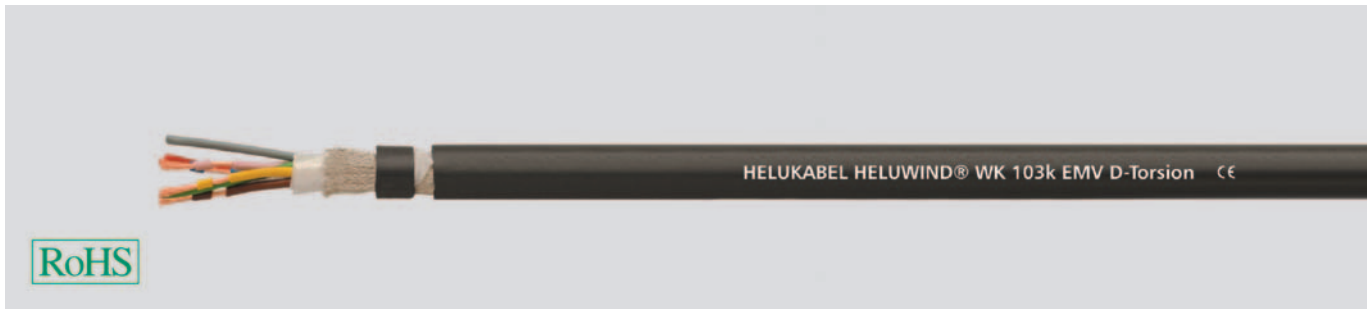
Part no.	No.cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
704991	41 G 1,5	16	25,0	591,0	1050,0
704992	50 G 1,5	16	27,7	720,0	1200,0
704993	3 G 2,5	14	8,9	72,0	151,0
704994	4 G 2,5	14	9,7	96,0	230,0
704995	5 G 2,5	14	10,9	120,0	250,0
704996	7 G 2,5	14	14,4	168,0	360,0
704997	10 G 2,5	14	15,8	240,0	480,0
704998	12 G 2,5	14	16,3	288,0	560,0
705038	19 G 2,5	14	21,0	456,0	591,0
704999	3 G 4	12	10,8	116,0	250,0
705000	4 G 4	12	12,0	154,0	286,0
705001	5 G 4	12	13,6	192,0	370,0
705002	7 G 4	12	15,9	269,0	530,0
705003	12 G 4	12	19,6	461,0	740,0
705004	3 G 6	10	13,1	173,0	340,0
705005	4 G 6	10	14,6	231,0	460,0
705006	5 G 6	10	16,3	288,0	566,4
705007	7 G 6	10	19,6	404,0	780,0
705008	4 G 10	8	17,4	384,0	670,0
705009	5 G 10	8	20,1	480,0	870,0
705010	7 G 10	8	23,5	672,0	1150,0
705011	4 G 16	6	20,7	615,0	1000,0
705012	5 G 16	6	25,4	768,0	1250,0
705013	4 G 25	4	25,2	960,0	1580,0
705014	5 G 25	4	28,2	1200,0	1900,0
705016	4 G 35	2	31,4	1344,0	2100,0
705017	5 G 35	2	35,4	1680,0	2600,0
705018	4 G 50	1	36,7	1920,0	2800,0
707650	5 C 50	1	41,2	2400,0	3200,0
704940	4 G 70	2/0	7,1	29,0	86,0

Part no.	No.cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
705015	1 x 35	2	12,9	336,0	460,0
705019	1 x 70	2/0	17,9	672,0	1580,0
705020	1 x 95	3/0	21,9	912,0	1230,0
705021	1 x 120	4/0	23,1	1152,0	1540,0
705022	1 x 150	300 kcmil	27,2	1440,0	1870,0
705023	1 x 185	350 kcmil	27,5	1776,0	2284,0
705024	1 x 240	500 kcmil	31,2	2304,0	2966,8
705025	1 x 300	600 kcmil	35,0	2880,0	3730,0
705026	1 x 400	750 kcmil	39,3	3840,0	4500,0

Dimensions and specifications may be changed without prior notice.

HELUWIND® WK 103k EMV D-Torsion

shielded, UV-resistant, UL/CSA-Style 10269/2570 Single-/Multiconductor, 0,6/1kV



Technical data

- **Temperature range**
flexing -40 °C to +80 °C
fixed installation -40 °C to +80 °C
installation -40 °C to +80 °C
- **Nominal voltage**
acc. to VDE U₀/U 0,6/1kV,
acc. to UL 1000V
- **Test voltage 50 Hz**
4000 V
- **Minimum bending radius**
10 x cable diameter
(5 x for fixed installation)
- **Torsion application**
+/-140° per 1 m
- **Approvals**
UL-Style 10269 to 400mm² Singleconductor
UL-Style 2570 Multiconductor,
cRUus*
- **Flame test**
FT1, VW-1, IEC 60332-1

Cable structure

- Special bare copper conductors, fine stranded according to IEC 60228
- Special flexible insulation material for low temperatures
- Core identification JZ: black with white numbers + Gn/YI ground or color code DIN 47100
- Multiconductors cabled
- EMV-shielded types have tinned copper wrapping
- Jacket special heat-resistant compound
- Black jacket

Properties

- UV-resistant
- multi-climate operation
- torsion tested
- flame-retardant
- oil-resistant
- recyclable
- **easy to assemble**

Note

Other diameters, part-no. and prices on request.
Please contact us with your individual requirements via
fax +49 7150 9209 5135.

Highest permissible Voltage

- DC:
Conductor/Conductor 1,8kV
Conductor/Earth 0,9kV
- AC: Conductor/Earth 0,7kV
- Three phase: Conductor/Conductor 1,2kV

Application

The WK 103k EMC was designed for flexible use, especially to accommodate the torsional stress in the cable loop of a wind turbine. The cable is designed for a voltage level for 0.6/1kV for all dimensions, whereby individual cables can also be routed in parallel for standard conformity according to UL. A spatial separation of the cable routes is no longer necessary. The WK series was successfully tested with over 18,000 torsion cycles and thus offers optimal functional safety well beyond the service life of the wind turbine.

CE= The product conforms to the EC Low Voltage Directive 2006/95/EC.

Continuation ►



HELUWIND® WK 103k EMV D-Torsion

shielded, UV-resistant, UL/CSA-Style 10269/2570 Single-/Multiconductor, 0,6/1kV



Core identification JZ

Part no.	No.cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
704880	4 G 0,34	22	7,7	32,0	91,0
704883	4 G 0,5	20	8,0	37,8	105,0
704886	6 G 0,5	20	9,2	53,6	130,0
704890	10 G 0,5	20	11,4	73,0	170,0
704891	12 G 0,5	20	11,7	88,4	220,0
704892	3 G 0,75	19	7,7	45,2	97,0
704893	4 G 0,75	19	8,3	52,6	122,0
704895	5 G 0,75	19	9,0	63,0	145,0
704896	7 G 0,75	19	9,7	82,8	200,0
704898	4 x 2 x 0,75	19	12,7	91,0	211,0
704897	8 G 0,75	19	10,7	95,0	220,0
704900	12 G 0,75	19	12,2	126,9	257,5
704903	18 G 0,75	19	14,4	179,0	400,0
704904	12 x 2 x 0,75	19	17,6	223,0	520,0
704906	25 G 0,75	19	17,8	256,0	552,0
704908	41 G 0,75	19	21,2	370,8	795,0
704909	50 G 0,75	19	23,5	441,0	900,0
704914	2 G 1,5	16	6,8	44,0	86,0
704915	3 G 1,5	16	8,8	68,1	133,0
704916	4 G 1,5	16	9,4	87,9	159,0
704918	5 G 1,5	16	10,3	104,0	195,0
704920	7 G 1,5	16	11,9	140,8	247,0
704922	12 G 1,5	16	14,7	226,8	410,0
704923	3 G 2,5	14	10,4	104,4	210,0
704924	4 G 2,5	14	11,2	132,8	264,0
704925	5 G 2,5	14	12,3	161,1	288,0
704926	7 G 2,5	14	14,8	223,1	411,0
704927	12 G 2,5	14	16,7	350,6	560,0
705037	19 G 2,5	14	21,7	561,0	638,0
704928	5 G 4	12	13,6	237,4	382,0
704929	7 G 4	12	16,3	325,0	582,0
704930	12 G 4	12	20,0	532,1	806,0
704931	5 G 6	10	17,4	341,0	640,0
704932	4 G 10	8	17,8	445,6	727,0
704933	5 G 10	8	19,8	550,2	955,0
704934	4 G 16	6	21,1	692,2	1072,0
704935	5 G 16	6	24,4	854,4	1330,0
704936	4 G 25	4	26,0	1059,0	1664,0
704937	5 G 25	4	28,6	1327,0	2014,0
704938	4 G 50	1	37,0	2080,0	3200,0

Part no.	No.cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
78177	1 x 70	2/0	19,8	739,0	950,0
74006	1 x 95	3/0	21,2	959,0	1285,8
78178	1 x 120	4/0	25,0	1250,0	1644,2
78179	1 x 150	300 kcmil	28,4	1740,0	2000,0
78180	1 x 185	350 kcmil	30,1	1904,0	2450,0
703328	1 x 240	500 kcmil	32,5	2451,0	2953,3
704939	1 x 300	600 kcmil	39,0	3027,0	3920,0

Core identification DIN 47100

Part no.	No.cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
704877	2 x 2 x 0,25	24	8,9	27,0	90,0
704878	4 x 2 x 0,25	24	9,9	39,0	115,0
704879	5 x 2 x 0,25	24	11,1	46,0	130,0
704881	2 x 2 x 0,34	22	9,6	35,0	110,0
704882	4 x 2 x 0,34	22	11,0	47,0	130,0
704884	2 x 2 x 0,5	20	9,8	39,0	115,0
704885	4 x 0,5	20	8,0	37,8	105,0
704887	6 x 0,5	20	9,2	53,6	130,0
704889	8 x 0,5	20	11,3	42,0	150,0
704888	4 x 2 x 0,5	20	11,5	69,2	190,0
704894	2 x 2 x 0,75	19	10,4	54,0	130,0
704899	4 x 2 x 0,75	19	12,7	91,0	211,0
704901	12 x 0,75	19	12,2	126,9	257,5
704902	8 x 2 x 0,75	19	17,1	170,0	410,0
704905	12 x 2 x 0,75	19	17,6	223,0	520,0
704907	32 x 0,75	19	18,8	294,0	610,0
704910	4 x 1	18	8,7	56,0	110,0
704911	6 x 1	18	10,2	82,0	150,0
704912	8 x 1	18	11,7	106,0	210,0
704913	12 x 1	18	13,3	150,0	280,0
704917	2 x 2 x 1,5	16	12,1	90,0	180,0
704919	3 x 2 x 1,5	16	14,0	120,0	235,0
704921	4 x 2 x 1,5	16	14,6	150,0	210,0

Dimensions and specifications may be changed without prior notice.



HELUWIND® WK 135-Torsion

Offshore, UV-resistant, UL/CSA-Style 10553/20234
Single-/Multiconductor, 0,6/1kV, 90°C (80°C acc. UL)



Technical data

- **Temperature range**
flexing -40°C to +90°C
fixed installation -40°C to +90°C
acc. UL to +80°C
- **Operating temperature at conductor**
max. +90°C
- **Nominal voltage**
acc. to VDE U₀/U 0,6/1kV
acc. to UL 1000V
- **Test voltage 50 Hz:**
conductor/conductor 4000 V
- **Minimum bending radius**
8 x cable diameter
(4 x for fixed installation)
- **Torsion application**
+/-150° per 1m
- **Approvals**
Singleconductor UL-Style 10553
Multiconductor UL-Style 20234
cRUUs
- **Flame test**
FT1, IEC 60332-3-24
UL 758, Cable flame test
- **Halogen free**
IEC 60754-1
- **Smoke density**
IEC 61034-1+2
- **Oil**
acc. to oil res II
- **WTTC** in preparation

Application

The WK 135 was designed for flexible use, especially to accommodate the torsional stress in the cable loop of a wind turbine. The cable is designed for a voltage level for 0.6/1kV for all dimensions, whereby individual cables can also be routed in parallel for standard conformity according to UL. A spatial separation of the cable routes is no longer necessary. Due to the extremely resistant jacket and the absence of halogen, this cable is ideally suited for use in offshore wind turbines. The WK series was successfully tested with over 18,000 torsion cycles and thus offers optimal functional safety well beyond the service life of the wind turbine.

Advantages of the WK 135-T over the H07BN4-F:

- Burning behavior in accordance with IEC 60332-3-24
- Higher abrasion resistance
- Recyclable

CE= The product conforms to the EC Low Voltage Directive 2006/95/EC

Cable structure

- Special bare copper conductors, fine stranded according to IEC 60228
- Insulation special compound
- Core identification JZ: black with white numbers + Gn/Yl ground or color code DIN 47100 or VDE 0293 HD 308
- Multiconductors cabled
- Jacket special compound
- Black jacket

Properties

- halogen-free
- extremely abrasion-resistant
- low adhesion
- high flame retardant
- torsion tested
- suitable for Offshore
- extremely oil resistant
- UV-resistant
- recyclable
- multi climate operation
- designed for CCV application
- **easy to assemble**

Note

Other diameters, part-no. and prices on request.

Please contact us with your individual requirements via
fax +49 7150 9209 5135.

Highest permissible Voltage

- DC:
Conductor/Conductor 1,8kV
Conductor/Earth 0,9kV
- AC: Conductor/Earth 0,7kV
- Three phase: Conductor/Conductor 1,2kV

Continuation ►

HELUWIND® WK 135-Torsion

Offshore, UV-resistant, UL/CSA-Style 10553/20234
Single-/Multiconductor, 0,6/1kV, 90°C (80°C acc. UL)



Core identification JZ

Part no.	No.cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
703668	4 G 0,34	22	7,1	29,0	88,0
703669	4 G 0,5	20	7,4	34,0	98,0
703671	6 G 0,5	20	8,6	49,0	122,0
703289	10 G 0,5	20	10,8	48,0	165,0
703673	12 G 0,5	20	11,1	84,0	208,0
703291	3 G 0,75	19	7,3	22,0	77,0
703292	4 G 0,75	19	7,9	29,0	100,0
703293	5 G 0,75	19	8,6	36,0	120,0
703294	7 G 0,75	19	10,0	51,0	170,0
704699	10 G 0,75	19	11,0	72,0	200,0
703295	12 G 0,75	19	11,8	87,0	220,0
704700	14 G 0,75	19	12,5	101,0	238,0
704701	16 G 0,75	19	13,2	116,0	271,0
704702	18 G 0,75	19	13,9	130,0	310,0
704703	21 G 0,75	19	15,2	152,0	380,0
703296	25 G 0,75	19	16,9	180,0	490,0
704704	32 G 0,75	19	18,2	231,0	560,0
704705	36 G 0,75	19	19,1	260,0	620,0
704706	40 G 0,75	19	20,5	288,0	729,0
704038	50 G 0,75	19	23,5	441,0	998,2
704707	4 G 1	18	8,3	39,0	100,0
704708	5 G 1	18	9,0	48,0	110,0
704709	7 G 1	18	10,5	68,0	140,0
704710	10 G 1	18	13,0	96,0	220,0
704711	12 G 1	18	13,2	116,0	240,0
704712	14 G 1	18	13,4	135,0	280,0
704713	16 G 1	18	14,1	154,0	310,0
704714	18 G 1	18	15,1	173,0	360,0
704715	21 G 1	18	16,7	202,0	410,0
704716	25 G 1	18	18,4	240,0	500,0
704717	32 G 1	18	19,8	308,0	590,0
704718	36 G 1	18	20,6	346,0	700,0
704719	40 G 1	18	22,4	384,0	800,0
704720	41 G 1	18	22,4	394,0	810,0
704721	50 G 1	18	24,6	480,0	980,0
704722	2 G 1,5	16	7,9	29,0	75,0
703298	3 G 1,5	16	8,4	44,0	112,7
703299	4 G 1,5	16	8,9	58,0	137,5
703300	5 G 1,5	16	9,9	72,0	164,6
703301	7 G 1,5	16	12,0	101,0	210,0
704723	10 G 1,5	16	13,1	144,0	270,0
703302	12 G 1,5	16	14,3	173,0	360,0
704724	14 G 1,5	16	14,9	202,0	420,0
704725	16 G 1,5	16	15,7	231,0	450,0
704726	18 G 1,5	16	16,8	260,0	510,0
704727	21 G 1,5	16	17,8	303,0	590,0
704728	25 G 1,5	16	20,6	360,0	700,0
704729	32 G 1,5	16	22,2	460,0	900,0
704730	36 G 1,5	16	23,1	519,0	980,0
704731	40 G 1,5	16	25,0	576,0	1030,0
704732	41 G 1,5	16	25,0	591,0	1050,0
704733	50 G 1,5	16	27,7	720,0	1200,0
703303	3 G 2,5	14	9,3	72,0	151,4
703304	4 G 2,5	14	10,1	96,0	189,3
703305	5 G 2,5	14	11,1	120,0	227,6

Dimensions and specifications may be changed without prior notice.

Core identification JZ

Part no.	No.cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
703306	7 G 2,5	14	14,4	168,0	360,0
704734	10 G 2,5	14	15,8	240,0	480,0
703307	12 G 2,5	14	16,3	288,0	527,0
705046	19 G 2,5	14	21,0	456,0	591,0
704735	3 G 4	12	10,8	116,0	217,9
704736	4 G 4	12	11,8	154,0	0,0
703308	5 G 4	12	13,2	192,0	332,9
703309	7 G 4	12	15,9	269,0	530,0
703310	12 G 4	12	19,6	461,0	740,0
704737	3 G 6	10	12,5	173,0	327,9
704738	4 G 6	10	14,6	231,0	460,0
704471	5 G 6	10	16,3	288,0	538,6
704739	7 G 6	10	19,6	404,0	780,0
703311	4 G 10	8	17,4	384,0	670,0
703312	5 G 10	8	19,4	480,0	885,6
704740	7 G 10	8	23,5	672,0	1150,0
703313	4 G 16	6	23,2	615,0	1100,0
703314	5 G 16	6	25,8	768,0	1382,1
703315	4 G 25	4	26,2	960,0	1594,2
703316	5 G 25	4	29,7	1200,0	1990,0
704742	4 G 35	2	30,6	1344,0	2261,3
704743	5 G 35	2	34,5	1680,0	2727,4
704744	4 G 50	1	35,5	1920,0	3248,0
707651	3 G 70	2/0	36,8	2016,0	2518,0
705108	4 G 95	3/0	26,2	960,0	1650,0

Part no.	No.cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
707129	1 x 25	4	11,4	240,0	476,0
704741	1 x 35	2	13,4	336,0	454,0
703317	1 x 70	2/0	18,2	672,0	894,1
703318	1 x 95	3/0	21,9	912,0	1222,0
703319	1 x 120	4/0	21,3	1152,0	1314,0
703320	1 x 150	300 kcmil	24,7	1440,0	1814,2
703321	1 x 185	350 kcmil	26,1	1776,0	2186,5
703322	1 x 240	500 kcmil	30,2	2304,0	2810,5
703323	1 x 300	600 kcmil	32,8	2880,0	3517,3
704745	1 x 400	750 kcmil	39,3	3840,0	4500,0

Core identification VDE 0293 HD 308

Part no.	No.cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
707454	4 G 2,5	14	10,1	96,0	185,0
707456	5 G 6	10	16,3	288,0	540,0
707463	4 G 25	4	26,2	960,0	1650,0
707455	4 G 35	2	30,6	1344,0	2100,0
707464	5 G 35	2	34,5	1680,0	2700,0
707457	5 G 70	2/0	45,7	3360,0	5414,0
708436	4 G 95	3/0	45,4	3648,0	5300,0
708687	5 G 95	3/0	51,0	4560,0	6770,0

HELUWIND® WK 135 EMV D-Torsion

Offshore, shielded, UV-resistant, UL/CSA-Style 10553/20234
Single-/Multiconductor, 0,6/1kV, 90°C (80°C acc. UL)



Technical data

- **Temperature range**
flexing -40°C to +90°C
fixed installation -40°C to +90°C
acc. UL to +80°C
- **Operating temperature at conductor**
max. +90°C
- **Nominal voltage**
acc. to VDE U₀/U 0,6/1kV
acc. to UL 1000V
- **Test voltage 50 Hz:**
conductor/conductor 4000 V
- **Minimum bending radius**
8 x cable diameter
(4 x for fixed installation)
- **Torsion application**
+/-150° per 1m
- **Approvals**
Singleconductor UL-Style 10553
Multiconductor UL-Style 20234
cRUUs
- **Flame test**
FT1, IEC 60332-3-24
UL 758, Cable flame test
- **Halogen free**
IEC 60754-1
- **Smoke density**
IEC 61034-1+2
- **Oil**
acc. to oil res II
- **WTTC** in preparation

Application

The WK 135 EMC was designed for flexible use, especially to accommodate the torsional stress in the cable loop of a wind turbine. The cable is designed for a voltage level for 0.6/1kV for all dimensions, whereby individual cables can also be routed in parallel for standard conformity according to UL. A spatial separation of the cable routes is no longer necessary. Due to the extremely resistant jacket and the absence of halogen, this cable is ideally suited for use in offshore wind turbines. The WK series was successfully tested with over 18,000 torsion cycles and thus offers optimal functional safety well beyond the service life of the wind turbine.

Advantages of the WK 135-T over the H07BN4-F:

- Burning behavior in accordance with IEC 60332-3-24
- Higher abrasion resistance
- Recyclable

CE= The product conforms to the EC Low Voltage Directive 2006/95/EC

Cable structure

- Special bare copper conductors, fine stranded according to IEC 60228
- Insulation special compound
- Core identification JZ: black with white numbers + Gn/Yl ground or color code DIN 47100 or VDE 0293 HD 308
- Multiconductors cabled
- EMV-shielded types have tinned copper wrapping
- Jacket special compound
- Black jacket

Properties

- halogen-free
- extremely abrasion-resistant
- low adhesion
- high flame retardant
- torsion tested
- suitable for Offshore
- extremely oil resistant
- UV-resistant
- recyclable
- multi climate operation
- designed for CCV application
- **easy to assemble**

Note

Other diameters, part-no. and prices on request.

Please contact us with your individual requirements via
fax +49 7150 9209 5135.

Highest permissible Voltage

- DC:
Conductor/Conductor 1,8kV
Conductor/Earth 0,9kV
- AC: Conductor/Earth 0,7kV
- Three phase: Conductor/Conductor 1,2kV

Continuation ▶

HELUWIND® WK 135 EMV D-Torsion

Offshore, shielded, UV-resistant, UL/CSA-Style 10553/20234
Single-/Multiconductor, 0,6/1kV, 90°C (80°C acc. UL)



Core identification JZ

Part no.	No. cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
703285	4 G 0,34	22	7,7	32,0	91,0
703286	4 G 0,5	20	8,0	36,5	100,9
703288	6 G 0,5	20	9,2	53,6	130,0
703287	8 G 0,5	20	11,5	69,2	190,0
703672	10 G 0,5	20	11,4	73,0	170,0
703290	12 G 0,5	20	11,7	88,4	220,0
703674	3 G 0,75	19	7,7	43,2	97,0
703675	4 G 0,75	19	8,3	52,6	122,0
703676	5 G 0,75	19	9,0	63,0	145,0
703677	7 G 0,75	19	10,2	82,8	177,7
703678	8 G 0,75	19	10,7	93,0	220,0
704685	4 x 2 x 0,75	19	12,7	91,0	220,0
703679	12 G 0,75	19	12,2	126,9	257,5
703680	18 G 0,75	19	14,5	179,0	358,6
704039	12 x 2 x 0,75	19	17,6	223,0	513,2
703681	25 G 0,75	19	17,3	238,3	560,0
703682	41 G 0,75	19	21,2	358,0	805,8
707006	25 G 1	18	19,0	304,0	593,0
704167	2 G 1,5	16	6,8	44,0	85,1
703684	3 G 1,5	16	8,8	68,1	133,0
703685	4 G 1,5	16	9,4	87,9	159,0
703686	5 G 1,5	16	10,3	104,4	195,0
703687	7 G 1,5	16	11,9	140,8	248,5
703688	12 G 1,5	16	14,7	226,8	410,0
703689	3 G 2,5	14	10,4	104,4	210,0
703690	4 G 2,5	14	10,6	132,7	216,1
703691	5 G 2,5	14	12,3	161,0	253,4
703692	7 G 2,5	14	14,8	223,1	347,5
703693	12 G 2,5	14	16,7	350,6	560,0
705045	19 G 2,5	14	21,7	561,0	638,0
703694	5 G 4	12	13,4	227,0	361,2
703695	7 G 4	12	16,3	325,0	582,0
703696	12 G 4	12	20,0	532,1	806,0
704697	5 G 6	10	17,4	341,0	640,0
703697	4 G 10	8	17,8	445,6	727,0
703698	5 G 10	8	19,8	550,2	935,0
703699	4 G 16	6	23,6	696,5	1176,0
703700	5 G 16	6	26,2	863,1	1428,0
703701	4 G 25	4	26,7	1059,4	1671,6
703702	5 G 25	4	30,1	1327,5	2108,0
704698	4 G 50	1	36,0	2070,0	3150,0

Part no.	No. cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
703703	1 x 70	2/0	19,6	741,1	994,0
703704	1 x 95	3/0	22,3	993,0	1305,0
703705	1 x 120	4/0	24,7	1241,6	1603,0
703706	1 x 150	300 kcmil	25,3	1548,0	1924,1
703707	1 x 185	350 kcmil	29,8	1900,2	2415,0
703708	1 x 240	500 kcmil	32,7	2444,4	3030,0
703804	1 x 300	600 kcmil	39,3	3300,0	3785,7

Core identification DIN 47100

Part no.	No. cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
704675	2 x 2 x 0,25	24	8,9	27,0	90,0
704676	4 x 2 x 0,25	24	9,9	39,0	115,0
704677	5 x 2 x 0,25	24	11,1	46,0	130,0
704678	2 x 2 x 0,34	22	9,6	35,0	110,0
704679	4 x 2 x 0,34	22	11,0	47,0	130,0
704680	4 x 0,5	20	9,8	39,0	115,0
704681	4 x 0,5	20	8,0	37,8	105,0
704682	6 x 0,5	20	9,2	53,6	130,5
704683	4 x 2 x 0,5	20	11,3	42,0	150,0
704684	2 x 2 x 0,75	19	10,4	54,0	130,0
707638	3 x 2 x 0,75	19	11,4	78,0	188,0
704040	4 x 2 x 0,75	19	12,7	91,0	218,1
704686	12 x 0,75	19	12,2	126,9	257,5
704687	8 x 2 x 0,75	19	17,1	170,0	410,0
704688	12 x 2 x 0,75	19	17,6	223,0	520,0
704689	32 x 0,75	19	18,8	294,0	610,0
704690	4 x 1	18	8,7	56,0	110,0
704691	6 x 1	18	10,2	82,0	150,0
704692	8 x 1	18	11,7	106,0	210,0
704693	12 x 1	18	13,3	150,0	280,0
704694	2 x 2 x 1,5	16	12,1	90,0	180,0
704695	3 x 2 x 1,5	16	12,8	120,0	240,3
704696	4 x 2 x 1,5	16	14,6	150,0	210,0

Dimensions and specifications may be changed without prior notice.

HELUWIND® WK 137-Torsion FT4

Offshore, UV-resistant, UL/CSA-Style 10553/20234
Single-/Multiconductor, 0,6/1kV, 90°C (80°C acc. UL)



Technical data

- **Temperature range**
flexing -40°C to +90°C
fixed installation -40°C to +90°C
acc. UL to +80°C
- **Operating temperature at conductor**
max. +90°C
- **Nominal voltage**
acc. to VDE U₀/U 0,6/1kV
acc. to UL 1000V
- **Test voltage 50 Hz:**
conductor/conductor 4000 V
- **Minimum bending radius**
8 x cable diameter
(4 x for fixed installation)
- **Torsion application**
+/-150° per 1m
- **Approvals**
Singleconductor UL-Style 10553
Multiconductor UL-Style 20234
cRUus
- **Flame test**
FT 4
IEC 60332-3-24
UL 758, Cable flame test
- **Halogen free**
IEC 60754-1
- **Smoke density**
IEC 61034-1+2
- **Oil**
acc. to oil res II
- **WTTC** in preparation

Application

The WK 137 was designed for flexible use, especially to accommodate the torsional stress in the cable loop of a wind turbine. The cable is designed for a voltage level for 0.6/1kV for all dimensions, whereby individual cables can also be routed in parallel for standard conformity according to UL. A spatial separation of the cable routes is no longer necessary. This cable also satisfies the high requirements of the CSA FT4 flame test and is ideally suited for use in offshore wind turbines thanks to its extremely resistant jacket and the absence of halogen. The WK series was successfully tested with over 18,000 torsion cycles and thus offers optimal functional safety well beyond the service life of the wind turbine.

Advantages of the WK 137-T FT4 over the H07BN4-F:

- Burning behavior in accordance with IEC 60332-3-24 and FT4
- Higher abrasion resistance

CE The product conforms to the EC Low Voltage Directive 2006/95/EC

Cable structure

- Special bare copper conductors, fine stranded according to IEC 60228
- Insulation special compound
- Core identification JZ: black with white numbers + Gn/Yl ground or color code DIN 47100
- Multiconductors cabled
- Jacket special compound SSH
- Black jacket

Properties

- halogen-free
- extremely abrasion-resistant
- low adhesion
- high flame retardant
- torsion tested
- suitable for Offshore
- extremely oil resistant
- UV-resistant
- multi climate operation
- designed for CCV application
- **easy to assemble**

Note

Other diameters, part-no. and prices on request.

Please contact us with your individual requirements via
fax +49 7150 9209 5135.

Highest permissible Voltage

- DC:
Conductor/Conductor 1,8kV
Conductor/Earth 0,9kV
- AC: Conductor/Earth 0,7kV
- Three phase: Conductor/Conductor 1,2kV

Continuation ▶

HELUWIND® WK 137-Torsion FT4

Offshore, UV-resistant, UL/CSA-Style 10553/20234
Single-/Multiconductor, 0,6/1kV, 90°C (80°C acc. UL)



Core identification JZ

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
705741	3 G 0,75	19	7,1	22,0	88,0
705742	5 G 0,75	19	8,6	36,0	122,0
705743	7 G 0,75	19	10,0	51,0	170,0
705744	12 G 0,75	19	11,8	87,0	220,0
705745	18 G 0,75	19	13,9	130,0	310,0
705719	3 G 1	18	7,8	49,0	133,0
705746	5 G 1	18	9,0	48,0	110,0
705747	7 G 1	18	10,5	68,0	140,0
705748	12 G 1	18	13,2	116,0	240,0
705749	18 G 1	18	15,1	173,0	360,0
705720	3 G 1,5	16	8,4	44,0	113,5
705721	4 G 1,5	16	9,1	58,0	139,8
705722	5 G 1,5	16	9,9	72,0	166,5
705723	7 G 1,5	16	11,5	101,0	235,2
705724	12 G 1,5	16	14,3	173,0	360,0
705725	18 G 1,5	16	16,8	260,0	524,6
705726	3 G 2,5	14	9,3	72,0	151,4
705727	5 G 2,5	14	11,1	120,0	227,6
705750	7 G 2,5	14	14,4	168,0	360,0
705751	3 G 4	12	10,8	116,0	222,0
705752	5 G 4	12	13,6	237,4	382,0
705753	7 G 4	12	15,9	269,0	530,0
705754	3 G 6	10	13,1	173,0	340,0
705728	4 G 6	10	14,6	231,0	460,0
705729	5 G 6	10	16,3	288,0	508,6
705755	7 G 6	10	19,6	404,0	780,0
705730	4 G 10	8	17,4	384,0	670,0
705756	5 G 10	8	20,9	480,0	893,6

Core identification JZ

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
705757	4 G 16	6	20,7	615,0	1000,0
705731	5 G 16	6	25,8	768,0	1390,0
705732	4 G 25	4	26,2	960,0	1556,6
705758	5 G 25	4	28,2	1200,0	1900,0
705759	4 G 35	2	31,0	1344,0	2234,6
705733	5 G 35	2	34,7	1680,0	2747,3

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
708974	1 x 25	4	11,4	240,0	454,0
708975	1 x 35	2	13,4	336,0	476,0
708976	1 x 50	1	15,6	480,0	630,0
708977	1 x 70	2/0	18,2	672,0	894,0
708978	1 x 95	3/0	21,9	912,0	1222,0
708979	1 x 120	4/0	22,9	1152,0	1314,0
708980	1 x 150	300 kcmil	24,7	1440,0	1814,0
708981	1 x 185	350 kcmil	26,1	1776,0	2186,0
708982	1 x 240	500 kcmil	30,2	2304,0	2810,0
708983	1 x 300	600 kcmil	32,8	2880,0	3518,0
708984	1 x 400	750 kcmil	39,3	3840,0	4500,0

Dimensions and specifications may be changed without prior notice.



HELUWIND® WK 137 EMV D-Torsion FT4

Offshore, shielded, UV-resistant, UL/CSA-Style 10553/20234
Single-/Multiconductor, 0,6/1kV, 90°C (80°C acc. UL)



Technical data

- **Temperature range**
flexing -40°C to +90°C
fixed installation -40°C to +90°C
acc. UL to +80°C
- **Operating temperature at conductor**
max. +90°C
- **Nominal voltage**
acc. to VDE U₀/U 0,6/1kV
acc. to UL 1000V
- **Test voltage 50 Hz:**
conductor/conductor 4000 V
- **Minimum bending radius**
8 x cable diameter
(4 x for fixed installation)
- **Torsion application**
+/-150° per 1m
- **Approvals**
Singleconductor UL-Style 10553
Multiconductor UL-Style 20234
cRUus
- **Flame test**
FT 4
IEC 60332-3-24
UL 758, Cable flame test
- **Halogen free**
IEC 60754-1
- **Smoke density**
IEC 61034-1+2
- **Oil**
acc. to oil res II
- **WTTC** in preparation

Application

The WK 137 EMC was designed for flexible use, especially to accommodate the torsional stress in the cable loop of a wind turbine. The cable is designed for a voltage level for 0.6/1kV for all dimensions, whereby individual cables can also be routed in parallel for standard conformity according to UL. A spatial separation of the cable routes is no longer necessary. This cable also satisfies the high requirements of the CSA FT4 flame test and is ideally suited for use in offshore wind turbines thanks to its extremely resistant jacket and the absence of halogen. The WK series was successfully tested with over 18,000 torsion cycles and thus offers optimal functional safety well beyond the service life of the wind turbine.

Advantages of the WK 137-T over the H07BN4-F:

- Burning behavior in accordance with IEC 60332-3-24 and FT4
- Higher abrasion resistance

CE= The product conforms to the EC Low Voltage Directive 2006/95/EC

Cable structure

- Special bare copper conductors, fine stranded according to IEC 60228
- Insulation special compound
- Core identification JZ: black with white numbers + Gn/YI ground or color code DIN 47100
- Multiconductors cabled
- EMV-shielded types have tinned copper wrapping
- Jacket special compound SSH
- Black jacket

Properties

- halogen-free
- extremely abrasion-resistant
- low adhesion
- high flame retardant
- torsion tested
- suitable for Offshore
- extremely oil resistant
- UV-resistant
- multi climate operation
- designed for CCV application
- **easy to assemble**

Note

Other diameters, part-no. and prices on request.

Please contact us with your individual requirements via
fax +49 7150 9209 5135.

Highest permissible Voltage

- DC:
Conductor/Conductor 1,8kV
Conductor/Earth 0,9kV
- AC: Conductor/Earth 0,7kV
- Three phase: Conductor/Conductor 1,2kV

Continuation ▶

HELUWIND® WK 137 EMV D-Torsion FT4

Offshore, shielded, UV-resistant, UL/CSA-Style 10553/20234
Single-/Multiconductor, 0,6/1kV, 90°C (80°C acc. UL)



Core identification JZ

Part no.	No.cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
706461	4 G 0,34	22	7,7	52,0	91,0
706462	4 G 0,5	20	8,0	37,8	105,0
706463	6 G 0,5	20	9,2	53,6	130,0
706464	4 x 2 x 0,5	20	11,5	69,2	190,0
706465	10 G 0,5	20	11,4	75,0	170,0
706466	12 G 0,5	20	11,7	88,4	220,0
706467	3 G 0,75	19	7,1	43,2	97,0
706468	4 G 0,75	19	7,8	52,6	122,0
706469	5 G 0,75	19	9,0	63,0	145,0
706470	7 G 0,75	19	10,2	82,8	200,0
706471	4 x 2 x 0,75	19	12,7	91,0	220,0
706472	8 G 0,75	19	10,7	93,0	220,0
706473	12 G 0,75	19	12,2	126,9	257,5
706474	18 G 0,75	19	14,5	179,0	400,0
706475	12 x 2 x 0,75	19	17,6	223,0	520,0
706476	25 G 0,75	19	17,3	238,5	544,0
706477	41 G 0,75	19	21,2	370,8	795,0
706478	50 G 0,75	19	23,5	441,0	900,0
706479	2 G 1,5	16	6,8	44,0	86,0
706480	3 G 1,5	16	8,8	68,0	133,0
706481	4 G 1,5	16	9,4	87,8	159,0
706482	5 G 1,5	16	10,3	104,4	195,0
706483	7 G 1,5	16	11,9	140,8	247,0
706484	12 G 1,5	16	14,7	226,8	410,0
706485	3 G 2,5	14	9,8	104,4	210,0
706486	4 G 2,5	14	10,5	132,7	264,0
706488	7 G 2,5	14	13,5	223,1	411,0
706487	12 G 2,5	14	12,3	161,0	288,0
706489	12 G 2,5	14	16,7	350,6	560,0
706490	19 G 2,5	14	21,7	561,0	658,0
706491	5 G 4	12	13,6	237,4	382,0
706492	7 G 4	12	16,3	325,0	582,0
706493	12 G 4	12	20,0	532,1	806,0
706494	3 G 6	10	12,9	203,3	436,0
706495	5 G 6	10	17,4	341,0	640,0
706496	4 G 10	8	17,8	445,6	727,0
706497	5 G 10	8	21,8	550,2	935,0
706498	4 G 16	6	23,6	696,5	1176,0
706499	5 G 16	6	26,2	885,0	1428,0
706500	4 G 25	4	26,9	1059,4	1742,0
706501	5 G 25	4	30,1	1327,4	2108,0

Dimensions and specifications may be changed without prior notice.

Core identification DIN 47100

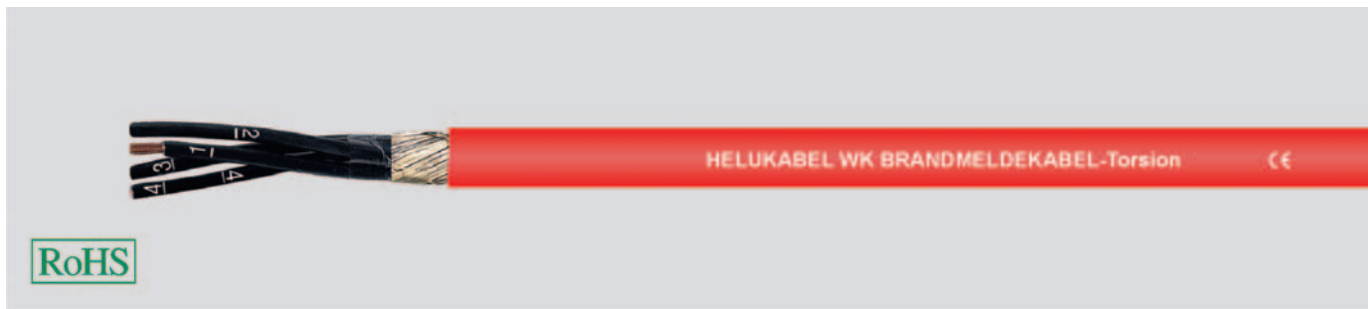
Part no.	No.cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
706510	2 x 2 x 0,25	24	8,9	27,0	90,0
706511	4 x 2 x 0,25	24	9,9	39,0	115,0
706512	5 x 2 x 0,25	24	11,1	46,0	130,0
706513	2 x 2 x 0,34	22	9,6	35,0	110,0
706514	4 x 2 x 0,34	22	11,0	47,0	130,0
706515	2 x 2 x 0,5	20	9,8	39,0	115,0
706516	4 x 0,5	20	8,0	37,8	105,0
706517	6 x 0,5	20	9,2	53,6	130,0
706518	4 x 2 x 0,5	20	11,3	69,5	150,0
706519	2 x 2 x 0,75	19	10,4	54,0	130,0
706520	4 x 2 x 0,75	19	12,7	91,0	220,0
706521	12 x 0,75	19	12,2	126,9	257,5
706522	8 x 2 x 0,75	19	17,1	170,0	410,0
706523	12 x 2 x 0,75	19	17,6	223,0	520,0
706524	32 x 0,75	19	18,8	294,0	610,0
706525	4 x 1	18	8,7	56,0	110,0
706526	6 x 1	18	10,2	82,0	150,0
706527	8 x 1	18	11,7	106,0	210,0
706528	12 x 1	18	13,3	150,0	280,0
706529	2 x 2 x 1,5	16	12,1	90,0	180,0
706530	3 x 2 x 1,5	16	14,0	120,0	235,0

Part no.	No.cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
706503	1 x 70	2/0	19,6	741,1	994,0
706504	1 x 95	3/0	22,3	993,0	1305,0
706505	1 x 120	4/0	24,7	1241,6	1603,0
706506	1 x 150	300 kcmil	25,3	1548,0	1970,0
706507	1 x 185	350 kcmil	29,8	1900,2	2415,0
706508	1 x 240	500 kcmil	32,7	2444,4	3030,0
706509	1 x 300	600 kcmil	34,0	3300,0	4310,0



HELUWIND® WK Brandmeldekabel-Torsion

halogen free, FT1



Technical data

- **Temperature range:**
flexing -40°C to +80°C
fixed installation -50°C to +90°C
- **Nominal voltage:**
300/500V
- **Test voltage:**
conductor/conductor 1500V
conductor/shield 800V
- **Minimum bending radius:**
10 x cable diameter
- **Torsion application:**
3 x 360° on 5m (= 216° je m)
- **Approvals:**
IEC 60332-1, test type B acc. to VDE 0472
Part 804,
- **Flame test**
FT1

Application

This fire alarm cable was specially developed for torsional use in the loop for wind turbines. We supply leading wind turbine manufacturers with our cables.

CE = The product conforms to the EC Low Voltage Directive 2006/95/EC

Cable structure

- Special bare copper conductors, fine stranded according to IEC 60228
- Special Polyester insulation
- Core identification (OZ) black with numbers 1 - _
- Multiconductors cabled
- EMV-shielded types have tinned copper wrapping
- Jacket special polyurethane compound low adhesion
- Jacket color red RAL 3000

Properties

- very good oil and petrol-resistance acc. to DIN VDE 0250 and 0472
- good resistance to acids, alkalis and solvents

Note

Other diameters, part-no. and prices on request.

Please contact us with your individual requirements via fax +49 7150 9209 5135.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
702485	4 x 0,75	-	6,6	49,0	82,0

Dimensions and specifications may be changed without prior notice.

HELUWIND® WK 101 H

halogen-free



Technical data

- **Temperature range**
flexing -40°C to +90°C
fixed installation -50°C to +100°C
acc. UL to +80°C
- **Operating temperature at conductor**
max. +90°C
- **Nominal voltage**
acc. to VDE U₀/U 0,6/1kV
- **Test voltage 50 Hz:**
4000 V
- **Minimum bending radius**
7,5 x cable diameter
(4 x for fixed installation)
- **Halogen free**
IEC 60754-1

Cable structure

- Special bare copper conductors, fine stranded according to IEC 60228
- Separating foil wrap
- Insulation special compound black
- Jacket special compound
- Jacket color black

Properties

- halogen-free
- abrasion-resistant
- extremely oil resistant
- UV and ozone resistant
- recyclable
- multi climate application

Note

Other diameters, part-no. and prices on request.
Please contact us with your individual requirements via
fax +49 7150 9209 5135.

A torsional version for loop application is available on request.

Highest permissible Voltage

- DC:
Conductor/Conductor 1,8kV
Conductor/Earth 0,9kV
- AC: Conductor/Earth 0,7kV
- Three phase: Conductor/Conductor 1,2kV

Application

The HELUWIND WK series of cables were specifically designed for use in wind turbines. We supply the leading wind turbines manufacturers with our cables.

CE= The product conforms to the EC low-voltage directive 2006/95/EG

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
707522	1 x 16	-	9,7	154,0	240,0
707523	1 x 25	-	11,2	240,0	287,7
707524	1 x 35	-	13,6	336,0	394,4
707525	1 x 50	-	15,6	480,0	590,0
707526	1 x 70	-	16,2	672,0	757,7
707527	1 x 95	-	21,9	912,0	1230,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
707528	1 x 120	-	20,2	1152,0	1295,7
707529	1 x 150	-	22,8	1440,0	1679,7
707494	1 x 185	-	26,7	1776,0	2009,9
707495	1 x 240	-	30,5	2304,0	2900,0
707530	1 x 300	-	34,9	2880,0	3490,1
707531	1 x 400	-	40,1	3840,0	4430,0

Dimensions and specifications may be changed without prior notice.

HELUWIND® WK H07BN4-F WIND-Torsion

UV-resistant, 750V, +90°C



Technical data

- **Temperature range:**
Ambient temperature -45°C to +90°C
- **Operating temperature at conductor**
max. +90°C
- **Nominal voltage:**
450/750V
- **Test voltage:**
3000V
- **Min. bending radius:**
6 x cable diameter
- **Torsion application:**
+/-150° per 1m

Cable structure

- Special bare copper conductors, fine stranded according to IEC 60228
- Insulation Special EPR compound black
- Jacket Special EPR compound
- color black

Properties

- UV-resistant

Note

Other diameters, part-no. and prices on request.
Please contact us with your individual requirements via
fax +49 7150 9209 5135.

Application

The Heluwind WK H07BN4-F Wind-Torsion cable is the special version for torsional applications in wind turbines. We supply leading wind turbine manufacturers with our cables.

CE= The product conforms to the EC Low Voltage Directive 2006/95/EC

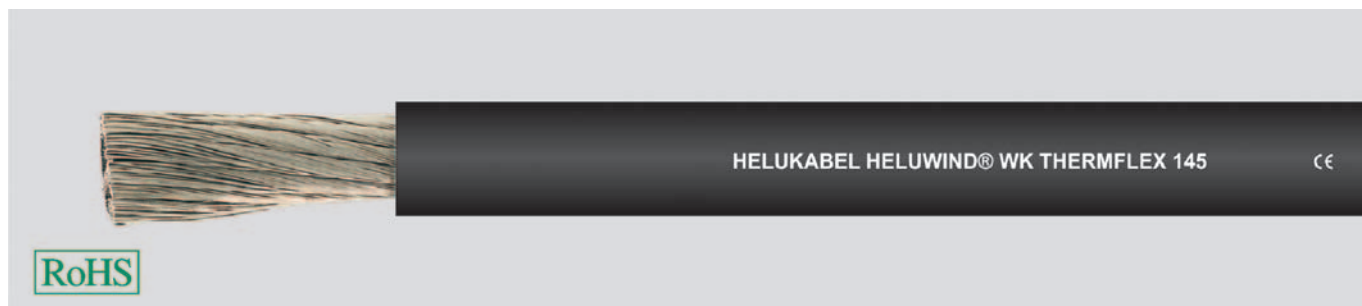
Part no.	No. cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
703402	1 x 25	-	13,1	240,0	516,0
703403	1 x 35	-	14,6	336,0	670,0
703404	1 x 50	-	17,1	480,0	840,0
703390	1 x 70	-	19,2	672,0	1112,0
703391	1 x 95	-	22,0	912,0	1520,0
703392	1 x 120	-	24,4	1152,0	1880,0
703393	1 x 150	-	28,0	1440,0	2513,0

Part no.	No. cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
703394	1 x 185	-	30,0	1776,0	2272,0
703395	1 x 240	-	34,0	2304,0	3534,0
703396	1 x 300	-	36,1	2880,0	4020,0
703397	1 x 400	-	41,5	3840,0	5640,0
703398	1 x 500	-	46,0	4800,0	6000,0
703399	1 x 630	-	54,0	6048,0	6900,0

Dimensions and specifications may be changed without prior notice.

HELUWIND® WK THERMFLEX 145

halogen free, UV-resistant, +145°C



Technical data

- **Temperature range**
flexing -20°C to +120°C
fixed installation -55°C to +145°C
- **Nominal voltage**
U₀/U 0,6/1 kV
- **Test voltage**
4000 V
- **Insulation resistance**
min. 100 MOhm x km
- **Minimum bending radius**
flexing 12,5 x cable diameter
fixed installation 4 x cable diameter
- **Flame test**
IEC 60332-3-24 Cat. C

Cable structure

- Tinned copper conductors, fine stranded according to IEC 60228 cl. 5
- Insulation special polyolefin-copolymer, halogen-free, flame retardant
- Jacket color black

Properties

- Halogen-free, no release of corrosive or toxic gases
- Reduced propagation of fire
- Minimal smoke generation
- Good abrasion-resistance
- Good oil and weathering resistance
- Resistant to UV radiation and ozone
- Thermal class B
- **easy to assemble**
- The materials used are silicone and cadmium-free and free of substances harmful to paint adhesion

Note

Other diameters, part-no. and prices on request.

Please contact us with your individual requirements via fax +49 7150 9209 5135.

Highest permissible Voltage

- DC:
Conductor/Conductor 1,8kV
Conductor/Earth 0,9kV
- AC: Conductor/Earth 0,7kV
- Three phase: Conductor/Conductor 1,2kV

Application

This special cable can be used, for example, as a generator connection cable in wind turbines.

Additional areas of use:

- Temperature class B (130°C) connection cable for motors, transformers, relays, coils, magnets, etc.
- Power train connections in the automotive industry
- Halogen-free wiring of switch cabinets and control cabinets
- Connection cable for heating equipment
- Supply cable for high-output lamps for industry, sporting facilities and roads

CE = The product conforms to the EC Low Voltage Directive 2006/95/EC

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
75486	1 x 6	-	5,4	58,0	70,0
75487	1 x 10	-	6,8	96,0	119,0
75488	1 x 16	-	8,5	154,0	180,0
75489	1 x 25	-	10,3	240,0	270,0
75490	1 x 35	-	11,8	336,0	373,0
75491	1 x 50	-	13,9	480,0	528,0
75492	1 x 70	-	16,0	672,0	728,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
75493	1 x 95	-	18,5	912,0	966,0
75494	1 x 120	-	20,5	1152,0	1230,0
75495	1 x 150	-	22,1	1440,0	1530,0
71437	1 x 185	-	24,8	1776,0	2106,3
75496	1 x 240	-	27,7	2304,0	2583,8
706557	1 x 300	-	37,8	2880,0	3910,0
706558	1 x 400	-	38,7	3840,0	4870,0

Dimensions and specifications may be changed without prior notice.

HELUWIND® WK 300w-Torsion 1,8/3kV

UV-resistant, direct burial



Technical data

- **Temperatur range**
flexing -35°C to +90°C
fixed installation -40°C to +90°C
installation -20°C to +90°C
- **Operating temperature at conductor**
max. +90°C
- **Nominal voltage**
according VDE U₀/U 1,8/3kV
- **Test voltage 50 Hz:**
9000 V
- **Minimum bending radius**
10 x cable diameter
(5 x for fixed installation)
- **Torsion application**
+/-100° per 1m for unshielded version
- **Flame test**
FT1, VW-1, IEC 60332-1 flame retardant and self-extinguishing

Cable structure

- Special bare copper conductor, fine stranded according to IEC 60228
- Special heat-resistant insulation black
- Jacket special heat-resistant compound
- Black jacket

Properties

- UV-resistant
- multi-climate operation
- torsion tested
- flame-retardant
- oil-resistant
- recyclable
- **easy to assemble**
- also for direct burial

Note

Other diameters, part-no. and prices on request.
Please contact us with your individual requirements via fax +49 7150 9209 5135.

Application

The WK 300w was designed for flexible use, especially to accommodate the torsional stress in the cable loop of a wind turbine. The WK series was successfully tested with over 18,000 torsion cycles and thus offers optimal functional safety well beyond the service life of the wind turbine. An additional feature is the high voltage level of 1.8/3kV. The WK300w is also designed for flexible routing through empty conduit and underground installation. It can be used, for example, in the power cabling of inverter cabinets to external transformer stations. With a circuit temperature of +90° degrees Celsius, a high current-carrying capacity is possible.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
706432	1 x 35	-	14,8	336,0	500,0
706399	1 x 50	-	16,6	480,0	660,0
706400	1 x 70	-	19,5	672,0	920,0
706401	1 x 95	-	23,9	912,0	1300,0
706402	1 x 120	-	24,8	1152,0	1600,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
706403	1 x 150	-	25,9	1440,0	1990,0
706404	1 x 185	-	28,7	1776,0	2430,0
706405	1 x 240	-	31,2	2304,0	2877,9
706406	1 x 300	-	32,0	2880,0	3960,0
706407	1 x 400	-	39,2	3840,0	4800,0

Dimensions and specifications may be changed without prior notice.

HELUWIND® WK 303w-Torsion 1,8/3kV, UL 2kV

UV-resistant, direct burial



Technical data

- **Temperatur range**
flexing -35°C to +90°C
fixed installation -40°C to +90°C
installation -20°C to +90°C
- **Operating temperature at conductor**
max. +90°C
- **Nominal voltage**
acc. VDE U₀/U 1,8/3kV
acc. UL 2000V
- **Test voltage 50 Hz:**
9000 V
- **Minimum bending radius**
10 x cable diameter
(5 x for fixed installation)
- **Torsion application**
+/-100° per 1m for unshielded version
- **Flame test**
IEC 60332-1, FT2

Cable structure

- Special bare copper conductor, fine stranded according to IEC 60228
- Special heat-resistant insulation black
- Jacket special heat-resistant compound
- Black jacket

Properties

- UV-resistant
- multi-climate operation
- torsion tested
- flame-retardant
- oil-resistant
- recyclable
- **easy to assemble**
- also for direct burial

Note

Other diameters, part-no. and prices on request.
Please contact us with your individual requirements via
fax +49 7150 9209 5135.

Application

The HELUWIND® WK 303 series was specifically designed for wind power applications. We supply the leading wind turbine manufacturers with our cables.

CE – The product conforms to the EC low-voltage directive 73/23EWG bzw. 93/68EWG.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
708874	1 x 150	300 kcmil	27,1	1440,0	1820,0
708875	1 x 185	350 kcmil	29,2	1776,0	2360,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
708876	1 x 240	500 kcmil	32,0	2304,0	3170,0
708877	1 x 300	600 kcmil	34,2	2880,0	3820,0

Dimensions and specifications may be changed without prior notice.

HELUWIND® WK 305-Torsion 1,8/3kV

UV-resistant, Offshore



Technical data

- **Temperature range**
flexing -40 °C to +90 °C
fixed installation -40 °C to +90 °C
- **Operating temperature at conductor**
max. +90°C
- **Nominal voltage**
to VDE U₀/U 1,8/3kV
- **Test voltage 50 Hz**
9000 V
- **Minimum bending radius**
10 x cable diameter
(5 x for fixed installation)
- **Torsion application**
+/-100° per 1m
- **Flame test**
IEC 60332-3, FT2
- **Halogen free**
IEC 60754-1
- **Smoke density**
IEC 61034-1+2
- **Oil test**
acc. to oil res II

Cable structure

- Special bare copper conductor, fine stranded according to IEC 60228
- Special insulation black
- Jacket SSH compound low adhesion
- Black jacket

Properties

- halogen free
- extremely abrasion resistant
- low adhesion
- high flame retardant
- torsion tested
- suitable for offshore
- extremely oil resistant
- UV resistant
- recyclable
- Multi climate operation
- designed for CCV application
- **easy to assemble**

Note

Other diameters, part-no. and prices on request.
Please contact us with your individual requirements via
fax +49 7150 9209 5135.

Application

The WK 305 was designed for flexible use, especially to accommodate the torsional stress in the cable loop of a wind turbine. The WK series was successfully tested with over 18,000 torsion cycles and thus offers optimal functional safety well beyond the service life of the wind turbine. An additional feature is the high voltage level of 1.8/3kV. The WK 305 is used instead of the WK 300 when the absence of halogen is necessary.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
706452	1 x 50	-	15,0	480,0	660,0
706453	1 x 70	-	20,0	672,0	920,0
706454	1 x 95	-	23,8	912,0	1300,0
706455	1 x 120	-	26,3	1152,0	1600,0
706456	1 x 150	-	29,2	1440,0	1990,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
706457	1 x 185	-	31,4	1776,0	2430,0
706458	1 x 240	-	34,4	2304,0	3280,0
706459	1 x 300	-	36,9	2880,0	3960,0
706460	1 x 400	-	41,5	3840,0	4800,0

Dimensions and specifications may be changed without prior notice.

HELUWIND® WK 335-Torsion 2,0/3,3kV UL 2kV

UV-resistant, Offshore



Technical data

- **Temperatur range**
flexing -40°C to +90°C
fixed installation -40°C to +90°C
- **Operating temperature at conductor**
max. +90°C
- **Nominal voltage**
acc. VDE U₀/U 2,0/3,3kV,
acc. UL 2000V
- **Test voltage 50 Hz:**
9000 V
- **Minimum bending radius**
10 x cable diameter
(5 x for fixed installation)
- **Torsion application**
+/-100° per 1m
- **Flame test**
IEC 60332-3, FT2
- **Halogen-free**
IEC 60754-1
- **Smoke density**
IEC 61034-1+2
- **Oil test**
acc. to oil res II

Cable structure

- Special bare copper conductor, fine stranded according to IEC 60228
- Special insulation black
- Jacket SSH compound low adhesion
- Black jacket

Properties

- halogen-free
- global application
- extremely abrasion resistant
- low adhesion
- high flame retardant
- torsion tested
- suitable for Offshore
- extremely oil resistant
- UV resistant
- recyclable
- Multi climate operation
- designed for CCV application
- **easy to assemble**

Note

Other diameters, part-no. and prices on request.
Please contact us with your individual requirements via
fax +49 7150 9209 5135.

Application

The HELUWIND® WK 335 series was specifically designed for wind power applications. We supply the leading wind turbine manufacturers with our cables.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
708340	1 x 120	4/0	26,3	1260,0	1810,0
708341	1 x 150	300 kcmil	27,5	1540,0	1920,0
708342	1 x 185	350 kcmil	29,6	1876,0	2460,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
708343	1 x 240	500 kcmil	32,4	2404,0	3270,0
708344	1 x 300	600 kcmil	34,6	2980,0	3920,0

Dimensions and specifications may be changed without prior notice.

HELUWIND® WK MS-Single-Torsion

3,6/6kV, 12/20kV



Technical data

- **Temperatur range**
flexing -40°C to +90°C
- **Nominal voltage**
3,6/6 kV
12/20 kV
- **Minimum bending radius**
12 x cable diameter
- **Torsion application**
+/-105° per 1m

Cable structure

- Special bare copper conductor, fine stranded acc. to IEC 60228
- Special semiconductor layer
- Special insulation black
- Jacket special rubber compound
- Black jacket

Properties

- abrasion resistant
- flame retardant
- torsion tested
- oil resistant
- UV resistant
- multi climate operation
- designed for CCV application
- **easy to assemble**

Note

Other diameters, part-no. and prices on request.
Please contact us with your individual requirements via
fax +49 7150 9209 5135.

3,6/6kV

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
708711	1 x 120	-	25,2	1152,0	1640,0
708332	1 x 150	-	27,1	1440,0	1820,0
708333	1 x 185	-	29,2	1776,0	2360,0
708334	1 x 240	-	32,0	2304,0	3170,0
708335	1 x 300	-	34,2	2880,0	3820,0

12/20kV

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
708712	1 x 120	-	27,3	1152,0	1860,0
708713	1 x 150	-	29,5	1440,0	2090,0
708714	1 x 185	-	31,6	1776,0	2530,0
708715	1 x 240	-	34,7	2304,0	3420,0
708716	1 x 300	-	36,8	2880,0	4100,0

Dimensions and specifications may be changed without prior notice.



HELUWIND® WK MS-Single-Torsion UL/CSA

3,6/6kV, 12/20kV



Technical data

- **Temperatur range**
flexing -40°C to +90°C
- **Nominal voltage**
3,6/6 kV
12/20 kV
- **Minimum bending radius**
12 x cable diameter
- **Torsion application**
+/-105° per 1m
- **Approval**
UL 1072

Cable structure

- Special bare copper conductor, fine stranded acc. to IEC 60228
- Special semiconductor layer
- Special insulation black
- Copper shield
- Jacket special rubber compound
- Black jacket

Properties

- abrasion resistant
- flame retardant
- torsion tested
- oil resistant
- UV resistant
- multi climate operation
- designed for CCV application
- **easy to assemble**

Note

Other diameters, part-no. and prices on request.
Please contact us with your individual requirements via
fax +49 7150 9209 5135.

3,6/6kV

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
708702		262 kcmil	24,1	1280,0	1790,0
708703		313 kcmil	25,5	1590,0	2072,0
708704		373 kcmil	27,8	1900,0	2376,0
708705		444 kcmil	29,9	2272,0	2770,0
708706		535 kcmil	32,7	2608,0	3246,0
708707		646 kcmil	35,1	3300,0	3801,0
708708		777 kcmil	37,3	3970,0	4492,0
708709		929 kcmil	40,1	4780,0	5344,0
708710		1111 kcmil	44,2	5690,0	6410,0

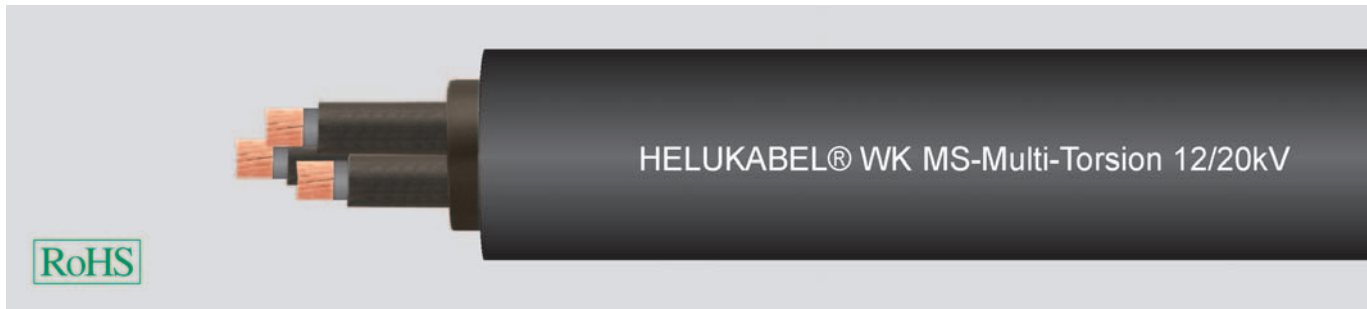
12/20kV

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
708717		262 kcmil	26,1	1280,0	1990,0
708718		313 kcmil	27,2	1590,0	2191,0
708719		373 kcmil	29,8	1900,0	2563,0
708720		444 kcmil	31,9	2272,0	2983,0
708721		535 kcmil	34,9	2608,0	3471,0
708722		646 kcmil	37,2	3300,0	4020,0
708723		777 kcmil	39,4	3970,0	4696,0
708724		929 kcmil	42,4	4780,0	5552,0
708725		1111 kcmil	46,5	5690,0	6620,0

Dimensions and specifications may be changed without prior notice.

HELUWIND® WK MS-Multi-Torsion

3,6/6kV, 12/20kV, 24/38kV



Technical data

- **Temperatur range**
flexing -40°C to +90°C
- **Nominal voltage**
3,6/6 kV,
12/20 kV
or 24/38 kV
- **Minimum bending radius**
12 x cable diameter
- **Torsion application**
+/-105° per 1m

Cable structure

- Special bare copper conductor, fine stranded acc. to IEC 60228
- Special semiconductor layer
- Special insulation black
- Conductor insulation with semiconductor layer
- conductors wrapped
- Inner Sheath special compound
- Sheath special rubber compound
- Black jacket

Properties

- global application
- abrasion resistant
- flame retardant
- torsion tested
- oil resistant
- UV resistant
- multi climate operation
- designed for CCV application
- **easy to assemble**

Note

Other diameters, part-no. and prices on request.
Please contact us with your individual requirements via
fax +49 7150 9209 5135.

3,6/6kV

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
708425	3 x 25 + 25	-	40,1	960,0	2600,0
708426	3 x 35 + 35	-	45,1	1344,0	3020,0
708427	3 x 50 + 50	-	47,2	1920,0	3500,0
708428	3 x 70 + 70	-	51,9	2688,0	4210,0

12/20kV

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
708726	3 x 25 + 25	-	41,9	960,0	2790,0
708728	3 x 50 + 50	-	49,3	1920,0	3711,0

12/20kV

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
708727	3 x 35 + 35	-	47,0	1344,0	3231,0
708729	3 x 70 + 70	-	54,0	2688,0	4421,0

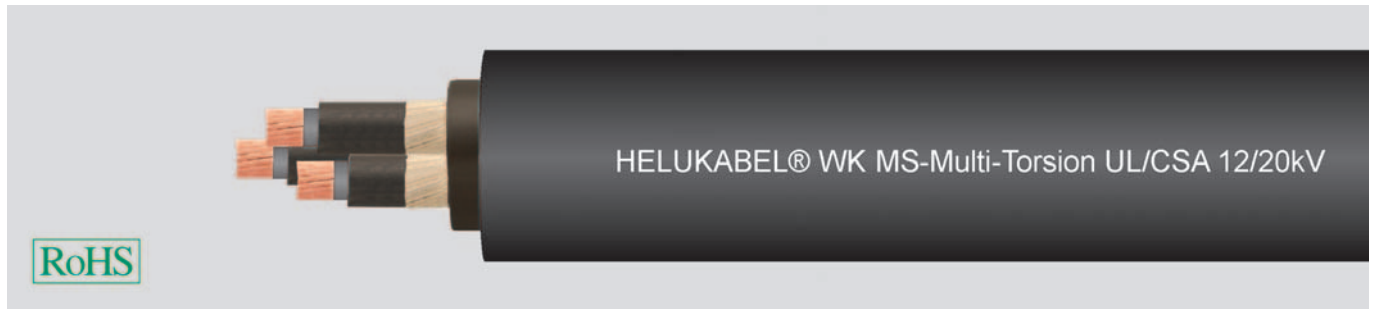
24/38kV

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
708730	3 x 25 + 25	-	43,6	960,0	2910,0
708731	3 x 35 + 35	-	48,9	1344,0	3400,0
708732	3 x 50 + 50	-	51,2	1920,0	3921,0
708733	3 x 70 + 70	-	56,0	2688,0	4638,0

Dimensions and specifications may be changed without prior notice.

HELUWIND® WK MS-Multi-Torsion UL/CSA

3,6/6kV, 12/20kV, 24/38kV



Technical data

- **Temperatur range**
flexing -40°C to +90°C
- **Nominal voltage**
3,6/6 kV,
12/20 kV
or 24/38 kV
- **Minimum bending radius**
12 x cable diameter
- **Torsion application**
+/-105° per 1m
- **Approval**
UL 1072

Cable structure

- Special bare copper conductor, fine stranded acc. to IEC 60228
- Special semiconductor layer
- Special insulation EOR or AVGM
- Conductor insulation with semiconductor layer for N-conductor
- conductors wrapping
- tinned copper shield
- Inner jacket special compound
- jacket special halogen free compound
- Black jacket

Properties

- global application
- abrasion resistant
- flame retardant
- torsion testet
- suitable for Offshore
- oil resistant
- UV resistant
- multi climate operation
- designed for CCV application
- **easy to assemble**

Note

Other diameters, part-no. and prices on request.
Please contact us with your individual requirements via
fax +49 7150 9209 5135.

3,6/6kV

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
708734		3x4+4	40,1	960,0	2600,0
708735		3x2+2	45,1	1344,0	3020,0
708736		3x1+1	47,2	1920,0	3500,0
708737		3x2/0+2/0	51,9	2688,0	4210,0

12/20kV

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
708738		3x4+4	41,9	960,0	2790,0
708739		3x2+2	47,0	1344,0	3231,0

12/20kV

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
708740		3x1+1	49,3	1920,0	3711,0
708741		3x2/0+2/0	54,0	2688,0	4421,0

24/38kV

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
708742		3x4+4	43,6	960,0	2910,0
708743		3x2+2	48,9	1344,0	3400,0
708744		3x1+1	51,2	1920,0	3921,0
708745		3x2/0+2/0	56,0	2688,0	4638,0

Dimensions and specifications may be changed without prior notice.

HELUWIND® WK DLO 2kV

FT4, RHH, RHW-2, UL44 , VW-1, LS, MSHA



Technical data

- **Temperature range:**
flexing -40°C to +90°C
- **Nominal voltage:**
DLO 2000V
- **Approvals:**
UL44, CSA, ICEA S-68-516/NEMA WC-8, MSHA, VW-1, FOR CT USE. LS CERTIFIED
- **Flame test**
FT4, FT1

Cable structure

- Tinned copper conductors according to ASTM B-172, ASTM B-33
- Special wrapping
- Special EPR insulation
- Special CPE jacket compound, non-adhesive
- Jacket color black

Properties

- UV-resistant

Note

Other diameters, part-no. and prices on request.
Please contact us with your individual requirements via
fax +49 7150 9209 5135.

Application

The cable is listed under the standard UL 44. The WK DLO is a flexible cable for the universal tower wiring of the wind turbine all the way up to the top tower segment. Optional, we can produce a version for torsional application. We recommend our WK 103 or WK 135 as a torsion cable through the cable loop to the generator in the nacelle.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
703156	14		5,9	22,0	37,0
703157	12		6,3	33,0	69,0
703158	10		7,2	61,0	100,0
702513	8		8,2	82,8	142,0
703159	6		10,1	140,0	200,0
703160	4		11,5	237,0	286,0
703161	2		12,6	339,0	370,0
703162	1		16,1	510,0	637,0
703163	1/0		17,5	465,0	715,0
703862	2/0		18,5	656,0	830,0
703164	3/0		20,2	930,0	1104,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
702863		4/0	21,7	1103,0	1298,0
702514		262 kcmil	24,8	1280,0	1590,0
703166		373 kcmil	28,2	1900,0	2176,0
703165		313 kcmil	26,4	1590,0	1872,0
708857		373 kcmil	28,2	1900,0	2176,0
703167		444 kcmil	30,0	2272,0	2570,0
702515		535 kcmil	32,2	2608,0	3046,0
703168		646 kcmil	34,8	3300,0	3600,0
703169		777 kcmil	37,0	3970,0	4290,0
703170		929 kcmil	39,5	4780,0	5144,0
703171		1111 kcmil	44,4	5690,0	6070,0

Dimensions and specifications may be changed without prior notice.

HELWIND® WK RHH/RHW-2 ALU

UL44, NEC



Technical data

- **Temperature range:**
flexing -40°C to +90°C
- **Nominal voltage:**
2000V
- **Approvals:**
UL listet as RHH/RHW-2
UL44
NEC

Cable structure

- Special compacted ALU conductors according to AA-8000
- Special XLPE insulation
- color black

Properties

- UV-resistant
- flame resistant
- reduced outer diameter

Note

Other diameters, part-no. and prices on request.
Please contact us with your individual requirements via
fax +49 7150 9209 5135.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	AL weight kg / km	Weight approx. kg / km
708746		262 kcmil	23,2	367,0	541,0
708747		313 kcmil	24,3	439,0	630,0
708748		373 kcmil	26,9	523,0	741,0
708749		444 kcmil	28,6	622,0	780,0
708750		535 kcmil	31,6	749,0	960,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	AL weight kg / km	Weight approx. kg / km
708751		646 kcmil	34,0	905,0	1210,0
708752		777 kcmil	36,1	1088,0	1510,0
708753		929 kcmil	39,5	1301,0	1720,0
708754		1111 kcmil	43,2	1556,0	1900,0

Dimensions and specifications may be changed without prior notice.



POWERLINE

WK

HELUWIND® WK POWERLINE ALU 105°C, 0,6/1kV

flexible ALU-Conductor



Technical data

- **Temperature range**
fixed -40°C to +105°C
flexing -20°C up to +90°C
- **Operating temperature at conductor**
max. +105°C
- **Nominal voltage**
0,6/1kV (50Hz)
- **Test voltage**
2,5kV (50Hz)
- **Min. bending radius**
flexing 10 x cable outer diameter
fixed installation 4 x cable outer diameter
- **Flame test**
IEC 60332-1
- **Approvals**
acc. to DIN VDE 0250-813
UL/CSA in preparation

Cable structure

- Aluminium conductor, fine stranded wires
- Special insulation black
- Sheath special compound
- black jacket

Properties

- UV resistant
- oil-resistant
- easy to assemble
- recyclable

Note

Please ask for our extended notes/information about the properties and for the necessary connection technology. Please contact us with your individual requirements via fax +49 7150 9209 5135.

Application

The WK Powerline ALU is a highly flexible aluminum cable with a fine wire strand structure, which is suitable for use in the area of energy management - especially in the power wiring of a wind turbine. Thanks to its high flexibility and low weight, this cable can be installed in the tower in one continuous length. Time-intensive wiring of the individual tower segments is eliminated.

The decisive advantage, however, lies in the process safety of the connection technology: The number of breaks from the top tower segment to the inverter is reduced from as many as 90 connection points to only 18 connections, depending on the number of power cables and tower segments. The installation effort in the field is thereby reduced from several days to a few hours.

For torsional use we recommend the WK 103-T, WK 135-T or WK 137-T.

The WK Powerline ALU may only be prepared with the certified connection technology of HELUKABEL®. Either with the C8 Crimp or screw connector (tested in accordance with IEC 61238-1 Cl. A). See Accessories section in the catalog.

The cable is also optionally available in a halogen-free design with UL/CSA approval and a rated voltage of 1.8/3 kV.

CE= The product conforms to the EC Low Voltage Directive 2006/95/EC

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	AL weight kg / km	Weight approx. kg / km
707062	1 x 70	-	17,4	206,0	379,0
707063	1 x 95	-	18,8	280,0	480,0
707064	1 x 120	-	20,6	355,0	576,0
706408	1 x 150	-	22,4	441,0	665,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	AL weight kg / km	Weight approx. kg / km
706088	1 x 185	-	24,5	544,0	950,0
706089	1 x 240	-	27,5	706,0	1150,0
706084	1 x 300	-	31,9	882,0	1400,0
706085	1 x 400	-	36,7	1176,0	1680,0

Dimensions and specifications may be changed without prior notice.

HELUWIND® WK POWERLINE ALU robust 105°C, 0,6/1kV

flexible ALU-Conductor



Technical data

- **Temperature range**
fixed -40°C to +105°C
flexing -20°C up to +90°C
- **Operating temperature at conductor**
max. +105°C
- **Nominal voltage**
0,6/1kV (50Hz)
- **Test voltage**
2,5kV (50Hz)
- **Min. bending radius**
flexing 10 x cable outer diameter
fixed installation 4 x cable outer diameter
- **Flame test**
IEC 60332-1
- **Approvals**
acc. to DIN VDE 0250-813
UL/CSA in preparation

Cable structure

- Aluminium conductor, fine stranded wires
- Special insulation black
- Sheath special compound
- black jacket

Properties

- extremely abrasion resistant
- UV resistant
- oil-resistant
- easy to assemble
- recyclable

Note

Please ask for our extended notes/information about the properties and for the necessary connection technology. Please contact us with your individual requirements via fax +49 7150 9209 5135.

Application

CE – The product conforms to the EC low-voltage directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	AL weight kg / km	Weight approx. kg / km
707097	1 x 70	-	17,4	206,0	460,0
707098	1 x 95	-	18,8	280,0	536,0
707099	1 x 120	-	20,6	355,0	576,0
707100	1 x 150	-	22,4	441,0	665,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	AL weight kg / km	Weight approx. kg / km
707101	1 x 185	-	24,5	544,0	950,0
707102	1 x 240	-	27,5	706,0	1150,0
707103	1 x 300	-	31,9	882,0	1398,0
707104	1 x 400	-	36,7	1176,0	1588,0

Dimensions and specifications may be changed without prior notice.

HELUWIND® WK POWERLINE ALU 105°C, 1,8/3kV

flexible ALU-Conductor, direct burial



Technical data

- **Temperature range**
fixed -40°C to +105°C
flexing -20°C up to +90°C
- **Operating temperature at conductor**
max. +105°C
- **Nominal voltage**
1,8/3 kV (50Hz)
- **Test voltage**
9 kV (50Hz)
- **Min. bending radius**
flexing 10 x cable outer diameter
fixed installation 4 x cable outer diameter
- **Flame test**
IEC 60332-1
- **Approvals**
in accordance DIN VDE 0250-813

Cable structure

- Aluminium conductor, fine stranded wires
- Special insulation black
- Jacket special compound
- black jacket

Properties

- UV resistant
- oil-resistant
- easy to assemble
- recyclable
- direct burial

Note

Please ask for our extended notes/information about the properties and for the necessary connection technology. Please contact us with your individual requirements via fax +49 7150 9209 5135.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	AL weight kg / km	Weight approx. kg / km
707647	1 x 185	-	26,0	544,0	1020,0
706578	1 x 240	-	28,4	706,0	1250,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	AL weight kg / km	Weight approx. kg / km
707432	1 x 300	-	33,2	882,0	1520,0
707648	1 x 400	-	38,1	1176,0	1855,0

Dimensions and specifications may be changed without prior notice.

HELUWIND® WK POWERLINE ALU robust 105°C, 1,8/3kV

flexible ALU-Conductor



Technical data

- **Temperature range**
fixed -40°C to +105°C
flexing -20°C up to +90°C
- **Operating temperature at conductor**
max. +105°C
- **Nominal voltage**
1,8/3kV (50Hz)
- **Test voltage**
9kV (50Hz)
- **Min. bending radius**
flexing 10 x cable outer diameter
fixed installation 4 x cable outer diameter
- **Flame test**
IEC 60332-1
- **Approvals**
in accordance DIN VDE 0250-813

Cable structure

- Aluminium conductor, fine stranded wires
- Special insulation black
- Sheath special compound
- black jacket

Properties

- extremely abrasion resistant
- UV resistant
- oil-resistant
- easy to assemble
- recyclable

Note

Please ask for our extended notes/information about the properties and for the necessary connection technology. Please contact us with your individual requirements via fax +49 7150 9209 5135.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	AL weight kg / km	Weight approx. kg / km
707692	1 x 185	-	26,0	544,0	1020,0
707693	1 x 240	-	28,4	706,0	1250,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	AL weight kg / km	Weight approx. kg / km
707694	1 x 300	-	33,2	882,0	1520,0
707695	1 x 400	-	38,1	1176,0	1855,0

Dimensions and specifications may be changed without prior notice.

HELUWIND® WK POWERLINE ALU halogen free 105°C 1,8/3kV

flexible ALU-Conductor



Technical data

- **Temperature range**
fixed -40°C to +105°C
flexing -20°C up to +90°C
- **Operating temperature at conductor**
max. +105°C
- **Nominal voltage**
1,8/3kV (50Hz)
- **Test voltage**
9kV (50Hz)
- **Min. bending radius**
flexing 10 x cable outer diameter
fixed installation 4 x cable outer diameter
- **Approvals**
in accordance DIN VDE 0250-813

Cable structure

- Aluminium conductor, fine stranded wires
- Special insulation black
- Sheath special compound
- black jacket

Properties

- halogen free
- abrasion resistant
- UV resistant
- oil-resistant
- easy to assemble
- recyclable

Note

Please ask for our extended notes/information about the properties and for the necessary connection technology. Please contact us with your individual requirements via fax +49 7150 9209 5135.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	AL weight kg / km	Weight approx. kg / km
709143	1 x 185	-	26,0	544,0	1020,0
709144	1 x 240	-	28,4	706,0	1150,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	AL weight kg / km	Weight approx. kg / km
709145	1 x 300	-	33,2	882,0	1400,0
709146	1 x 400	-	38,1	1176,0	1680,0

Dimensions and specifications may be changed without prior notice.

HELUWIND® WK POWERLINE Copper Tower

0,6/1kV



Technical data

- **Temperature range**
fixed -40°C to +90°C
flexing -25°C up to +50°C
- **Operating temperature at conductor**
max. +90°C
- **Nominal voltage**
0,6/1kV (50Hz)
- **Test voltage**
4kV (50Hz)
- **Min. bending radius**
15 x cable diameter
- **Approvals**
in accordance DIN to IEC 60502-1

Cable structure

- Bare copper stranded round shaped conductors (RM) according to IEC 60228, Cl. 2 (nv)
- insulation EPR compound black
- Jacket special PCP compound
- Jacket color black

Properties

- UV resistant
- oil-resistant

Note

Please contact us with your individual requirements via
fax +49 7150 9209 5135.

Application

For use for medium mechanical stress in dry, damp, wet rooms and outdoor, especially as power cable in wind turbines, for fixed installation in the tower or lattice tower. Because of the special cable structure, and outer jacket, this cable provides a relative flexibility compared to standard cables. (NYY-N2XY-N2XH). Optionally as 1,8/3kV.

CE= The product conforms to the EC low-voltage directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
708475	1 x 150	-	23,6	1440,0	1610,0
708476	1 x 185	-	25,0	1776,0	2050,0
708477	1 x 240	-	28,0	2304,0	2630,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
708478	1 x 300	-	30,0	2880,0	3200,0
708479	1 x 400	-	34,0	3840,0	4150,0

Dimensions and specifications may be changed without prior notice.



HELUWIND® WK POWERLINE ALU Tower

0,6/1 kV



Technical data

- **Temperature range**
fixed -40°C to +90°C
flexing -25°C to +50°C
- **Operating temperature at conductor**
max. +90°C
- **Nominal voltage**
0,6/1kV (50Hz)
- **Test voltage, 50 Hz**
4 kV (50Hz)
- **Min. bending radius**
15 x cable diameter
- **Approvals**
according to IEC 60502-1

Cable structure

- ALU stranded round shaped conductors (RM)
according to IEC 60228, Cl. 2 (nv)
- insulation EPR compound black
- Jacket special PCP compound
- Jacket color black

Properties

- UV resistant
- oil-resistant

Note

Please contact us with your individual requirements via fax +49 7150 9209 5135.

Application

For use for medium mechanical stress in dry, damp, wet rooms and outdoor, especially as power cable in wind turbines, for fixed installation in the tower or lattice tower. Because of the special cable structure, and outer jacket, this cable provides a relative flexibility compared to standard cables. (NYY-N2XY-N2XH). Optionally as 1,8/3kV.

CE= The product conforms to the EC low-voltage directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	AL weight kg / km	Weight approx. kg / km
708470	1 x 150	-	23,0	435,0	790,0
708471	1 x 185	-	26,0	537,0	960,0
708472	1 x 240	-	27,0	696,0	1208,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	AL weight kg / km	Weight approx. kg / km
708473	1 x 300	-	29,0	870,0	1342,0
708474	1 x 400	-	31,4	1160,0	1845,0

Dimensions and specifications may be changed without prior notice.

HELUWIND® WK POWERLINE Blade Copper

lightning protection



Technical data

- **Temperature range**
fixed installation -40°C to +80°C
- **Nominal voltage**
0,6/1kV (50 Hz)
- **Test voltage**
4kV (50 Hz)
- **Min. bending radius**
fixed installation 4 x cable diameter

Cable structure

- Bare Copper conductor RM
- Special insulation compound
- Jacket color black

Properties

- oil resistant
- UV-resistant

Note

Please contact us with your individual requirements via fax +49 7150 9209 5135.

Application

CE= The product conforms to the EC low-voltage directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
708678	1 x 50	-	12,1	480,0	690,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
708679	1 x 70	-	13,7	672,0	1050,0

Dimensions and specifications may be changed without prior notice.

HELUWIND® WK POWERLINE Blade ALU

lightning protection



Technical data

- **Temperature range**
fixed installation -40°C to +80°C
- **Nominal voltage**
0,6/1kV (50 Hz)
- **Test voltage**
4kV (50 Hz)
- **Min. bending radius**
fixed installation 4 x cable diameter

Cable structure

- Aluminium conductor RM
- Special insulation compound
- Sheath color black

Properties

- oil resistant
- UV-resistant

Note

Please contact us with your individual requirements via
fax +49 7150 9209 5135.

Application

CE= The product conforms to the EC low-voltage directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	AL weight kg / km	Weight approx. kg / km
706576	1 x 50	-	12,1	148,0	376,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	AL weight kg / km	Weight approx. kg / km
706577	1 x 70	-	13,7	208,0	491,0

Dimensions and specifications may be changed without prior notice.





Technical data

- Power and control cable to DIN VDE 0276 part 603 S1, HD 603.1 and IEC 60502, 7 core and above to DIN VDE 0276 part 627, HD 627 S1 and IEC 60502
- **Temperature range**
flexing -5 °C to +50 °C
fixed installation -40 °C to +70 °C
- Permissible **operating temperature** at conductor +70 °C
- Permissible **short circuit temperature** +160 °C (short circuit duration 5 sec.)
- **Nominal voltage** U_0/U 0,6/1 kV
- **Test voltage** 4 kV
- Max. permissible **tensile stress** with cable grip for Cu-conductor = 50 N/mm²
- **Minimum bending radius**
for single core approx. 15x cable \varnothing
for multi core approx. 12x cable \varnothing
- **Power ratings table**
see Technical Informations
- **Caloric load values**
see Technical Informations

Cable structure

- Plain copper conductor, to DIN VDE 0295 cl. 1 or cl. 2 solid or stranded type, BS 6360 cl. 1 or cl. 2, IEC 60228 and HD 383
- PVC core insulation, DIV4 to HD 603.1
- Cores stranded concentrically
- Colour coded to DIN VDE 0293-308, 0276 part 603 or HD 186
- Core colour for 3+½ conductor
J-type: gnye (½), bn, bk, gy
O-type: bu (½), bn, bk, gy
- PVC outer jacket, DMV5 to HD 603.1
- Sheath colour black

Properties

- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Highest permissible voltage

- Direct current systems 1,8 kV
- Alternating current systems, single-phase systems 1,4 kV
Both conductors insulated, single-phase systems 0,7 kV
One conductor earthed, three-phase systems 1,2 kV
With concentric conductor and a cross-section of 240 mm² and above 3,6 kV

Note

- re = round conductor, single-wire;
rm = round conductor, multiple-wire;
sm = stranded, sectional core.
- Also available in NYFGBY, NYBY versions etc.
- 2 cores = adapted to DIN VDE.
- **In respect to 3+½ conductors**
Whereby only one conductor is allowed to contain a smaller cross-section (as per DIN VDE 0276 part 603 table 5) and permitted to place as insulated core (gree-yellow and blue as ½-conductor), stranded in layer.

Application

Power cables for energy supply are installed in open air, in underground, in water, indoors, in cable ducts, power stations, for industry and distribution boards as well as in subscriber networks, where mechanical damages are not to be expected.

☞ The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

No. cores x cross-sec. mm ²		Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	J type Part no.	AWG-No.	O type Part no.	AWG-No.
1 x 4	re	9,0	38,0	115,0	32001	12	32089	12
1 x 6	re	9,5	58,0	135,0	32002	10	32090	10
1 x 10	re	10,0	96,0	179,0	32003	8	32091	8
1 x 16	re	11,0	154,0	245,0	32004	6	32092	6
1 x 25	rm	12,0	240,0	360,0	32005	4	32093	4
1 x 35	rm	13,0	336,0	470,0	32006	2	32094	2
1 x 50	rm	15,0	480,0	620,0	32007	1	32095	1
1 x 70	rm	16,5	672,0	810,0	32008	2/0	32096	2/0
1 x 95	rm	19,0	912,0	1110,0	32009	3/0	32097	3/0
1 x 120	rm	20,5	1152,0	1360,0	32010	4/0	32098	4/0
1 x 150	rm	22,5	1440,0	1670,0	32011	300 kcmil	32099	300 kcmil
1 x 185	rm	25,0	1776,0	2050,0	32012	350 kcmil	32100	350 kcmil
1 x 240	rm	28,0	2304,0	2630,0	32013	500 kcmil	32101	500 kcmil
1 x 300	rm	30,0	2880,0	3200,0	32014	600 kcmil	32102	600 kcmil
1 x 400	rm	34,0	3840,0	4150,0	32015	750 kcmil	32103	750 kcmil
1 x 500	rm	38,0	4800,0	5200,0	32556	1000 kcmil	32558	1000 kcmil
1 x 630	rm	43,0	6048,0	6650,0	32557	-	32559	-

Prices on request

Continuation ▶

NYY-J / NYY-O power cable, 0,6/1kV, VDE approved



No.cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	J type Part no.	AWG-No.	O type Part no.	AWG-No.
2 x 1,5 re	11,0	29,0	175,0	32016	16	32104	16
2 x 2,5 re	12,0	48,0	215,0	32017	14	32105	14
2 x 4 re	14,0	77,0	295,0	32018	12	32106	12
2 x 6 re	15,0	115,0	370,0	32019	10	32107	10
2 x 10 re	16,5	192,0	495,0	32020	8	32108	8
2 x 16 re	18,5	307,0	670,0	32021	6	32109	6
2 x 25 rm	23,5	480,0	960,0	32022	4	32110	4
3 x 1,5 re	11,5	43,0	195,0	32023	16	32111	16
3 x 2,5 re	12,5	72,0	250,0	32024	14	32112	14
3 x 4 re	14,0	115,0	340,0	32025	12	32113	12
3 x 6 re	15,0	173,0	430,0	32026	10	32114	10
3 x 10 re	17,0	288,0	590,0	32027	8	32115	8
3 x 16 re	19,0	461,0	820,0	32028	6	32116	6
3 x 25 rm	24,0	720,0	1320,0	32029	4	32117	4
3 x 35 sm	25,0	1008,0	1450,0	32030	2	32118	2
3 x 50 sm	26,5	1440,0	1850,0	32031	1	32119	1
3 x 70 sm	30,0	2016,0	2450,0	32032	2/0	32120	2/0
3 x 95 sm	34,5	2736,0	3300,0	32033	3/0	32121	3/0
3 x 120 sm	37,0	3456,0	4100,0	32034	4/0	32122	4/0
3 x 150 sm	40,0	4320,0	4900,0	32293	300 kcmil	32296	300 kcmil
3 x 185 sm	46,0	5328,0	6500,0	32294	350 kcmil	32297	350 kcmil
3 x 240 sm	51,0	6912,0	8300,0	32295	500 kcmil	32298	500 kcmil
4 x 1,5 re	12,0	58,0	230,0	32044	16	32132	16
4 x 2,5 re	13,5	96,0	300,0	32045	14	32133	14
4 x 4 re	15,0	154,0	410,0	32046	12	32134	12
4 x 6 re	16,5	230,0	520,0	32047	10	32135	10
4 x 10 re	18,5	384,0	730,0	32048	8	32136	8
4 x 16 re	21,5	614,0	1045,0	32049	6	32137	6
4 x 25 rm	26,0	960,0	1640,0	32050	4	32138	4
4 x 35 sm	27,5	1344,0	1760,0	32051	2	32139	2
4 x 50 sm	30,0	1920,0	2350,0	32052	1	32140	1
4 x 70 sm	34,0	2688,0	3100,0	32053	2/0	32141	2/0
4 x 95 sm	39,0	3648,0	4250,0	32054	3/0	32142	3/0
4 x 120 sm	42,5	4608,0	5300,0	32055	4/0	32143	4/0
4 x 150 sm	47,5	5760,0	6400,0	32056	300 kcmil	32144	300 kcmil
4 x 185 sm	52,0	7104,0	8500,0	32057	350 kcmil	32145	350 kcmil
4 x 240 sm	58,0	9216,0	11000,0	32058	500 kcmil	32146	500 kcmil
5 x 1,5 re	13,0	72,0	270,0	32059	16	32147	16
5 x 2,5 re	14,5	120,0	360,0	32060	14	32148	14
5 x 4 re	16,5	192,0	490,0	32061	12	32149	12
5 x 6 re	18,0	288,0	600,0	32062	10	32150	10
5 x 10 re	20,0	480,0	890,0	32063	8	32151	8
5 x 16 re	22,5	768,0	1255,0	32064	6	32152	6
5 x 25 rm	28,0	1200,0	1960,0	32065	4		
5 x 35 rm	34,0	1680,0	2400,0	32300	2		
5 x 50 rm	40,0	2400,0	3500,0	32257	1		
7 x 1,5 re	15,5	101,0	310,0	32066	16	32153	16
7 x 2,5 re	16,5	168,0	450,0	32076	14	32163	14
7 x 4 re	18,5	269,0	640,0	32086	12		
7 x 6 re	20,0	403,0	850,0	32087	10	32174	10
7 x 10 re	23,5	672,0	1200,0	32088	8	32175	8
10 x 1,5 re	18,0	144,0	380,0	32067	16	32154	16
10 x 2,5 re	19,5	240,0	520,0	32077	14	32164	14
12 x 1,5 re	19,0	173,0	420,0	32068	16	32155	16
12 x 2,5 re	20,5	288,0	600,0	32078	14		
14 x 1,5 re	20,0	202,0	470,0	32069	16	32156	16
14 x 2,5 re	21,0	336,0	680,0	32079	14		
16 x 1,5 re	21,0	250,0	520,0	32070	16	32157	16
16 x 2,5 re	22,0	384,0	750,0	32080	14		
19 x 1,5 re	22,0	274,0	570,0	32071	16	32158	16
19 x 2,5 re	23,0	456,0	850,0	32081	14	32168	14
21 x 1,5 re	23,0	302,0	650,0	32072	16	32159	16
21 x 2,5 re	24,5	504,0	980,0	32082	14		
24 x 1,5 re	25,0	346,0	750,0	32073	16	32160	16
24 x 2,5 re	27,0	576,0	1100,0	32083	14		
30 x 1,5 re	26,0	452,0	860,0	32074	16	32161	16
30 x 2,5 re	28,0	720,0	1280,0	32084	14		
40 x 1,5 re	29,0	576,0	1070,0	32075	16	32162	16
40 x 2,5 re	31,5	960,0	1700,0	32085	14		
52 x 2,5 re	35,0	1248,0	2150,0	32169	14		
61 x 1,5 re	34,0	878,0	1680,0	32176	16		

3+1/2-conductors

No.cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	J type Part no.	AWG-No.	O type Part no.	AWG-No.
3 x 25 / 16 rm/re	24,5	874,0	1530,0	32035	4	32123	4
3 x 35 / 16 sm/re	26,0	1162,0	1750,0	32036	2	32124	2
3 x 50 / 25 sm	29,0	1680,0	2350,0	32037	1	32125	1
3 x 70 / 35 sm/rm	32,0	2352,0	2850,0	32038	2/0	32126	2/0
3 x 95 / 50 sm	38,0	3216,0	3850,0	32039	3/0	32127	3/0
3 x 120 / 70 sm	41,0	4128,0	4780,0	32040	4/0	32128	4/0
3 x 150 / 70 sm	46,0	4992,0	5800,0	32041	300 kcmil	32129	300 kcmil
3 x 185 / 95 sm	51,0	6240,0	7600,0	32042	350 kcmil	32130	350 kcmil
3 x 240 / 120 sm	58,0	8064,0	9800,0	32043	500 kcmil	32131	500 kcmil
3 x 300 / 150 sm	64,0	10080,0	11500,0	32256	600 kcmil		

Dimensions and specifications may be changed without prior notice. (RQ01)

Prices on request



Technical data

- Power and control cable according to DIN VDE 0276 part 603, HD 603 S1 and IEC 60502
- Insulation and sheath-compound of thermoplastic PVC
- **Temperature range**
flexing -5°C up to +50°C
fixed installation -40°C up to +70°C
- Permissible **short circuit temperature** +160°C (short circuit duration 5 sec.)
- **Nominal voltage** U_0/U 0.6/1 kV
- **Test voltage** 4 kV
- Max. permissible **tensile stress** with cable grip for Alu-conductor = 30 N/mm²
- **Current carrying capacity** as per DIN VDE 0276 part 603, in normal operation table 14 and 15, under short circuit conditions table 17
- **Minimum bending radius** for multi core approx. 12x cable \emptyset

Cable structure

- Solid aluminium conductor, as per VDE 0295 cl. 1 or cl. 2 (round and sector shaped), BS 6360 cl. 1 or cl. 2, IEC 60228 and HD 383
- PVC core insulation, DIV4 to HD 603.1
- Conductor colours: green-yellow, brown, black, grey
- Cores stranded in layers
- Inner covering
- PVC outer sheath black, DMV5 to HD 603.1
- Sheath colour: black

Properties

- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Highest permissible voltage

- Direct current systems 1.8 kV
- Alternating current systems, single-phase systems 1.4 kV
Both conductors insulated, single-phase systems 0.7 kV
One conductor earthed, three-phase systems 1.2 kV
With concentric conductor and a cross-section of 240 mm² and above 3.6 kV

Note

- rm = stranded core.

Application

Power cables for energy supply are installed in underground, water, cable ducts, power stations, outdoors, indoors, for industry and distribution boards as well as in subscriber networks, where mechanical damages are not expected.

CE = The product conforms to the EC Low-Voltage Directive 2006/95/EG.

Part No.	No. cores x cross-sec. mm ²		Outer \emptyset app. mm	Alu weight kg / km	Weight approx. kg / km
32322	1 x 185	rm	25,0	537,0	979,0
32323	1 x 240	rm	28,0	696,0	1253,0
32324	1 x 300	rm	30,0	870,0	1395,0
32325	1 x 400	rm	34,0	1160,0	1890,0

Dimensions and specifications may be changed without prior notice. (RQ01)
Prices on request.

NA2XY

power cable 0.6/1kV, VDE approved



Technical Data

- Power and control cable according to DIN VDE 0276 Part 603 S1 or HD 603.1 and IEC 60502
- **Temperature range**
Flexing -5°C up to +50°C
Fixed installation -40°C up to +70°C
- **Permissible operating temperature** at the conductor +90°C
- **Permissible short circuit temperature** +250°C (short-circuit duration 5 sec.)
- Nominal voltage U_0/U 0.6/1 kV
- **Test voltage** 4 kV
Max. permissible tensile load with cable grip = 30 N/mm²
- **Minimum bending radius**
Single-core approx. 15x cable Ø

Cable Structure

- Aluminium conductor according to DIN VDE 0295 cl. 1 or cl. 2, single-wire or multi-wire, BS 6360 cl. 1 or cl. 2, IEC 60228 cl. 1 or cl. 2 or HD 383
- Core insulation consisting of cross-linked polyethylene compound, DIX3 in accordance with HD 603.1
- Cores stranded in concentric layers
- Core colours according to DIN VDE 0293-308, 0276 Part 603 or HD 186
- PVC outer sheath, DMV6/DMP2 according to HD 603.1
- Sheath colour: black

Properties

- Self-extinguishing and flame retardant in accordance with VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (conforms to DIN VDE 0472 Part 804 Test method B)
- The materials used in manufacture are free of silicone, cadmium and substances that impair paint wetting
- **Highest permissible voltage**
- Direct current systems: 1.8 kV
- Three-phase systems
Single-phase systems:
Both outer conductors insulated 1.4 kV
Single-phase systems:
One outer conductor earthed 0.7 kV
- Three-phase system: 1.2 kV

Note

- re = round conductor single-wire;
rm = round conductor, multi-wire;
sm = sector-shaped conductor, multi-wire.

Application

Power distribution cables for use in underground, water, concrete, cable ducts, outdoors, indoors, for power stations, industrial applications and switching systems, as well as in local networks if no mechanical damage is expected. Respecting the permissible operating temperature at the conductor of +90°C permits a higher current carrying capacity than PVC insulated power distribution cables.

CE = The product conforms to the EG Low-Voltage Directive 2006/95/EG.

No. cores x cross-sec. mm ²	Outer Ø mm	Alu weight kg / km	Weight approx. kg / km	J type Part No.	O type Part No.
1x185 rm	25,5	537	978	33121	33133
1x240 rm	28,5	696	1253	33122	33134
1x300 rm	30,0	870	1394	33123	33135
1x400 rm	34,0	1160	1890	33124	33136

Dimensions and specifications may be changed without prior notice. (RQ01)
Prices on request.

N2XH

power cable, 0.6/1kV, halogen-free, no operational integrity



Technical data

- Power and control cable according to DIN VDE 0276 part 604, HD 604 S1 part 1 and part 5G
- Conductor resistance (at 20°C) according to VDE 0295 cl. 1 or 2 and IEC 60228 cl. 1 or 2 and HD 383 cl. 1 and cl. 2
- **Temperature range** during installation -5°C up to +50°C fixed installation -30°C up to +90°C
- Permissible **operating temperature** at conductor 90°C
- **Nominal voltage** U_0/U 0.6/1 kV
- **Test voltage** 4 kV
- **Minimum bending radius** single-core approx. 15x cable Ø multi-core approx. 12x cable Ø
- **Radiation resistance** up to 100×10^5 cJ/kg (up to 100 Mrad)
- **Caloric load values** see Technical Informations

Cable structure

- Plain Cu wire conductor, single or multiple-wire, according to DIN VDE 0295 cl. 1 or 2, BS 6360 cl. 1 or 2 and IEC 60228 cl. 1 or 2, HD 383
- Halogen-free core insulation, cross-linked polyethylene compound 2X11, to HD 604 S1
- Colour coding of cores according to DIN VDE 0293-308 and HD 186
- Green-yellow earth-core, 3 cores and above
- Cores stranded in layers (for multi-core cables)
- Overall filled inner sheath, covered by filling compound or wrapped tape
- Outer sheath of thermoplastic polyolefine compound HM4, to HD 604 S1
- Sheath colour: black
- **LSZH** = Low Smoke Zero Halogen.

Properties

- Halogen-free, no separation of corrosive or toxic gases
- Limited propagation of fire
- Low smoke production
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Tests

- Flame test according to VDE 0482 part 266-2, BS 4066 part 3/ DIN EN 50266-2/ IEC 60332-3 (equivalent DIN VDE 0472 part 804 test method C)
- Corrosiveness of combustion gases according to VDE 0482 part 267/ DIN EN 50267-2-2/ IEC 60754-2 (equivalent DIN VDE 0472 part 813)
- Halogen-free according to DIN VDE 0482 part 267/ EN 50267-2-1/ IEC 60754-1 (equivalent DIN VDE 0472 part 815)
- Smoke density according to DIN VDE 0482 part 268, HD 606, EN 50268-1+2/ IEC 61034-1+2, BS 7622 part 1+2 (equivalent DIN VDE 0472 part 816)

Note

- rm = round conductor, multiple-wire.

Application

Halogen-free power cable for applications with increased safety requirements in the event of fire; ideal for use in environments where harm to human life and damage to property must be prevented in the event of fire; e.g. in industrial installations, communal establishments, hotels, airports, underground stations, railway stations, hospitals department stores, banks, schools theaters, multi-storey buildings, process control centres etc. Suitable for fixed installation in dry, damp or wet environments; in, above, on and beneath plaster as well as in masonry walls and in concrete. These cables are suitable for outdoor applications and in underground by using in conduits or tubes.

CE = The product conforms to the EC Low-Voltage Directive 2006/95/EG.

Part No. J type	Part No. O type	No. cores x cross-sec. mm ²	Outer Ø app. mm	Cop. weight kg / km	Weight app. kg / km
53111	53259	1 x 185 rm	25,0	1776,0	1910,0
53112	53260	1 x 240 rm	28,0	2304,0	2370,0
53113	53261	1 x 300 rm	30,0	2880,0	2970,0

Dimensions and specifications may be changed without prior notice. (RQ01)
Prices on request.



Technical data

- **Temperature range**
fixed installation -40 °C to +90 °C
during assembly -5 °C to +50 °C
- **Operating temperature at conductor**
max. +90°C
- **Nominal voltage**
U₀/U 0,6/1kV
- **Test voltage 50 Hz**
4kV
- **Approvals**
production in according to VDE standards,
CE compliant
- **Min. bending radius**
15 x cable diameter
- **Flame test**
acc. to DIN VDE 0482 part 266-2, BS 4066,
part 3 / EN 50266-2 /
IEC 60332-3-24 (acc. DIN VDE 0472
part 804 cat. C)
- **Smoke density**
acc. DIN VDE 0482 part 268, HD 606,
EN 50268-12 / IEC 61034-12,
BS 7622 Teil 12 (acc. DIN VDE 0472 Teil 816)
- **Corrosivity of combustion gases**
acc. VDE 0482 Teil 267 /
DIN EN 50267-2-2 / IEC 60754-2
(acc. DIN VDE 0472 part 813)
- **Halogen free**
acc. DIN VDE 0482 part 267 / EN 50267-2-1
/ IEC 60754-1
(acc. DIN VDE 0472 part 815)

Cable structure

- ALU conductors, stranded conductors acc.
to IEC 60228 Cl. 2
- conductor insulation cross-linked PE
- Core identification black
- Jacket thermoplastic polymer
- black jacket

Properties

- Halogen-free
- UV resistant

Note

Other diameters, part-no. and prices on request.
Please contact us with your individual requirements via
fax +49 7150 9209 5135.

Application

The HELUWIND® WK series was specifically designed for wind power applications. We supply the leading wind turbine manufacturers with our cables.

CE= The product conforms to the EC low-voltage directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	AL weight kg / km	Weight approx. kg / km	Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	AL weight kg / km	Weight approx. kg / km
705031	1 x 185	-	22,0	537,0	1100,0	705033	1 x 300	-	26,9	870,0	1342,0
705032	1 x 240	-	24,2	696,0	1208,0	705034	1 x 400	-	29,9	1160,0	1843,0

Dimensions and specifications may be changed without prior notice.

N2XS2Y 6/10kV, 12/20kV, 18/30kV XLPE-insulated, Cu-conductor, single core, screened, PE-jacket



Technical data

- XLPE-insulated power cables to IEC 60502, DIN VDE 0276 part 620, HD 620 S1
- **Temperature range**
during installation up to -20 °C
- **Operating temperature**
max. 90 °C
- **Short circuit temperature**
250 °C (short circuit duration up to 5 sec.)
- **Nominal voltages**
U₀/U 6/10 kV, 12/20 kV, 18/30 kV
- **Operating voltages** for
6/10 kV = max. 12 kV
12/20 kV = max. 24 kV
18/30 kV = max. 36 kV
- **Test voltages** for
6/10 kV = 15 kV
12/20 kV = 30 kV
18/30 kV = 45 kV
- **Minimum bending radius**
during installation max. 15x cable ø
- **Power ratings**
table see Technical Informations

Cable structure

- Circular bare cu-conductor of stranded wires to HD 383
- Inner semi-conducting coating
- Core insulation of cross-linked Polyethylene (XLPE), PE-compound DIX8 to HD 620.1
- Outer extrusion of semi-conducting coating spliced with the insulation
- Wrapping of conductive material
- Screen: Braiding of copper wires with one or two tapes applied helically
- Wrapping
- PE-outer jacket black, compound DMP2 to HD 620.1
- Jacket colour black

Properties

- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers
- **Installation notes**
To guarantee an optimum on operating reliability the extruded semi-conductive layer is spliced with the insulation for long duration. For this reason we recommend a peeling tool for installation.

Note

- Further dimensions available on request.

Application

Suitable for indoor installation and in cable ducts, outdoors, underground and in water as well as for installation on cable trays for industries, switch-boards and power stations. The PE-outer jacket is resistant to high mechanical stress for laying the cables. This PE-jacket is not flame-resistant (does not conform the test method B, as per VDE 0472 part 804).

The inner conducting layer between the conductor and the XLPE insulation and the firmly bonded outer conducting layer on the XLPE insulation assures a construction free of partial discharges with high operational reliability.

N2XS2Y 6/10kV

Part No.	No. cores x Cross-sec. mm ²	Nominal- voltage kV	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
32481	1x50 rm /16	6/10	26	662	1520
32482	1x70 rm /16	6/10	28	860	1760
32483	1x95 rm /16	6/10	29	1098	2130
32484	1x120 rm /16	6/10	31	1340	2470
32486	1x150 rm /25	6/10	33	1725	3020
32488	1x185 rm /25	6/10	35	2059	3630
32490	1x240 rm /25	6/10	37	42587	4560
32491	1x300 rm /25	6/10	38	3163	3630

Other dimensions available upon request. Dimensions and specifications may be changed without prior notice. Prices on request.

NA2XS2Y 6/10kV, 12/20kV, 18/30kV XLPE-insulated, Cu-conductor, single core, screened, PE-jacket



Technical data

- XLPE-insulated power cables to DIN VDE 0276 part 620, HD 620 S1 and IEC 60502
- **Temperature range**
during installation up to -20 °C
- **Operating temperature**
max. 90 °C
- **Short circuit temperature**
250 °C (short circuit duration up to 5 sec.)
- **Nominal voltages**
U₀/U 6/10 kV, 12/20 kV, 18/30 kV
- **Operating voltages** for
6/10 kV = max. 12 kV
12/20 kV = max. 24 kV
18/30 kV = max. 36 kV
- **Test voltages** for
6/10 kV = 15 kV
12/20 kV = 30 kV
18/30 kV = 45 kV
- **Minimum bending radius**
during installation max. 15x cable ø
- **Power ratings**
table see Technical Informations

Cable structure

- Circular bare alu-conductor of stranded wires to HD 383
- Inner semi-conducting coating
- Core insulation of cross-linked Polyethylene (XLPE), PE-compound DIX8 to HD 620.1
- Outer extrusion of semi-conducting coating spliced with the insulation
- Wrapping of conductive material
- Screen: Braiding of copper wires with one or two tapes applied helically
- Wrapping
- PE-outer jacket black, compound DMP2 to HD 620.1
- Jacket colour black

Properties

- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers
- **Installation notes**
To guarantee an optimum on operating reliability the extruded semi-conductive layer is spliced with the insulation for long duration. For this reason we recommend a peeling tool for installation.

Note

- Further dimensions available on request.

Application

Suitable for indoor installation and in cable ducts, outdoors, underground and in water as well as for installation on cable trays for industries, switch-boards and power stations. The PE-outer jacket is resistant to high mechanical stress for laying the cables. This PE-jacket is not flame-resistant (does not conform the test method B, as per VDE 0472 part 804). The inner conducting layer between the conductor and the XLPE insulation and the firmly bonded outer conducting layer on the XLPE insulation assures a construction free of partial discharges with high operational reliability.

NA2XS2Y 12/20kV

Part No.	No. cores x Cross-sec. mm ²	Nominal- voltage kV	Outer Ø approx. mm	Cop. weight kg/km	Alu weight kg / km	Weight approx. kg / km
32534	1x70 rm /16	12/20	30	182	203	980
32535	1x95 rm /16	12/20	33	182	276	1120
32536	1x120 rm /25	12/20	35	182	348	1210
32538	1x150 rm /25	12/20	37	283	435	1420
32540	1x185 rm /25	12/20	36	283	537	1570
32542	1x240 rm /25	12/20	40	283	696	1830
32543	1x300 rm /25	12/20	44	283	870	2070
32544	1x400 rm /35	12/20	47	394	1160	2460

Other dimensions available upon request. Dimensions and specifications may be changed without prior notice. Prices on request.

N2XS(F)2Y 6/10kV, 12/20kV, 18/30kV XLPE-insulated, Cu-conductor, single core, longitudinally water-tight, screened, PE-jacket



Technical data

- XLPE-insulated power cables to DIN VDE 0276 part 620, HD 620 S1 and IEC 60502
- **Temperature range**
during installation up to -20 °C
- **Operating temperature**
max. 90 °C
- **Short circuit temperature**
250 °C (short circuit duration up to 5 sec.)
- **Nominal voltages**
U₀/U 6/10 kV, 12/20 kV, 18/30 kV
- **Operating voltages for**
6/10 kV = max. 12 kV
12/20 kV = max. 24 kV
18/30 kV = max. 36 kV
- **Test voltages for**
6/10 kV = 15 kV
12/20 kV = 30 kV
18/30 kV = 45 kV
- **Minimum bending radius**
during installation max. 15x cable ø
- **Power ratings**
table see Technical Informations

Cable structure

- Circular bare Cu-conductor of stranded wires to DIN VDE 0295 cl. 2 bzw. IEC 60228 cl. 2
- Inner semi-conducting coating
- Core insulation of cross-linked Polyethylene (XLPE), PE-compound DIX8 to HD 620.1
- Outer extrusion of semi-conducting coating spliced with the XLPE-insulation
- Longitudinally water-tight, conductive wrapping
- Screen: Braiding of copper wires with one or two tapes applied helically
- Longitudinally water-tight wrapping
- PE-outer jacket, compound DMP2 to HD 620.1
- Jacket colour black

Properties

- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers
- **Installation notes**
To guarantee an optimum on operating reliability the extruded semi-conductive layer is spliced with the insulation for long duration. For this reason we recommend a peeling tool for installation

Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm².
- For longitudinally and crosswise water-tight cable type N2XS(FL)2Y with PE-copolymere coated aluminium.
- Further types and dimensions on request.

Application

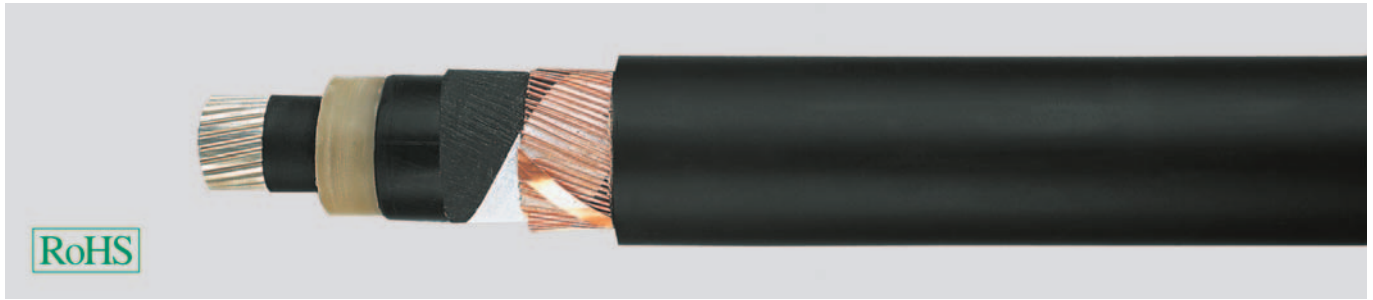
Suitable for indoor installation and in cable ducts, outdoors, underground and in water as well as for installation on cable trays for industries, switch-boards and power stations. The PE-outer jacket is resistant to high mechanical stress for laying the cables. This PE-jacket is not flame-resistant (does not conform the test method B, as per VDE 0472 part 804). The inner conducting layer between the conductor and the XLPE insulation and the firmly bonded outer conducting layer on the XLPE insulation assures a construction free of partial discharges with high operational reliability.

N2XS(F)2Y 12/20kV

Part No.	No. cores x Cross-sec. mm ²	Nominal- voltage kV	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
32571	1x35 rm /16	12/20			
32572	1x50 rm /16	12/20	33	662	1400
32573	1x70 rm /25	12/20	35	854	1550
32574	1x95 rm /16	12/20	36	1094	1800
32575	1x120 rm /16	12/20	37	1334	2150
32576	1x150 rm /25	12/20	39	1723	2400
32577	1x185 rm /25	12/20	41	2059	2850
32578	1x240 rm /25	12/20	43	2587	3250
32579	1x300 rm /16	12/20	45	3163	3850
32580	1x400 rm /35	12/20	48	4234	4900

Other dimensions available upon request. Dimensions and specifications may be changed without prior notice. Prices on request.

NA2XS(F)2Y 6/10kV, 12/20kV, 18/30kV XLPE-insulated, alu-conductor, single core, longitudinally water-tight, screened, PE-jacket



Technical data

- XLPE-insulated power cables to DIN VDE 0276 part 620, HD 620 S1 and IEC 60502
- **Temperature range**
during installation up to -20°C
- **Operating temperature**
max. 90°C
- **Short circuit temperature**
250°C (short circuit duration up to 5 sec.)
- **Nominal voltages**
U₀/U 6/10 kV, 12/20 kV, 18/30 kV
- **Operating voltages for**
6/10 kV = max. 12 kV
12/20 kV = max. 24 kV
18/30 kV = max. 36 kV
- **Test voltages for**
6/10 kV = 15 kV
12/20 kV = 30 kV
18/30 kV = 45 kV
- **Minimum bending radius**
during installation max. 15x cable Ø
- **Power ratings**
table see Technical Informations

Cable structure

- Circular bare alu-conductor of stranded wires to DIN VDE 0295 cl. 2 and IEC 60228 cl. 2
- Inner semi-conducting coating
- Core insulation of cross-linked Polyethylene (XLPE), PE-compound DIX8 to HD 620.1
- Outer extrusion of semi-conducting coating spliced with the XLPE-insulation
- Longitudinally water-tight, conductive wrapping
- Screen: Braiding of copper wires with one or two tapes applied helically
- Longitudinally water-tight wrapping
- PE-outer jacket, compound DMP2 to HD 620.1
- Jacket colour black
- Jacket thickness voltage 2,5 mm

Properties

- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers
- **Installation notes**
To guarantee an optimum on operating reliability the extruded semi-conductive layer is spliced with the insulation for long duration. For this reason we recommend a peeling tool for installation.

Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm².
- For longitudinally and crosswise water-tight cable type NA2XS(FL)2Y with PE-copolymere coated aluminium.
- Further types and dimensions on request.

Application

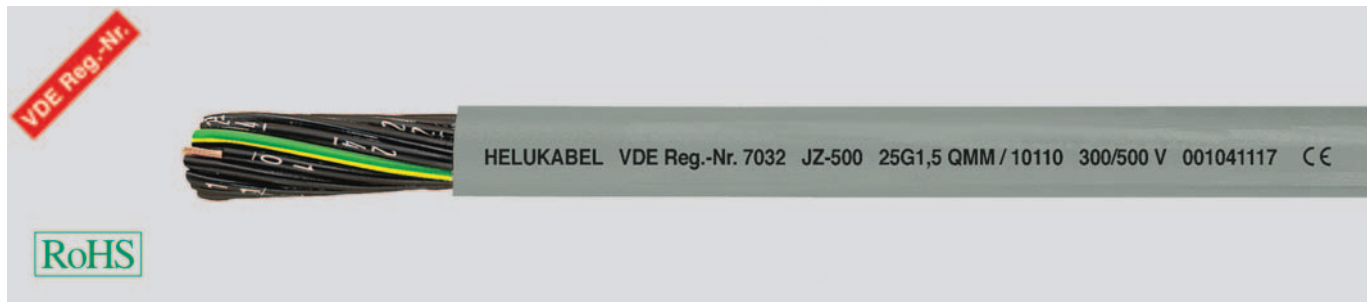
Suitable for indoor installation and in cable ducts, outdoors, underground and in water as well as for installation on cable trays for industries, switch-boards and power stations. The PE-outer jacket is resistant to high mechanical stress for laying the cables. This PE-jacket is not flame-resistant (does not conform the test method B, as per VDE 0472 part 804).

The inner conducting layer between the conductor and the XLPE insulation and the firmly bonded outer conducting layer on the XLPE insulation assures a construction free of partial discharges with high operational reliability.

NA2XS(F)2Y 12/20kV

Part No.	No. cores x Cross-sec. mm ²	Nominal-voltage kV	Outer Ø approx. mm	Cop. weight kg/km	Alu weight kg / km	Weight approx. kg / km
32612	1x70 rm /16	12/20	34	182	203	1030
32613	1x95 rm /16	12/20	36	182	276	1140
32614	1x120 rm /16	12/20	37	182	348	1250
32615	1x150 rm /25	12/20	39	283	435	1320
32616	1x185 rm /25	12/20	41	283	537	1570
32617	1x240 rm /25	12/20	43	283	696	1780
32618	1x300 rm /25	12/20	45	283	870	2100
32619	1x400 rm /35	12/20	48	394	1160	2480

Other dimensions available upon request. Dimensions and specifications may be changed without prior notice. Prices on request.



Technical data

- Control cables, special PVC
- Conforms to DIN VDE 0281, 0293, 0295
- **Temperature range**
flexing -15 °C¹⁾ to +80 °C
fixed installation -40 °C to +80 °C
- **Nominal voltage** U₀/U 300/500 V
- **Test voltage** 4000 V
- **Breakdown voltage** min. 8000 V
- **Insulation resistance**
min. 20 MΩm x km
- **Minimum bending radius**
flexing 7,5x cable ø
fixed installation 4x cable ø
- **Radiation resistance**
up to 80x10⁶ cJ/kg (up to 80 Mrad)
- ¹⁾ cold bending test, impact resistance test at low temperatures, elongation test at low temperatures. Tested according VDE 0473 part 811-1-4, EN 60811-1-4

Cable structure

- Bare copper, fine wire conductors, according to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Core insulation of special PVC Z 7225
- Black cores with continuous white numbering according to DIN VDE 0293 (also available with other core colours)
- Green-yellow earth core in the outer layer (3 cores and above)
- Cores stranded in layers with optimal lay-length
- Outer sheath of special PVC, TM2 to DIN VDE 0281 part 1 and HD 21.1
- colour grey (RAL 7001)
- with meter marking, change-over in 2011

Properties

- Extensively oil resistant, oil-/ chemical Resistance - see table Technical Informations
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Note

- G = with green-yellow earth core;
x = without green-yellow earth core (OZ).
- Important for assemblers: We supply any "desired length" of stranded cores without outer sheath, core insulation colour acc. RAL 9005 with number combination acc. customers requirement.
- AWG sizes are approximate equivalent values. The actual cross-section is in mm².
- Please note the cleanroom qualification when ordering.
- **screened analogue type:**
F-CY-JZ
F-CY-OZ (LIY-CY)
Y-CY-JB
Y-CY-JZ

Application

These cables are used for flexible use for medium mechanical stresses with free movement without tensile stress or forced movements in dry, moist and wet rooms but not suitable for open air, as measuring and control cables in tool machines, conveyor belts, production lines in machinery production, in air-conditioning and in steel production.

The earth core is laid in the outer layer. Selected PVC-compounds guarantee a good flexibility as well as an economic and fast installation.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
10001	2 x 0,5	4,9	9,6	40,0	20
10002	3 G 0,5	5,2	14,4	46,0	20
10003	3 x 0,5	5,2	14,4	46,0	20
10004	4 G 0,5	5,6	19,0	56,0	20
10005	4 x 0,5	5,6	19,0	56,0	20
10006	5 G 0,5	6,3	24,0	65,0	20
10007	5 x 0,5	6,3	24,0	65,0	20
10008	6 G 0,5	6,9	29,0	75,0	20
10009	7 G 0,5	6,9	33,6	80,0	20
10010	7 x 0,5	6,9	33,6	80,0	20
10011	8 G 0,5	7,4	38,0	97,0	20
10172	8 x 0,5	7,4	38,0	97,0	20
10012	10 G 0,5	8,3	48,0	116,0	20
10013	12 G 0,5	8,8	58,0	135,0	20
10014	12 x 0,5	8,8	58,0	135,0	20
10015	14 G 0,5	9,7	67,0	150,0	20
10183	16 G 0,5	10,2	76,0	175,0	20
10016	18 G 0,5	11,0	86,0	196,0	20
10017	20 G 0,5	11,5	96,0	215,0	20
10018	21 G 0,5	11,5	101,0	240,0	20
10019	25 G 0,5	12,9	120,0	270,0	20
10020	30 G 0,5	13,8	144,0	310,0	20
10021	32 G 0,5	14,3	154,0	323,0	20
10022	34 G 0,5	14,9	163,0	362,0	20
10023	40 G 0,5	15,6	192,0	434,0	20
10024	42 G 0,5	16,1	202,0	449,0	20

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
10025	50 G 0,5	17,9	240,0	513,0	20
10169	52 G 0,5	17,9	252,0	534,0	20
10026	61 G 0,5	19,0	293,0	625,0	20
10027	65 G 0,5	19,7	312,0	682,0	20
10028	80 G 0,5	21,8	384,0	780,0	20
10029	100 G 0,5	24,3	480,0	980,0	20
10030	2 x 0,75	5,3	14,4	46,0	18
10031	3 G 0,75	5,6	21,6	54,0	18
10032	3 x 0,75	5,6	21,6	54,0	18
10033	4 G 0,75	6,3	28,8	66,0	18
10034	4 x 0,75	6,3	29,0	66,0	18
10035	5 G 0,75	6,9	36,0	80,0	18
10036	5 x 0,75	6,9	36,0	80,0	18
10037	6 G 0,75	7,5	43,0	99,0	18
10177	6 x 0,75	7,5	43,0	99,0	18
10038	7 G 0,75	7,5	50,0	110,0	18
10039	7 x 0,75	7,5	50,0	110,0	18
10040	8 G 0,75	8,2	58,0	130,0	18
10173	8 x 0,75	8,2	58,0	130,0	18
10041	9 G 0,75	8,8	65,0	153,0	18
10042	10 G 0,75	9,2	72,0	162,0	18
10043	12 G 0,75	9,8	86,0	179,0	18
10044	12 x 0,75	9,8	86,0	179,0	18
10045	14 G 0,75	10,6	101,0	214,0	18
10046	15 G 0,75	11,4	108,0	218,0	18
10047	18 G 0,75	12,2	130,0	257,0	18

Prices on request.

Continuation ▶

JZ-500 COLD flexible at low temperature, number coded, meter marking



Technical data

- Control cables, special PVC
- Requirements adapted to DIN VDE 0281, 0293, 0295
- **Temperature range**
flexing -30 °C to +80 °C
fixed installation -40 °C to +80 °C
- **Nominal voltage** U₀/U 300/500 V
- **Test voltage** 4000 V
- **Breakdown voltage** min. 8000 V
- **Insulation resistance**
min. 20 MΩm x km
- **Minimum bending radius**
flexing 7,5x cable ø
fixed installation 4x cable ø
- **Radiation resistance**
up to 80x10⁶ cJ/kg (up to 80 Mrad)

Cable structure

- Bare copper, fine wire conductors, according to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Core insulation of special PVC Y14
- Black cores with continuous white numbering according to DIN VDE 0293
- Green-yellow earth core in the outer layer (3 cores and above)
- Cores stranded in layers with optimal lay-length
- Cold flexible outer sheath of special PVC
- colour black (RAL 9005)
- with meter marking

Properties

- Extensively oil resistant, öl-/ chemical Resistance - see table Technical Informations
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Note

- G = with green-yellow earth core;
x = without green-yellow earth core (OZ).

Application

This cold-flexible PVC hose cable is used under average stress for flexible applications with free movement, without tensile load and without forced motion guide in dry, moist, wet rooms and outside, as measuring and control cable at machine tools, conveyor belts and transport belts, production streets, in plant construction, in air condition construction and in refrigerated warehouses.

Selected PVC mixtures guarantee good flexibility, efficient and fast installation.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
10750	2 x 0,5	4,9	9,6	40,0	20
10751	3 G 0,75	5,6	21,6	54,0	18
10752	3 x 0,75	5,6	21,6	54,0	18
10753	4 G 0,75	6,3	28,8	66,0	18
10754	4 x 0,75	6,3	29,0	66,0	18
10755	5 G 0,75	6,9	36,0	80,0	18
10756	5 x 0,75	6,9	36,0	80,0	18
10757	7 G 0,75	7,5	50,0	110,0	18
10758	7 x 0,75	7,5	50,0	110,0	18
10759	12 G 0,75	9,8	86,0	179,0	18
10760	18 G 0,75	12,2	130,0	257,0	18
10761	25 G 0,75	14,3	180,0	365,0	18
10762	2 x 1	5,6	19,2	60,0	17
10763	3 G 1	5,9	29,0	72,0	17
10764	3 x 1	5,9	29,0	72,0	17
10765	4 G 1	6,6	38,4	86,0	17
10766	4 x 1	6,6	38,4	86,0	17
10767	5 G 1	7,3	48,0	104,0	17
10768	5 x 1	7,3	48,0	104,0	17
10769	7 G 1	8,1	67,0	141,0	17
10770	7 x 1	8,1	67,0	141,0	17
10771	12 G 1	10,4	115,0	230,0	17
10772	18 G 1	12,9	173,0	343,0	17
10773	25 G 1	15,4	240,0	485,0	17

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
10774	2 x 1,5	6,4	29,0	70,0	16
10775	3 G 1,5	6,8	43,0	90,0	16
10776	3 x 1,5	6,8	43,0	90,0	16
10777	4 G 1,5	7,4	58,0	109,0	16
10778	4 x 1,5	7,4	58,0	109,0	16
10779	5 G 1,5	8,3	72,0	131,0	16
10780	5 x 1,5	8,3	72,0	131,0	16
10781	6 G 1,5	9,2	86,0	157,0	16
10782	7 G 1,5	9,2	101,0	184,0	16
10783	7 x 1,5	9,2	101,0	184,0	16
10784	12 G 1,5	12,0	173,0	309,0	16
10785	18 G 1,5	14,6	259,0	440,0	16
10786	25 G 1,5	17,4	360,0	620,0	16
10787	2 x 2,5	7,8	48,0	112,0	14
10788	3 G 2,5	8,3	72,0	148,0	14
10789	3 x 2,5	8,3	72,0	148,0	14
10790	4 G 2,5	9,2	96,0	178,0	14
10791	4 x 2,5	9,2	96,0	178,0	14
10792	5 G 2,5	10,1	120,0	221,0	14
10793	5 x 2,5	10,1	120,0	221,0	14
10794	7 G 2,5	11,2	168,0	306,0	14
10795	7 x 2,5	11,2	168,0	306,0	14
10796	4 G 6	13,0	230,0	424,0	10
10797	5 G 6	14,5	288,0	525,0	10

Dimensions and specifications may be changed without prior notice. (RA01)

Prices on request.



Technical data

- Special PVC control cables, adapted to DIN VDE 0281 part 13
- **Temperature range**
flexing -5 °C to +80 °C
fixed installation -40 °C to +80 °C
- **Nominal voltage** U₀/U 300/500 V
- **Test voltage**
core/core 4000 V
core/screen 2000 V
- **Breakdown voltage** min. 8000 V
- **Insulation resistance**
min. 20 MOhm x km
- **Mutual capacitance** according to different cross-sections
0,5 mm² to 2,5 mm²:
core/core approx. 150 nF/km
core/screen approx. 270 nF/km
- **Coupling resistance**
max. 250 Ohm/km
- **Minimum bending radius**
flexing 10x cable ø
fixed installation 5x cable ø
- **Radiation resistance**
up to 80x10⁶ cJ/kg (up to 80 Mrad)

Cable structure

- Bare copper, fine wire conductors, bunch stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Core insulation of special PVC Z 7225
- Black cores with continuous white figure imprint to DIN VDE 0293
- Green-yellow earth core in the outer layer (3 cores and above)
- Cores stranded in layers with optimal lay-length
- Foil separator
- Tinned copper braided screening, approx. 85% coverage
- Special PVC outer sheath TM2, to special PVC, TM2 to DIN VDE 0281 part 1 and HD 21.1
- Colour grey (RAL 7001)
- With meter marking, change-over in 2011

Properties

- Extensively oil resistant, oil-/ chemical Resistance - see table Technical Informations
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Note

- G = with green-yellow earth core;
x = without green-yellow earth core (OZ).
- AWG sizes are approximate equivalent values. The actual cross-section is in mm².
- Please note the cleanroom qualification when ordering.
- To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.
- **unscreened analogue type: JZ-500**

Application

For use as a data cable in control circuits, in tool-making and machine industries as well as a signal cable in computer systems and electronics. The more usual PVC inner sheath has been replaced in these cables by a stabilising foil separator, thus reducing the total diameter of the cables considerably and thereby reducing the bending radius, total weight etc. The high covering percentage of the copper screening offers interference-free signal transfer etc.

The dense screening assures disturbance-free transmission of all signals and impulses. An ideal disturbance-free control cable for the above application.

EMC = Electromagnetic compatibility

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
16320	2 x 0,5	5,7	35,0	45,0	20	16333	21 G 0,5	12,7	188,0	250,0	20
16321	3 G 0,5	5,9	42,0	55,0	20	16334	24 G 0,5	13,5	235,0	300,0	20
16322	4 G 0,5	6,4	47,0	61,0	20	16335	25 G 0,5	13,6	240,0	314,0	20
16323	5 G 0,5	6,9	56,0	74,0	20	16336	30 G 0,5	14,4	295,0	360,0	20
16324	6 G 0,5	7,6	67,0	89,0	20	16337	32 G 0,5	14,9	301,0	425,0	20
16325	7 G 0,5	7,6	69,0	98,0	20	16165	34 G 0,5	15,6	312,0	433,0	20
16326	8 G 0,5	8,7	80,0	117,0	20	16338	36 G 0,5	15,6	318,0	446,0	20
16327	10 G 0,5	9,6	94,0	135,0	20	16339	40 G 0,5	16,9	343,0	475,0	20
16328	12 G 0,5	9,7	108,0	157,0	20	16490	41 G 0,5	16,9	348,0	486,0	20
16329	14 G 0,5	10,2	116,0	190,0	20	16340	50 G 0,5	18,5	406,0	573,0	20
16330	16 G 0,5	11,0	129,0	210,0	20	16341	61 G 0,5	19,7	508,0	653,0	20
16331	18 G 0,5	11,5	145,0	217,0	20	16342	80 G 0,5	22,6	680,0	784,0	20
16332	20 G 0,5	12,2	172,0	240,0	20	16343	100 G 0,5	24,9	804,0	995,0	20

Prices on request.

Continuation ▶

F-CY-JZ flexible, Cu-screened, EMC-preferred type, meter marking



Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
16344	2 x 0,75	6,1	40,0	59,0	18
16345	3 G 0,75	6,3	52,0	66,0	-
16346	4 G 0,75	6,8	60,0	77,0	18
16347	5 G 0,75	7,4	71,0	93,0	18
16348	6 G 0,75	8,2	80,0	113,0	18
16349	7 G 0,75	8,2	91,0	130,0	18
16350	8 G 0,75	9,6	110,0	145,0	18
16351	10 G 0,75	10,3	137,0	180,0	18
16353	12 G 0,75	10,5	142,0	202,0	18
16354	14 G 0,75	11,3	180,0	225,0	18
16355	16 G 0,75	11,9	200,0	275,0	18
16356	18 G 0,75	12,7	212,0	292,0	18
16447	19 G 0,75	12,7	230,0	308,0	18
16357	20 G 0,75	13,3	238,0	320,0	18
16358	21 G 0,75	14,0	246,0	378,0	18
16359	24 G 0,75	14,9	270,0	435,0	18
16360	25 G 0,75	15,0	281,0	415,0	18
16361	27 G 0,75	15,0	304,0	435,0	18
16362	30 G 0,75	15,8	320,0	450,0	18
16363	32 G 0,75	16,7	342,0	484,0	18
16166	34 G 0,75	17,2	345,0	502,0	18
16364	36 G 0,75	17,2	350,0	535,0	18
16448	37 G 0,75	17,2	361,0	592,0	18
16365	40 G 0,75	18,6	369,0	610,0	18
16491	41 G 0,75	18,6	400,0	622,0	18
16366	50 G 0,75	20,3	461,0	777,0	18
16367	61 G 0,75	21,7	540,0	900,0	18
16368	80 G 0,75	24,8	711,0	1210,0	18
16369	100 G 0,75	27,6	900,0	1445,0	18
16370	2 x 1	6,4	50,0	65,0	17
16371	3 G 1	6,7	60,0	80,0	17
16372	4 G 1	7,2	71,0	98,0	17
16373	5 G 1	8,0	88,0	127,0	17
16374	6 G 1	8,7	97,0	144,0	17
16375	7 G 1	8,7	111,0	158,0	17
16376	8 G 1	10,1	127,0	197,0	17
16377	10 G 1	11,2	150,0	232,0	17
16378	12 G 1	11,4	184,0	260,0	17
16379	14 G 1	12,0	196,0	302,0	17
16380	16 G 1	12,8	209,0	346,0	17
16381	18 G 1	13,5	260,0	380,0	17
16352	19 G 1	13,5	280,0	412,0	17
16382	20 G 1	14,3	317,0	440,0	17
16383	24 G 1	16,0	320,0	493,0	17
16384	25 G 1	16,2	349,0	534,0	17
16439	27 G 1	16,2	400,0	562,0	17
16385	28 G 1	17,0	408,0	595,0	17
16386	30 G 1	17,0	441,0	616,0	17
16387	34 G 1	18,5	486,0	741,0	17
16446	37 G 1	18,5	519,0	790,0	17
16388	40 G 1	19,9	510,0	835,0	17
16492	41 G 1	19,9	531,0	843,0	17
16389	50 G 1	21,8	625,0	1025,0	17
16390	61 G 1	23,3	702,0	1205,0	17
16391	80 G 1	26,6	920,0	1445,0	17
16392	100 G 1	29,7	1120,0	1613,0	17

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
16393	2 x 1,5	7,0	63,0	88,0	16
16394	3 G 1,5	7,5	80,0	100,0	16
16395	4 G 1,5	8,1	97,0	126,0	16
16396	5 G 1,5	9,0	119,0	160,0	16
16397	7 G 1,5	9,8	147,0	208,0	16
16398	8 G 1,5	11,4	170,0	244,0	16
16399	10 G 1,5	12,6	193,0	315,0	16
16400	12 G 1,5	12,8	267,0	338,0	16
16401	14 G 1,5	13,5	283,0	383,0	16
16402	16 G 1,5	14,4	315,0	424,0	16
16403	18 G 1,5	15,4	374,0	479,0	16
16449	19 G 1,5	15,4	386,0	508,0	16
16404	20 G 1,5	16,1	396,0	545,0	16
16405	21 G 1,5	17,0	425,0	560,0	16
16406	24 G 1,5	18,2	458,0	690,0	16
16407	25 G 1,5	18,4	526,0	705,0	16
16450	27 G 1,5	18,4	531,0	774,0	16
16408	28 G 1,5	19,1	541,0	810,0	16
16409	30 G 1,5	19,1	555,0	830,0	16
16410	35 G 1,5	20,8	645,0	890,0	16
16451	37 G 1,5	20,8	674,0	945,0	16
16411	40 G 1,5	22,6	725,0	1060,0	16
16493	41 G 1,5	22,6	801,0	1071,0	16
16412	50 G 1,5	24,7	885,0	1290,0	16
16413	61 G 1,5	26,4	1100,0	1705,0	16
16414	80 G 1,5	30,3	1324,0	2010,0	16
16415	100 G 1,5	33,6	1641,0	2505,0	16
16416	2 x 2,5	8,3	96,0	130,0	14
16417	3 G 2,5	9,0	144,0	167,0	14
16418	4 G 2,5	9,8	148,0	195,0	14
16419	5 G 2,5	10,9	181,0	223,0	14
16420	7 G 2,5	11,9	255,0	344,0	14
16421	10 G 2,5	15,5	340,0	460,0	14
16438	12 G 2,5	15,8	441,0	570,0	14
16452	18 G 2,5	18,9	570,0	681,0	14
16422	2 x 4	9,8	120,0	185,0	12
16423	3 G 4	10,6	174,0	240,0	12
16424	4 G 4	11,5	230,0	310,0	12
16425	5 G 4	12,7	273,0	385,0	12
16426	7 G 4	14,0	316,0	500,0	12
16427	2 x 6	11,7	173,0	268,0	10
16428	3 G 6	12,5	240,0	330,0	10
16429	4 G 6	13,8	305,0	415,0	10
16430	5 G 6	15,3	439,0	509,0	10
16431	7 G 6	16,9	505,0	672,0	10
16432	2 x 10	14,7	255,0	425,0	8
16433	3 G 10	15,7	350,0	500,0	8
16434	4 G 10	17,3	535,0	783,0	8
16435	5 G 10	19,2	592,0	856,0	8
16436	7 G 10	21,4	810,0	1305,0	8
16440	4 G 16	20,4	740,0	880,0	6
16437	5 G 16	22,6	895,0	1295,0	6
16441	4 G 25	24,9	1140,0	1570,0	4
16442	5 G 25	27,8	1380,0	1965,0	4
16443	4 G 35	28,4	1576,0	2070,0	2
16444	5 G 35	31,6	1930,0	2690,0	2
16445	4 G 50	34,6	2155,0	3015,0	1

Dimensions and specifications may be changed without prior notice. (RA01)

Prices on request.



Process control for a large cabling machine at our Windsbach factory.



Technical data

- Special PVC control cables, adapted to DIN VDE 0281 part 13
- **Temperature range**
flexing -15 °C¹⁾ to +80 °C
fixed installation -40 °C to +80 °C
- **Nominal voltage** U₀/U 300/500 V
- **Test voltage** 4000 V
- **Breakdown voltage** min. 8000 V
- **Insulation resistance**
min. 20 MOhm x km
- **Mutual capacitance** according to different cross-sections
0,5 mm² to 2,5 mm²:
core/core approx. 150 nF/km
core/screen approx. 270 nF/km
- **Coupling resistance**
max. 250 Ohm/km
- **Minimum bending radius**
flexing 10x cable ø
fixed installation 5x cable ø
- **Radiation resistance**
up to 80x10⁶ cJ/kg (up to 80 Mrad)
- ¹⁾ cold bending test, impact resistance test at low temperatures, elongation test at low temperatures. Tested according VDE 0473 part 811-1-4, EN 60811-1-4

Cable structure

- Bare copper, fine wire conductors, bunch stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Core insulation of special PVC Z 7225
- Black cores with continuous white numbering to DIN VDE 0293
- Green-yellow earth core in the outer layer (3 cores and above)
- Cores stranded in layers with optimal lay-length
- Special PVC inner sheath
- Tinned copper, braided screen, approx. 85% coverage
- Transparent special PVC outer sheath
- with meter marking, change-over in 2011

Properties

- Extensively oil resistant, oil-/ chemical Resistance - see table Technical Informations
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Note

- G = with green-yellow earth core;
x = without green-yellow earth core (OZ).
- **unscreened analogue type:**
JZ-500

Application

For use as a data and control cable in machinery, computer systems etc. as well as a signal cable for electronics. The high level of screening ensures a high degree of interference protection. The screening density assures disturbancefree transmission of all signals and impulses. The PVC-inner sheaths of those cables raise the mechanical stress. The applied clear transparent PVC outer sheath accentuates the optical view of the tinned copper braid.

EMC = Electromagnetic compatibility

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
16200	2 x 0,5	7,1	41,0	67,0	20	16219	50 G 0,5	20,9	407,0	740,0	20
16169	3 x 0,5	7,2	45,0	83,0	20	16220	61 G 0,5	22,4	520,0	850,0	20
16201	3 G 0,5	7,4	45,0	83,0	20	16221	80 G 0,5	25,2	690,0	1080,0	20
16202	4 G 0,5	8,0	54,0	94,0	20	16222	100 G 0,5	28,4	805,0	1350,0	20
16170	4 x 0,5	7,8	54,0	94,0	20	16223	2 x 0,75	7,7	46,0	87,0	18
16203	5 G 0,5	8,5	66,0	108,0	20	16224	3 G 0,75	8,0	57,0	98,0	18
16171	5 x 0,5	8,3	66,0	108,0	20	16173	3 x 0,75	7,8	57,0	98,0	18
16204	6 G 0,5	9,3	73,0	125,0	20	16225	4 G 0,75	8,5	63,0	113,0	18
16205	7 G 0,5	9,3	79,0	136,0	20	16196	4 x 0,75	8,3	63,0	113,0	18
17172	7 x 0,5	9,5	79,0	136,0	20	16226	5 G 0,75	9,3	76,0	130,0	18
16206	8 G 0,5	9,8	82,0	150,0	20	16174	5 x 0,75	9,1	76,0	130,0	18
16207	10 G 0,5	10,9	107,0	170,0	20	16227	6 G 0,75	9,9	82,0	156,0	18
16208	12 G 0,5	11,6	137,0	195,0	20	16228	7 G 0,75	10,1	100,0	184,0	18
16209	14 G 0,5	12,4	142,0	223,0	20	16175	7 x 0,75	10,4	100,0	184,0	18
16210	16 G 0,5	12,9	147,0	250,0	20	16229	8 G 0,75	10,6	112,0	221,0	18
16211	18 G 0,5	13,5	156,0	277,0	20	16230	10 G 0,75	11,7	140,0	270,0	18
16212	20 G 0,5	14,2	173,0	310,0	20	16231	12 G 0,75	12,7	175,0	292,0	18
16315	21 G 0,5	14,2	189,0	331,0	20	16232	14 G 0,75	13,3	190,0	315,0	18
16213	24 G 0,5	15,6	236,0	390,0	20	16233	16 G 0,75	14,1	204,0	335,0	18
16214	25 G 0,5	15,6	250,0	407,0	20	16234	18 G 0,75	14,9	240,0	358,0	18
16215	30 G 0,5	16,4	297,0	520,0	20	16235	20 G 0,75	15,4	262,0	420,0	18
16216	32 G 0,5	17,1	312,0	550,0	20	16316	21 G 0,75	15,4	274,0	454,0	18
16217	36 G 0,5	17,9	320,0	585,0	20	16236	24 G 0,75	17,3	291,0	480,0	18
16218	40 G 0,5	18,4	345,0	654,0	20	16237	25 G 0,75	17,3	306,0	508,0	18
16453	41 G 0,5	19,1	348,0	671,0	20	16238	27 G 0,75	17,7	326,0	535,0	18
						16239	30 G 0,75	18,5	340,0	640,0	18

Prices on request.

Continuation ▶

Y-CY-JZ flexible, CU-screened, transparent, EMC-preferred type, meter marking



Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
16240	32 G 0,75	19,1	349,0	688,0	18
16241	36 G 0,75	19,9	358,0	730,0	18
16242	40 G 0,75	20,6	371,0	950,0	18
16454	41 G 0,75	21,2	403,0	971,0	18
16243	50 G 0,75	23,2	470,0	1100,0	18
16244	61 G 0,75	25,0	550,0	1290,0	18
16245	80 G 0,75	28,3	715,0	1510,0	18
16246	100 G 0,75	31,6	910,0	1640,0	18
16248	2 x 1	8,0	54,0	97,0	17
16249	3 G 1	8,3	64,0	103,0	17
16176	3 x 1	8,2	64,0	103,0	17
16250	4 G 1	9,0	76,0	146,0	17
16177	4 x 1	8,9	76,0	146,0	17
16251	5 G 1	9,7	89,0	169,0	17
16178	5 x 1	9,5	89,0	169,0	17
16252	6 G 1	10,3	101,0	199,0	17
16253	7 G 1	10,5	114,0	219,0	17
16179	7 x 1	11,0	114,0	219,0	17
16254	8 G 1	11,2	130,0	270,0	17
16255	10 G 1	12,5	156,0	330,0	17
16256	12 G 1	13,3	186,0	350,0	17
16257	14 G 1	14,1	198,0	400,0	17
16258	16 G 1	14,8	214,0	422,0	17
16259	18 G 1	15,6	284,0	514,0	17
16260	20 G 1	16,3	325,0	545,0	17
16261	24 G 1	18,2	366,0	640,0	17
16262	25 G 1	18,4	387,0	689,0	17
16263	28 G 1	19,2	421,0	710,0	17
16264	30 G 1	19,6	457,0	762,0	17
16265	34 G 1	20,9	500,0	910,0	17
16266	40 G 1	21,5	536,0	1070,0	17
16455	41 G 1	22,2	578,0	1092,0	17
16267	50 G 1	25,4	681,0	1315,0	17
16268	61 G 1	26,1	710,0	1370,0	17
16269	80 G 1	29,8	940,0	1610,0	17
16270	100 G 1	34,2	1180,0	1840,0	17
16271	2 x 1,5	8,6	64,0	130,0	16
16272	3 G 1,5	9,2	82,0	152,0	16
16180	3 x 1,5	9,0	82,0	152,0	16
16273	4 G 1,5	9,8	99,0	168,0	16
16181	4 x 1,5	9,6	99,0	168,0	16
16274	5 G 1,5	10,8	123,0	202,0	16
16182	5 x 1,5	10,5	123,0	202,0	16
16275	7 G 1,5	11,7	148,0	304,0	16
16183	7 x 1,5	12,1	148,0	304,0	16
16276	8 G 1,5	12,6	172,0	336,0	16
16277	10 G 1,5	13,8	198,0	420,0	16
16278	12 G 1,5	14,9	274,0	434,0	16

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
16279	14 G 1,5	15,8	294,0	480,0	16
16280	16 G 1,5	16,7	318,0	525,0	16
16281	18 G 1,5	17,4	386,0	640,0	16
16282	20 G 1,5	18,5	401,0	690,0	16
16317	21 G 1,5	18,5	447,0	720,0	16
16283	24 G 1,5	20,4	487,0	770,0	16
16284	25 G 1,5	20,6	531,0	805,0	16
16285	28 G 1,5	21,6	562,0	900,0	16
16286	30 G 1,5	21,6	598,0	950,0	16
16287	35 G 1,5	23,2	685,0	1100,0	16
16288	40 G 1,5	25,0	759,0	1350,0	16
16456	41 G 1,5	25,0	840,0	1381,0	16
16289	50 G 1,5	27,4	997,0	1675,0	16
16290	61 G 1,5	29,2	1120,0	1800,0	16
16291	80 G 1,5	33,4	1360,0	2300,0	16
16292	100 G 1,5	37,6	1690,0	2600,0	16
16293	2 x 2,5	10,1	110,0	180,0	14
16294	3 G 2,5	10,8	148,0	216,0	14
16295	4 G 2,5	11,5	169,0	267,0	14
16296	5 G 2,5	12,8	220,0	347,0	14
16297	7 G 2,5	14,1	284,0	407,0	14
16298	10 G 2,5	16,4	369,0	660,0	14
16318	12 G 2,5	17,9	470,0	722,0	14
16299	2 x 4	11,8	124,0	302,0	12
16300	3 G 4	12,5	178,0	340,0	12
16301	4 G 4	13,7	234,0	410,0	12
16302	5 G 4	15,0	284,0	502,0	12
16303	7 G 4	16,4	321,0	638,0	12
16304	2 x 6	13,7	176,0	350,0	10
16305	3 G 6	14,4	245,0	450,0	10
16306	4 G 6	15,7	316,0	559,0	10
16307	5 G 6	17,3	442,0	702,0	10
16308	7 G 6	19,0	530,0	907,0	10
16309	2 x 10	16,6	260,0	500,0	8
16310	3 G 10	17,6	367,0	750,0	8
16311	4 G 10	19,4	549,0	1020,0	8
16312	5 G 10	21,3	604,0	1115,0	8
16313	7 G 10	23,6	820,0	1500,0	8
16460	4 G 16	23,4	807,0	1380,0	6
16314	5 G 16	26,0	940,0	1553,0	6
16461	4 G 25	28,3	1169,0	1890,0	4
16462	5 G 25	31,5	1420,0	2270,0	4
16463	4 G 35	32,4	1680,0	2390,0	2
16464	5 G 35	36,5	2020,0	2885,0	2
16465	4 G 50	38,6	2370,0	3315,0	1
16157	5 G 50	43,0	2880,0	4150,0	1
16466	4 G 70	46,1	3257,0	4600,0	2/0
16158	5 G 70	50,9	4032,0	5750,0	2/0
16467	4 G 95	51,1	4060,0	6060,0	3/0
16159	5 G 95	56,0	5244,0	7580,0	3/0
16468	4 G 120	56,5	5231,0	7315,0	4/0
16160	5 G 120	62,1	6624,0	9150,0	4/0
16167	4 G 150	64,6	7760,0	9680,0	300 kcmil
16168	5 G 150	70,6	8496,0	10170,0	300 kcmil

Dimensions and specifications may be changed without prior notice. (RA01)

Prices on request.

JZ-500 HMH flexible control cable, halogen-free, extremely fire resistant, oil resistant¹⁾, meter marking



Technical data

- Halogen-free flexible control cable, core construction adapted to DIN VDE 0281 part 14 and DIN VDE 0281 part 13
- **Temperature range**
flexing -15 °C to +70 °C
fixed installation -40 °C to +70 °C
- **Nominal voltage** U₀/U 300/500 V
- **Test voltage** 2000 V
- **Minimum bending radius**
flexing approx. 12,5x cable ø
fixed installation approx. 4x cable ø
- **Radiation resistance**
up to 100x10⁶ cJ/kg (up to 100 Mrad)

Cable structure

- Bare copper, fine wire conductors, to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Core insulation of halogen-free compound TI6, to E DIN VDE 0281 part 14
- Black cores with white continuous numbering to DIN VDE 0293
- Green-yellow earth core in the outer layer (3 cores and above)
- Cores stranded in layer with optimal lay-length
- Halogen-free sheath compound TM7, to E DIN VDE 0281 part 14
- Outer jacket colour grey (RAL 7001)
- with meter marking, change-over in 2011
- **LSOH** = Low Smoke Zero Halogen-free.

Properties

- ¹⁾ For the critical applications we advise for consultation
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Tests

- Flame test to VDE 0482-332-3, BS 4066 part 3/ DIN EN 60332-3/ IEC 60332-3 (equivalent DIN VDE 0472 part 804 test method C)
- self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- Corrosiveness of combustion gases according to VDE 0482 part 267/ DIN EN 50267-2-2/ IEC 60754-2 (equivalent DIN VDE 0472 part 813)
- Halogen-free according to VDE 0482 part 267/ DIN EN 50267-2-1/ IEC 60754-1 (equivalent DIN VDE 0472 part 815)
- Smoke density according to VDE 0482 part 1034-1+2 / IEC 61034-1+2 / DIN EN 61034-1+2 / BS 7622 part 1+2 (equivalent DIN VDE 0472 part 816)

Note

- G = with green-yellow earth core;
x = without green-yellow earth core (OZ).
- Please note the cleanroom qualification when ordering.
- **screened analogue type:**
JZ-500 HMH-C

Application

Halogen-free, flame retardant cables are used as measuring and control cable in machine tools, conveyor belts, production lines as well as in plant installations, in air-conditioning and steel production works. For fixed installation or flexible application, directed without forcing by casual, not constantly recurring free movements and without tensile stress, for medium mechanical strain. This cable is suitable for the application in dry, damp and wet environments and also for laying on, in and under plaster as well as in concrete and masonry excluding in direct laying in shaked or stamped concrete, not suitable for imbedding in solidified or compressed concrete.

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
11201	2 x 0,5	4,9	9,6	43,0	20
11202	3 G 0,5	5,2	14,4	50,0	20
11332	3 x 0,5	5,2	14,4	50,0	20
11203	4 G 0,5	5,6	19,0	60,0	20
11333	4 x 0,5	5,6	19,0	60,0	20
11204	5 G 0,5	6,3	24,0	71,0	20
11334	5 x 0,5	6,3	24,0	71,0	20
11205	7 G 0,5	6,9	33,6	84,0	20
11206	8 G 0,5	7,4	38,0	101,0	20
11207	10 G 0,5	8,3	48,0	121,0	20
11208	12 G 0,5	8,8	58,0	142,0	20
11209	16 G 0,5	10,2	76,0	183,0	20

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
11210	18 G 0,5	11,0	86,0	204,0	20
11211	20 G 0,5	11,5	96,0	227,0	20
11212	25 G 0,5	12,9	120,0	283,0	20
11213	30 G 0,5	13,8	144,0	324,0	20
11214	34 G 0,5	14,9	163,0	367,0	20
11215	37 G 0,5	14,9	178,0	381,0	20
11216	41 G 0,5	16,1	197,0	417,0	20
11217	42 G 0,5	16,1	202,0	454,0	20
11218	50 G 0,5	17,9	240,0	519,0	20
11219	61 G 0,5	19,0	293,0	635,0	20
11220	65 G 0,5	19,7	312,0	694,0	20

Prices on request.

Continuation ▶

JZ-500 HMH flexible control cable, halogen-free, extremely fire resistant, oil resistant¹⁾, meter marking



Part no.	No.cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
11221	2 x 0,75	5,3	14,4	47,0	18
11222	3 G 0,75	5,6	21,6	56,0	18
11335	3 x 0,75	5,6	21,6	56,0	18
11223	4 G 0,75	6,3	29,0	69,0	18
11336	4 x 0,75	6,3	29,0	69,0	18
11224	5 G 0,75	6,9	36,0	83,0	18
11337	5 x 0,75	6,9	36,0	83,0	18
11225	7 G 0,75	7,5	50,0	114,0	18
11338	7 x 0,75	7,5	50,0	114,0	18
11226	8 G 0,75	8,2	58,0	136,0	18
11227	10 G 0,75	9,2	72,0	172,0	18
11228	12 G 0,75	9,8	86,0	183,0	18
11229	16 G 0,75	11,4	115,0	241,0	18
11230	18 G 0,75	12,2	130,0	266,0	18
11231	20 G 0,75	12,7	144,0	291,0	18
11232	25 G 0,75	14,3	180,0	374,0	18
11233	30 G 0,75	15,3	216,0	450,0	18
11234	34 G 0,75	16,7	245,0	517,0	18
11235	37 G 0,75	16,7	260,0	541,0	18
11236	41 G 0,75	18,0	296,0	611,0	18
11237	42 G 0,75	18,0	302,0	621,0	18
11238	50 G 0,75	19,8	360,0	742,0	18
11239	61 G 0,75	21,2	439,0	853,0	18
11240	65 G 0,75	21,7	468,0	909,0	18
11241	2 x 1	5,6	19,2	63,0	17
11242	3 G 1	5,9	29,0	74,0	17
11339	3 x 1	5,9	29,0	74,0	17
11243	4 G 1	6,6	38,4	90,0	17
11340	4 x 1	6,6	38,4	90,0	17
11244	5 G 1	7,3	48,0	109,0	17
11245	7 G 1	8,1	67,0	151,0	17
11246	8 G 1	8,7	77,0	184,0	17
11247	10 G 1	9,8	96,0	224,0	17
11248	12 G 1	10,4	115,0	243,0	17
11249	16 G 1	12,3	154,0	314,0	17
11250	18 G 1	12,9	173,0	361,0	17
11251	20 G 1	13,7	192,0	387,0	17
11252	25 G 1	15,4	240,0	496,0	17
11253	34 G 1	17,9	326,0	670,0	17
11254	37 G 1	17,9	355,0	713,0	17
11255	41 G 1	19,4	394,0	784,0	17
11256	42 G 1	19,4	403,0	824,0	17
11257	50 G 1	21,2	480,0	952,0	17
11258	61 G 1	22,5	586,0	1140,0	17
11259	65 G 1	23,5	628,0	1201,0	17
11260	2 x 1,5	6,4	29,0	70,0	16
11261	3 G 1,5	6,8	43,0	94,0	16
11341	3 x 1,5	6,8	43,0	94,0	16
11262	4 G 1,5	7,4	58,0	112,0	16
11263	5 G 1,5	8,3	72,0	141,0	16
11264	7 G 1,5	9,2	101,0	191,0	16
11265	8 G 1,5	9,9	115,0	224,0	16
11266	10 G 1,5	10,9	144,0	282,0	16
11267	12 G 1,5	12,0	173,0	311,0	16
11268	16 G 1,5	13,9	230,0	392,0	16
11269	18 G 1,5	14,6	259,0	450,0	16
11270	20 G 1,5	15,5	288,0	497,0	16
11271	25 G 1,5	17,4	360,0	630,0	16
11272	34 G 1,5	20,2	490,0	842,0	16
11273	37 G 1,5	20,2	533,0	897,0	16
11274	50 G 1,5	24,2	720,0	1277,0	16
11275	61 G 1,5	25,8	878,0	1460,0	16
11276	65 G 1,5	26,7	936,0	1612,0	16

Part no.	No.cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
11277	2 x 2,5	7,8	48,0	118,0	14
11278	3 G 2,5	8,3	72,0	151,0	14
11279	4 G 2,5	9,2	96,0	181,0	14
11280	5 G 2,5	10,1	120,0	224,0	14
11281	7 G 2,5	11,2	168,0	316,0	14
11282	8 G 2,5	12,3	192,0	370,0	14
11283	10 G 2,5	13,9	240,0	451,0	14
11284	12 G 2,5	14,8	288,0	499,0	14
11285	16 G 2,5	17,1	384,0	720,0	14
11286	18 G 2,5	18,2	432,0	769,0	14
11287	20 G 2,5	19,1	480,0	911,0	14
11288	25 G 2,5	21,6	600,0	1047,0	14
11289	30 G 2,5	23,0	720,0	1280,0	14
11290	2 x 4	9,3	77,0	199,0	12
11291	3 G 4	9,8	115,0	247,0	12
11292	4 G 4	11,0	154,0	299,0	12
11293	5 G 4	12,3	192,0	369,0	12
11294	7 G 4	13,6	269,0	463,0	12
11295	8 G 4	14,6	307,0	601,0	12
11296	10 G 4	17,8	384,0	698,0	12
11297	12 G 4	18,2	461,0	790,0	12
11298	16 G 4	20,6	614,0	1130,0	12
11299	18 G 4	21,9	691,0	1280,0	12
11300	2 x 6	11,0	115,0	266,0	10
11301	3 G 6	11,9	173,0	360,0	10
11302	4 G 6	13,0	230,0	429,0	10
11303	5 G 6	14,5	288,0	529,0	10
11304	7 G 6	16,2	403,0	631,0	10
11305	2 x 10	14,0	192,0	440,0	8
11306	3 G 10	14,8	288,0	550,0	8
11307	4 G 10	16,4	384,0	708,0	8
11308	5 G 10	18,3	480,0	862,0	8
11309	7 G 10	20,2	672,0	1124,0	8
11310	2 x 16	16,8	307,0	642,0	6
11311	3 G 16	18,2	461,0	830,0	6
11312	4 G 16	20,0	614,0	1060,0	6
11313	5 G 16	22,6	768,0	1270,0	6
11314	7 G 16	24,8	1075,0	1794,0	6
11315	3 G 25	22,2	720,0	1190,0	4
11316	4 G 25	24,9	960,0	1594,0	4
11317	5 G 25	27,7	1200,0	2014,0	4
11318	3 G 35	25,6	1008,0	1590,0	2
11319	4 G 35	28,4	1344,0	2200,0	2
11320	5 G 35	31,7	1680,0	2693,0	2
11321	3 G 50	30,9	1440,0	2571,0	1
11322	4 G 50	34,2	1920,0	3087,0	1
11323	5 G 50	38,3	2400,0	3980,0	1
11324	3 G 70	36,5	2016,0	3207,0	2/0
11325	4 G 70	40,3	2688,0	4077,0	2/0
11326	5 G 70	45,3	3360,0	5501,0	2/0
11327	3 G 95	41,1	2736,0	4708,0	3/0
11328	4 G 95	45,8	3648,0	5590,0	3/0
11329	5 G 95	50,7	4560,0	6972,0	3/0
11330	3 G 120	47,0	3456,0	5515,0	4/0
11331	4 G 120	51,4	4608,0	7100,0	4/0

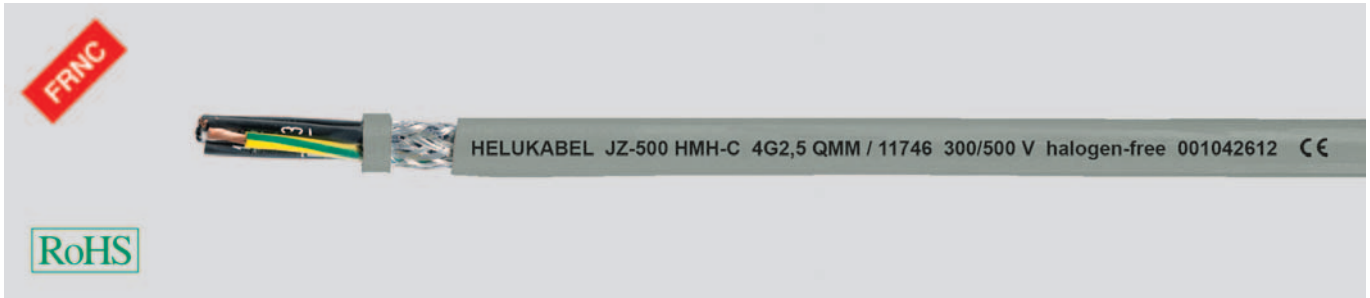
Prices on request.

Dimensions and specifications may be changed without prior notice. (RA03)



Quality assurance inspections with the aid of a stereo microscope at our Windsbach factory.

JZ-500 HMH-C flexible control cable, halogen-free, extremely fire resistant, oil resistant¹⁾, Cu-screened, EMC-preferred type



Technical data

- Halogen-free core flexible control cable adapted to DIN VDE 0281 part 14 and DIN VDE 0281 part 13
- **Temperature range**
flexing -15 °C to +70 °C
fixed installation -40 °C to +70 °C
- **Nominal voltage** U_0/U 300/500 V
- **Test voltage** 2000 V
- **Minimum bending radius**
flexing approx. 12,5x cable \varnothing
fixed installation approx. 4x cable \varnothing
- **Coupling resistance**
max. 250 Ohm/km
- **Radiation resistance**
up to 100×10^6 cJ/kg (up to 100 Mrad)

Cable structure

- Bare copper, fine wire conductors, to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Core insulation of halogen-free compound TI6, to E DIN VDE 0281 part 14
- Black cores with white continuous numbering to DIN VDE 0293
- Green-yellow earth core in the outer layer (3 cores and above)
- Cores laid up in layers with optimal lay-length
- Separating layer
- Screen braid of tinned copper wires, coverage approx. 85%
- Halogen-free sheath compound TM7, to E DIN VDE 0281 part 14
- Jacket colour grey (RAL 7001)
- with meter marking, change-over in 2011
- **LSOH** = Low Smoke Zero Halogen-free.

Properties

- ¹⁾ For the critical applications we advise for consultation
 - The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers
- ### Tests
- Flame test to VDE 0482-332-3, BS 4066 part 3/ DIN EN 50266-2/ IEC 60332-3 (equivalent DIN VDE 0472 part 804 test method C)
 - self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
 - Corrosiveness of combustion gases according to VDE 0482 part 267/ DIN EN 50267-2-2/ IEC 60754-2 (equivalent DIN VDE 0472 part 813)
 - Halogen-free according to VDE 0482 part 267/ DIN EN 50267-2-1/ IEC 60754-1 (equivalent DIN VDE 0472 part 815)
 - Smoke density according to VDE 0482 part 1034-1+2 / IEC 61034-1+2 / DIN EN 61034-1+2 / BS 7622 part 1+2 (equivalent DIN VDE 0472 part 816)

Note

- G = with green-yellow earth core;
x = without green-yellow earth core (OZ).
- Cleanroom qualification tested with analog type. Please note "cleanroom qualified" when ordering.
- **unscreened analogue type:**
JZ-500 HMH

Application

Halogen-free, flame retardant control cables are used for instrumentation and control cables in tooling machinery, conveyor and transportation belts, production lines, in plant construction, air-conditioning systems as well as in iron and steel works. For fixed installation or for flexing applications, for casual, not constantly recurring free movement without forced motion and without tensile stress for medium mechanical loads. The cable is suitable for use in dry, damp and wet environments for installation above, on, in and beneath plaster as well as in masonry and concrete walls except for direct embedding in vibrated, compacted or tamped concrete, not suitable for imbedding in solidified or compressed concrete.

An interference-free transmission of signals and pulse is assured by the high degree of screening.

EMC = Electromagnetic compatibility

To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	Outer \varnothing approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No. cores x cross-sec. mm ²	Outer \varnothing approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
11656	2 x 0,5	5,7	35,0	46,0	20	11678	2 x 0,75	6,1	40,0	60,0	18
11657	3 G 0,5	5,9	42,0	56,0	20	11679	3 G 0,75	6,3	52,0	68,0	18
11342	3 x 0,5	5,9	42,0	56,0	20	11344	3 x 0,75	6,3	52,0	68,0	18
11658	4 G 0,5	6,4	47,0	62,0	20	11680	4 G 0,75	6,8	60,0	78,0	18
11343	4 x 0,5	6,4	47,0	62,0	20	11345	4 x 0,75	6,8	60,0	78,0	18
11659	5 G 0,5	6,9	56,0	75,0	20	11681	5 G 0,75	7,4	71,0	95,0	18
11660	7 G 0,5	7,6	69,0	98,0	20	11346	5 x 0,75	7,4	71,0	95,0	18
11663	12 G 0,5	9,7	108,0	158,0	20	11682	7 G 0,75	8,2	91,0	130,0	18
11665	18 G 0,5	11,5	145,0	216,0	20	11347	7 x 0,75	8,2	91,0	130,0	18
11667	25 G 0,5	13,6	240,0	315,0	20	11685	12 G 0,75	10,5	142,0	203,0	18
						11687	18 G 0,75	12,7	212,0	290,0	18
						11689	25 G 0,75	15,0	281,0	413,0	18

Prices on request.

Continuation ▶

JZ-500 HMMH-C flexible control cable, halogen-free, extremely fire resistant, oil resistant¹⁾, Cu-screened, EMC-preferred type



Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
11700	2 x 1	6,4	50,0	66,0	17
11701	3 G 1	6,7	60,0	80,0	17
11348	3 x 1	6,7	60,0	80,0	17
11702	4 G 1	7,2	71,0	100,0	17
11349	4 x 1	7,2	71,0	100,0	17
11703	5 G 1	8,0	88,0	130,0	17
11704	7 G 1	8,7	111,0	160,0	17
11707	12 G 1	11,4	184,0	260,0	17
11709	18 G 1	13,5	260,0	382,0	17
11711	25 G 1	16,2	349,0	540,0	17
11722	2 x 1,5	7,0	63,0	88,0	16
11723	3 G 1,5	7,4	80,0	100,0	16
11350	3 x 1,5	7,4	80,0	100,0	16
11724	4 G 1,5	8,1	97,0	125,0	16
11725	5 G 1,5	9,0	119,0	158,0	16
11726	7 G 1,5	9,8	147,0	210,0	16
11729	12 G 1,5	12,8	267,0	340,0	16
11731	18 G 1,5	15,5	374,0	480,0	16
11733	25 G 1,5	18,5	526,0	702,0	16
11744	2 x 2,5	8,4	96,0	132,0	14
11745	3 G 2,5	8,8	144,0	168,0	14
11746	4 G 2,5	9,8	148,0	195,0	14
11747	5 G 2,5	10,8	181,0	222,0	14
11748	7 G 2,5	11,9	255,0	345,0	14
11751	12 G 2,5	15,8	441,0	572,0	14
11766	2 x 4	9,9	120,0	184,0	12
11768	3 G 4	10,4	174,0	238,0	12
11769	4 G 4	11,6	230,0	305,0	12
11770	5 G 4	12,9	273,0	388,0	12
11771	7 G 4	14,2	316,0	504,0	12
11781	2 G 6	11,7	173,0	270,0	10
11782	3 G 6	12,5	240,0	328,0	10
11783	4 G 6	13,8	305,0	416,0	10
11784	5 G 6	15,3	439,0	510,0	10
11785	7 G 6	16,9	505,0	670,0	10
11786	2 x 10	14,5	255,0	420,0	8
11787	3 G 10	15,5	350,0	495,0	8
11788	4 G 10	17,1	535,0	785,0	8
11789	5 G 10	19,1	592,0	855,0	8
11790	7 G 10	21,2	810,0	1308,0	8
11793	4 G 16	20,8	740,0	882,0	6

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
11794	5 G 16	23,4	895,0	1293,0	6
11812	7 G 16	25,6	1282,0	2149,0	6
11795	3 G 25	23,0	1070,0	1432,0	4
11796	4 G 25	25,7	1140,0	1911,0	4
11797	5 G 25	28,5	1380,0	2414,0	4
11798	3 G 35	26,4	1240,0	1914,0	2
11799	4 G 35	29,2	1576,0	2542,0	2
11800	5 G 35	32,5	1930,0	3180,0	2
11801	3 G 50	31,7	1675,0	3080,0	1
11802	4 G 50	35,0	2155,0	3550,0	1
11803	5 G 50	39,1	2794,0	4753,0	1
11804	3 G 70	37,3	2288,0	3840,0	2/0
11805	4 G 70	41,1	3120,0	4939,0	2/0
11806	5 G 70	46,1	3705,0	6572,0	2/0
11807	3 G 95	42,2	3010,0	5651,0	3/0
11808	4 G 95	46,9	4043,0	6690,0	3/0
11809	5 G 95	51,8	5026,0	8370,0	3/0
11810	3 G 120	47,3	3812,0	6342,0	4/0
11811	4 G 120	52,5	5069,0	8453,0	4/0
11813	4 G 185	65,5	8040,0	10800,0	350 kcmil

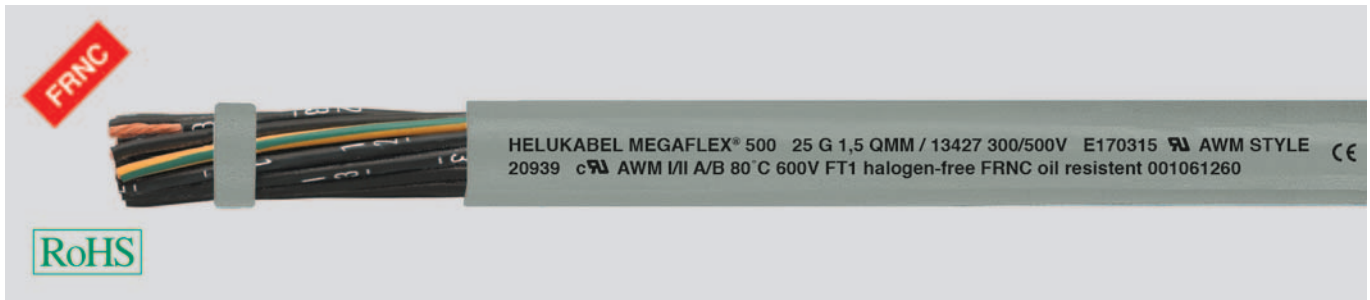
Prices on request.

Dimensions and specifications may be changed without prior notice. (RA03)



Photo: REpower

MEGAFLEX® 500 halogen-free, flame retardant, oil-resistant, UV-resistant, flexible, meter marking



Technical data

- Halogen-free flexible control cable, core-structure adapted to DIN VDE 0281 part 14, to UL-Style 20939, UL-Std. 758
- **Temperature range**
flexing -30 °C to +80 °C
fixed installation -40 °C to +80 °C
- **Nominal voltage** U₀/U 300/500 V
- **Test voltage** 3000 V
- **Minimum bending radius**
flexing approx. 10x cable ø
fixed installation approx. 4x cable ø
- **Flexible**
Alternate bending test according to DIN VDE 0281-2

Cable structure

- Bare copper, fine wire conductors, to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Core insulation of halogen-free special polymer
- Black cores with white continuous numbering to DIN VDE 0293
- Green-yellow earth core in the outer layer (3 cores and above)
- Cores stranded in layer with optimal lay-length
- Outer sheath, halogen-free special polymer
- Outer jacket colour grey (RAL 7001)
- with meter marking, change-over in 2011
- The materials used in manufacture are cadmium-free and contain no silicone and are free from substances harmful to the wetting properties of lacquers
- **LSOH** = Low Smoke Zero Halogen-free.

Properties

- Halogen-free
- Highly flame-retardant
- Resistant to oils and greases
- Resistant to UV and weathering
- Hydrolysis resistant
- Flexible, abrasion- and wear-resistant
- Ozone-resistant
- Recyclable

Tests

- Flame test to VDE 0482-332-3/ BS 4066 part 3/
DIN EN 60332-3/ IEC 60332-3-24 (previously DIN VDE 0472 part 804 test method C)
- Self-extinguishing and flame retardant according to DIN VDE 0482-332-1-2, DIN EN/IEC 60332-1 (previously DIN VDE 0472 part 804 test method B)
- Corrosiveness of combustion gases according to NF X 10-702
- Halogen-free according to DIN VDE 0482 part 267/ EN 50267-2-1/ IEC 60754-1 (equivalent DIN VDE 0472 part 815)
- Smoke density according to DIN VDE 0482 part 1034-1+2, DIN EN 61034-1+2/ IEC 61034-1+2, BS 7622 part 1+2 (previously DIN VDE 0472 part 816)
- Oil-resistant to DIN EN 60811-2-1
- Hydrolysis-resistant to DIN EN 61234-1
- Ozone-resistant to DIN EN 60811-2-1 / DIN VDE 0281-2



Approved to UL/CSA

Note

- G = with green-yellow earth core;
x = without green-yellow earth core (OZ).
- Also available as a 0,6/1 kV cable under consideration of economical minimum quantities. MEGAFLEX® 600
- **screened analogue type:**
MEGAFLEX® 500-C

Application

For fixed installation or flexible application, with free movements without forcing which do not constantly recur and without tensile stress, for high mechanical strain. As a measuring and control cable primarily in machinery and plant construction, in building and air-conditioning systems, in warehousing and conveying systems, in ship-building and for regenerative types of energy such as in the construction of wind power stations. Especially well-suited for use in public buildings, such as airports and train stations, where personal injuries and subsequent damage must be prevented in the event of a fire. The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
13344	2 x 0,5	4,8	9,6	43,0	20
13345	3 G 0,5	5,1	14,4	50,0	20
13346	3 x 0,5	5,1	14,4	50,0	20
13347	4 G 0,5	5,7	19,0	60,0	20
13348	4 x 0,5	5,7	19,0	60,0	20
13349	5 G 0,5	6,2	24,0	71,0	20
13350	5 x 0,5	6,2	24,0	71,0	20
13351	7 G 0,5	7,4	33,6	84,0	20
13352	8 G 0,5	8,0	38,0	101,0	20
13353	10 G 0,5	8,8	48,0	121,0	20
13354	12 G 0,5	9,1	58,0	142,0	20
13355	16 G 0,5	10,0	76,0	183,0	20

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
13356	18 G 0,5	10,7	86,0	204,0	20
13357	20 G 0,5	11,2	96,0	227,0	20
13359	25 G 0,5	12,7	120,0	283,0	20
13360	30 G 0,5	13,5	144,0	324,0	20
13361	34 G 0,5	14,5	163,0	367,0	20
13362	37 G 0,5	15,0	178,0	381,0	20
13363	41 G 0,5	15,8	197,0	417,0	20
13364	42 G 0,5	15,8	202,0	454,0	20
13365	50 G 0,5	17,3	240,0	519,0	20
13366	61 G 0,5	19,4	293,0	635,0	20
13367	65 G 0,5	19,4	312,0	694,0	20

Prices on request.

Continuation ▶

MEGAFLEX® 500 halogen-free, flame retardant, oil-resistant, UV-resistant, flexible, meter marking



Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
13368	2 x 0,75	5,2	14,4	47,0	19
13369	3 G 0,75	5,5	21,6	56,0	19
13370	3 x 0,75	5,5	21,6	56,0	19
13371	4 G 0,75	6,2	29,0	69,0	19
13372	4 x 0,75	6,2	29,0	69,0	19
13373	5 G 0,75	6,8	36,0	83,0	19
13374	5 x 0,75	6,8	36,0	83,0	19
13375	7 G 0,75	8,1	50,0	114,0	19
13376	7 x 0,75	8,1	50,0	114,0	19
13377	8 G 0,75	8,9	58,0	136,0	19
13378	10 G 0,75	9,6	72,0	172,0	19
13379	12 G 0,75	9,9	86,0	183,0	19
13380	16 G 0,75	11,2	115,0	241,0	19
13381	18 G 0,75	11,9	130,0	266,0	19
13382	20 G 0,75	12,6	144,0	291,0	19
13383	25 G 0,75	14,1	180,0	374,0	19
13384	30 G 0,75	15,4	216,0	450,0	19
13385	34 G 0,75	16,4	245,0	517,0	19
13386	37 G 0,75	17,2	260,0	541,0	19
13387	41 G 0,75	17,6	296,0	611,0	19
13388	42 G 0,75	17,6	302,0	621,0	19
13389	50 G 0,75	19,8	360,0	742,0	19
13390	61 G 0,75	20,9	439,0	853,0	19
13392	65 G 0,75	21,5	468,0	909,0	19
13393	2 x 1	5,5	19,2	63,0	18
13394	3 G 1	6,0	29,0	74,0	18
13395	3 x 1	6,0	29,0	74,0	18
13396	4 G 1	6,6	38,4	90,0	18
13397	4 x 1	6,6	38,4	90,0	18
13398	5 G 1	7,2	48,0	109,0	18
13399	7 G 1	8,6	67,0	151,0	18
13400	8 G 1	9,4	77,0	184,0	18
13401	10 G 1	10,4	96,0	224,0	18
13402	12 G 1	10,7	115,0	243,0	18
13403	16 G 1	12,0	154,0	314,0	18
13404	18 G 1	12,7	173,0	361,0	18
13405	20 G 1	13,5	192,0	387,0	18
13406	25 G 1	15,2	240,0	496,0	18
13407	34 G 1	17,4	326,0	670,0	18
13408	37 G 1	18,4	355,0	713,0	18
13409	41 G 1	18,9	394,0	784,0	18
13410	42 G 1	18,9	405,0	824,0	18
13411	50 G 1	21,0	480,0	952,0	18
13412	61 G 1	22,2	586,0	1140,0	18
13413	65 G 1	22,8	628,0	1201,0	18
13414	2 x 1,5	6,1	29,0	70,0	16
13415	3 G 1,5	6,5	43,0	94,0	16
13416	3 x 1,5	6,5	43,0	94,0	16
13417	4 G 1,5	7,2	58,0	112,0	16
13418	5 G 1,5	7,9	72,0	141,0	16
13419	7 G 1,5	9,5	101,0	191,0	16
13420	8 G 1,5	10,4	115,0	224,0	16
13421	10 G 1,5	11,3	144,0	282,0	16
13422	12 G 1,5	11,7	173,0	311,0	16
13423	16 G 1,5	13,3	230,0	392,0	16
13425	18 G 1,5	14,0	259,0	450,0	16
13426	20 G 1,5	14,9	288,0	497,0	16
13427	25 G 1,5	16,8	360,0	630,0	16
13428	34 G 1,5	19,4	490,0	842,0	16
13429	37 G 1,5	20,2	533,0	897,0	16
13430	50 G 1,5	23,4	720,0	1277,0	16
13431	61 G 1,5	24,8	878,0	1460,0	16
13432	65 G 1,5	26,0	936,0	1612,0	16

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
13433	2 x 2,5	7,6	48,0	118,0	14
13434	3 G 2,5	8,3	72,0	151,0	14
13435	4 G 2,5	9,1	96,0	181,0	14
13436	5 G 2,5	10,2	120,0	224,0	14
13437	7 G 2,5	12,1	168,0	316,0	14
13438	8 G 2,5	13,2	192,0	370,0	14
13439	10 G 2,5	14,6	240,0	451,0	14
13440	12 G 2,5	15,2	288,0	499,0	14
13441	16 G 2,5	16,8	384,0	720,0	14
13442	18 G 2,5	18,1	432,0	769,0	14
13443	20 G 2,5	19,0	480,0	911,0	14
13444	25 G 2,5	22,2	600,0	1047,0	14
13445	30 G 2,5	22,9	720,0	1280,0	14
13446	2 x 4	9,2	77,0	199,0	12
13447	3 G 4	9,9	115,0	247,0	12
13448	4 G 4	11,0	154,0	299,0	12
13449	5 G 4	12,1	192,0	369,0	12
13450	7 G 4	13,3	269,0	463,0	12
13451	8 G 4	15,9	307,0	601,0	12
13452	10 G 4	17,3	384,0	698,0	12
13453	12 G 4	18,3	461,0	790,0	12
13454	16 G 4	20,2	614,0	1130,0	12
13455	18 G 4	21,8	691,0	1280,0	12
13456	2 x 6	10,8	115,0	266,0	10
13457	3 G 6	11,7	173,0	360,0	10
13458	4 G 6	13,0	230,0	429,0	10
13459	5 G 6	14,5	288,0	529,0	10
13460	7 G 6	16,0	403,0	631,0	10
13461	2 x 10	14,0	192,0	440,0	8
13462	3 G 10	15,0	288,0	550,0	8
13463	4 G 10	16,8	384,0	708,0	8
13464	5 G 10	18,7	480,0	862,0	8
13465	7 G 10	20,6	672,0	1124,0	8
13466	2 x 16	16,5	307,0	642,0	6
13467	3 G 16	17,6	461,0	830,0	6
13468	4 G 16	19,7	641,0	1060,0	6
13469	5 G 16	21,9	768,0	1270,0	6
13470	7 G 16	24,4	1075,0	1794,0	6
13471	3 G 25	22,5	720,0	1190,0	4
13472	4 G 25	25,2	960,0	1594,0	4
13473	5 G 25	27,9	1200,0	2014,0	4
13474	3 G 35	26,3	1008,0	1590,0	2
13475	4 G 35	29,2	1344,0	2200,0	2
13476	5 G 35	32,7	1680,0	2693,0	2
13477	3 G 50	31,5	1440,0	2571,0	1
13478	4 G 50	35,0	1920,0	3087,0	1
13479	5 G 50	38,7	2400,0	3980,0	1
13480	3 G 70	37,2	2016,0	3207,0	2/0
13481	4 G 70	42,2	2688,0	4077,0	2/0
13482	5 G 70	47,4	3360,0	5501,0	2/0
13483	3 G 95	42,1	2736,0	4708,0	3/0
13484	4 G 95	47,0	3648,0	5590,0	3/0
13485	5 G 95	52,3	4560,0	6972,0	3/0
13486	3 G 120	46,6	3456,0	5515,0	4/0
13487	4 G 120	51,4	4608,0	7100,0	4/0
13488	3 G 150	53,0	4320,0	6279,0	300 kcmil
13489	4 G 150	59,0	5760,0	7781,0	300 kcmil

Prices on request.

Dimensions and specifications may be changed without prior notice. (RA03)

MEGAFLEX® 500-C halogen-free, flame retardant, oil-resistant, UV-resistant, flexible, screened, EMC-preferred types, meter marking



Technical data

- Halogen-free flexible control cable, core-structure adapted to DIN VDE 0281 part 14, to UL-Style 20939, UL-Std. 758
- **Temperature range**
flexing -30 °C to +80 °C
fixed installation -40 °C to +80 °C
- **Nominal voltage** U₀/U 300/500 V
- **Test voltage** 3000 V
- **Minimum bending radius**
flexing approx. 10x cable ø
fixed installation approx. 4x cable ø
- **Flexible**
Alternate bending test according to DIN VDE 0281-2
- **Coupling resistance**
max. 250 Ohm/km

Cable structure

- Bare copper, fine wire conductors, to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Core insulation of halogen-free special polymer
- Black cores with white continuous numbering to DIN VDE 0293
- Green-yellow earth core in the outer layer (3 cores and above)
- Cores stranded in layer with optimal lay-length
- Separating foil
- Tinned copper braided screening, coverage approx. 85%
- Outer sheath, halogen-free special polymer
- Outer jacket colour grey (RAL 7001)
- with meter marking, change-over in 2011
- The materials used in manufacture are cadmium-free and contain no silicone and are free from substances harmful to the wetting properties of lacquers
- **LSOH** = Low Smoke Zero Halogen-free.

Properties

- Halogen-free
- Highly flame-retardant
- Resistant to oils and greases
- Resistant to UV and weathering
- Flexible, abrasion- and wear-resistant
- Ozone-resistant
- Recycleable

Tests

- Flame test to VDE 0482-332-3 / BS 4066 part 3/
DIN EN 60332-3/IEC 60332-3 (previously DIN VDE 0472 part 804 test method C)
- Self-extinguishing and flame retardant according to DIN VDE 0482-332-1-2, DIN EN/IEC 60332-1 (previously DIN VDE 0472 part 804 test method B)
- Corrosiveness of combustion gases according to NF X 10-702
Halogen-free according to DIN VDE 0482 part 267/ EN 50267-2-1/ IEC 60754-1 (equivalent DIN VDE 0472 part 815)
- Smoke density according to DIN VDE 0482 part 1034-1+2, DIN EN 61034-1+2/
IEC 61034-1+2, BS 7622 part 1+2 (previously DIN VDE 0472 part 816)
- Oil-resistant to DIN 60811-2-1
- Hydrolysis-resistant to DIN EN 61234-1
- Ozone-resistant to DIN EN 60811-2-1 / DIN VDE 0281-2



Approved to UL/CSA

Note

- G = with green-yellow earth core;
x = without green-yellow earth core (OZ).
- **unscreened analogue type:**
MEGAFLEX® 500

Application

For fixed installation or flexible application, with free movements without forcing which do not constantly recur and without tensile stress, for high mechanical strain. An interference-free transmission of signals and pulse is assured by the high degree of screening. As a measuring and control cable primarily in machinery and plant construction, in building and air-conditioning systems, in warehousing and conveying systems, in ship-building and for regenerative types of energy such as in the construction of wind power stations. Especially well-suited for use in public buildings, such as airports and train stations, where personal injuries and subsequent damage must be prevented in the event of a fire.

EMC = Electromagnetic compatibility

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
13500	2 x 0,5	5,7	35,0	46,0	20
13501	3 G 0,5	6,0	42,0	56,0	20
13502	3 x 0,5	6,0	42,0	56,0	20
13504	4 x 0,5	6,5	47,0	62,0	20
13503	4 G 0,5	6,5	47,0	62,0	20
13505	5 G 0,5	7,0	56,0	75,0	20
13506	5 x 0,5	7,0	56,0	75,0	20
13507	7 G 0,5	7,9	69,0	98,0	20

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
13508	8 G 0,5	8,5	80,0	116,0	20
13509	10 G 0,5	9,3	94,0	135,0	20
13510	12 G 0,5	9,6	108,0	158,0	20
13511	16 G 0,5	10,7	129,0	210,0	20
13512	18 G 0,5	11,2	145,0	216,0	20
13514	20 G 0,5	11,9	172,0	240,0	20
13515	25 G 0,5	13,4	240,0	315,0	20

Prices on request.

Continuation ▶

MEGAFLEX® 500-C halogen-free, flame retardant, oil-resistant, UV-resistant, flexible, screened, EMC-preferred types, meter marking



Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
13516	2 x 0,75	6,1	40,0	60,0	18
13517	3 G 0,75	6,4	52,0	68,0	18
13518	3 x 0,75	6,4	52,0	68,0	18
13519	4 G 0,75	6,9	60,0	78,0	18
13520	4 x 0,75	6,9	60,0	78,0	18
13521	5 G 0,75	7,4	71,0	95,0	18
13522	5 x 0,75	7,4	71,0	95,0	18
13523	7 G 0,75	8,6	91,0	130,0	18
13524	7 x 0,75	8,6	91,0	130,0	18
13525	8 G 0,75	9,4	110,0	145,0	18
13526	10 G 0,75	10,2	137,0	180,0	18
13527	12 G 0,75	10,4	142,0	203,0	18
13528	16 G 0,75	11,6	200,0	275,0	18
13529	18 G 0,75	12,4	212,0	290,0	18
13530	20 G 0,75	12,9	238,0	320,0	18
13531	25 G 0,75	14,8	281,0	413,0	18
13532	2 x 1	6,4	50,0	66,0	17
13533	3 G 1	6,7	60,0	80,0	17
13534	3 x 1	6,7	60,0	80,0	17
13535	4 G 1	7,3	71,0	100,0	17
13536	4 x 1	7,3	71,0	100,0	17
13537	5 G 1	7,8	88,0	130,0	17
13538	7 G 1	9,1	111,0	160,0	17
13539	8 G 1	9,9	127,0	197,0	17
13540	10 G 1	10,8	150,0	232,0	17
13541	12 G 1	11,2	184,0	260,0	17
13542	16 G 1	12,5	209,0	346,0	17
13543	18 G 1	13,2	260,0	382,0	17
13544	20 G 1	13,8	317,0	440,0	17
13545	25 G 1	15,8	349,0	540,0	17
13546	2 x 1,5	6,6	63,0	88,0	16
13547	3 G 1,5	6,9	80,0	100,0	16
13548	3 x 1,5	6,9	80,0	100,0	16
13549	4 G 1,5	7,5	97,0	125,0	16
13550	5 G 1,5	8,4	119,0	158,0	16
13552	7 G 1,5	10,0	147,0	210,0	16
13554	8 G 1,5	10,7	170,0	244,0	16
13556	10 G 1,5	11,8	193,0	315,0	16
13557	12 G 1,5	12,1	267,0	340,0	16
13558	16 G 1,5	13,6	315,0	424,0	16
13559	18 G 1,5	14,6	374,0	480,0	16
13560	20 G 1,5	15,3	396,0	545,0	16
13561	25 G 1,5	17,9	526,0	702,0	16

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
13562	2 x 2,5	8,3	96,0	132,0	14
13563	3 G 2,5	9,0	144,0	168,0	14
13565	4 G 2,5	9,8	148,0	195,0	14
13566	5 G 2,5	10,9	181,0	256,0	14
13567	7 G 2,5	12,9	255,0	345,0	14
13568	8 G 2,5	13,8	285,0	390,0	17
13569	10 G 2,5	15,8	340,0	482,0	14
13570	12 G 2,5	15,9	441,0	572,0	14
13571	2 x 4	9,8	120,0	220,0	12
13572	3 G 4	10,6	174,0	251,0	12
13573	4 G 4	11,5	230,0	305,0	12
13574	5 G 4	12,7	273,0	388,0	12
13575	7 G 4	13,9	316,0	504,0	12
13576	2 x 6	11,5	173,0	270,0	10
13577	3 G 6	12,4	240,0	351,0	10
13578	4 G 6	13,8	305,0	464,0	10
13579	5 G 6	15,7	439,0	546,0	10
13580	7 G 6	16,6	505,0	670,0	10
13581	2 x 10	14,9	255,0	461,0	8
13582	3 G 10	15,9	350,0	574,0	8
13583	4 G 10	17,8	535,0	785,0	8
13584	5 G 10	19,6	592,0	914,0	8
13585	7 G 10	21,6	810,0	1308,0	8
13586	2 x 16	17,3	422,0	670,0	6
13587	3 G 16	18,5	585,0	911,0	6
13588	4 G 16	20,8	740,0	1105,0	6
13589	5 G 16	22,9	895,0	1293,0	6
13590	7 G 16	25,0	1282,0	2149,0	6
13591	4 G 25	26,2	1140,0	1911,0	4
13592	4 x 35	30,4	1576,0	2542,0	2
13593	4 G 50	34,6	2155,0	3550,0	1
13594	4 G 70	41,3	3120,0	4939,0	2/0
13595	4 G 95	46,2	4043,0	6690,0	3/0
13596	4 G 120	51,0	5069,0	8453,0	4/0
13597	4 G 150	59,0	5792,0	9104,0	300 kcmil

Prices on request.

Dimensions and specifications may be changed without prior notice. (RA03)



Technical data

- In accordance to DIN VDE 0262/12.95 and DIN VDE 0281 part 13, with insulation wall thickness for 1 kV
- **Temperature range**
flexing -15 °C¹⁾ to +80 °C
fixed installation -40 °C to +80 °C
- **Nominal voltage** U₀/U 0,6/1 kV
- **Test voltage** 4000 V
- **Breakdown voltage** min. 8000 V
- **Insulation resistance**
min. 20 MOhm x km
- **Current carrying capacity**
in accordance to VDE 0298 part 4
- **Minimum bending radius**
flexing 7,5x cable ø
fixed installation 4x cable ø
- **Radiation resistance**
up to 80x10⁶ cJ/kg (up to 80 Mrad)
- ¹⁾ cold bending test, impact resistance test at low temperatures, elongation test at low temperatures. Tested according VDE 0473 part 811-1-4, EN 60811-1-4

Cable structure

- Bare copper, fine wire conductors, as per DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Special PVC core insulation TI2, to DIN VDE 0281 part 1
- Black cores with white figure imprints to DIN VDE 0293
- Green-yellow earth core in the outer layer (3 cores and above)
- Cores stranded in layers with optimal lay-length
- Special PVC outer sheath TM2, to DIN VDE 0281 part 1
- Colour black (RAL 9005)
- with meter marking, change-over in 2011

Properties

- Extensively oil resistant, oil-/ chemical resistance - see table Technical Informations
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers
- **UV- resistant**

Note

- G = with green-yellow earth core;
x = without green-yellow earth core (OZ).
- Different dimensions are also available with red resp. blue cores.
- AWG sizes are approximate equivalent values. The actual cross-section is in mm².
- **screened analogue type:**
JZ-600-Y-CY

Application

Wiring cable for measuring and controlling purposes in tool machinery, conveyor belts and production lines, for plant installations, air conditioning and in steel production plants and rolling mills. Suitable for installation for flexible use for medium mechanical stresses with free movement without tensile stress or forced movements in dry, moist and wet rooms as well as outside (fixed installation). Is not suitable to be used as direct burial- or as underwater cable. The cores have been numbered in such a way that the numbers are easily identifiable, even if the cable has only been stripped back a few cm. The core numbers have been underlined to avoid confusion. The earth core is located in the outer layer. The black, special PVC outer sheath is resistant to the ultra violet radiation. Mainly used in South-European, Eastern and Arabian countries.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
10550	2 x 0,5	6,3	9,6	56,0	20	10582	2 x 0,75	6,6	14,4	66,0	18
10551	3 G 0,5	6,6	14,4	68,0	20	10583	3 G 0,75	6,9	21,6	74,0	18
10552	3 x 0,5	6,6	14,4	68,0	20	10584	3 x 0,75	6,9	21,6	74,0	18
10553	4 G 0,5	7,2	19,0	100,0	20	10585	4 G 0,75	7,5	29,0	126,0	18
10554	4 x 0,5	7,2	19,0	100,0	20	10586	4 x 0,75	7,5	29,0	126,0	18
10555	5 G 0,5	8,0	24,0	117,0	20	10587	5 G 0,75	8,4	36,0	140,0	18
10556	5 x 0,5	8,0	24,0	117,0	20	10588	5 x 0,75	8,4	36,0	140,0	18
10557	6 G 0,5	8,7	29,0	126,0	20	10589	6 G 0,75	9,3	43,0	170,0	18
10558	7 G 0,5	8,7	33,6	138,0	20	10590	6 x 0,75	9,3	43,0	170,0	18
10559	7 x 0,5	8,7	33,6	138,0	20	10591	7 G 0,75	9,3	50,0	190,0	18
10560	8 G 0,5	9,5	38,0	150,0	20	10592	7 x 0,75	9,3	50,0	190,0	18
10561	8 x 0,5	9,5	38,0	150,0	20	10593	8 G 0,75	10,0	58,0	212,0	18
10562	10 G 0,5	10,6	48,0	176,0	20	10594	8 x 0,75	10,0	58,0	212,0	18
10563	12 G 0,5	11,4	58,0	200,0	20	10595	9 G 0,75	10,9	65,0	227,0	18
10564	12 x 0,5	11,4	58,0	200,0	20	10596	10 G 0,75	11,1	72,0	238,0	18
10565	14 G 0,5	12,3	67,0	230,0	20	10597	12 G 0,75	12,2	86,0	257,0	18
10566	16 G 0,5	12,9	76,0	250,0	20	10598	12 x 0,75	12,2	86,0	257,0	18
10567	18 G 0,5	13,8	86,0	276,0	20	10599	14 G 0,75	12,9	101,0	286,0	18
10568	20 G 0,5	14,4	96,0	293,0	20	10600	15 G 0,75	13,8	108,0	319,0	18
10569	21 G 0,5	14,4	96,0	305,0	20	10601	18 G 0,75	14,5	130,0	362,0	18
10570	25 G 0,5	16,1	120,0	335,0	20	10602	20 G 0,75	15,4	144,0	394,0	18
10571	30 G 0,5	17,2	144,0	348,0	20	10603	21 G 0,75	15,4	151,0	422,0	18
10572	32 G 0,5	18,0	154,0	355,0	20	10604	25 G 0,75	17,2	180,0	486,0	18
10573	34 G 0,5	18,7	163,0	520,0	20	10605	32 G 0,75	19,0	230,0	595,0	18
10574	40 G 0,5	19,5	192,0	590,0	20	10606	34 G 0,75	19,9	245,0	638,0	18
10575	42 G 0,5	20,1	202,0	595,0	20	10607	37 G 0,75	19,9	260,0	696,0	18
10576	50 G 0,5	22,1	240,0	715,0	20	10608	40 G 0,75	20,6	288,0	726,0	18
10577	52 G 0,5	22,1	252,0	740,0	20	10609	41 G 0,75	20,6	296,0	750,0	18
10578	61 G 0,5	23,6	293,0	840,0	20	10610	42 G 0,75	21,5	302,0	770,0	18
10579	65 G 0,5	24,4	312,0	880,0	20	10611	50 G 0,75	23,7	360,0	895,0	18
10580	80 G 0,5	27,2	384,0	960,0	20	10612	61 G 0,75	25,3	439,0	1070,0	18
10581	100 G 0,5	31,2	480,0	1050,0	20	10613	65 G 0,75	26,0	468,0	1110,0	18
						10614	80 G 0,75	28,9	576,0	1500,0	18
						10615	100 G 0,75	33,2	720,0	1889,0	18

Prices on request.

Continuation ▶

JZ-600 flexible, number coded, 0,6/1kV, meter marking



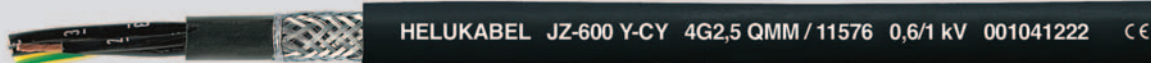
Part no.	No.cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
10616	2 x 1	7,0	19,2	80,0	17
10617	3 G 1	7,4	29,0	96,0	17
10618	3 x 1	7,4	29,0	96,0	17
10619	4 G 1	8,2	38,4	100,0	17
10620	4 x 1	8,2	38,4	100,0	17
10621	5 G 1	9,2	48,0	130,0	17
10622	5 x 1	9,2	48,0	130,0	17
10623	6 G 1	9,9	58,0	150,0	17
10624	7 G 1	9,9	67,0	170,0	17
10625	7 x 1	9,9	67,0	170,0	17
10626	8 G 1	10,9	77,0	230,0	17
10627	9 G 1	11,6	86,0	250,0	17
10628	10 G 1	11,9	96,0	270,0	17
10629	10 x 1	11,9	96,0	270,0	17
10630	12 G 1	13,1	115,0	290,0	17
10631	12 x 1	13,1	115,0	290,0	17
10632	14 G 1	14,0	134,0	320,0	17
10633	16 G 1	14,8	154,0	360,0	17
10634	18 G 1	15,7	173,0	405,0	17
10635	18 x 1	15,7	173,0	405,0	17
10636	20 G 1	16,7	192,0	450,0	17
10637	20 G 1	16,7	192,0	480,0	17
10638	21 G 1	16,7	205,0	510,0	17
10639	24 G 1	18,4	236,0	550,0	17
10640	25 G 1	18,6	240,0	570,0	17
10641	25 x 1	18,6	240,0	570,0	17
10642	26 G 1	18,8	252,0	590,0	17
10643	30 x 1	19,8	308,0	650,0	17
10644	34 G 1	21,5	326,0	750,0	17
10645	36 G 1	21,5	346,0	790,0	17
10646	40 G 1	22,5	384,0	850,0	17
10647	40 x 1	22,5	384,0	850,0	17
10648	41 G 1	23,2	394,0	890,0	17
10649	42 G 1	23,2	403,0	900,0	17
10650	50 G 1	25,6	480,0	1100,0	17
10651	56 G 1	26,4	538,0	1190,0	17
10652	61 G 1	27,3	586,0	1266,0	17
10653	65 G 1	28,3	628,0	1560,0	17
10654	80 G 1	31,4	786,0	1810,0	17
10655	100 G 1	36,0	960,0	1950,0	17
10656	2 x 1,5	8,2	29,0	95,0	16
10657	3 G 1,5	8,6	43,0	112,0	16
10658	3 x 1,5	8,6	43,0	112,0	16
10659	4 G 1,5	9,6	58,0	139,0	16
10660	4 x 1,5	9,6	58,0	139,0	16
10661	5 G 1,5	10,7	72,0	170,0	16
10662	5 x 1,5	10,7	72,0	170,0	16
10663	6 G 1,5	11,6	86,0	190,0	16
10664	7 G 1,5	11,6	101,0	225,0	16
10665	7 x 1,5	11,6	101,0	225,0	16
10666	8 G 1,5	13,8	115,0	250,0	16
10667	9 G 1,5	15,2	130,0	280,0	16
10668	10 G 1,5	15,2	144,0	300,0	16
10669	11 G 1,5	15,5	158,0	330,0	16
10670	12 G 1,5	15,5	173,0	370,0	16
10671	12 x 1,5	15,5	173,0	370,0	16
10672	14 G 1,5	16,6	202,0	400,0	16
10673	16 G 1,5	17,5	230,0	450,0	16
10674	18 G 1,5	18,6	259,0	520,0	16
10675	19 G 1,5	18,6	279,0	550,0	16
10676	20 G 1,5	19,7	288,0	600,0	16
10677	21 G 1,5	20,6	302,0	600,0	16
10678	25 G 1,5	22,5	360,0	730,0	16
10679	32 G 1,5	24,5	461,0	880,0	16
10680	34 G 1,5	25,6	490,0	950,0	16
10681	40 G 1,5	26,7	576,0	990,0	16
10682	42 G 1,5	27,6	605,0	1120,0	16
10683	50 G 1,5	30,4	720,0	1400,0	16
10684	56 G 1,5	31,5	806,0	1530,0	16
10685	61 G 1,5	32,6	878,0	1700,0	16
10686	65 G 1,5	34,8	936,0	1900,0	16
10687	80 G 1,5	37,4	1152,0	2300,0	16
10688	100 G 1,5	41,6	1440,0	2700,0	16
10689	2 x 2,5	9,6	48,0	160,0	14

Part no.	No.cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
10690	3 G 2,5	10,1	72,0	175,0	14
10691	3 x 2,5	10,1	72,0	175,0	14
10692	4 G 2,5	11,2	96,0	203,0	14
10693	4 x 2,5	11,2	96,0	203,0	14
10694	5 G 2,5	12,5	120,0	251,0	14
10695	5 x 2,5	12,5	120,0	251,0	14
10696	7 G 2,5	13,8	168,0	330,0	14
10697	7 x 2,5	13,8	168,0	330,0	14
10698	8 G 2,5	15,1	192,0	400,0	14
10699	12 G 2,5	18,3	288,0	553,0	14
10700	14 G 2,5	19,6	336,0	630,0	14
10701	18 G 2,5	22,0	432,0	795,0	14
10702	21 G 2,5	23,3	504,0	930,0	14
10703	25 G 2,5	26,2	600,0	1110,0	14
10704	34 G 2,5	30,4	816,0	1450,0	14
10705	42 G 2,5	33,0	1008,0	1750,0	14
10706	50 G 2,5	36,2	1200,0	2100,0	14
10707	61 G 2,5	38,8	1464,0	2540,0	14
10708	100 G 2,5	50,2	2400,0	3850,0	14
10709	2 x 4	11,1	77,0	180,0	12
10710	3 G 4	11,7	115,0	230,0	12
10711	4 G 4	13,0	154,0	310,0	12
10712	5 G 4	14,5	192,0	410,0	12
10713	7 G 4	16,0	269,0	540,0	12
10714	8 G 4	17,4	307,0	710,0	12
10715	12 G 4	21,4	461,0	860,0	12
10716	3 G 6	13,1	173,0	370,0	10
10717	4 G 6	14,5	230,0	430,0	10
10718	5 G 6	16,2	288,0	650,0	10
10719	7 G 6	18,0	403,0	860,0	10
10720	3 G 10	16,5	288,0	660,0	8
10721	4 G 10	18,2	384,0	790,0	8
10722	5 G 10	20,3	480,0	960,0	8
10723	7 G 10	22,5	672,0	1300,0	8
10724	3 G 16	20,1	461,0	700,0	6
10725	4 G 16	22,3	614,0	1100,0	6
10726	5 G 16	25,0	768,0	1600,0	6
10727	7 G 16	27,4	1075,0	1890,0	6
10728	3 G 25	24,8	720,0	1450,0	4
10729	4 G 25	27,4	960,0	1600,0	4
10730	5 G 25	30,5	1200,0	2050,0	4
10731	7 G 25	33,8	1680,0	2900,0	4
10732	3 G 35	27,1	1008,0	1900,0	2
10733	4 G 35	30,0	1344,0	2400,0	2
10734	5 G 35	33,3	1680,0	2900,0	2
10735	3 G 50	32,4	1440,0	2700,0	1
10736	4 G 50	35,8	1920,0	3400,0	1
10742	5 G 50	40,0	2400,0	4361,0	1
10737	3 G 70	36,9	2016,0	3300,0	2/0
10738	4 G 70	40,9	2688,0	4400,0	2/0
10743	5 G 70	45,5	3360,0	5807,0	2/0
10739	3 G 95	41,7	2736,0	5050,0	3/0
10740	4 G 95	46,2	3648,0	6010,0	3/0
10744	5 G 95	51,7	4560,0	7752,0	3/0
10741	4 G 120	51,6	4608,0	7500,0	4/0
10745	4 G 150	58,5	5760,0	8640,0	300 kcmil
10746	4 G 185	61,1	7104,0	10380,0	350 kcmil

Prices on request.

Dimensions and specifications may be changed without prior notice. (RA01)

JZ-600-Y-CY flexible, number coded, 0,6/1kV, Cu screened meter marking, EMC-preferred type



Technical data

- In accordance to DIN VDE 0262/12.95 and DIN VDE 0281 part 13
- **Temperature range**
flexing -15 °C¹⁾ to +80 °C
fixed installation -40 °C to +90 °C
- **Nominal voltage** U₀/U 0,6/1 kV
- **Test voltage** 4000 V
- **Breakdown voltage** min. 8000 V
- **Insulation resistance**
min. 20 MOhm x km
- **Power rating**
according to DIN VDE 0298
- **Minimum bending radius**
flexing 10x cable ø
fixed installation 5x cable ø
- **Radiation resistance**
up to 80x10⁶ cJ/kg (up to 80 Mrad)
- **Coupling resistance**
max. 250 Ohm/km
- ¹⁾ cold bending test, impact resistance test at low temperatures, elongation test at low temperatures. Tested according VDE 0473 part 811-1-4, EN 60811-1-4

Cable structure

- Bare copper, fine wire conductors, according to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Special PVC core insulation TI2, to DIN VDE 0281 part 1
- Black cores with sequential numbering imprinted in white, according to DIN VDE 0293
- Green-yellow earth core in the outer layer (3 cores and above)
- Cores stranded in layers with optimal lay-length
- PVC-insulated inner sheath
- Braided screen of tinned Cu wires, coverage approx. 85%
- Special PVC outer sheath TM2, to DIN VDE 0281 part 1
- colour black (RAL 9005)
- with meter marking, change-over in 2011

Properties

- Extensively oil resistant, oil-/ chemical Resistance - see table Technical Informations
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers
- UV resistant

Note

- G = with green-yellow earth core; x = without green-yellow earth core (OZ).
- Further sizes are available upon request.
- AWG sizes are approximate equivalent values. The actual cross-section is in mm².
- **unscreened analogue type:**
JZ-600

Application

Wiring cable for measuring and controlling purposes in tool machinery, conveyor belts and production lines, for plant installations, air conditioning and in steel production plants and rolling mills. Suitable for installation for flexible use for medium mechanical stresses with free movement without tensile stress or forced movements in dry, moist and wet rooms as well as outside (fixed installation). Is not suitable to be used as direct burial- or as underwater cable. The cores have been numbered in such a way that the numbers are easily identifiable, even if the cable has only been stripped back a few cm. The core numbers have been underlined to avoid confusion. The earth core is located in the outer layer. The black, special PVC outer sheath is resistant to the ultra violet radiation. Mainly used in South-European, Eastern and Arabian countries. Interference-free transmission of signals and pulses is assured by the high degree of screening.

EMC = Electromagnetic compatibility

To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
11464	2 x 0,5	8,5	41,0	129,0	20
11465	3 G 0,5	8,8	45,0	150,0	20
11466	4 G 0,5	9,6	54,0	170,0	20
11467	5 G 0,5	10,2	66,0	199,0	20
11469	7 G 0,5	11,1	79,0	235,0	20
11472	12 G 0,5	14,0	137,0	320,0	20
11475	18 G 0,5	16,2	156,0	428,0	20
11478	25 G 0,5	19,1	250,0	503,0	20
11489	2 x 0,75	8,8	46,0	143,0	18
11490	3 G 0,75	9,3	57,0	155,0	18
11491	4 G 0,75	9,9	63,0	190,0	18
11492	5 G 0,75	10,8	76,0	228,0	18
11494	7 G 0,75	11,5	100,0	323,0	18
11498	12 G 0,75	14,8	175,0	410,0	18
11501	18 G 0,75	17,1	240,0	560,0	18
11504	25 G 0,75	20,2	306,0	730,0	18

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
11516	2 x 1	9,4	54,0	150,0	17
11517	3 G 1	9,8	64,0	163,0	17
11518	4 G 1	10,6	76,0	200,0	17
11519	5 G 1	11,4	89,0	239,0	17
11521	7 G 1	12,5	114,0	289,0	17
11525	12 G 1	15,7	186,0	464,0	17
11528	18 G 1	18,4	284,0	628,0	17
11532	25 G 1	21,6	387,0	855,0	17
11546	2 x 1,5	10,6	64,0	162,0	16
11547	3 G 1,5	11,1	82,0	187,0	16
11548	4 G 1,5	11,8	99,0	240,0	16
11549	5 G 1,5	13,1	123,0	289,0	16
11551	7 G 1,5	14,2	148,0	383,0	16
11556	12 G 1,5	18,1	274,0	592,0	16
11559	18 G 1,5	21,4	386,0	806,0	16
11563	25 G 1,5	24,9	531,0	1241,0	16

Prices on request.

Continuation ▶

JZ-600-Y-CY flexible, number coded, 0,6/1kV, Cu screened meter marking, EMC-preferred type



Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
11574	2 x 2,5	12,1	110,0	272,0	14
11575	3 G 2,5	12,7	148,0	298,0	14
11576	4 G 2,5	13,8	169,0	345,0	14
11577	5 G 2,5	15,1	220,0	427,0	14
11578	7 G 2,5	16,6	284,0	561,0	14
11580	12 G 2,5	21,3	470,0	857,0	14
11582	18 G 2,5	25,4	572,0	1355,0	14
11584	25 G 2,5	29,6	740,0	1995,0	14
11590	2 x 4	13,8	124,0	306,0	12
11591	3 G 4	14,4	178,0	391,0	12
11592	4 G 4	15,7	234,0	527,0	12
11593	5 G 4	17,3	284,0	700,0	12
11594	7 G 4	19,0	321,0	920,0	12
11596	12 G 4	24,4	581,0	1510,0	12
11597	2 x 6	15,2	176,0	420,0	10
11598	3 G 6	15,9	245,0	629,0	10
11599	4 G 6	17,3	316,0	731,0	10
11600	5 G 6	19,2	442,0	1105,0	10
11601	7 G 6	21,0	530,0	1465,0	10
11602	2 x 10	18,6	260,0	845,0	8
11603	3 G 10	19,7	367,0	1125,0	8
11604	4 G 10	21,5	549,0	1345,0	8
11605	5 G 10	23,7	604,0	1635,0	8
11606	7 G 10	26,0	820,0	2210,0	8
11607	2 x 16	22,4	491,0	1150,0	6

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
11608	3 G 16	23,7	653,0	1395,0	6
11609	4 G 16	26,1	807,0	1870,0	6
11610	5 G 16	29,0	940,0	2720,0	6
11611	7 G 16	31,8	1345,0	3213,0	6
11612	3 G 25	28,7	920,0	2465,0	4
11613	4 G 25	31,7	1169,0	2750,0	4
11614	5 G 25	35,0	1420,0	3490,0	4
11615	7 G 25	38,4	1921,0	4980,0	4
11616	3 G 35	31,2	1250,0	3250,0	2
11617	4 G 35	34,5	1680,0	4100,0	2
11618	5 G 35	38,1	2020,0	4950,0	2
11619	3 G 50	36,9	1887,0	4590,0	1
11620	4 G 50	40,7	2370,0	5780,0	1
11621	5 G 50	45,2	2880,0	7210,0	1
11622	3 G 70	41,8	2516,0	5610,0	2/0
11623	4 G 70	46,0	3257,0	7480,0	2/0
11624	5 G 70	50,4	4032,0	9390,0	2/0
11625	3 G 95	46,8	3086,0	8585,0	3/0
11626	4 G 95	51,3	4060,0	10220,0	3/0
11627	5 G 95	56,4	5244,0	13800,0	3/0
11628	3 G 120	51,9	4176,0	11105,0	4/0
11629	4 G 120	56,4	5231,0	13750,0	4/0
13137	4 G 150	64,3	7760,0	15990,0	300 kcmil
13147	4 G 185	67,5	8104,0	18470,0	350 kcmil

Prices on request.

Dimensions and specifications may be changed without prior notice. (RA01)



Photo: REpower

Single 600-J/-O special single core cable, 0,6/1kV, meter marking



Technical data

- Special PVC control cable according to UL-Style 10107 and CSA AWM I/II A/B, adapted to DIN VDE 0281 part 3, DIN VDE 0281 part 13, to UL-Std. 758
- **Temperature**
range flexing -5 °C bis +90 °C
fixed installation -40 °C bis +90 °C
- **Permissible operating temperature**
max. 90 °C at conductor
- **Nominal voltage** U_0/U 06/1 kV
nach UL+CSA 600V
- **Test voltage** 4000 V
- **Breakdown voltage** min. 8000 V
- **Insulation resistance**
min. 20 MOhm x km
- **Minimum bending radius**
flexing 7,5x cable \varnothing
fixed installation 4x cable \varnothing
- **Radiation resistance**
up to 80×10^6 cJ/kg (up to 80 Mrad)

Cable structure

- Bare copper, fine wire conductors to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- 1. Core insulation of special PVC, T12 to DIN VDE 0281 part 1 and UL-Std. 1581 class 43, colour black or green-yellow
- 2. Core insulation (jacket) of special PVC, TM2 to DIN VDE 0821 part 1 and UL Std. 1581 class 43, colour black (RAL 9005)
- with meter marking, change-over in 2011

Properties

- Chemical Resistance - see table Technical informations
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B), UL VW-1
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers
- Resistant to ultra violet rays

Note

- G = with green-yellow earth core;
x = without green-yellow earth core.
- AWG sizes are approximate equivalent values. The actual cross-section is in mm².
- **screened analogue type:**
Single 600-CY -J/-O
- also as 1000 V Style 10678 deliverable

Application

PVC Single cores suitable for installation for flexible use for medium mechanical stresses with free movement without tensile stress or forced movements in dry, moist and wet rooms as well as outside (fixed installation). Is not suitable to be used as direct burial- or as underwater cable.

These two norms approved single cores designed for exportorientated machinery manufacturer for machine tools, conveyor belts and production lines.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Core colour	Outer Ø approx. mm	Cop. approx. weight kg / km	Weight approx. kg / km
10881	1 G 6	10	green-yellow	7,8	58,0	118,0
10882	1 x 6	10	black	7,8	58,0	118,0
10883	1 G 10	8	green-yellow	9,0	96,0	180,0
10884	1 x 10	8	black	9,0	96,0	180,0
10885	1 G 16	6	green-yellow	10,0	154,0	250,0
10886	1 x 16	6	black	10,0	154,0	250,0
10887	1 G 25	4	green-yellow	11,5	240,0	370,0
10888	1 x 25	4	black	11,5	240,0	370,0
10889	1 G 35	2	green-yellow	13,0	336,0	490,0
10890	1 x 35	2	black	13,0	336,0	490,0
10891	1 G 50	1	green-yellow	15,6	480,0	665,0
10892	1 x 50	1	black	15,6	480,0	665,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Core colour	Outer Ø approx. mm	Cop. approx. weight kg / km	Weight approx. kg / km
10893	1 G 70	2/0	green-yellow	17,9	672,0	910,0
10894	1 x 70	2/0	black	17,9	672,0	910,0
10895	1 G 95	3/0	green-yellow	19,5	912,0	1195,0
10896	1 x 95	3/0	black	19,5	912,0	1195,0
10897	1 G 120	4/0	green-yellow	22,3	1152,0	1545,0
10898	1 x 120	4/0	black	22,3	1152,0	1545,0
10899	1 G 150	300 kcmil	green-yellow	25,0	1440,0	1750,0
10900	1 x 150	300 kcmil	black	25,0	1440,0	1750,0
10901	1 G 185	350 kcmil	green-yellow	28,6	1776,0	2320,0
10902	1 x 185	350 kcmil	black	28,6	1776,0	2320,0
10903	1 G 240	500 kcmil	green-yellow	31,4	2304,0	2960,0
10904	1 x 240	500 kcmil	black	31,4	2304,0	2960,0

Dimensions and specifications may be changed without prior notice. (RN06)

Prices on request.

Single 600-CY -J/-O special single core cable, Cu-screened, EMC-preferred type, meter marking



Technical data

- Special PVC control cable according to UL-Style 10107 and CSA AWM I/II A/B, adapted to DIN 0281 part 3, DIN VDE 0281 part 13, to UL-Std. 758
- **Temperature range**
flexing -5 °C bis +90 °C
fixed installation -40 °C bis +90 °C
- **Permissible operating temperature**
max. 90 °C at conductor
- **Nominal voltage** U₀/U 06/1 kV
- **Test voltage** 4000 V
- **Breakdown voltage** min. 8000 V
- **Insulation resistance**
min. 20 MΩm x km
- **Minimum bending radius**
flexing 7,5x cable ø
fixed installation 4x cable ø
- **Coupling resistance**
max. 250 Ωm/km
- **Radiation resistance**
up to 80x10⁶ cJ/kg (up to 80 Mrad)

Cable structure

- Bare copper, fine wire conductors, to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- 1. Core insulation of special PVC, TI2 to DIN VDE 0281 part 1 and UL-Std. 1581 class 43, colour black or green-yellow
- Tinned copper braided screening, coverage approx. 85%
- 2. Core insulation of special PVC, TM2 to DIN VDE 0281 part 1 and UL-Std. 1581 class 43, colour black (RAL 9005)
- with meter marking, change-over in 2011

Properties

- Chemical Resistance - see table Technical Informations
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B) UL VW-1
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers
- Resistant to ultra violet rays

Note

- G = with green-yellow earth core;
x = without green-yellow earth core.
- **unscreened analogue type:**
Single 600-J/-O
- also as 1000 V Style 10678 deliverable

Application

PVC Single cores suitable for installation for flexible use for medium mechanical stresses with free movement without tensile stress or forced movements in dry, moist and wet rooms as well as outside (fixed installation). Is not suitable to be used as direct burial-or as underwater cable.

These two norms approved single cores designed for exportorientated machinery manufacturer for machine tools, conveyor belts and production lines. These screened cables are particularly suitable for the interference-free transmission in instrumentation and control engineering applications (electromagnetic compatibility).

EMC = Electromagnetic compatibility

To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Core colour	Outer Ø approx. mm	Cop. weight approx. kg / km	Weight approx. kg / km
10910	1 G 6	10	green-yellow	7,6	72,0	140,0
10911	1 x 6	10	black	7,6	72,0	140,0
10912	1 G 10	8	green-yellow	9,4	130,0	230,0
10913	1 x 10	8	black	9,4	130,0	230,0
10914	1 G 16	6	green-yellow	10,4	190,0	300,0
10915	1 x 16	6	black	10,4	190,0	300,0
10916	1 G 25	4	green-yellow	12,0	260,0	420,0
10917	1 x 25	4	black	12,0	260,0	420,0
10918	1 G 35	2	green-yellow	14,4	405,0	615,0
10919	1 x 35	2	black	14,4	405,0	615,0
10920	1 G 50	1	green-yellow	16,4	560,0	825,0
10921	1 x 50	1	black	16,4	560,0	825,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Core colour	Outer Ø approx. mm	Cop. weight approx. kg / km	Weight approx. kg / km
10922	1 G 70	2/0	green-yellow	17,4	780,0	1090,0
10923	1 x 70	2/0	black	17,4	780,0	1090,0
10924	1 G 95	3/0	green-yellow	20,1	1030,0	1395,0
10925	1 x 95	3/0	black	20,1	1030,0	1395,0
10926	1 G 120	4/0	green-yellow	23,0	1285,0	1770,0
10927	1 x 120	4/0	black	23,0	1285,0	1770,0
10928	1 G 150	300 kcmil	green-yellow	26,1	1570,0	1930,0
10929	1 x 150	300 kcmil	black	26,1	1570,0	1930,0
10930	1 G 185	350 kcmil	green-yellow	29,3	1940,0	2635,0
10931	1 x 185	350 kcmil	black	29,3	1940,0	2635,0
10932	1 G 240	500 kcmil	green-yellow	32,2	2530,0	3380,0
10933	1 x 240	500 kcmil	black	32,2	2530,0	3380,0

Dimensions and specifications may be changed without prior notice. (RN06)

Prices on request.

JZ-600 HMH flexible control cable, halogen-free, extremely fire resistant, oil resistant¹⁾, 0,6/1kV, meter marking



Technical data

- Halogen-free, flexible control cable, adapted to DIN VDE 0281 part 14 and DIN VDE 0281 part 13
- **Temperature range**
flexing -15 °C to +70 °C
fixed -40 °C to +70 °C
- **Nominal voltage** U_0/U 0,6/1 kV
- **Test voltage** 4000 V
- **Minimum bending radius**
for permanent bending
approx. 15x cable \varnothing
- **Radiation resistance**
up to 100×10^6 cJ/kg (up to 100 Mrad)

Cable structure

- Bare copper, fine wire conductor to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and/or IEC 60228 cl. 5
- Halogen-free polymer core insulation, TI6 acc. to E DIN VDE 0281 Part 14
- Black cores with continuous white numbering according to DIN VDE 0293
- Green-yellow earth core in the outer layer (3 cores and above)
- Cores stranded in layers with optimal lay-length
- Halogen-free polymer sheath, TM7 acc. to E DIN VDE 0281 Part 14
- Sheath colour black (RAL 9005)
- with meter marking, change-over in 2011
- **LSOH** = Low Smoke Zero Halogen-free.

Properties

- ¹⁾ For critical applications recommend you request a consultation
 - The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers
- ### Tests
- Flame test acc. to VDE 0482-332-3 BS 4066 Part 3/ DIN EN 60332-3/IEC 60332-3 (as per DIN VDE 0472 Part 804 Test Method C)
 - self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
 - Corrosiveness of corrosive gases acc. to VDE 0482, Part 267/ DIN EN 50267-2-2/ IEC 607542 (as per DIN VDE 0472, Part 813)
 - Halogen-free acc. to VDE 0482, Part 267/ DIN EN 50267-2-1/ IEC 60754-1 (as per DIN VDE 0472, Part 815)
 - Smoke density according to VDE 0482 part 1034-1+2 / IEC 61034-1+2 / DIN EN 61034-1+2 / BS 7622 part 1+2 (equivalent DIN VDE 0472 part 816)

Note

- G = with green-yellow earth core;
x = without green-yellow earth core (OZ).
- **screened analogue type:**
JZ-600 HMH-C

Application

Halogen-free, flame retardant cables are used as measuring and control cable in machine tools, conveyor belts, production lines as well as in plant installations, in heating and air-conditioning systems and steel production works. For fixed installation or flexible application, directed without forcing by casual, constantly recurring free movements and without tensile stress, for medium mechanical strain. This cable is suitable for the application in dry, damp and wet environments and outdoors (fixed installation) and for laying on, in and under plaster as well as in concrete and masonry excluding in direct laying in vibration, compacted or compressed concrete.

EMC = Electromagnetic compatibility

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	Outer \varnothing approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No. cores x cross-sec. mm ²	Outer \varnothing approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
12723	2 x 0,5	6,3	9,6	57,0	20	12735	2 x 0,75	6,6	14,4	68,0	18
12724	3 G 0,5	6,6	14,4	69,0	20	12736	3 G 0,75	6,9	21,6	77,0	18
12725	3 x 0,5	6,6	14,4	69,0	20	12737	3 x 0,75	6,9	21,6	77,0	18
12726	4 G 0,5	7,2	19,0	104,0	20	12738	4 G 0,75	7,5	29,0	136,0	18
12727	4 x 0,5	7,2	19,0	104,0	20	12739	4 x 0,75	7,5	29,0	136,0	18
12728	5 G 0,5	8,0	24,0	121,0	20	12740	5 G 0,75	8,4	36,0	152,0	18
12729	5 x 0,5	8,0	24,0	121,0	20	12741	5 x 0,75	8,4	36,0	152,0	18
12730	7 G 0,5	8,7	33,6	145,0	20	12742	7 G 0,75	9,3	50,0	208,0	18
12731	10 G 0,5	10,6	48,0	186,0	20	12743	10 G 0,75	11,1	72,0	250,0	18
12732	12 G 0,5	11,4	58,0	224,0	20	12744	12 G 0,75	12,2	86,0	271,0	18
12733	18 G 0,5	13,8	86,0	292,0	20	12745	18 G 0,75	14,5	130,0	387,0	18
12734	25 G 0,5	16,1	120,0	357,0	20	12746	25 G 0,75	17,2	180,0	498,0	18

Prices on request.

Continuation ▶

JZ-600 HMM flexible control cable, halogen-free, extremely fire resistant, oil resistant¹⁾, 0,6/1kV, meter marking



Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
12747	2 x 1	7,0	19,2	82,0	17
12748	3 G 1	7,4	29,0	99,0	17
12749	3 x 1	7,4	29,0	99,0	17
12750	4 G 1	8,2	38,4	140,0	17
12751	4 x 1	8,2	38,4	140,0	17
12752	5 G 1	9,2	48,0	160,0	17
12753	5 x 1	9,2	48,0	160,0	17
12754	7 G 1	9,9	67,0	217,0	17
12755	10 G 1	11,9	96,0	271,0	17
12756	12 G 1	13,1	115,0	301,0	17
12757	18 G 1	15,7	173,0	417,0	17
12758	25 G 1	18,6	240,0	576,0	17
12759	2 x 1,5	8,2	29,0	97,0	16
12760	3 G 1,5	8,6	43,0	119,0	16
12761	3 x 1,5	8,6	43,0	119,0	16
12762	4 G 1,5	9,6	58,0	148,0	16
12763	4 x 1,5	9,6	58,0	148,0	16
12764	5 G 1,5	10,7	72,0	172,0	16
12765	5 x 1,5	10,7	72,0	172,0	16
12766	7 G 1,5	11,6	101,0	243,0	16
12767	10 G 1,5	15,2	144,0	311,0	16
12768	12 G 1,5	15,5	173,0	392,0	16
12769	18 G 1,5	18,6	259,0	529,0	16
12770	25 G 1,5	22,5	360,0	741,0	16
12771	2 x 2,5	9,6	48,0	160,0	14
12772	3 G 2,5	10,1	72,0	177,0	14
12773	3 x 2,5	10,1	72,0	177,0	14
12774	4 G 2,5	11,2	96,0	209,0	14
12775	4 x 2,5	11,2	96,0	209,0	14
12776	5 G 2,5	12,5	120,0	272,0	14
12777	5 x 2,5	12,5	120,0	272,0	14
12778	7 G 2,5	13,8	168,0	340,0	14
12779	10 G 2,5	16,7	288,0	561,0	14
12780	12 G 2,5	18,3	432,0	799,0	14
12781	18 G 2,5	22,0	480,0	940,0	14
12782	25 G 2,5	26,2	600,0	1121,0	14

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
12783	3 G 4	11,7	115,0	255,0	12
12784	4 G 4	13,0	154,0	319,0	12
12785	5 G 4	14,5	192,0	423,0	12
12786	3 G 6	13,1	173,0	380,0	10
12787	4 G 6	14,5	230,0	441,0	10
12788	5 G 6	16,2	288,0	657,0	10
12789	3 G 10	16,5	288,0	668,0	8
12790	4 G 10	18,2	384,0	796,0	8
12791	5 G 10	20,3	480,0	972,0	8
12792	3 G 16	20,1	461,0	832,0	6
12793	4 G 16	22,3	614,0	1122,0	6
12794	5 G 16	25,0	768,0	1604,0	6
12795	3 G 25	24,8	720,0	1457,0	4
12796	4 G 25	27,4	960,0	1611,0	4
12797	5 G 25	30,5	1200,0	2070,0	4
12798	3 G 35	27,1	1008,0	1914,0	2
12799	4 G 35	30,0	1344,0	2424,0	2
12800	5 G 35	33,3	1680,0	2970,0	2
12801	4 G 50	35,8	1920,0	3467,0	1
12802	4 G 70	40,9	2688,0	4491,0	2/0
12803	4 G 95	46,2	3648,0	6170,0	3/0
12804	4 G 120	51,6	4608,0	7618,0	4/0

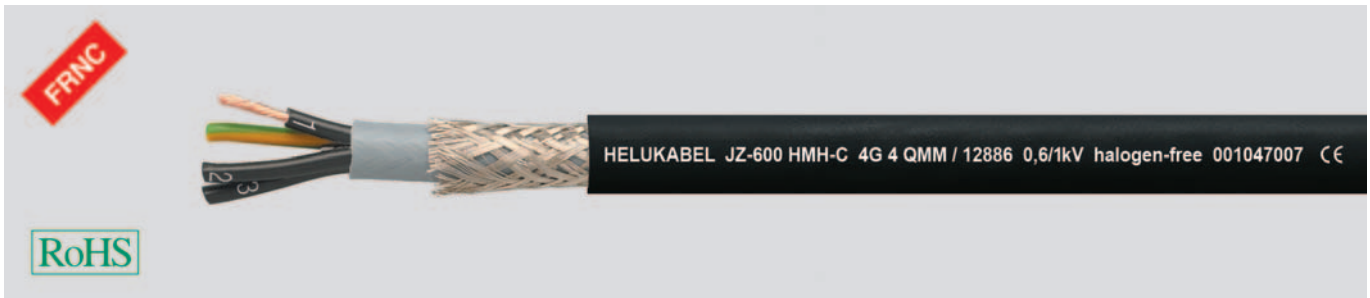
Prices on request.

Dimensions and specifications may be changed without prior notice. (RA03)



Photo: REpower

JZ-600 HMH-C flexible control cable, halogen-free, extremely fire resistant, oil resistant¹⁾, 0,6/1kV, screened, EMC-preferred type, meter marking



Technical data

- Halogen-free, flexible control cable, core construction adapted to DIN VDE 0281 Part 14 and DIN VDE 0281 Part 13
- **Temperature range**
flexing -15 °C to +70 °C
fixed -40 °C to +70 °C
- **Nominal voltage** U₀/U 0,6/1 kV
- **Test voltage** 4000 V
- **Minimum bending radius**
for permanent bending
approx. 15x cable ø
- **Coupling resistance**
max. 250 Ohm/km
- **Radiation resistance**
up to 100x10⁶ cJ/kg (up to 100 Mrad)

Cable structure

- Bare copper, fine wire conductor to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and/or IEC 60228 cl. 5
- Halogen-free polymer core insulation, TI6 acc. to E DIN VDE 0281 Part 14
- Black cores with continuous white numbering according to DIN VDE 0293
- Green-yellow earth core in the outer layer (3 cores and above)
- Cores stranded in layers with optimal lay-length
- Inner sheath
- Tinned copper braided screening, coverage approx. 85%
- Free-free polymer sheath, TM7 acc. to E DIN VDE 0281 Part 14
- Sheath colour black (RAL 9005)
- with meter marking, change-over in 2011
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Properties

- ¹⁾ For critical applications recommend you request a consultation

Tests

- Flame test acc. to VDE 0482-332-3 BS 4066 Part 3/
DIN EN EN 60332-3/IEC 60332-3 (as per DIN VDE 0472 Part 804 Test Method C)
- Self-extinguishing and flame-resistant acc. to DIN VDE 0482 Part 265-2-1/
EN 50265-2-1/ IEC 60332-1 (as per DIN VDE 0472 Part 804 Test Method B)
- Corrosiveness of corrosive gases acc. to VDE 0482, Part 267/ DIN EN 50267-2-2/ IEC 607542 (as per DIN VDE 0472, Part 813)
- Halogen-free acc. to VDE 0482, Part 267/ DIN EN 50267-2-1/ IEC 60754-1 (as per DIN VDE 0472, Part 815)
- Smoke density according to VDE 0482 part 1034-1+2 / IEC 61034-1+2 / DIN EN 61034-1+2 / BS 7622 part 1+2 (equivalent DIN VDE 0472 part 816)

Note

- G = with green-yellow earth core
- **unscreened analogue type:**
JZ-600 HMH

Application

Halogen-free, flame retardant cables are used as measuring and control cable in machine tools, conveyor belts, production lines as well as in plant installations, in heating and air-conditioning systems and steel production works. For fixed installation or flexible application, directed without forcing by casual, constantly recurring free movements and without tensile stress, for medium mechanical strain. This cable is suitable for the application in dry, damp and wet environments and outdoors (fixed installation) and for laying on, in and under plaster as well as in concrete and masonry excluding in direct laying in vibration, compacted or compressed concrete. The dense screening assures interference-free transmission of all signals and impulses.

EMC = Electromagnetic compatibility

To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
12850	3 G 0,5	8,8	45,0	150,0	20	12864	3 G 1	9,8	64,0	163,0	17
12851	4 G 0,5	9,6	54,0	170,0	20	12865	4 G 1	10,6	76,0	200,0	17
12852	5 G 0,5	10,2	66,0	199,0	20	12866	5 G 1	11,4	89,0	239,0	17
12853	7 G 0,5	11,1	79,0	235,0	20	12867	7 G 1	12,5	114,0	289,0	17
12854	12 G 0,5	14,0	137,0	320,0	20	12868	12 G 1	15,7	186,0	464,0	17
12855	18 G 0,5	16,2	156,0	428,0	20	12869	18 G 1	18,4	284,0	628,0	17
12856	25 G 0,5	19,1	250,0	503,0	20	12870	25 G 1	21,6	387,0	855,0	17
12857	3 G 0,75	9,3	57,0	155,0	18	12871	3 G 1,5	11,1	82,0	187,0	16
12858	4 G 0,75	9,9	63,0	190,0	18	12872	4 G 1,5	11,8	99,0	240,0	16
12859	5 G 0,75	10,8	76,0	228,0	18	12873	5 G 1,5	13,1	123,0	289,0	16
12860	7 G 0,75	11,5	100,0	323,0	18	12874	7 G 1,5	14,2	148,0	383,0	16
12861	12 G 0,75	14,8	175,0	410,0	18	12875	12 G 1,5	18,1	274,0	592,0	16
12862	18 G 0,75	17,1	240,0	560,0	18	12876	18 G 1,5	21,4	386,0	806,0	16
12863	25 G 0,75	20,2	306,0	730,0	18	12877	25 G 1,5	24,9	531,0	1241,0	16

Prices on request.

Continuation ▶

JZ-600 HMH-C flexible control cable, halogen-free, extremely fire resistant, oil resistant¹⁾, 0,6/1kV, screened, EMC-preferred type, meter marking



Part no.	No.cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
12878	3 G 2,5	12,7	148,0	298,0	14
12879	4 G 2,5	13,8	169,0	345,0	14
12880	5 G 2,5	15,1	220,0	427,0	14
12881	7 G 2,5	16,6	284,0	561,0	14
12882	12 G 2,5	21,3	470,0	857,0	14
12883	18 G 2,5	25,4	572,0	1355,0	14
12884	25 G 2,5	29,6	740,0	1995,0	14
12885	3 G 4	14,4	178,0	391,0	12
12886	4 G 4	15,7	234,0	527,0	12
12887	5 G 4	17,3	284,0	700,0	12
12888	3 G 6	15,9	245,0	629,0	10
12889	4 G 6	17,3	316,0	731,0	10
12890	5 G 6	19,2	442,0	1105,0	10
12891	3 G 10	19,7	367,0	1125,0	8
12892	4 G 10	21,5	549,0	1345,0	8
12893	5 G 10	23,7	604,0	1635,0	8

Part no.	No.cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
12894	4 G 16	26,1	807,0	1395,0	6
12895	5 G 16	29,0	940,0	1870,0	6
12896	7 G 16	31,8	1345,0	2720,0	6
12897	3 G 25	28,7	920,0	2465,0	4
12898	4 G 25	31,7	1169,0	2750,0	4
12899	5 G 25	35,0	1420,0	3490,0	4
12900	3 G 35	31,2	1250,0	3230,0	2
12901	4 G 35	34,5	1680,0	4100,0	2
12902	5 G 35	38,1	2020,0	4950,0	2
12903	4 G 50	40,7	2370,0	5780,0	1
12904	4 G 70	46,0	3257,0	7480,0	2/0
12905	4 G 95	51,3	4060,0	10220,0	3/0
12906	4 G 120	56,4	5231,0	13750,0	4/0
12907	4 G 150	64,3	6794,0	15900,0	4/0

Prices on request.

Dimensions and specifications may be changed without prior notice. (RA03)



Photo: REpower

JZ-600 UL/CSA flexible, number coded, 0,6/1kV, meter marking



Technical data

- Special PVC control cables Adapted to DIN VDE 0276 part 627, DIN VDE 0281 part 13, with insulation thickness for 1 kV type and UL-Std. 758 Style 21179
- **Temperature range**
flexing -5 °C to +80 °C
fixed installation -40 °C to +80 °C
- **Nominal voltage** 1000 V
- **Test voltage** 4000 V
- **Breakdown voltage** min. 8000 V
- **Insulation resistance**
min. 20 MOhm x km
- **Power rating**
as per DIN VDE 0298
- **Minimum bending radius**
flexing 7,5x cable Ø
fixed installation 4x cable Ø
- **Radiation resistance**
up to 80x10⁶ cJ/kg (up to 80 Mrad)

Cable structure

- Bare copper, fine wire conductors, as per DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Special PVC core insulation TI2, to DIN VDE 0281 part 1, class 43 UL-Std. 1581
- Black cores with white figure imprints to DIN VDE 0293
- Green-yellow earth core in the outer layer (3 cores and above)
- Cores stranded in layers with optimal lay-length
- Separating foil Special PVC outer sheath TM2, to DIN VDE 0281 part 1, class 43 UL-Std. 1581
- Colour black (RAL 9005) or grey (RAL 7001)
- with meter marking, change-over in 2011

Properties

- Extensively oil resistant, oil-/ chemical Resistance - see table Technical Informations
- Resistant to ultra violet rays (building with black jacket)
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B) VW1, FT1
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Note

- G = with green-yellow earth core;
x = without green-yellow earth core (OZ).
- AWG sizes are approximate equivalent values. The actual cross-section is in mm².
- **screened analogue type:**
JZ-600-Y-CY UL/CSA

Application

Wiring cable for measuring and controlling purposes in tool machinery, conveyor belts and production lines, for plant installations, air conditioning and in steel production plants and rolling mills. Suitable for installation for flexible use for medium mechanical stresses with free movement without tensile stress or forced movements in dry, moist and wet rooms as well as outside (fixed installation, building with black jacket). Is not suitable to be used as direct burial- or as underwater cable. The cores have been numbered in such a way that the numbers are easily identifiable, even if the cable has only been stripped back a few cm. The core numbers have been underlined to avoid confusion. The earth core is located in the outer layer. The black, special PVC outer sheath is resistant to the ultra violet radiation. Mainly used in South-European, Eastern and Arabian countries.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
black						grey					
11815	2 x 0,5	20	6,4	9,6	56,0	11880	2 x 0,5	20	6,4	9,6	56,0
11816	3 G 0,5	20	6,8	14,4	68,0	11881	3 G 0,5	20	6,8	14,4	68,0
11817	4 G 0,5	20	7,6	19,0	100,0	11882	4 G 0,5	20	7,6	19,0	100,0
11818	5 G 0,5	20	8,2	24,0	117,0	11883	5 G 0,5	20	8,2	24,0	117,0
11819	7 G 0,5	20	9,8	33,6	138,0	11884	7 G 0,5	20	9,8	33,6	138,0
11820	12 G 0,5	20	12,2	58,0	200,0	11885	12 G 0,5	20	12,2	58,0	200,0
11821	18 G 0,5	20	14,4	86,0	276,0	11886	18 G 0,5	20	14,4	86,0	276,0
11822	25 G 0,5	20	17,2	120,0	355,0	11887	25 G 0,5	20	17,2	120,0	355,0
11823	2 x 0,75	19	6,8	14,4	66,0	11888	2 x 0,75	18	6,8	14,4	66,0
11824	3 G 0,75	19	7,2	21,6	74,0	11889	3 G 0,75	18	7,2	21,6	74,0
11825	4 G 0,75	19	8,0	29,0	126,0	11890	4 G 0,75	18	8,0	29,0	126,0
11826	5 G 0,75	19	8,8	36,0	140,0	11891	5 G 0,75	18	8,8	36,0	140,0
11827	7 G 0,75	19	10,7	50,0	190,0	11892	7 G 0,75	18	10,7	50,0	190,0
11828	12 G 0,75	19	13,1	86,0	257,0	11893	12 G 0,75	18	13,1	86,0	257,0
11829	18 G 0,75	19	15,6	130,0	362,0	11894	18 G 0,75	18	15,6	130,0	362,0
11830	25 G 0,75	19	18,9	180,0	486,0	11895	25 G 0,75	18	18,9	180,0	486,0
11831	2 x 1	18	7,4	19,2	80,0	11896	2 x 1	17	7,4	19,2	80,0
11832	3 G 1	18	8,0	29,2	96,0	11897	3 G 1	17	8,0	29,2	96,0
11833	4 G 1	18	8,8	38,4	100,0	11898	4 G 1	17	8,8	38,4	100,0
11834	5 G 1	18	9,8	48,0	130,0	11899	5 G 1	17	9,8	48,0	130,0
11835	7 G 1	18	11,7	67,0	170,0	11900	7 G 1	17	11,7	67,0	170,0
11836	12 G 1	18	14,5	115,0	290,0	11901	12 G 1	17	14,5	115,0	290,0
11837	18 G 1	18	17,3	173,0	405,0	11902	18 G 1	17	17,3	173,0	405,0
11838	25 G 1	18	21,1	240,0	570,0	11903	25 G 1	17	21,1	240,0	570,0
11839	2 x 1,5	16	8,4	29,0	95,0	11904	2 x 1,5	16	8,4	29,0	95,0
11840	3 G 1,5	16	9,1	43,0	112,0	11905	3 G 1,5	16	9,1	43,0	112,0
11841	4 G 1,5	16	9,9	58,0	139,0	11906	4 G 1,5	16	9,9	58,0	139,0
11842	5 G 1,5	16	11,0	72,0	170,0	11907	5 G 1,5	16	11,0	72,0	170,0
11843	7 G 1,5	16	13,3	101,0	225,0	11908	7 G 1,5	16	13,3	101,0	225,0
11844	12 G 1,5	16	16,6	173,0	370,0	11909	12 G 1,5	16	16,6	173,0	370,0
11845	18 G 1,5	16	19,7	259,0	520,0	11910	18 G 1,5	16	19,7	259,0	520,0
11846	25 G 1,5	16	23,9	360,0	730,0	11911	25 G 1,5	16	23,9	360,0	730,0

Prices on request.

Continuation ▶

JZ-600 UL/CSA flexible, number coded, 0,6/1kV, meter marking



Part no. Jacket colour	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
11847	2 x 2,5	14	9,4	48,0	160,0
11848	3 G 2,5	14	9,9	72,0	175,0
11849	4 G 2,5	14	11,1	96,0	203,0
11850	5 G 2,5	14	12,4	120,0	251,0
11851	7 G 2,5	14	15,0	168,0	330,0
11852	12 G 2,5	14	18,4	288,0	553,0
11853	18 G 2,5	14	22,0	432,0	795,0
11854	25 G 2,5	14	26,9	600,0	1110,0
11855	2 x 4	12	11,4	77,0	180,0
11856	3 G 4	12	12,3	115,0	230,0
11857	4 G 4	12	13,8	154,0	310,0
11858	5 G 4	12	15,3	192,0	410,0
11859	7 G 4	12	16,8	269,0	540,0
11860	12 G 4	12	22,9	461,0	860,0
11861	3 G 6	10	14,1	173,0	370,0
11862	4 G 6	10	15,6	230,0	430,0
11863	5 G 6	10	17,3	288,0	650,0
11864	7 G 6	10	19,3	403,0	860,0
11865	3 G 10	8	16,5	288,0	660,0
11866	4 G 10	8	18,1	384,0	790,0
11867	5 G 10	8	20,5	480,0	960,0
11868	7 G 10	8	22,5	672,0	1300,0
11869	3 G 16	6	19,6	461,0	760,0
11870	4 G 16	6	21,7	614,0	1100,0
11871	5 G 16	6	24,2	768,0	1600,0
11872	7 G 16	6	25,7	1075,0	1890,0
11873	3 G 25	4	24,0	720,0	1450,0
11874	4 G 25	4	26,9	960,0	1600,0
11875	5 G 25	4	29,4	1200,0	2050,0
11876	7 G 25	4	32,8	1680,0	2900,0

Part no. Jacket colour	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
11912	2 x 2,5	14	9,4	48,0	160,0
11913	3 G 2,5	14	9,9	72,0	175,0
11914	4 G 2,5	14	11,1	96,0	203,0
11915	5 G 2,5	14	12,4	120,0	251,0
11916	7 G 2,5	14	15,0	168,0	330,0
11917	12 G 2,5	14	18,4	288,0	553,0
11918	18 G 2,5	14	22,0	432,0	795,0
11919	25 G 2,5	14	26,9	600,0	1110,0
11920	2 x 4	12	11,4	77,0	180,0
11921	3 G 4	12	12,3	115,0	230,0
11922	4 G 4	12	13,8	154,0	310,0
11923	5 G 4	12	15,3	192,0	410,0
11924	7 G 4	12	16,8	269,0	540,0
11925	12 G 4	12	22,9	461,0	860,0
11926	3 G 6	10	14,1	173,0	370,0
11927	4 G 6	10	15,6	230,0	430,0
11928	5 G 6	10	17,3	288,0	650,0
11929	7 G 6	10	19,3	403,0	860,0
11930	3 G 10	8	16,5	288,0	660,0
11931	4 G 10	8	18,4	384,0	790,0
11932	5 G 10	8	20,5	480,0	960,0
11933	7 G 10	8	22,5	672,0	1300,0
11934	3 G 16	6	19,6	461,0	760,0
11935	4 G 16	6	21,7	614,0	1100,0
11936	5 G 16	6	24,2	768,0	1600,0
11937	7 G 16	6	25,7	1075,0	1890,0
11938	3 G 25	4	24,0	720,0	1450,0
11939	4 G 25	4	26,9	960,0	1600,0
11940	5 G 25	4	29,3	1200,0	2050,0
11941	7 G 25	4	32,6	1680,0	2900,0

Dimensions and specifications may be changed without prior notice. (RN01)

Prices on request.



Photo: REpower

JZ-600-Y-CY UL/CSA flexible, number coded, 0,6/1kV, EMC-preferred type, meter marking



Technical data

- Special PVC control cables
- Adapted to DIN VDE 0276 part 627, DIN VDE 0281 part 13, with insulation thickness for 1 kV type and UL-Std. 758 Style 21179
- **Temperature range**
flexing -5 °C to +80 °C
fixed installation -40 °C to +90 °C
- **Nominal voltage** U 1000 V
- **Test voltage** 4000 V
- **Breakdown voltage** min. 8000 V
- **Insulation resistance**
min. 20 MOhm x km
- **Power rating**
according to DIN VDE 0298
- **Minimum bending radius**
flexing 10x cable ø
fixed installation 5x cable ø
- **Radiation resistance**
up to 80x10⁶ cJ/kg (up to 80 Mrad)
- **Coupling resistance**
max. 250 Ohm/km

Cable structure

- Bare copper, fine wire conductors, according to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Special PVC core insulation TI2, to DIN VDE 0281 part 1, class 43 UL-Std. 1581
- Black cores with sequential numbering imprinted in white, according to DIN VDE 0293
- Green-yellow earth core in the outer layer (3 cores and above)
- Cores stranded in layers with optimal lay-length
- PVC-insulated inner sheath TM2, to DIN VDE 0281 part 1, class 43 UL-Std. 1581
- Braided screen of tinned Cu wires, coverage approx. 85%
- Special PVC outer sheath TM2, to DIN VDE 0281 part 1 class 43 UL-Std. 1581
- Colour black (RAL 9005) or grey (RAL 7001)
- with meter marking, change-over in 2011

Properties

- Extensively oil resistant, oil-/ chemical Resistance - see table Technical Informations
- UV-resistant (building with black jacket)
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B) VW-1, FT1
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Note

- G = with green-yellow earth core;
x = without green-yellow earth core (0Z).
- AWG sizes are approximate equivalent values. The actual cross-section is in mm².
- **unscreened analogue type:**
JZ-600 UL/CSA

Application

Wiring cable for measuring and controlling purposes in tool machinery, conveyor belts and production lines, for plant installations, air conditioning and in steel production plants and rolling mills. Suitable for installation for flexible use for medium mechanical stresses with free movement without tensile stress or forced movements in dry, moist and wet rooms as well as outside (fixed installation, building with black jacket). Is not suitable to be used as direct burial- or as underwater cable. Interference-free transmission of signals and pulses is assured by the high degree of screening.

EMC = Electromagnetic compatibility

To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec.	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	Part no.	No. cores x cross-sec.	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
black						grey					
12345	2 x 0,5	20	8,3	41,0	129,0	12410	2 x 0,5	20	8,3	30,0	129,0
12346	3 G 0,5	20	8,6	45,0	150,0	12411	3 G 0,5	20	8,6	39,0	150,0
12347	4 G 0,5	20	9,4	54,0	170,0	12412	4 G 0,5	20	9,4	52,0	170,0
12348	5 G 0,5	20	10,1	66,0	199,0	12413	5 G 0,5	20	10,1	61,0	199,0
12349	7 G 0,5	20	12,1	79,0	235,0	12414	7 G 0,5	20	12,1	75,0	235,0
12350	12 G 0,5	20	14,7	137,0	320,0	12415	12 G 0,5	20	14,7	130,0	320,0
12351	18 G 0,5	20	17,3	156,0	428,0	12416	18 G 0,5	20	17,3	170,0	428,0
12352	25 G 0,5	20	20,6	250,0	503,0	12417	25 G 0,5	20	20,6	230,0	503,0
12353	2 x 0,75	19	8,7	46,0	143,0	12418	2 x 0,75	18	8,7	39,0	143,0
12354	3 G 0,75	19	9,0	57,0	155,0	12419	3 G 0,75	18	9,0	57,0	155,0
12355	4 G 0,75	19	9,9	63,0	190,0	12420	4 G 0,75	18	9,9	68,0	190,0
12356	5 G 0,75	19	10,8	76,0	228,0	12421	5 G 0,75	18	10,8	79,0	228,0
12357	7 G 0,75	19	13,0	100,0	323,0	12422	7 G 0,75	18	13,0	96,0	323,0
12358	12 G 0,75	19	15,8	175,0	410,0	12423	12 G 0,75	18	15,8	169,0	410,0
12359	18 G 0,75	19	17,9	240,0	560,0	12424	18 G 0,75	18	17,9	224,0	560,0
12360	25 G 0,75	19	22,8	306,0	730,0	12425	25 G 0,75	18	22,8	292,0	730,0
12361	2 x 1	18	9,4	54,0	150,0	12426	2 x 1	17	9,4	52,0	150,0
12362	3 G 1	18	9,8	64,0	163,0	12427	3 G 1	17	9,8	67,0	163,0
12363	4 G 1	18	10,8	76,0	200,0	12428	4 G 1	17	10,8	78,0	200,0
12364	5 G 1	18	12,1	89,0	239,0	12429	5 G 1	17	12,1	94,0	239,0
12365	7 G 1	18	14,5	114,0	289,0	12430	7 G 1	17	14,5	122,0	289,0
12366	12 G 1	18	17,4	186,0	464,0	12431	12 G 1	17	17,4	201,0	464,0
12367	18 G 1	18	20,7	284,0	628,0	12432	18 G 1	17	20,7	275,0	628,0
12368	25 G 1	18	24,8	387,0	855,0	12433	25 G 1	17	24,8	364,0	855,0
12369	2 x 1,5	16	10,2	64,0	162,0	12434	2 x 1,5	16	10,2	68,0	162,0
12370	3 G 1,5	16	10,9	82,0	187,0	12435	3 G 1,5	16	10,9	84,0	187,0
12371	4 G 1,5	16	12,2	99,0	240,0	12436	4 G 1,5	16	12,2	104,0	240,0

Prices on request.

Continuation ▶

JZ-600-Y-CY UL/CSA flexible, number coded, 0,6/1kV, EMC-preferred type, meter marking



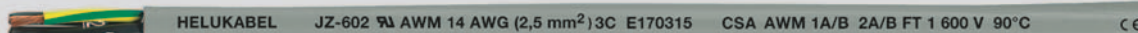
Part no. Jacket colour	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
12372	5 G 1,5	16	13,3	123,0	289,0
12373	7 G 1,5	16	16,0	148,0	383,0
12374	12 G 1,5	16	19,6	274,0	592,0
12375	18 G 1,5	16	23,4	386,0	806,0
12376	25 G 1,5	16	28,2	531,0	1241,0
12377	2 x 2,5	14	11,5	110,0	272,0
12378	3 G 2,5	14	12,2	148,0	298,0
12379	4 G 2,5	14	13,4	169,0	345,0
12380	5 G 2,5	14	14,9	220,0	427,0
12381	7 G 2,5	14	17,9	284,0	561,0
12382	12 G 2,5	14	21,9	470,0	857,0
12383	18 G 2,5	14	26,1	572,0	1355,0
12384	25 G 2,5	14	31,9	740,0	1995,0
12385	2 x 4	12	14,3	124,0	306,0
12386	3 G 4	12	15,1	178,0	391,0
12387	4 G 4	12	16,7	234,0	527,0
12388	5 G 4	12	18,6	284,0	700,0
12389	7 G 4	12	20,0	321,0	920,0
12390	3 G 6	10	17,0	245,0	629,0
12391	4 G 6	10	18,7	316,0	751,0
12392	5 G 6	10	20,7	442,0	1105,0
12393	7 G 6	10	23,0	530,0	1465,0
12394	3 G 10	8	19,6	367,0	1125,0
12395	4 G 10	8	21,9	549,0	1345,0
12396	5 G 10	8	24,1	604,0	1635,0
12397	7 G 10	8	26,8	820,0	2210,0
12398	3 G 16	6	23,5	653,0	1395,0
12399	4 G 16	6	26,4	807,0	1870,0
12400	5 G 16	6	28,8	940,0	2720,0
12401	7 G 16	6	31,9	1345,0	3213,0
12402	3 G 25	4	28,0	920,0	2465,0
12403	4 G 25	4	32,5	1169,0	2750,0
12404	5 G 25	4	35,7	1420,0	3490,0
12405	7 G 25	4	39,0	1921,0	4980,0

Part no. Jacket colour	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
12437	5 G 1,5	16	13,3	123,0	289,0
12438	7 G 1,5	16	16,0	180,0	383,0
12439	12 G 1,5	16	19,6	284,0	592,0
12440	18 G 1,5	16	23,4	390,0	806,0
12441	25 G 1,5	16	28,2	521,0	1241,0
12442	2 x 2,5	14	11,5	99,0	272,0
12443	3 G 2,5	14	12,2	124,0	298,0
12444	4 G 2,5	14	13,4	170,0	345,0
12445	5 G 2,5	14	14,9	202,0	427,0
12446	7 G 2,5	14	17,9	268,0	561,0
12447	12 G 2,5	14	21,9	423,0	857,0
12448	18 G 2,5	14	26,1	572,0	1355,0
12449	25 G 2,5	14	31,9	740,0	1995,0
12450	2 x 4	12	14,3	156,0	306,0
12451	3 G 4	12	15,1	191,0	391,0
12452	4 G 4	12	16,7	236,0	527,0
12453	5 G 4	12	18,6	303,0	700,0
12454	7 G 4	12	20,0	394,0	920,0
12455	3 G 6	10	17,0	251,0	629,0
12456	4 G 6	10	18,7	319,0	751,0
12457	5 G 6	10	20,7	421,0	1105,0
12458	7 G 6	10	23,0	561,0	1465,0
12459	3 G 10	8	19,6	371,0	1125,0
12460	4 G 10	8	21,9	576,0	1345,0
12461	5 G 10	8	24,1	620,0	1635,0
12462	7 G 10	8	26,8	842,0	2210,0
12463	3 G 16	6	23,5	540,0	1395,0
12464	4 G 16	6	26,4	807,0	1870,0
12465	5 G 16	6	28,8	1394,0	2720,0
12466	7 G 16	6	31,9	1605,0	3213,0
12467	3 G 25	4	28,0	820,0	2465,0
12468	4 G 25	4	32,5	1169,0	2750,0
12469	5 G 25	4	35,7	1850,0	3490,0
12470	7 G 25	4	39,0	2140,0	4980,0

Dimensions and specifications may be changed without prior notice. (RN01)

Prices on request.

JZ-602 two approvals control cable, 90°C, 600V, oil resistant, meter marking



Technical data

- Control cable of special-PVC to UL CSA AWM I/II A/B Style 2587 (jacket insulation) and CSA
- Temperature range**
flexing -5 °C to +90 °C
fixed installation -40 °C to +90 °C
- Nominal voltage**
according to UL + CSA 600 V
- Test voltage** 3000 V
- Breakdown voltage** min. 6000 V
- Insulation resistance**
min 20 MOhm x km
- Minimum bending radius**
flexing 7,5x cable ø
fixed installation 4x cable ø
- Radiation resistance**
up to 80x10⁶ cJ/kg (up to 80 Mrad)

Cable structure

- Bare copper, fine wire stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Special PVC core insulation TI3, to DIN VDE 0281 part 1 and class 43 to UL-Std. 1581
- Black conductors with consecutive numbering in white
- Green-yellow earth core in the outer layer (3 cores and above)
- Cores stranded in layers with optimal lay-length
- Special PVC outer sheath YM5, to DIN VDE 0207 part 5 and class 43 to UL-Std. 1581
- Colour grey (RAL 7001)
- with meter marking, change-over in 2011

Properties

- Resistant to mineral oils, synthetic oils and water based coolants
- The outer sheath is approved with an improved oil-resistance-test
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Note

- G = with green-yellow earth core;
x = without green-yellow earth core (OZ).
- Please note the cleanroom qualification when ordering.
- screened analogue type:
JZ-602-CY

Application

UL-approved and CSA certified flexible control cable rated at 600 V. Used in machine tools, control systems, connection between control panels and machines, assembly lines and other industrial equipment. Suitable for installation in dry, moist or wet environment and moderate flexing applications.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
83090	2 x 0,5	20	5,8	9,6	49,0
83091	3 G 0,5	20	6,2	14,0	58,0
83092	4 G 0,5	20	6,6	19,0	69,0
83093	5 G 0,5	20	7,2	24,0	84,0
83094	7 G 0,5	20	7,8	34,0	123,0
83100	8 G 0,5	20	8,4	38,4	140,0
83101	9 G 0,5	20	10,3	43,2	177,0
83095	12 G 0,5	20	10,8	58,0	192,0
83096	18 G 0,5	20	12,8	86,0	256,0
83097	25 G 0,5	20	15,4	120,0	358,0
83098	34 G 0,5	20	17,6	163,0	487,0
83099	41 G 0,5	20	19,7	197,0	580,0
83080	2 x 1	18	6,2	19,2	53,0
83081	3 G 1	18	6,6	27,0	61,0
83565	3 x 1	18	6,6	27,0	61,0
83082	4 G 1	18	7,2	38,4	74,0
83083	5 G 1	18	7,8	48,0	90,0
83084	7 G 1	18	8,4	67,0	130,0
83102	8 G 1	18	9,4	76,8	144,0
83103	9 G 1	18	11,0	86,4	180,0
83085	12 G 1	18	11,7	115,2	198,0
83086	18 G 1	18	14,0	173,0	274,0
83087	25 G 1	18	17,0	240,0	384,0
83088	34 G 1	18	19,2	326,0	494,0
83089	41 G 1	18	21,0	394,0	508,0
83070	2 x 1,5	16	6,8	28,8	75,0
83071	3 G 1,5	16	7,4	44,0	94,0
83072	4 G 1,5	16	8,0	58,0	117,0
83073	5 G 1,5	16	8,6	72,0	140,0
83074	7 G 1,5	16	9,7	101,0	186,0

Part no.	No. cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
83104	9 G 1,5	16	12,7	129,7	244,0
83075	12 G 1,5	16	13,3	173,0	319,0
83076	18 G 1,5	16	15,7	260,0	451,0
83077	25 G 1,5	16	18,8	360,0	625,0
83078	34 G 1,5	16	22,0	490,0	840,0
83079	41 G 1,5	16	25,6	590,0	1032,0
83060	2 x 2,5	14	8,1	48,0	115,0
83061	3 G 2,5	14	8,6	72,0	143,0
83062	4 G 2,5	14	10,0	96,0	185,0
83063	5 G 2,5	14	10,8	120,0	221,0
83064	7 G 2,5	14	12,0	168,0	293,0
83065	9 G 2,5	14	15,5	216,0	429,0
83066	12 G 2,5	14	16,6	288,0	563,0
83067	18 G 2,5	14	19,5	432,0	854,0
83068	19 G 2,5	14	19,5	456,0	914,0
83069	25 G 2,5	14	25,8	600,0	1188,0
83051	3 G 4	12	11,1	115,0	232,0
83052	4 G 4	12	12,4	154,0	298,0
83053	5 G 4	12	13,7	192,0	358,0
83054	7 G 4	12	15,0	269,0	460,0
83041	3 G 6	10	12,8	173,0	360,0
83042	4 G 6	10	14,1	231,0	402,0
83043	5 G 6	10	15,7	288,0	484,0
83044	7 G 6	10	17,7	403,0	630,0
83031	3 G 10	8	16,8	288,0	535,0
83032	4 G 10	8	18,3	384,0	653,0
83033	5 G 10	8	20,1	480,0	786,0
83034	7 G 10	8	22,4	672,0	1100,0

Prices on request.

Continuation ▶

JZ-602 two approvals control cable, 90°C, 600V, oil resistant, meter marking



Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
83020	2 x 16	6	20,0	307,0	640,0
83021	3 G 16	6	21,3	461,0	810,0
83022	4 G 16	6	23,8	615,0	1045,0
83023	5 G 16	6	26,6	768,0	1260,0
83024	7 G 16	6	29,4	1075,0	1760,0
83011	3 G 25	4	24,7	720,0	1180,0
83012	4 G 25	4	27,8	960,0	1507,0
83013	5 G 25	4	30,5	1200,0	1858,0
83014	7 G 25	4	35,5	1680,0	2830,0
83001	3 G 35	2	29,4	1008,0	1590,0
83002	4 G 35	2	32,6	1344,0	2123,0
83003	5 G 35	2	36,3	1680,0	2612,0
83004	3 G 50	1	31,2	1440,0	2652,0
83005	4 G 50	1	36,8	1920,0	3058,0
83006	5 G 50	1	38,7	2400,0	4093,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
83007	3 G 70	2/0	39,2	2016,0	3307,0
83008	4 G 70	2/0	42,6	2688,0	4254,0
83009	5 G 70	2/0	48,4	3360,0	5661,0
83010	3 G 95	3/0	42,1	2736,0	4867,0
83015	4 G 95	3/0	47,5	3648,0	5762,0
83016	5 G 95	3/0	51,2	4560,0	7208,0
83017	3 G 120	4/0	47,8	3456,0	5580,0
83018	4 G 120	4/0	54,6	4608,0	7280,0
83019	5 G 120	4/0	59,0	5760,0	8692,0

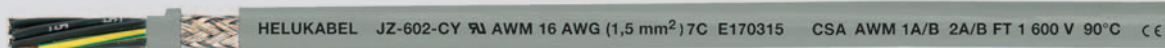
Prices on request.

Dimensions and specifications may be changed without prior notice. (RN01)



JZ-602-CY EMC-preferred type, 90°C 600V, screened two approvals

control cable, oil resistant, meter marking



Technical data

- Special PVC-insulated sheathed cable according to UL AWM Style 10012 (core insulation) Style 2587 and CSA
- **Temperature range**
flexing -5 °C to +90 °C
fixed installation -40 °C to +90 °C
- **Nominal voltage** according to UL+CSA 600 V
- **Test voltage** 3000 V
- **Breakdown voltage** min. 6000 V
- **Insulation resistance**
min. 20 MOhm x km
- **Minimum bending radius**
flexing 10x cable ø
fixed installation 5x cable ø
- **Radiation resistance**
up to 80x10⁶ cJ/kg (up to 80 Mrad)
- **Coupling resistance**
max. 250 Ohm/km

Cable structure

- Bare copper, fine wire stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Special PVC core insulation TI3, to DIN VDE 0281 part 1 and class 43 to UL-Std. 1581
- Cores black with sequential numbering imprinted in white
- Green-yellow earth core in the outer layer (3 cores and above)
- Cores stranded in layers with optimal lay-length
- PVC-insulated inner sheath YM5 to DIN VDE 0207 part 5
- Braided screen of tinned Cu wires approx. 85% coverage
- Special PVC outer sheath YM5, to DIN VDE 0207 part 5 and class 43 to UL-Std. 1581
- Colour grey (RAL 7001)
- with meter marking, change-over in 2011

Properties

- Resistant to mineral oils, synthetic oils and refrigerants. The outer sheath is approved with an improved oil-resistance-test.
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Note

- G = with green-yellow earth core;
x = without green-yellow earth core (OZ).
- Cleanroom qualification tested with analog type. Please note "cleanroom qualified" when ordering.
- **unscreened analogue type:**
JZ-602

Application

UL and CSA approved flexible control cables up to 600 V, for all machinery in tooling and plant construction, suitable for installation in dry, moist or wet environments for medium mechanical loads. Designed for the export-orientated machinery manufacturer, specifically for USA and Canada. The thick braiding screen ensures compliance with electromagnetic requirements.

EMC = Electromagnetic compatibility

To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
82990	2 x 0,5	20	7,7	35,0	93,0
82991	3 G 0,5	20	8,0	42,0	124,0
82992	4 G 0,5	20	8,6	47,0	133,0
82993	5 G 0,5	20	9,2	56,0	153,0
82994	7 G 0,5	20	10,0	69,0	191,0
82995	9 G 0,5	20	11,8	87,0	243,0
82996	12 G 0,5	20	13,0	108,0	322,0
82997	18 G 0,5	20	15,2	145,0	374,0
82998	25 G 0,5	20	18,2	240,0	436,0
82999	34 G 0,5	20	20,1	312,0	560,0
83000	41 G 0,5	20	22,4	348,0	663,0
82979	2 x 1	18	8,1	50,0	107,0
82980	3 G 1	18	8,4	60,0	130,0
82981	4 G 1	18	9,3	71,0	155,0
82982	5 G 1	18	10,0	88,0	181,0
82983	7 G 1	18	10,7	111,0	209,0
82984	9 G 1	18	12,7	139,0	321,0
82985	12 G 1	18	14,0	184,0	341,0
82986	18 G 1	18	16,4	260,0	473,0
82987	25 G 1	18	19,7	349,0	650,0
82988	34 G 1	18	22,1	486,0	781,0
82989	41 G 1	18	24,5	531,0	892,0
82968	2 x 1,5	16	8,7	63,0	136,0
82969	3 G 1,5	16	9,4	80,0	165,0
82970	4 G 1,5	16	10,2	97,0	192,0
82971	5 G 1,5	16	11,0	119,0	224,0
82972	7 G 1,5	16	12,0	147,0	273,0
82973	9 G 1,5	16	14,2	182,0	340,0
82974	12 G 1,5	16	15,6	267,0	461,0
82975	18 G 1,5	16	18,7	374,0	674,0
82976	25 G 1,5	16	22,6	526,0	950,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
82977	34 G 1,5	16	25,5	629,0	1203,0
82978	41 G 1,5	16	27,4	801,0	1588,0
82959	2 x 2,5	14	10,3	96,0	173,0
82960	3 G 2,5	14	10,8	144,0	220,0
82961	4 G 2,5	14	11,7	148,0	270,0
82962	5 G 2,5	14	13,0	181,0	329,0
82963	7 G 2,5	14	14,2	255,0	428,0
82964	9 G 2,5	14	15,8	309,0	580,0
82965	12 G 2,5	14	17,1	441,0	761,0
82966	18 G 2,5	14	18,9	570,0	1140,0
82967	25 G 2,5	14	27,8	738,0	1551,0
82954	2 x 4	12	12,5	120,0	209,0
82955	3 G 4	12	13,1	174,0	310,0
82956	4 G 4	12	14,4	230,0	456,0
82957	5 G 4	12	15,8	273,0	532,0
82958	7 x 4	12	17,6	316,0	737,0
82949	2 G 6	10	14,2	173,0	318,0
82950	3 G 6	10	15,1	240,0	411,0
82951	4 G 6	10	16,5	305,0	572,0
82952	5 G 6	10	18,3	439,0	732,0
82953	7 G 6	10	20,9	505,0	961,0
82945	3 G 10	8	19,1	350,0	741,0
82946	4 G 10	8	21,1	535,0	988,0
82947	5 G 10	8	23,6	592,0	1202,0
82948	7 G 10	8	26,4	810,0	1743,0
82941	3 G 16	6	24,3	585,0	1088,0
82942	4 G 16	6	27,5	740,0	1662,0

Prices on request.

Continuation ▶

JZ-602-CY EMC-preferred type, 90°C 600V, screened two approvals control cable, oil resistant, meter marking



Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
82943	5 G 16	6	31,2	895,0	2021,0
82944	7 G 16	6	34,1	1282,0	2720,0
82937	3 G 25	4	29,9	1070,0	1947,0
82938	4 G 25	4	32,9	1140,0	2591,0
82939	5 G 25	4	36,4	1380,0	3197,0
82940	7 G 25	4	39,0	1870,0	4550,0
82934	3 G 35	2	32,8	1240,0	2701,0
82935	4 G 35	2	36,3	1576,0	3277,0
82936	5 G 35	2	39,9	1930,0	4530,0
82488	3 G 50	1	35,0	1675,0	2870,0
82780	4 G 50	1	41,0	2155,0	3960,0
82781	5 G 50	1	44,4	2794,0	4371,0
82782	3 G 70	2/0	41,4	2288,0	3647,0
82783	4 G 70	2/0	46,7	3120,0	4882,0
82914	5 G 70	2/0	50,6	3705,0	5876,0
82915	3 G 95	3/0	46,2	3010,0	4751,0
82916	4 G 95	3/0	51,2	4043,0	6368,0
82917	5 G 95	3/0	56,1	5026,0	7843,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
82918	3 G 120	4/0	52,0	3812,0	5899,0
82919	4 G 120	4/0	58,7	5069,0	8010,0
82920	5 G 120	4/0	62,7	5877,0	9205,0

Prices on request.

Dimensions and specifications may be changed without prior notice. (RN01)



Photo: REpower



JZ-603 <VDE><HAR> H05VV5-F 4 G 0,5 QMM AWM STYLE 2587 20AWG 4C VW-1 LL113926 CSA
AWM I/II A/B 90°C 600V FT1 CCC A014024 HELUKABEL GMBH 60227IEC75(RVVY) 300/500V GOST-R / 83651



Technical data

- Special PVC control cable with oil resistant outer sheath to DIN VDE 0281 part 13, HD 21.13 S1 and to UL-Style 2587
- **Temperature range**
flexing
-5 °C to +70 °C (HAR)
-5 °C to +90 °C (UL+CSA)
fixed installation
-40 °C to +70 °C (HAR)
-40 °C to +90 °C (UL+CSA)
- **Nominal voltage**
U₀/U 300/500 V (HAR)
U 600 V (UL+CSA)
- **Test voltage** 3000 V
- **Breakdown voltage** min. 6000 V
- **Insulation resistance**
min. 20 MΩm x km
- **Minimum bending radius**
flexing 7,5x cable ø
fixed installation 4x cable ø
- **Radiation resistance**
up to 80x10⁶ cJ/kg (up to 80 Mrad)

Cable structure

- Bare copper, fine wire conductors to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Special PVC core insulation T11, to DIN VDE 0281 part 1, HD 21.1S2 and class 43 to UL-Std. 1581
- Black cores with white continuous numbering according to DIN VDE 0293
- Green-yellow earth core in the outer layer
- Cores stranded in layers with optimal lay-length
- Special PVC outer sheath TM5 oil resistant, to DIN VDE 0281 part 1, HD 21.1 S4 and class 43 to UL-Std. 1581
- Colour grey (RAL 7001)
- with meter marking, change-over in 2011

Properties

- Oil resistant as per HD/EN 60811-2-1, UL 1581 part 50.182
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B), UL-VW1.
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Note

- G = with green-yellow earth core;
x = without green-yellow earth core (OZ).
- AWG sizes are approximate equivalent values. The actual cross-section is in mm².
- The following amendments in the cable designation result from the new DIN VDE 0281 part 13 / harmonised in accordance with HD 21.13S1: NYSLYÖ-J (new: H05VV5-F) and NYSLYCYÖ-J (new: H05VVC4V5-K). SEV-approval is no longer applicable as a result of the harmonisation.
- **screened analogue type:**
JZ-603-CY

Application

UL-CSA-HAR approved cables offer any company exporting anywhere in the world, primarily designed for exporters, used in machine tools, control systems, assembly lines and other industrial equipment. These cables are suitable for flexible use for medium mechanical stresses with free movements in dry, moist and wet rooms but not for open air.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
83704	2 x 0,5	20	5,8	9,6	52,0	83679	34 G 1	18	20,3	326,0	742,0
83650	3 G 0,5	20	6,1	14,0	63,0	83680	41 G 1	18	22,4	394,0	885,0
83651	4 G 0,5	20	6,7	19,0	69,0	83681	50 G 1	18	24,3	480,0	1071,0
83652	5 G 0,5	20	7,3	24,0	87,0	83682	61 G 1	18	26,8	586,0	1265,0
83653	7 G 0,5	20	8,8	34,0	119,0	83707	2 x 1,5	16	7,4	28,8	91,0
83654	12 G 0,5	20	11,1	58,0	198,0	83683	3 G 1,5	16	8,0	43,0	110,0
83655	18 G 0,5	20	12,9	86,0	266,0	83684	4 G 1,5	16	8,7	58,0	141,0
83656	25 G 0,5	20	16,0	120,0	380,0	83685	5 G 1,5	16	9,8	72,0	167,0
83657	34 G 0,5	20	17,7	163,0	508,0	83686	7 G 1,5	16	11,9	101,0	225,0
83658	41 G 0,5	20	19,5	197,0	594,0	83687	12 G 1,5	16	14,5	173,0	361,0
83659	50 G 0,5	20	21,3	240,0	715,0	83688	18 G 1,5	16	17,4	259,0	518,0
83660	61 G 0,5	20	23,8	293,0	840,0	83689	25 G 1,5	16	21,3	360,0	730,0
83705	2 x 0,75	19	6,1	14,4	66,0	83690	34 G 1,5	16	24,1	490,0	945,0
83661	3 G 0,75	19	6,5	22,0	76,0	83691	41 G 1,5	16	26,2	591,0	1135,0
83662	4 G 0,75	19	7,1	29,0	85,0	83692	50 G 1,5	16	28,8	720,0	1381,0
83663	5 G 0,75	19	7,9	36,0	113,0	83693	61 G 1,5	16	31,5	878,0	1640,0
83664	7 G 0,75	19	9,5	50,0	144,0	83708	2 x 2,5	14	9,1	48,0	125,0
83665	12 G 0,75	19	11,6	86,0	245,0	83694	3 G 2,5	14	9,9	72,0	169,0
83666	18 G 0,75	19	13,9	130,0	327,0	83695	4 G 2,5	14	11,0	96,0	209,0
83667	25 G 0,75	19	17,1	180,0	466,0	83696	5 G 2,5	14	12,0	120,0	256,0
83668	34 G 0,75	19	19,1	245,0	626,0	83697	7 G 2,5	14	14,6	168,0	340,0
83669	41 G 0,75	19	20,9	296,0	747,0	83698	12 G 2,5	14	18,1	288,0	579,0
83670	50 G 0,75	19	23,0	360,0	896,0	83699	18 G 2,5	14	22,1	432,0	851,0
83671	61 G 0,75	19	25,3	439,0	1070,0	83700	25 G 2,5	14	26,5	600,0	1175,0
83706	2 x 1	18	6,4	19,2	70,0	83701	34 G 2,5	14	29,9	816,0	1529,0
83672	3 G 1	18	6,8	29,0	88,0	83702	50 G 2,5	14	35,2	1200,0	2290,0
83673	4 G 1	18	7,5	39,0	99,0	83703	61 G 2,5	14	38,4	1464,0	2724,0
83674	5 G 1	18	8,4	48,0	132,0						
83675	7 G 1	18	10,0	67,0	170,0						
83676	12 G 1	18	12,5	115,0	285,0						
83677	18 G 1	18	14,7	173,0	405,0						
83678	25 G 1	18	18,0	240,0	570,0						

Prices on request.

Dimensions and specifications may be changed without prior notice. (RN01)

JZ-603-CY Multi approvals control cable, Cu-screened, EMC-preferred, oil resistant, meter marking



JZ-603-CY <VDE><HAR> H05VVC4V5-K 4 G 0,5 GMM AWM STYLE 2587 20AWG 4C VW-1 LL113926 CSA
AWM I/II A/B 90 C 600V FT1 CCC A014024 HELUKABEL GMBH 60227IEC74(RVVYP) 300/500V GOST-R / 83721



Technical data

- Special PVC control cable with oil resistant outer sheath to DIN VDE 0281 part 13, HD 21.13 S1 and to UL-Style 2587
- **Temperature range**
flexing -5 °C to +70 °C (HAR)
-5 °C to +90 °C (UL+CSA)
fixed installation -40 °C to +70 °C (HAR)
-40 °C to +90 °C (UL+CSA)
- **Nominal voltage**
U₀/U 300/500 V (HAR)
U 600 V (UL+CSA)
- **Test voltage** 3000 V
- **Breakdown voltage** min. 6000 V
- **Insulation resistance**
min. 20MΩm x km
- **Minimum bending radius**
flexing 10x cable ø
fixed installation 5x cable ø
- **Radiation resistance**
up to 80x10⁶ cJ/kg (up to 80 Mrad)
- **Coupling resistance**
max. 250 Ωm/km

Cable structure

- Bare copper, fine wire conductor to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Special PVC core insulation T11, to DIN VDE 0281 part 1, HD 21.1S2 and class 43 to UL-Std. 1581
- Black cores with white continuous numbering according to DIN VDE 0293
- Green-yellow earth core in the outer layer
- Cores stranded in layers with optimal lay-length
- PVC based inner sheath
- Tinned copper braiding screening, 85% coverage
- Special PVC outer sheath TM5, oil resistant to DIN VDE 0281 part 1, HD 21.1 S4 and class 43 to UL-Std. 1581
- Colour grey (RAL 7001)
- with meter marking, change-over in 2011

Properties

- Oil resistant as per DIN EN 60811-2-1, UL 1581 part 50.182
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B) UL VW-1
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Note

- G = with green-yellow earth core;
x = without green-yellow earth core (OZ).
- The following amendments in the cable designation result from the new DIN VDE 0281 part 13 / harmonised in accordance with HD 21.13S1: NYSLYÖ-J (new: H05VV5-F) and NYSLYCÖ-J (new: H05VVC4V5-K). SEV-approval is no longer applicable as a result of the harmonisation.
- **unscreened analogue type:**
JZ-603

Application

UL-CSA-HAR approved cables offer any company exporting anywhere in the world, primarily designed for exporters, used in machine tools, control systems, assembly lines and other industrial equipment. These cables are suitable for flexible use for medium mechanical stresses with free movements in dry, moist and wet rooms but not for open air.

EMC = Electromagnetic compatibility

To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
83709	2 x 0,5	20	8,0	41,0	90,0
83720	3 G 0,5	20	8,3	45,0	105,0
83721	4 G 0,5	20	8,9	54,0	123,0
83722	5 G 0,5	20	9,7	66,0	147,0
83723	7 G 0,5	20	11,2	79,0	195,0
83724	12 G 0,5	20	13,6	137,0	276,0
83725	18 G 0,5	20	15,4	156,0	418,0
83726	25 G 0,5	20	18,6	250,0	504,0
83727	34 G 0,5	20	20,8	316,0	632,0
83728	41 G 0,5	20	22,6	348,0	750,0
83729	50 G 0,5	20	24,8	407,0	968,0
83730	61 G 0,5	20	26,0	520,0	1068,0
83710	2 x 0,75	19	8,3	46,0	101,0
83731	3 G 0,75	19	8,6	57,0	127,0
83732	4 G 0,75	19	9,4	63,0	155,0
83733	5 G 0,75	19	10,1	76,0	180,0
83734	7 G 0,75	19	11,9	100,0	225,0
83735	12 G 0,75	19	14,2	175,0	326,0
83736	18 G 0,75	19	16,6	240,0	457,0
83737	25 G 0,75	19	20,0	306,0	635,0
83738	34 G 0,75	19	22,4	346,0	805,0
83739	41 G 0,75	19	24,0	403,0	908,0
83740	50 G 0,75	19	26,2	470,0	1155,0
83741	61 G 0,75	19	30,0	550,0	1400,0
83711	2 x 1	18	8,6	54,0	113,0
83742	3 G 1	18	9,2	64,0	144,0
83743	4 G 1	18	9,8	76,0	178,0
83744	5 G 1	18	10,7	89,0	205,0
83745	7 G 1	18	12,5	114,0	263,0
83746	12 G 1	18	15,1	186,0	424,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
83747	18 G 1	18	17,3	284,0	560,0
83748	25 G 1	18	21,1	387,0	760,0
83749	34 G 1	18	23,5	500,0	945,0
83750	41 G 1	18	25,5	578,0	1151,0
83751	50 G 1	18	27,6	681,0	1300,0
83752	61 G 1	18	32,4	710,0	1500,0
83712	2 x 1,5	16	9,6	64,0	144,0
83753	3 G 1,5	16	10,1	82,0	160,0
83754	4 G 1,5	16	11,0	99,0	210,0
83755	5 G 1,5	16	12,3	123,0	240,0
83756	7 G 1,5	16	14,2	148,0	305,0
83757	12 G 1,5	16	17,1	274,0	482,0
83758	18 G 1,5	16	20,0	386,0	611,0
83759	25 G 1,5	16	24,0	531,0	950,0
83760	34 G 1,5	16	27,1	671,0	1200,0
83761	41 G 1,5	16	29,7	840,0	1400,0
83762	50 G 1,5	16	31,8	997,0	1665,0
83763	61 G 1,5	16	34,6	1120,0	1852,0
83713	2 x 2,5	14	11,4	110,0	189,0
83764	3 G 2,5	14	12,0	148,0	244,0
83765	4 G 2,5	14	13,4	169,0	296,0
83766	5 G 2,5	14	14,6	220,0	367,0
83767	7 G 2,5	14	17,2	284,0	478,0
83768	12 G 2,5	14	21,2	470,0	622,0
83769	18 G 2,5	14	24,8	572,0	1010,0
83770	25 G 2,5	14	29,8	740,0	1375,0
83771	34 G 2,5	14	33,4	1179,0	1893,0
83772	50 G 2,5	14	39,0	1660,0	2666,0
83773	61 G 2,5	14	41,0	1992,0	3077,0

Prices on request.

Dimensions and specifications may be changed without prior notice. (RN01)

H07 RN-F rubber-sheathed cable, harmonized type



Technical data

- Rubber sheathed cable H07 RN-F to DIN VDE 0282 part 4, HD 22.4 S4, BS7919 ΔIEC 60245-4
- **Temperature range**
-30 °C to +60 °C
- Permissible **operating temperature** at conductor +60 °C
- **Nominal voltage** U_0/U 450/750 V in case of protected and fixed installation U_0/U 600/1000 V
- Max. permissible **operating voltage** in three phase and one phase a.c. system U_0/U 476/825 V direct current-system U_0/U 619/1238 V
- **Test voltage** 2500 V
- **Permanent tensile load**
max. 15 N/mm²
- **Minimum bending radius**
for fixed installation 4x cable \varnothing
for guiding over roller 7,5x cable \varnothing
during winding on drums 5-7x cable \varnothing

Cable structure

- Copper conductor fine wire stranded, bare to DIN VDE 0295 cl. 5, BS 6360 cl. 5, IEC 60228 cl. 5 and HD 383
- Rubber core insulation EI4 to DIN VDE 0282 part 1
- Insulation thickness to DIN VDE 0282 part 4
- Core identification to DIN VDE 0293-308
- Core colours
- up to 5 cores one-coloured
- 6 and more cores, black with numbering
- 3 and above, with green-yellow earth core
- 2 cores without green-yellow earth core
- Cores stranded in layers with optimal lay-length
- Outer jacket of rubber black, rubber compound to DIN VDE 0282 part 1
- Sheath thickness to DIN VDE 0282 part 4

Properties

- **Resistant to**
Weather
- **Test**
Test according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- Ozone resistant of the insulation to DIN VDE 0472 part 805, test method A or part 805 A1, test method C
- Oil resistant
Test according to EN 60811-2-1

Note

- G = with green-yellow earth core;
x = without green-yellow earth core.
- AWG sizes are approximate equivalent values. The actual cross-section is in mm².
- Further dimensions and cross-sections available on request.
- H07 RN-F = harmonized rubber-sheathed cable, working voltage 750 V, fine stranded.
- The core identification of a single core jacketed, of an insulated wire is black. For application as a protective core, the ends are to be identified with green-yellow and the middle conductor with light blue

Application

Heavy duty rubber-sheathed flexible cables are suited for use for medium mechanical stress in dry, damp and wet areas as well as in open air and in agriculture plants.

They are used for equipment in industry works such as boilers, heating plates, hand lamps, electric tools such as drills, circular saws and homework tools as well as for transportable motors or machines at site.

These cables are also suitable for direct installation on plaster, in temporary buildings and residential barracks. They are suitable for direct laying on components and mechanical parts of machines, for example lifts and cranes.

They can be used in case of protected and fixed installation in tubes or in equipment as well as rotor connecting cable of motors with a working voltage up to 1000 V alternating voltage or a direct voltage up to 750 V against ground. The operating direct voltage is permitted up to 900 V against ground when they are used in rail-coaches. Installation in hazardous areas according to DIN VDE 0165 is allowed.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	Outer \varnothing min. - max. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
37001	1 x 1,5	5,7 - 7,1	14,4	58,0	16
37002	1 x 2,5	6,3 - 7,9	24,0	71,0	14
37003	1 x 4	7,2 - 9,0	38,0	100,0	12
37004	1 x 6	7,9 - 9,8	58,0	130,0	10
37005	1 x 10	9,5 - 11,9	96,0	230,0	8
37006	1 x 16	10,8 - 13,4	154,0	290,0	6
37007	1 x 25	12,7 - 15,8	240,0	420,0	4
37008	1 x 35	14,3 - 17,9	336,0	530,0	2
37009	1 x 50	16,5 - 20,6	480,0	750,0	1
37010	1 x 70	18,6 - 23,3	672,0	960,0	2/0
37011	1 x 95	20,8 - 26,0	912,0	1250,0	3/0
37012	1 x 120	22,8 - 28,6	1152,0	1560,0	4/0
37013	1 x 150	25,2 - 31,4	1440,0	1900,0	300 kcmil
37014	1 x 185	27,6 - 34,4	1776,0	2300,0	350 kcmil
37015	1 x 240	30,6 - 38,3	2304,0	2950,0	500 kcmil
37016	1 x 300	33,5 - 41,9	2880,0	3600,0	600 kcmil
37017	1 x 400	37,4 - 46,8	3840,0	4600,0	750 kcmil
37018	1 x 500	41,3 - 52,0	4800,0	6000,0	1000 kcmil
37019	2 x 1	7,7 - 10,0	19,0	98,0	17
37020	2 x 1,5	8,5 - 11,0	29,0	135,0	16

Part no.	No. cores x cross-sec. mm ²	Outer \varnothing min. - max. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
37021	2 x 2,5	10,2 - 13,1	48,0	193,0	14
37022	2 x 4	11,8 - 15,1	77,0	280,0	12
37023	2 x 6	13,1 - 16,8	115,0	330,0	10
37024	2 x 10	17,7 - 22,6	192,0	586,0	8
37025	2 x 16	20,2 - 25,7	307,0	810,0	6
37026	2 x 25	24,3 - 30,7	480,0	1160,0	4
37027	3 G 1	8,3 - 10,7	29,0	130,0	17
37028	3 G 1,5	9,2 - 11,9	43,0	165,0	16

Prices on request.

Continuation ▶

H07 RN-F rubber-sheathed cable, harmonized type



Part no.	No. cores x cross-sec. mm ²	Outer Ø min. - max. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
37029	3 G 2,5	10,9 - 14,0	72,0	235,0	14
37030	3 G 4	12,7 - 16,2	115,0	320,0	12
37031	3 G 6	14,1 - 18,0	173,0	420,0	10
37032	3 G 10	19,1 - 24,2	288,0	810,0	8
37033	3 G 16	21,8 - 27,6	461,0	1050,0	6
37034	3 G 25	26,1 - 33,0	720,0	1250,0	4
37035	3 G 35	29,3 - 37,1	1008,0	1900,0	2
37036	3 G 50	34,1 - 42,9	1440,0	2600,0	1
37037	3 G 70	38,4 - 48,3	2016,0	3400,0	2/0
37038	3 G 95	43,3 - 54,0	2736,0	4450,0	3/0
37039	3 G 120	47,4 - 60,0	3456,0	5180,0	4/0
37040	3 G 150	52,0 - 66,0	4320,0	6500,0	300 kcmil
37041	3 G 185	57,0 - 72,0	5328,0	7860,0	350 kcmil
37042	3 G 240	65,0 - 82,0	6192,0	10224,0	500 kcmil
37043	3 G 300	72,0 - 90,0	8640,0	12620,0	600 kcmil
37044	4 G 1	9,2 - 11,9	38,0	150,0	17
37045	4 G 1,5	10,2 - 13,1	58,0	200,0	16
37046	4 G 2,5	12,1 - 15,5	96,0	290,0	14
37047	4 G 4	14,0 - 17,9	154,0	395,0	12
37048	4 G 6	15,7 - 20,0	230,0	540,0	10
37049	4 G 10	20,9 - 26,5	384,0	950,0	8
37050	4 G 16	23,8 - 30,1	614,0	1260,0	6
37051	4 G 25	28,9 - 36,6	960,0	1860,0	4
37052	4 G 35	32,5 - 41,1	1344,0	2380,0	2
37053	4 G 50	37,7 - 47,5	1920,0	3190,0	1
37054	4 G 70	42,7 - 54,0	2688,0	4260,0	2/0
37055	4 G 95	48,4 - 61,0	3648,0	5600,0	3/0

Part no.	No. cores x cross-sec. mm ²	Outer Ø min. - max. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
37056	4 G 120	53,0 - 66,0	4608,0	6830,0	4/0
37057	4 G 150	58,0 - 73,0	5760,0	8520,0	300 kcmil
37058	4 G 185	64,0 - 80,0	7104,0	9800,0	350 kcmil
37059	4 G 240	72,0 - 91,0	9216,0	12100,0	500 kcmil
37060	4 G 300	80,0 - 101,0	11520,0	15200,0	600 kcmil
37061	5 G 1,5	11,2 - 14,4	72,0	240,0	16
37062	5 G 2,5	13,3 - 17,0	120,0	345,0	14
37063	5 G 4	15,6 - 19,9	192,0	485,0	12
37064	5 G 6	17,5 - 22,2	288,0	650,0	10
37065	5 G 10	22,9 - 29,1	480,0	1200,0	8
37066	5 G 16	26,4 - 33,3	768,0	1550,0	6
37067	5 G 25	32,0 - 40,4	1200,0	2250,0	4
37068	5 G 35	36,8 - 45,8	1680,0	2750,0	2
37091	5 G 50	40,0 - 50,8	2400,0	3950,0	1
37154	5 G 70	43,8 - 54,0	3360,0	4740,0	1
34090	5 G 95	51,7 - 60,7	4560,0	6600,0	14
34349	5 G 120	59,6 - 68,6	5760,0	8180,0	14
37092	7 G 1,5	14,5 - 17,5	101,0	375,0	16
37079	7 G 2,5	16,5 - 20,0	168,0	520,0	14
37093	12 G 1,5	17,6 - 22,4	175,0	460,0	16
37096	12 G 2,5	20,6 - 26,2	288,0	760,0	14
37097	18 G 2,5	24,4 - 30,9	432,0	850,0	14
37094	19 G 1,5	20,7 - 26,3	274,0	810,0	16
37098	19 G 2,5	25,5 - 31,0	456,0	1075,0	14
37095	24 G 1,5	24,3 - 30,7	346,0	1015,0	16
37099	24 G 2,5	28,8 - 36,4	576,0	1390,0	14

Dimensions and specifications may be changed without prior notice. (RF01)

Prices on request.

H07RN-F/SOOW rubber-sheathed cable, harmonized version



Technical Data

- Rubber-sheathed cable H07RN-F according to VDE 0282 Part 4, HD 22.4 S4
UL - SOOW
CSA - SOOW
- **Temperature range**
HAR -25°C up to +60°C
UL/CSA -40°C up to +90°C
- **Permissible operating temperature**
at the conductor +60°C
- **Nominal voltage**
HAR 450/750 V
UL/CSA 600 V
- **Test voltage** 2500 V
- **Minimum bending radius**
Flexing 10x cable Ø
Fixed installation 7.5x cable Ø

Cable Structure

- Bare copper conductor, fine wire stranded according to DIN VDE 0295 cl. 5, BS 6360 cl. 5, IEC 60228 or HD 383
- Rubber core insulation (EPR)
- Core identification
3 cores: blue, brown, green-yellow
4 cores: brown, black, grey, green-yellow
5 cores: blue, brown, black, grey, green-yellow
- Cores stranded in layers with optimal lay-lengths
- Rubber outer sheath (CPE)
- Sheath colour: black

Properties

- Ozone-resistant
- Weather and UV-resistant
- Resistant to oils and greases

Note

- G = with green-yellow earth core

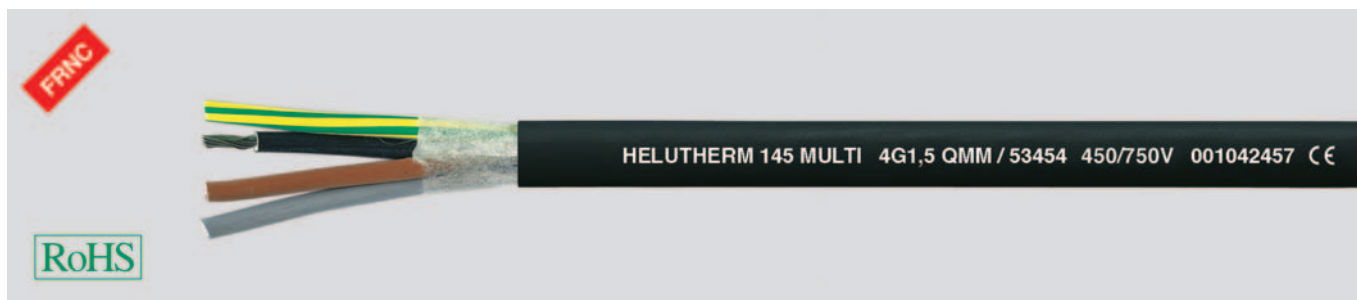
Application

Heavy-duty rubber cable with multiple approvals for installation in almost all machines destined for export markets, in dry, damp, wet environments and outdoors. As a feeder to transportable motors or machines, cranes, hoists, hand lamps and drilling machines. CE = The product conforms to the EG Low-Voltage Directive 2006/95/EG.

Part No.	Number of cores	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
39025	3G1	9,6	29	130
39026	3G1,5	10,2	43	165
39027	4G1,5	11,4	58	200
39028	5G1,5	13,1	72	240
39029	3G2,5	14,0	72	235
39030	4G2,5	15,1	96	290
39031	5G2,5	16,9	120	345
39032	3G4	16,0	115	320
39033	4G4	17,3	154	395
39034	5G4	18,7	192	485
39035	3G6	17,1	173	420
39036	4G6	18,4	230	540
39037	5G6	20,1	288	650
39038	3G10	22,9	288	810
39039	4G10	25,0	384	950

Dimensions and specifications may be changed without prior notice. (RN04)
Prices on request.

HELUTHERM® 145 MULTI flexible, cross-linked, halogen-free, meter marking



Technical data

- Halogen-free control and connecting cable with increased heat resistance
- **Temperature range**
flexing -35 °C to +120 °C
fixed installation -55 °C to +145 °C
in short-circuit +250 °C
- **Nominal voltage**
U₀/U 300/500 V up to 1,0 mm²
U₀/U 450/750 V at 1,5 mm²
with protected fixed installation
U₀/U 600/1000 V at 1,5 mm²
- **Test voltage** 3500 V
- **Minimum bending radius**
for fixed installation 4x cable \varnothing
in operation to -30 °C 12x cable \varnothing
in operation to +60 °C 8x cable \varnothing
- **Caloric load values**
see Technical Informations
- **Power ratings table**
see Technical Informations
- **Approval**
Germanischer Lloyd

Cable structure

- Tinned Cu wires, according to DIN VDE 0295 class 5, BS 6360 cl. 5 and IEC 60228 class 5
- Core insulation of polyolefin-copolymer, cross-linked and halogen-free
- Colour coded to DIN VDE 0293-308 and as of 6 cores number coded
- For two cores: brown, blue
- Green-yellow earth core as of 3 cores
- Cores stranded in layers with optimal lay-length
- Taping/Mica-Tape
- Polyolefin-Copolymer, cross-linked and halogen-free outer sheath
- Colour black
- with meter marking, change-over in 2011
- Different insulation- and outer sheath in other colours available on request.

Properties

- Reduced flame propagation
- Good abrasion and notch resistance
- Good resistance to oils and weathering
- Resistant to UV radiation and ozone
- Resistant to soldering temperatures
- Thermal class B
- Are resistant to melting, even when in contact with a temperatures of between 300 °C and 380 °C, because of the cross-linking for the insulation material
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Tests

- Flame test (unit flame test) to VDE 0482-332-3, BS 4066 part 3/ DIN EN 60332-3-22, IEC 60332-3-22 (equivalent DIN VDE 0472 part 804 test method C)
- Flame test (cable) to VDE 0482-332-1-2, DIN EN 60332-1-2, IEC 60332-1-2 (equivalent DIN VDE 0472 part 804 test method B)
- Corrosiveness of combustion gases according to VDE 0482 part 267/ DIN EN 50267-2-2/ IEC 60754-2 (equivalent DIN VDE 0472 part 813)
- Halogen-free according to DIN VDE 0482 part 267/ EN 50267-2-1/ IEC 60754-1 (equivalent DIN VDE 0472 part 815)
- Smoke density to VDE 0482 part 268-1 and 2, test method C, IEC 61034-1/61034-2, HD 606 and BS 7622 part 1 and 2 (DIN VDE 0472 part 816)

Note

- G = with green-yellow earth core
x = without green-yellow earth core
- **screened analogue type:**
HELUTHERM® 145 MULTI-C

Application

These halogen-free, cross-linked and temperature resistant wiring and control cables with enhanced fire-behaviour properties are used for wiring up the lighting fixtures, heaters, electric machines (temperature class B), switching systems and distribution switchboards. A very long service life is also given on account of their excellent high-temperature stability. These cables exhibit good resistance to weathering as well as being very stable to temperature, moisture, ozone and UV radiation. These cables are therefore mainly used for traffic control systems and diverse outdoor applications. The development of smoke is low and no corrosive gases are liberated during combustion of these halogen-free cables in case of fire. The risk of toxic fumes is considerably less in the event of fire because the caloric load values is lower. Precious time can thus be won for a disciplined evacuation, and unnecessary loss of life can be prevented. The extent of the damage to costly control and monitoring systems and the concrete and steel structures of buildings and plant due to fire is reduced by this. Injuries to persons and damage to materials can be prevented. A lower conductor cross-section is possible in certain circumstances because of the high thermal load and thus savings in the space and weight required can be made. These wiring and control cables provide a significant contribution in safety engineering and environmental protection.

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	Outer \varnothing approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
53376	1 x 0,25	2,9	2,4	11,4	24
53377	2 x 0,25	4,6	4,8	28,7	24
53378	3 G 0,25	4,9	7,2	33,7	24

Part no.	No. cores x cross-sec. mm ²	Outer \varnothing approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
53379	4 G 0,25	5,5	9,6	41,8	24
53380	5 G 0,25	5,8	12,0	47,0	24
53381	6 G 0,25	6,5	14,4	58,0	24

Prices on request.

Continuation ►

HELUTHERM® 145 MULTI-C flexible, cross-linked, halogen-free, Cu-screened, EMC-preferred type, meter marking



Technical data

- Halogen-free control and connecting cable with increased heat resistance
- **Temperature range**
flexing -35 °C to +120 °C
fixed installation -55 °C to +145 °C
in short-circuit +250 °C
- **Nominal voltage**
U₀/U 300/500 V up to 1,0 mm²
U₀/U 450/750 V at 1,5 mm²
with protected fixed installation
U₀/U 600/1000 V at 1,5 mm²
- **Test voltage** 3500 V
- **Minimum bending radius**
for fixed installation 4x cable ø
in operation to -30 °C 12x cable ø
in operation to +60 °C 8x cable ø
- **Coupling resistance**
max. 250 Ohm/km
- **Caloric load values**
see Technical Informations
- **Power ratings table**
see Technical Informations
- **Approval**
Germanischer Lloyd

Cable structure

- Tinned copper conductor, fine wire stranded according to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Core insulation of polyolefin-copolymer, cross-linked and halogen-free
- Black cores with continuous white numbering
- Cores stranded in layers with optimal lay-length
- Braided screen of tinned Cu wires, coverage approx. 85%
- Polyolefin-Copolymer, cross-linked and halogen-free outer sheath
- Colour black
- with meter marking, change-over in 2011
- Different insulation- and outer sheath in other colours available on request

Note

- **unscreened analogue type:**
HELUTHERM® 145 MULTI

Properties

- Lower propagation of fire
- Low development of smoke and fumes
- Good abrasion and notch resistance
- Good resistance to oils and weathering
- Resistant to UV radiation and ozone
- Resistant to soldering temperatures
- Thermal class B
- These control cables are resistant to melting, even when in contact with a soldering iron at temperatures of between 300 °C and 380 °C, because of the cross-linking for the insulation material
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Tests

- **Flame test** (unit flame test) to VDE 0482-332-3, BS 4066 part 3/ DIN EN 60332-3-22, IEC 60332-3-22 (equivalent DIN VDE 0472 part 804 test method C)
- **Flame test** (cable) to VDE 0482-332-1-2, DIN EN 60332-1-2, IEC 60332-1-2 (equivalent DIN VDE 0472 part 804 test method B)
- **Corrosiveness of combustion gases**
according to VDE 0482 part 267/ DIN EN 50267-2-2/ IEC 60754-2 (equivalent DIN VDE 0472 part 813)
- **Halogen-free** according to VDE 0482 part 267/ DIN EN 50267-2-1/ IEC 60754-1 (equivalent DIN VDE 0472 part 815)
- **Smoke density** to VDE 0482 part 268-1 and 2, test method C, IEC 61034-1/61034-2, HD 606 and BS 7622 part 1 and 2 (DIN VDE 0472 part 816)

Application

These halogen-free, cross-linked and temperature resistant wiring and control cables with enhanced fire-behaviour properties are used for wiring up the lighting fixtures, heaters, electric machines (temperature class B), switching systems and distribution switchboards. A very long service life is also given on account of their excellent high-temperature stability.

These cables exhibit good resistance to weathering as well as being very stable to temperature, moisture, ozone and UV radiation. These cables are therefore mainly used for traffic control systems and diverse outdoor applications. The development of smoke is low and no corrosive gases are liberated during combustion of these halogen-free cables in case of fire. The risk of toxic fumes is considerably less in the event of fire because the caloric load values is lower. Precious time can thus be won for a disciplined evacuation, and unnecessary loss of life can be prevented. The extent of the damage to costly control and monitoring systems and the concrete and steel structures of buildings and plant due to fire is reduced by this. Injuries to persons and damage to materials can be prevented. A lower conductor cross-section is possible in certain circumstances because of the high thermal load and thus savings in the space and weight required can be made. These wiring and control cables provide a significant contribution in safety engineering and environmental protection.

EMC = Electromagnetic compatibility

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
52194	2 x 0,25	5,0	16,0	36,0	24

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
52195	3 x 0,25	5,5	21,0	44,0	24

Prices on request.

Continuation ►

HELUTHERM® 145 MULTI-C flexible, cross-linked, halogen-free,



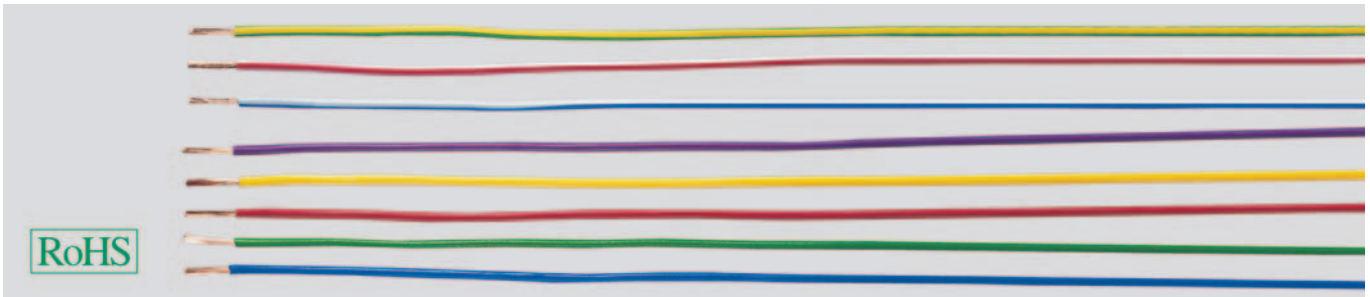
Cu-screened, EMC-preferred type, meter marking

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
52196	5 x 0,25	6,4	29,0	68,0	24
52197	7 x 0,25	7,5	37,0	95,0	24
52198	1 x 0,5	3,7	15,0	24,0	20
52199	2 x 0,5	5,6	29,0	55,0	20
52200	3 x 0,5	6,1	38,0	64,0	20
52201	4 x 0,5	6,7	45,0	78,0	20
52202	5 x 0,5	7,3	51,0	95,0	20
52203	6 x 0,5	7,9	66,0	106,0	20
52204	7 x 0,5	8,4	68,0	122,0	20
52205	8 x 0,5	9,0	80,0	158,0	20
52206	10 x 0,5	10,0	93,0	161,0	20
52207	12 x 0,5	10,0	107,0	170,0	20
52208	14 x 0,5	11,0	122,0	193,0	20
52209	16 x 0,5	11,7	129,0	216,0	20
52210	19 x 0,5	12,8	158,0	253,0	20
52211	21 x 0,5	13,5	167,0	281,0	20
52212	1 x 0,75	4,0	18,0	29,0	18
52213	2 x 0,75	6,6	38,0	71,0	18
52214	3 x 0,75	6,9	50,0	82,0	18
52215	4 x 0,75	7,6	58,0	100,0	18
52216	5 x 0,75	8,3	70,0	117,0	18
52217	6 x 0,75	8,9	85,0	135,0	18
52218	7 x 0,75	9,9	90,0	158,0	18
52219	8 x 0,75	10,6	110,0	178,0	18
52220	10 x 0,75	11,5	140,0	207,0	18
52221	12 x 0,75	11,5	148,0	220,0	18
52222	14 x 0,75	12,2	167,0	250,0	18
52223	16 x 0,75	12,9	183,0	282,0	18
52224	19 x 0,75	14,5	212,0	335,0	18
52225	21 x 0,75	15,3	230,0	370,0	18
52226	1 x 1	4,2	20,0	33,0	17
52227	2 x 1	7,0	31,0	78,0	17
52228	3 x 1	7,4	56,0	92,0	17
52229	4 x 1	8,1	66,0	112,0	17
52230	5 x 1	8,9	95,0	134,0	17
52231	6 x 1	9,5	105,0	164,0	17
52232	7 x 1	10,5	109,0	192,0	17
52233	8 x 1	11,4	130,0	219,0	17
52234	10 x 1	12,5	138,0	254,0	17
52235	12 x 1	12,5	164,0	270,0	17
52236	14 x 1	13,5	198,0	308,0	17
52237	16 x 1	14,3	203,0	350,0	17
52238	19 x 1	16,2	235,0	447,0	17
52239	21 x 1	17,0	257,0	492,0	17
52240	1 x 1,5	4,8	22,0	42,0	16

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
52241	2 x 1,5	8,2	58,0	105,0	16
52242	3 x 1,5	8,7	71,0	121,0	16
52243	4 x 1,5	9,4	86,0	156,0	16
52244	5 x 1,5	10,5	104,0	188,0	16
52245	6 x 1,5	11,5	118,0	225,0	16
52246	7 x 1,5	12,6	136,0	264,0	16
52247	8 x 1,5	13,7	172,0	308,0	16
52248	10 x 1,5	15,0	193,0	361,0	16
52249	12 x 1,5	15,0	222,0	383,0	16
52250	14 x 1,5	16,0	272,0	458,0	16
52251	16 x 1,5	17,0	285,0	515,0	16
52252	19 x 1,5	19,3	331,0	639,0	16
52253	21 x 1,5	20,3	367,0	705,0	16
52254	1 x 2,5	5,6	28,0	59,0	14
52255	2 x 2,5	9,8	96,0	148,0	14
52256	3 x 2,5	10,4	146,0	183,0	14
52257	4 x 2,5	11,5	150,0	221,0	14
52258	5 x 2,5	12,6	200,0	273,0	14
52259	6 x 2,5	13,8	227,0	326,0	14
52260	7 x 2,5	15,3	255,0	397,0	14
52261	8 x 2,5	16,5	265,0	475,0	14
52262	10 x 2,5	18,3	326,0	542,0	14
52263	12 x 2,5	18,3	376,0	582,0	14
52264	14 x 2,5	19,6	428,0	681,0	14
52265	16 x 2,5	20,7	480,0	778,0	14
52266	19 x 2,5	23,5	557,0	948,0	14
52267	21 x 2,5	24,4	606,0	1042,0	14
52268	1 x 4	6,3	56,0	86,0	12
52269	2 x 4	10,9	135,0	196,0	12
52270	3 x 4	11,5	178,0	248,0	12
52271	4 x 4	12,8	220,0	316,0	12
52272	5 x 4	14,3	259,0	376,0	12
52273	6 x 4	15,6	302,0	452,0	12
52274	7 x 4	17,0	355,0	555,0	12
52275	8 x 4	18,3	392,0	655,0	12
52276	10 x 4	20,7	480,0	767,0	12
52277	12 x 4	20,7	557,0	829,0	12
52278	14 x 4	22,1	636,0	948,0	12
52279	1 x 6	6,9	81,0	108,0	10
52280	2 x 6	12,1	175,0	255,0	10
52281	3 x 6	12,8	240,0	330,0	10
52282	4 x 6	14,3	305,0	429,0	10
52283	5 x 6	16,0	441,0	536,0	10
52284	6 x 6	17,4	473,0	624,0	10
52285	7 x 6	19,3	505,0	751,0	10
52286	1 x 10	8,4	124,0	170,0	8
52287	2 x 10	15,1	265,0	409,0	8
52288	3 x 10	16,4	370,0	550,0	8
52289	4 x 10	18,1	485,0	715,0	8
52290	5 x 10	20,2	610,0	882,0	8
52291	6 x 10	22,3	715,0	1026,0	8
52292	7 x 10	24,3	820,0	1195,0	8

Dimensions and specifications may be changed without prior notice. (RE01)

Prices on request.



Technical data

- PVC single cores to DIN VDE 0281 part 3, HD 21.3 S3 and IEC 60227-3
- **Temperature range**
flexing -5 °C to +70 °C
fixed installation -30 °C to +80 °C
- **Nominal voltage** U_0/U 450/750 V
- **Test voltage** 2500 V
- **Insulation resistance**
min. 10 MΩm x km
- **Minimum bending radius**
12,5 to 15x cable ø
- **Radiation resistance**
up to 80x10⁶ cJ/kg (up to 80 Mrad)

Cable structure

- Bare copper fine wire stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5, HD 383 and IEC 60228 cl. 5
- PVC core insulation, compound T11 to DIN VDE 0281 part 3, HD 21.3 S3 and IEC 60227-3
- Core colours see below
- **Core identification with nominal voltage U_0/U 450/750 V**
- The following colours are recommended (only single colour): black, white, blue, grey, brown, red, orange, turquoise, violet and pink. Two-coloured combinations are not allowed, with exceptions of green-yellow.
- **Colour code Single core cables H07 see Technical Informations**

Properties

- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Note

- Colours yellow, green, transparent only in (H)07 V-K available.
- Two-coloured combination is only permitted for (H)07 V-K.

Application

These insulated wires are suitable for laying in tubes, under and surface mounting of plasters and also in closed installation conduits. These are not allowed to install for direct laying on cable trays, channels or tanks. These types are permitted for the inner wiring of equipment, distributor and switchboards and also for protective laying to the lightings with a nominal voltage up to 1000 V alternating current or up to 750 V direct current against earth.

☑= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Depending on the cross-section, this finely stranded single conductor is available in different colours and put-ups.

Put-ups: Ring in carton or foil, barrels, spools and reels.

Colours: black-white, green-yellow, blue, brown, red, white, grey, violet, yellow, rose, green, trans, dark-blue, orange, ultramarine blue.

Put-ups:



Spool
1,5 mm² to 6 mm²



Barrel
1,5 mm² to 6 mm²



Coil in carton
1,5 mm² to 6 mm²

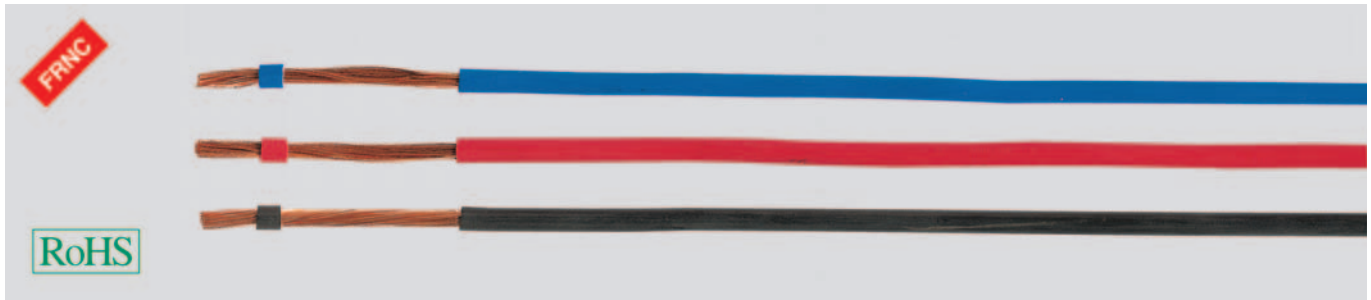


Coil in foil
1,5 mm² to 240 mm²



Reel
10 mm² to 240 mm²

H05Z-K / H07Z-K rubber insulated single core, halogen-free



Technical data

- Rubber-insulated single core cables for low emission of smoke and corrosive gases in case of fire to VDE 0282 part 9 and HD 22.9 S2
- **Conductor resistance** according to DIN VDE 0295 cl. 5
- **Temperature range** -40 °C to +90 °C
- Permissible **working temperature** at the conductor +90 °C
- **Nominal voltage**
H05Z-K U₀/U 300/500 V
H07Z-K U₀/U 450/750 V
- **Test voltage** 2500 V
- **Minimum bending radius** approx. 8x core ø
- **Radiation resistance** up to 20x10⁶ cJ/kg (up to 20 Mrad)

Cable structure

- Bare copper conductor, finewire stranded according to DIN VDE 0295 cl. 5, BS 6360 cl. 5, IEC 60228, HD 383
- Core identification according to DIN VDE 0293
- Separator over conductor permitted
- Core insulation of cross-linked polyolefin, compound type EI5 to DIN VDE 0282 part 1
- Core colors see table below, dark blue and orange on request
- **LSOH** = Low Smoke Zero Halogen-free.

Properties

- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Tests

- self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- Ozone resistant according to EN 60811-2-1 / HD 505.2.1
- Smoke density according to VDE 0482 part 1034-1+2, DIN EN 61034-1+2/ IEC 61034-1+2, BS 7622 part 1+2 (equivalent DIN VDE 0472 part 816)

Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm².

Application

Halogen-free single-core wires are used for installation in dry environments for wiring up lighting fixtures and units where valuable assets are to be protected from further damage resulting from fire. These cables may be installed on, in and beneath plaster, as well as in closed installation ducts. The direct operating voltage is permitted up to 900 V against ground when they are used in rail-coaches. For the inner wiring of switch boards and distributors are to be used with an alternating nominal voltage up to 1000 V or a direct voltage up to 750 V against ground.

☑ The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Depending on the cross-section, this finely stranded single conductor is available in different colours and put-ups.

Put-ups: Ring in carton or foil, barrels, spools and reels.

Colours: black-white, green-yellow, brown, red, white, grey, violet, yellow, dark-blue, ultramarine blue

Put-ups:



Spool
0,5 mm² to 6mm²



Barrel
0,5 mm² to 6 mm²



Coil in carton
0,5 mm² to 6 mm²



Coil in foil
0,5 mm² to 240 mm²



Reel
10 mm² to 240 mm²

FIVENORM HAR-UL-CSA-AWM-MTW, PVC single core, UL-Style

10269/UL-Standard 1063, 600V, 105°C



Technical data

- PVC-single cores according to DIN VDE 0281 part 7 and HD 21.7 S2, UL-Std. 1063, UL-Style 10269 and CSA-TEW and CSA-AWM I/A/B
- **Temperature range**
H05 V2-K/H07 V2-K
flexing +5 °C to +90 °C
fixed installation -40 °C to +90 °C
UL (AWM) -40 °C to +105 °C
UL (MTW) -40 °C to +90 °C
CSA (TEW) -40 °C to +105 °C
- **Nominal voltage**
H05 V2-K: U₀/U 300/500 V (up to 1 mm²)
H07 V2-K: U₀/U 450/750 V (1,5 mm²)
UL (AWM) U 1000 V
UL (MTW) U 600 V
CSA (TEW) U 600 V
- **Test voltage**
H05 V2-K/H07 V2-K 2000 V
- **Spark Test**
AWG 20: 5 kV
>AWG 20: 6 kV
- **Insulation resistance**
min. 20 MΩm x km
- **Minimum bending radius**
for permanent bending
ca. 10-15 core ø

Cable structure

- Bare copper fine wire stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5, HD 383 and IEC 60228 cl. 5 and UL-Subject 758 Section G
- PVC core insulation TI3 to DIN VDE 0281 part 1 and UL-Std. 1581, class 43, CSA-C 22.2 No. 210 Tab. 12 class H
- Core colours to DIN VDE 0293
- 2-colour combination - Part No. on request

Properties

- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B), UL VW-1, CSA FT1
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Note

- Tinned conductor on request.
- The cross-sections 0,5 mm², 0,75 mm² and 1,0 mm² are according to H05 V2-K, the cross-sections 1,5 up to 35 mm² according to H07 V2-K, the cross-sections >35 mm² are identified as H07 V-K.
- Cross-sections up to 35 mm² is according to DIN VDE 0281 part 7. Due to this cross-section >35 mm² is the type but with an increased heat-resistant PVC-compound.
- **Type H05 V:**
approved one-colour mark: black, blue, brown, grey, orange, pink, red, turquoise, violet, white, green and yellow.
Two-coloured mark in any combination of the above individual colours.
- **Type H07 V:**
approved mark: black, blue, brown, grey, orange, pink, red, turquoise, violet, white and green-yellow.
Other marks are available as (H).

Application

Five norms approved connecting jumper wire primarily designed for exportes, used in machine tools. The approbation of HAR, UL-AWM, UL-MTW, CSA-AWM, CSA-Equipment-wire make possible an economical storekeeping and simplification of parts list.

☞ The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Cross-sec. mm ² / AWG-no.	Outer Ø app. mm	Cop. weight kg / km	black 9005	blue 5015	brown 8003	red 3000	white 1013	grey 7000	vio 4005	pink 3015	og 2003	green 6018	ye 1021	gn-ye -	2-col -	dk-bu 5010	trans -	o.col. -
approx. RAL																		
Part no. 0,5 / 20	2,5	5,2	64075	64077	64078	64079	64080	64081	64082	64084	64088	64085	64083	64076	64090	64087	64086	64089
Part no. 0,75 / 19	2,65	7,2	64091	64093	64094	64095	64096	64097	64098	64100	64104	64101	64099	64092	64106	64103	64102	64105
Part no. 1 / 18	2,8	9,6	64107	64109	64110	64111	64112	64113	64114	64116	64120	64117	64115	64108	64122	64119	64118	64121
Part no. 1,5 / 16	3,05	14,4	64123	64125	64126	64127	64128	64129	64130	64132	64136	64133	64131	64124	64138	64135	64134	64137
Part no. 2,5 / 14	3,6	24,0	64139	64141	64142	64143	64144	64145	64146	64148	64152	64149	64147	64140	64154	64151	64150	64153
Part no. 4 / 12	4,1	38,0	64155	64157	64158	64159	64160	64161	64162	64164	64168	64165	64163	64156	64170	64167	64166	64169
Part no. 6 / 10	4,8	58,0	64171	64173	64174	64175	64176	64177	64178	64180	64184	64181	64179	64172	64186	64183	64182	64185
Part no. 10 / 8	6,4	96,0	64187	64189	64190	64191	64192	64193	64194	64196	64200	64197	64195	64188	64202	64199	64198	64201
Part no. 16 / 6	8,1	154,0	64203	64205	64206	64207	64208	64209	64210	64212	64216	64213	64211	64204	64218	64215	64214	64217
Part no. 25 / 4	9,6	240,0	64219	64221	64222	64223	64224	64225	64226	64228	64232	64229	64227	64220	64234	64231	64230	64233
Part no. 35 / 2	10,8	336,0	64235	64237	64238	64239	64240	64241	64242	64244	64248	64245	64243	64236	64250	64247	64246	64249
Part no. 50 / 1	13,6	480,0	64251	64253	64254	64255	64256	64257	64258	64260	64264	64261	64259	64252	64266	64263	64262	64265
Part no. 70 / 2/0	15,2	672,0	64267	64269	64270	64271	64272	64273	64274	64276	64280	64277	64275	64268	64282	64279	64278	64281
Part no. 95 / 3/0	16,8	912,0	64283	64285	64286	64287	64288	64289	64290	64292	64296	64293	64291	64284	64298	64295	64294	64297
Part no. 120 / 4/0	19,5	1152,0	64299	64301	64302	64303	64304	64305	64306	64308	64312	64309	64307	64300	64314	64311	64310	64313
Part no. 150 / 300 kcmil	22,2	1440,0	64315	64317	64318	64319	64320	64321	64322	64324	64328	64325	64323	64316	64330	64327	64326	64329

Dimensions and specifications may be changed without prior notice.
Prices on request.



Technical data

- Halogen-free single cores with increased heat resistance
- **Temperature range**
flexing -35 °C to +120 °C
fixed installation -55 °C to +145 °C
- **Nominal voltage**
U₀/U 300/500 V up to 1 mm²
U₀/U 450/ 750 V from 1,5 mm²
for fixed and protected installation
U₀/U 600/1000 V from 1,5 mm²
- **Test voltage** 3500 V
- **Minimum bending radius**
flexing 12,5x cable ø
fixed installation 4x cable ø
- **Caloric load values**
see Technical Informations
- **Power ratings table**
see Technical Informations
- **Approval**
Germanischer Lloyd

Cable structure

- Tinned Cu wires, according to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Core insulation of polyolefin-copolymer, cross-linked
- Core colours see table

Tests

- **Flame test (unit flame test)** to VDE 0482-332-3, BS 4066 part 3/ DIN EN 60332-3-22, IEC 60332-3-22 (equivalent DIN VDE 0472 part 804 test method C)
- **Flame test (cable)** to VDE 0482-332-1-2, DIN EN 60332-1-2, IEC 60332-1-2 (equivalent DIN VDE 0472 part 804 test method B)
- **Corrosiveness of combustion gases** according to VDE 0482 part 267/ DIN EN 50267-2-2/ IEC 60754-2 (equivalent DIN VDE 0472 part 813)
- **Halogen-free** according to VDE 0482 part 267/ DIN EN 50267-2-1/ IEC 60754-1 (equivalent DIN VDE 0472 part 815)
- **Smoke density** to VDE 0482 part 268-1 and 2, test method C, IEC 61034-1/61034-2, HD 606 and BS 7622 part 1 and 2 (DIN VDE 0472 part 816)

Properties

- Lower propagation of fire
- Low development of smoke and fumes
- Good abrasion and notch resistance
- Good resistance to oils and weathering
- Resistant to UV radiation and ozone
- Resistant to soldering temperatures
- Thermal class B
- These single-core cables are resistant to melting, even when in contact with a soldering iron at temperatures of between 300 °C and 380 °C, because of the cross-linking for the insulation material
- Due to the high temperature profile the cross-section of conductor can under certain circumstances be reduced, hereby enabling a saving in space requirement and weight
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

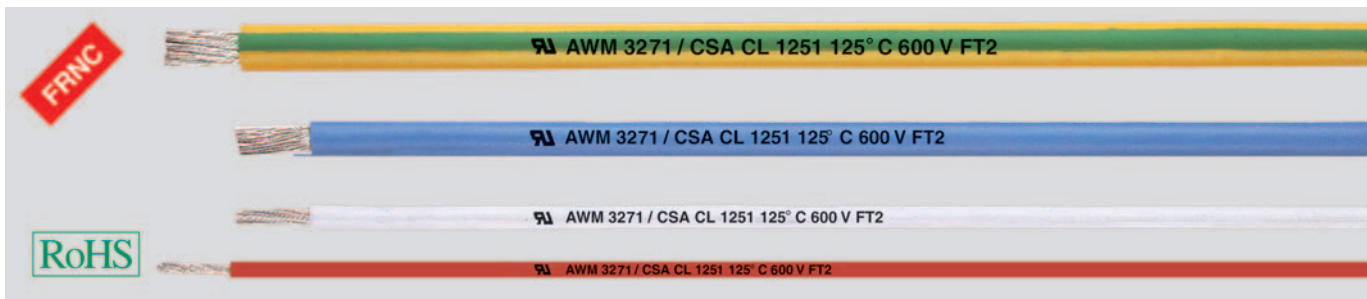
Application

These temperature resistant single-core cables are used for the internal wiring of lighting fixtures, heaters, electrical machinery, switching systems and distributors in equipment and plant and machinery, suitable for installation on, in and beneath plaster, in closed installation ducts, as well as for traffic systems and outdoor applications. These cables are not approved for direct routing on racks, gutters or tanks. For a protected installation, these cables may be used at a nominal voltage of up to 1000 V alternating current or a direct current up to 750 V when earthed. The maximum operating d.c. voltage used in rail vehicles shall not exceed 900 V when earthed. These halogen-free single core cables are characterised by their amazingly high long-time resistance to temperature and feature among the leading halogen-free, flame resistant products in the world. These single core cables significantly contribute to safety and the environment.

☑= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Cross-section mm ²	Outer Ø min - max mm	Cop. weight kg / km	Weight approx. kg / km	approx. RAL															
				black	gn-ye	brown	red	white	grey	vio	dk-bu	yellow	Beige	lt-bu	og	green	2-col.		
Part no. 0,25	1,4 - 1,8	2,4	4	50999	50998	51071	51072	51073	51074	51075	51079	51076	51164	51070	51077	51078	51165		
Part no. 0,33	1,5 - 1,9	3,2	5	51167	51166	51169	51170	51171	51172	51173	51177	51174	51178	51168	51175	51176	51179		
Part no. 0,5	1,7 - 2,1	4,8	7	51281	51280	51283	51284	51285	51286	51287	51291	51288	51292	51282	51289	51290	51293		
Part no. 0,75	2,0 - 2,4	7,2	11	51295	51294	51297	51298	51299	51300	51301	51305	51302	51306	51296	51303	51304	51307		
Part no. 1	2,3 - 2,7	9,6	14	51309	51308	51311	51312	51313	51314	51315	51319	51316	51320	51310	51317	51318	51321		
Part no. 1,5	2,7 - 3,1	14,4	20	51323	51322	51325	51326	51327	51328	51329	51333	51330	51334	51324	51331	51332	51335		
Part no. 2,5	3,3 - 3,7	24	30	51337	51336	51339	51340	51341	51342	51343	51347	51344	51348	51338	51345	51346	51349		
Part no. 4	4,1 - 4,5	38	47	51351	51350	51353	51354	51355	51356	51357	51361	51358	51362	51352	51359	51360	51363		
Part no. 6	4,8 - 5,2	58	72	51365	51364	51367	51368	51369	51370	51371	51375	51372	51376	51366	51373	51374	51377		
Part no. 10	6,5 - 6,6	96	120	51379	51378	51381	51382	51383	51384	51385	51389	51386	51390	51380	51387	51388	51391		
Part no. 16	7,2 - 7,8	154	182	51420	51419	51422	51423	51424	51425	51426	51430	51427	51431	51421	51428	51429	51432		
Part no. 25	9,4 - 9,8	240	272	51434	51433	51436	51437	51438	51439	51440	51444	51441	51445	51435	51442	51443	51446		
Part no. 35	10,3 - 11,1	336	371	51448	51447	51450	51451	51452	51453	51454	51458	51455	51459	51449	51456	51457	51460		
Part no. 50	12,6 - 13,4	480	530	51462	51461	51464	51465	51466	51467	51468	51472	51469	51473	51463	51470	51471	51474		
Part no. 70	14,7 - 15,4	672	730	51476	51475	51478	51479	51480	51481	51482	51486	51483	51487	51477	51484	51485	51488		
Part no. 95	16,9 - 17,7	912	964	51490	51489	51492	51493	51494	51495	51496	51500	51497	51501	51491	51498	51499	51502		
Part no. 120	18,6 - 19,8	1152	1235	51504	51503	51506	51507	51508	51509	51510	51514	51511	51515	51505	51512	51513	51516		
Part no. 150	20,8 - 22,0	1440	1523	51518	51517	51520	51521	51522	51523	51524	51528	51525	51529	51519	51526	51527	51530		
Part no. 185	23,0 - 24,2	1776	1850	51532	51531	51534	51535	51536	51537	51538	51542	51539	51543	51533	51540	51541	51544		
Part no. 240	26,1 - 27,3	2304	2432	51546	51545	51548	51549	51550	51551	51552	51556	51553	51557	51547	51554	51555	51558		

Dimensions and specifications may be changed without prior notice. (RK01)
Prices on request.



Technical data

- Halogen-free single cores with increased heat resistance according to **UL Style 3271 CSA CL 1251**
- **Temperature range**
flexing -35 °C to +120 °C
fixed installation -55 °C to +125 °C
in short circuit +280 °C
- **Nominal voltage** U 600 V
- **Test voltage** 3500 V
- **Minimum bending radius**
flexing approx. 12,5x core ø
fixed installation approx. 4x core ø
- **Caloric load values**
see Technical Informations
- **Power ratings table**
see Technical Informations

Cable structure

- Tinned Cu wires, according to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Core insulation of polyolefin-copolymer, cross-linked, flame retardant, halogen-free
- Core colours see table below
- **Tests**
Flame test to VDE 0482 Teil 266-2, BS 4066 part 3/ DIN EN 50266-2/ IEC 60332-3 (equivalent DIN VDE 0472 part 804 test method C)
Corrosiveness of combustion gases according to VDE 0482 part 267/ DIN EN 50267-2-2/ IEC 60754-2 (equivalent DIN VDE 0472 part 813)
Halogen-free according to VDE 0482 part 267/ DIN EN 50267-2-1/ IEC 60754-1 (equivalent DIN VDE 0472 part 815)
Smoke density to VDE 0482 part 1034-1+2/ IEC 61034-1+2 / DIN EN 61034-1+2 / BS 7622 part 1+2 (equivalent DIN VDE 0472 part 816)

Properties

- Halogen-free
- Lower propagation of fire
- Low development of smoke and fumes
- Good abrasion and notch resistance
- Good resistance to oils and weathering
- Resistant to UV radiation and ozone
- Resistant to soldering temperatures
- Resistant to melting, even when in contact with a soldering iron at temperatures of between 300 °C and 380 °C, because of the cross-linking for the insulation material
- Due to the high temperature profile the cross-section of conductor can under certain circumstances be reduced, hereby enabling a saving in space requirement and weight
- The materials in manufacture are cadmium-free +contain no silicone +free from substances harmful to the wetting properties of lacquers

Application

These temperature resistant single-core cables are used for the internal wiring of lighting fixtures, heaters, electrical machinery, switching systems and distributors in equipment and plant and machinery, suitable for installation on, in and beneath plaster, in closed installation ducts, as well as for traffic systems and outdoor applications. These cables are not approved for direct routing on racks, gutters or tanks. For a protected installation, these cables may be used at a nominal voltage of up to 1000 V alternating current or a direct current up to 750 V when earthed. The maximum operating d.c. voltage used in rail vehicles shall not exceed 900 V when earthed.

CE The product is conformed with the EC Low-Voltage Directive 2006/95/EC.

Cross-section mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	black	brown	red	white	grey	vio	green	Beige	pink	lt-blue	og	ye	gn-ye	2-col.
approx. RAL				9005	8003	3000	1013	7000	4005	6018	1001	3015	5015	2003	1021	6018	-
Part no. 0,25	2,3	2,4	7,0	59473	59475	59476	59477	59478	59479	59482	59484	59483	59474	59481	59480	59472	59485
Part no. 0,5	2,6	4,8	11,0	59487	59489	59490	59491	59492	59493	59496	59498	59497	59488	59495	59494	59486	59499
Part no. 0,75	2,8	7,2	14,0	59501	59503	59504	59505	59506	59507	59510	59512	59511	59502	59509	59508	59500	59513
Part no. 1	2,9	9,6	17,0	59515	59517	59518	59519	59520	59521	59524	59526	59525	59516	59523	59522	59514	59527
Part no. 1,5	3,2	14,4	22,0	59529	59531	59532	59533	59534	59535	59538	59540	59539	59530	59537	59536	59528	59541
Part no. 2,5	3,7	24,0	33,0	59543	59545	59546	59547	59548	59549	59552	59554	59553	59544	59551	59550	59542	59555
Part no. 4,0	4,2	38,4	53,0	59557	59559	59560	59561	59562	59563	59566	59568	59567	59558	59565	59564	59556	59569
Part no. 6,0	4,8	57,6	78,0	59571	59573	59574	59575	59576	59577	59580	59582	59581	59572	59579	59578	59570	59583
Part no. 10,0	6,7	96,0	136,0	59585	59587	59588	59589	59590	59591	59594	59596	59595	59586	59593	59592	59584	59597
Part no. 16,0	8,5	154,0	203,0	59599	59601	59602	59603	59604	59605	59608	59610	59609	59600	59607	59606	59598	59611
Part no. 25,0	10,4	240,0	300,0	59613	59615	59616	59617	59618	59619	59622	59624	59623	59614	59621	59620	59612	59625
Part no. 35,0	11,5	336,0	405,0	59627	59629	59630	59631	59632	59633	59636	59638	59637	59628	59635	59634	59626	59639
Part no. 50,0	14,4	480,0	580,0	59641	59643	59644	59645	59646	59647	59650	59652	59651	59642	59649	59648	59640	59653

Dimensions and specifications may be changed without prior notice.
Prices on request.

THHN/THWN 90°C, 600V, UL listed, PVC + nylon single core



Technical data

- PVC + Nylon insulated single cores as per UL-Styles und NEC standard
- **Temperature range as per Styles**
THHN: 90 °C dry - NEC standard
THWN: 75 °C wet - NEC standard
AWM: UL-Styles 1316 to 1321
 105 °C dry
 80 °C in oil
AWM: UL-Styles 1452, 1453
 90 °C dry
 80 °C in oil 1000 V
MTW: UL-Styles 1408 to 1414
 90 °C dry
 80 °C in oil 600 V
- **Nominal voltage** 600 V
- **Minimum bending radius**
8x core ø
- **Test voltage (Spark test)**
 AWG 14 to AWG 10 = 7,5 kV
 AWG 8 to AWG 2/0 = 10 kV
 AWG 3/0 to AWG 4/0 = 12,5 kV
 kcmil 250 to kcmil 500 = 15 kV
 kcmil 600 to kcmil 1000 = 17,5 kV

Cable structure

- Bare copper conductor, AWG-sizes as per given table below and ASTM B-3 and ASTM B-8
- Core insulation of PVC+Nylon-outer-sheath
- Cores colour coded, colour identification see below
- Surface of jacket printed with markings:
 14 to 1000 MCM THHN (stranded) - (size)
 AWG Type MTW OR THHN OR THWN 600 V OR GASOLINE AND OIL RESTTANT II (UL) OR AWM W-51554
 14 to 10 AWG THHN (solid) - (size)
 AWG TYPE THHN OR THWN 600 V OR GASOLINE AND OIL RESISTANT II (UL) OR AWM

Properties

- **Resistant against**
 Oils
 Gasoline
 Water
 Acids
 Ozone
 Lyes
 Sunlight
 Abrasion

Note

- 1 kcmil = 1000 circ mils = 0,5067 mm².
- Please complete the above part number for the colour required, using the following code:
 0 = green
 1 = black
 2 = blue
 3 = brown
 4 = red
 5 = white
 6 = grey
 7 = yellow
 8 = orange
 9 = pink

Application

As flexible connecting cable in machines, switch and distribution cabinets, cable assemblies and for fixed indoor installation, in tubes and in cable conduits.

AWM = **A**pliance **W**iring **M**aterial / For internal wrings for electrical equipment and control apparatus e.g. radio and televisions, electronic assembly component.

MTW = **M**achine **T**ool **W**ire / For the electronical installation of machine tools and the relative control.

THW = **T**hermoplastic PVC-insulated building wire, **H**eat resistant 75 °C, for **W**et and dry locations, flame retardant.

THHN = **T**hermoplastic PVC-insulated building wire, **N**ylon jacketed, 90 °C 600 V, for dry and damp locations.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

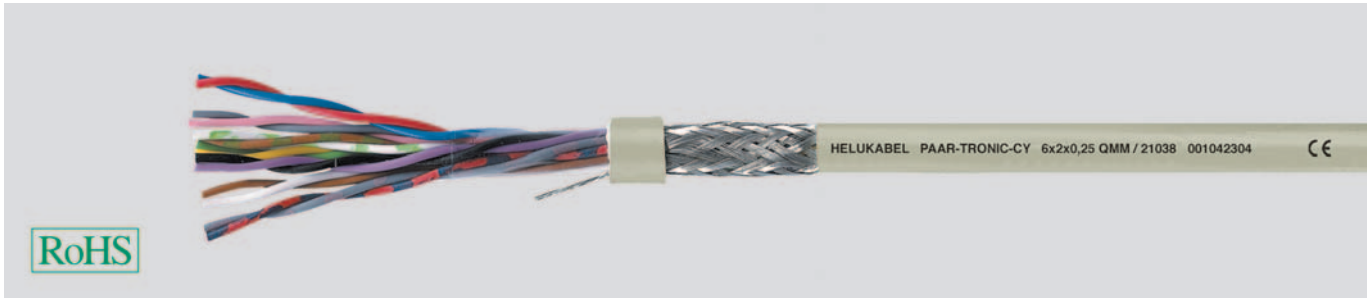
Part no.	Cross-sec. mm ²	AWG-No.	AWG size	Cond. make-up n x wire Ø	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
6320x	2,08	14	0,0147	19 x 0,38	3,0	20,7	25,0
6321x	3,32	12	0,0185	19 x 0,48	3,4	33,0	37,0
6322x	5,26	10	0,0234	19 x 0,6	4,3	51,6	60,0
6323x	8,35	8	0,0295	19 x 0,75	5,5	80,6	95,0
6324x	13,39	6	0,0378	19 x 0,96	6,6	125,0	143,0
6325x	21,14	4	0,0469	19 x 1,19	8,4	201,0	229,0
6326x	26,65	3	0,053	19 x 1,336	9,1	253,0	282,0
6327x	33,61	2	0,0591	19 x 1,5	10,0	317,0	349,0
6328x	42,38	1	0,0664	19 x 1,686	11,4	399,0	449,0
6329x	53,47	1/0	0,0745	19 x 1,89	12,4	500,0	557,0
6330x	67,4	2/0	0,0837	19 x 2,126	13,7	631,0	691,0
6331x	84,97	3/0	0,094	19 x 2,387	15,0	792,0	861,0
6332x	107,17	4/0	0,1055	19 x 2,68	16,5	996,0	1069,0

Part no.	Cross-sec. mm ²	AWG-No.	AWG size	Cond. make-up n x wire Ø	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
63331	127	250 kcmil	0,0822	37 x 2,088	18,29	1178,0	1277,0
63341	152	300 kcmil	0,09	37 x 2,286	19,56	1410,0	1515,0
63351	178	350 kcmil	0,0973	37 x 2,47	21,08	1645,0	1753,0
63361	203	400 kcmil	0,104	37 x 2,7	22,35	1902,0	1998,0
63371	254	500 kcmil	0,1162	37 x 2,95	24,13	2345,0	2466,0
63381	304	600 kcmil	0,0992	61 x 2,52	26,75	2920,0	3000,0
63391	380	750 kcmil	0,1109	61 x 2,82	29,36	3658,0	3713,0
63401	507	1000 kcmil	0,128	61 x 3,25	33,27	4858,0	4796,0

Dimensions and specifications may be changed without prior notice. (RN06)

Prices on request.

PAAR-TRONIC-CY flexible, Cu-screened, colour coded to DIN 47100, EMC-preferred type, meter marking



Technical data

- Special PVC data cables, adapted to DIN VDE 0812, 0814
- **Temperature range**
flexing -5 °C to +80 °C
fixed installation -30 °C to +80 °C
- **Operating voltage** 350 V
(not for purposes of high current and power installation)
- **Test voltage**
core/core 1200 V
core/screen 800 V
- **Breakdown voltage** min. 2400 V
- **Insulation resistance**
min. 20 MΩm x km
- **Conductor resistance**
at 0,14 mm² ≤ 138 Ωm/km
at 0,25 mm² ≤ 75,5 Ωm/km
at 0,34 mm² ≤ 57,5 Ωm/km
at 0,50 mm² ≤ 39 Ωm/km
at 0,75 mm² ≤ 26 Ωm/km
- **Capacitance** (approx. -value) at 800 Hz
core/core 0,14 mm² = 120 pF/m
core/core ≥ 0,25 mm² = 150 pF/m
core/screen 0,14 mm² = 240 pF/m
core/screen ≥ 0,25 mm² = 270 pF/m
- **Load**
at 0,14 mm² = 1,5 A
at 0,25 mm² = 2,5 A
at 0,34 mm² = 4,5 A
at 0,50 mm² = 6 A
at 0,75 mm² = 9 A
- **Inductance** approx. 0,65 mH/km
- **Impedance** approx. 78 Ωm
- **K₁-coupling** approx. 300 pF/100 m
- **Coupling resistance**
max. 250 Ωm/km
- **Minimum bending radius**
flexing 10x cable ø
fixed installation 5x cable ø
- **Radiation resistance**
up to 80x10⁶ cJ/kg (up to 80 Mrad)

Cable structure

- Bare copper, fine wire conductors, bunch stranded to DIN VDE 0295 cl. 5, 0245 and IEC 60228 cl. 5
- Conductor make-up for
0,14 mm² = 18x0,1 mm
0,25 mm² = 14x0,15 mm
0,34 mm² = 7x0,25 mm
- Special PVC core insulation Y12, to DIN VDE 0207 part 4
- Colours coded to DIN 47100 with colour repetition
- Cores stranded in pairs with optimal lay-length
- Pairs stranded in layers with optimal lay-length
- Core wrapping with foil
- Tinned copper braided screening, coverage approx. 85%
- Special PVC outer sheath YM2, to DIN VDE 0207 part 5
- Sheath colour grey (RAL 7032)
- with meter marking, change-over in 2011

Properties

- Extensively oil resistant, oil-/ chemical Resistance - see table Technical Informations
- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Note

- Also available in other sheath colours.
- **unscreened analogue type:**
PAAR-TRONIC

Application

These data control cables are used for flexible use with free movement without tensile stress or forced movements in dry, moist and wet rooms but not suitable for open air.

PAAR-TRONIC-CY is well suited for use in areas subject to signal interference. The high level of screening reduces substantially the effects of electrical disturbances from parallel running wiring etc. The copper screening is also often used as an "earth".

The twisted pairs conform favourable cross-talk attenuation values. These cables are suitable for dry and wet rooms, yet not for open air.

EMC = Electromagnetic compatibility

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.pairs x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
21001	1 x 2 x 0,14	4,1	15,6	34,0	26
21002	2 x 2 x 0,14	5,6	18,5	40,0	26
21003	3 x 2 x 0,14	5,6	23,0	49,0	26
21004	4 x 2 x 0,14	6,0	26,6	55,0	26
21005	5 x 2 x 0,14	6,7	30,7	66,0	26

Part no.	No.pairs x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
21006	6 x 2 x 0,14	7,2	48,5	86,0	26
21007	7 x 2 x 0,14	7,2	51,1	91,0	26
21008	8 x 2 x 0,14	8,4	53,7	97,0	26
21009	10 x 2 x 0,14	9,1	59,0	109,0	26
21010	12 x 2 x 0,14	9,2	66,0	141,0	26

Prices on request.

Continuation ▶

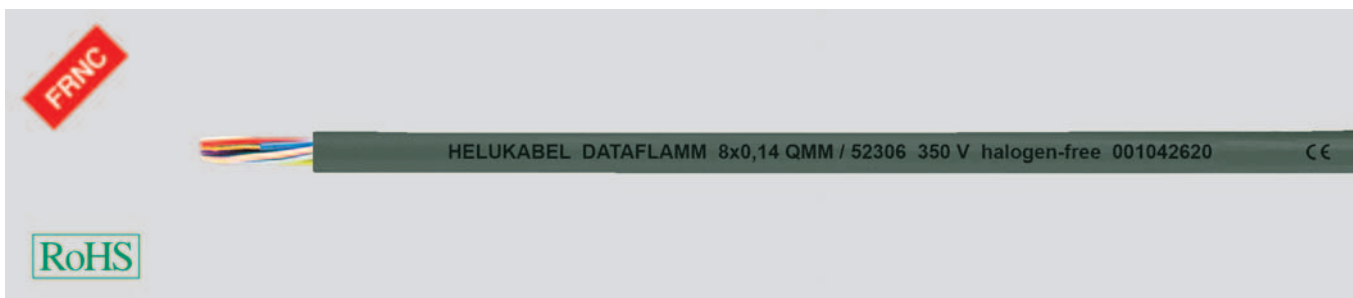
PAAR-TRONIC-CY flexible, Cu-screened, colour coded to DIN 47100, EMC-preferred type, meter marking



Part no.	No.pairs x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No.pairs x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
21011	14 x 2 x 0,14	9,9	74,0	148,0	26	19972	3 x 2 x 0,34	7,3	44,9	78,0	22
21012	15 x 2 x 0,14	10,4	76,0	152,0	26	19973	4 x 2 x 0,34	8,1	54,2	90,0	22
21013	16 x 2 x 0,14	10,4	79,0	155,0	26	19974	5 x 2 x 0,34	8,8	63,5	110,0	22
21014	18 x 2 x 0,14	11,0	83,0	171,0	26	19975	6 x 2 x 0,34	9,8	73,1	130,0	22
21015	20 x 2 x 0,14	11,5	97,0	183,0	26	19976	7 x 2 x 0,34	9,8	79,5	145,0	22
21016	22 x 2 x 0,14	12,3	103,0	205,0	26	19977	8 x 2 x 0,34	11,2	88,4	150,0	22
21017	24 x 2 x 0,14	12,3	111,0	228,0	26	19978	9 x 2 x 0,34	12,6	99,3	170,0	22
21018	25 x 2 x 0,14	12,5	113,0	239,0	26	19979	10 x 2 x 0,34	12,6	106,9	190,0	22
21019	26 x 2 x 0,14	12,5	122,0	245,0	26	19980	12 x 2 x 0,34	12,8	122,1	220,0	22
21020	27 x 2 x 0,14	12,5	125,0	251,0	26	19981	14 x 2 x 0,34	13,3	138,2	245,0	22
21021	28 x 2 x 0,14	13,7	128,0	258,0	26	19982	16 x 2 x 0,34	14,3	154,2	250,0	22
21022	30 x 2 x 0,14	13,7	140,0	270,0	26	19983	18 x 2 x 0,34	15,2	197,9	275,0	22
21023	32 x 2 x 0,14	14,2	145,0	284,0	26	19984	21 x 2 x 0,34	15,9	214,4	300,0	22
21024	34 x 2 x 0,14	14,7	150,0	300,0	26	19985	25 x 2 x 0,34	17,5	238,5	400,0	22
21025	36 x 2 x 0,14	14,9	156,0	316,0	26	19986	27 x 2 x 0,34	17,5	262,5	410,0	22
21026	38 x 2 x 0,14	15,6	162,0	350,0	26	19987	30 x 2 x 0,34	19,1	286,6	440,0	22
21027	40 x 2 x 0,14	16,1	177,0	370,0	26	19988	34 x 2 x 0,34	20,8	310,1	510,0	22
21028	44 x 2 x 0,14	16,8	181,0	390,0	26	19989	37 x 2 x 0,34	21,5	368,7	550,0	22
21029	46 x 2 x 0,14	17,0	195,0	430,0	26	19990	40 x 2 x 0,34	22,4	392,6	590,0	22
21030	50 x 2 x 0,14	17,7	202,0	440,0	26	19991	44 x 2 x 0,34	23,6	424,3	600,0	22
21031	52 x 2 x 0,14	17,7	206,0	460,0	26	19992	50 x 2 x 0,34	24,8	455,9	650,0	22
21032	55 x 2 x 0,14	18,2	210,0	480,0	26	19993	52 x 2 x 0,34	24,8	487,6	680,0	22
21033	1 x 2 x 0,25	4,6	15,0	45,0	24	19994	56 x 2 x 0,34	25,4	518,5	750,0	22
21034	2 x 2 x 0,25	6,3	28,0	53,0	24	19995	61 x 2 x 0,34	26,2	557,2	840,0	22
21035	3 x 2 x 0,25	6,6	32,0	65,0	24	17047	1 x 2 x 0,5	5,6	24,0	60,0	20
21036	4 x 2 x 0,25	7,0	38,0	80,0	24	17001	2 x 2 x 0,5	7,8	54,0	89,0	20
21037	5 x 2 x 0,25	7,8	55,0	98,0	24	17002	3 x 2 x 0,5	8,2	70,0	104,0	20
21038	6 x 2 x 0,25	8,6	65,0	114,0	24	17003	4 x 2 x 0,5	9,1	91,0	126,0	20
21039	7 x 2 x 0,25	8,6	70,0	121,0	24	17004	5 x 2 x 0,5	9,9	105,0	148,0	20
21040	8 x 2 x 0,25	9,8	75,0	129,0	24	17005	6 x 2 x 0,5	10,7	120,0	171,0	20
21041	10 x 2 x 0,25	11,0	110,0	157,0	24	17006	8 x 2 x 0,5	12,8	144,0	290,0	20
21042	12 x 2 x 0,25	11,2	117,0	189,0	24	17007	10 x 2 x 0,5	14,0	178,0	320,0	20
21043	14 x 2 x 0,25	12,2	122,0	213,0	24	17008	12 x 2 x 0,5	14,3	199,0	361,0	20
21044	15 x 2 x 0,25	12,8	134,0	225,0	24	17009	16 x 2 x 0,5	16,1	254,0	421,0	20
21045	16 x 2 x 0,25	12,8	143,0	237,0	24	17010	20 x 2 x 0,5	17,2	302,0	580,0	20
21046	18 x 2 x 0,25	13,5	148,0	248,0	24	17011	25 x 2 x 0,5	19,7	344,0	740,0	20
21047	20 x 2 x 0,25	14,1	162,0	275,0	24	17048	1 x 2 x 0,75	6,0	28,0	71,0	19
21048	22 x 2 x 0,25	14,9	172,0	303,0	24	17012	2 x 2 x 0,75	8,4	58,0	105,0	19
21049	24 x 2 x 0,25	15,3	223,0	330,0	24	17013	3 x 2 x 0,75	8,9	84,0	128,0	19
21050	25 x 2 x 0,25	15,5	233,0	343,0	24	17014	4 x 2 x 0,75	9,8	108,0	156,0	19
21051	26 x 2 x 0,25	15,5	238,0	345,0	24	17015	5 x 2 x 0,75	10,8	126,0	189,0	19
21052	27 x 2 x 0,25	15,5	244,0	350,0	24	17016	6 x 2 x 0,75	12,1	146,0	216,0	19
21053	28 x 2 x 0,25	17,0	249,0	360,0	24	17017	8 x 2 x 0,75	13,4	180,0	309,0	19
21054	30 x 2 x 0,25	17,0	254,0	375,0	24	17018	10 x 2 x 0,75	15,5	220,0	355,0	19
21055	32 x 2 x 0,25	17,6	290,0	400,0	24	17019	12 x 2 x 0,75	15,8	261,0	405,0	19
21056	34 x 2 x 0,25	18,2	312,0	410,0	24	17020	16 x 2 x 0,75	18,0	328,0	565,0	19
21057	36 x 2 x 0,25	18,2	322,0	420,0	24	17021	20 x 2 x 0,75	19,2	392,0	700,0	19
21058	38 x 2 x 0,25	19,0	339,0	450,0	24	17022	25 x 2 x 0,75	21,8	470,0	950,0	19
21059	40 x 2 x 0,25	19,7	349,0	485,0	24	17049	1 x 2 x 1	6,3	46,0	75,0	18
21060	44 x 2 x 0,25	20,5	359,0	500,0	24	17050	2 x 2 x 1	8,9	82,0	116,0	18
21061	46 x 2 x 0,25	20,7	398,0	540,0	24	17051	3 x 2 x 1	9,4	103,0	140,0	18
21062	50 x 2 x 0,25	21,5	405,0	550,0	24	17052	4 x 2 x 1	10,4	132,0	191,0	18
21063	52 x 2 x 0,25	21,5	435,0	580,0	24	17053	1 x 2 x 1,5	7,2	63,0	84,0	16
21064	55 x 2 x 0,25	22,1	464,0	630,0	24	17054	2 x 2 x 1,5	10,2	111,0	122,0	16
19970	1 x 2 x 0,34	5,2	16,0	58,0	22	17055	3 x 2 x 1,5	10,8	136,0	194,0	16
19971	2 x 2 x 0,34	7,0	36,9	65,0	22	17056	4 x 2 x 1,5	12,0	172,0	240,0	16

Dimensions and specifications may be changed without prior notice. (RB01)

Prices on request.



Technical data

- Special data cable
- **Temperature range**
flexing +5 °C to +70 °C
fixed installation -40 °C to +70 °C
- **Nominal voltage**
0,14 mm² = 350 V
>0,14 mm² = 500 V
- **Test voltage**
0,14 mm² = 800 V
>0,14 mm² = 1200 V
- **Insulation resistance**
min. 2 GOhm x km
- **Capacitance**
core/core <70 nF/km
- **Minimum bending radius**
approx. 7,5x cable ø
- **Radiation resistance**
up to 100x10⁶ cJ/kg (up to 100 Mrad)

Cable structure

- Bare copper, fine wire conductors to DIN VDE 0812, conductor make-up for 0,34 mm² - 7x0,25 mm
- PE-insulation, compound type 2YJ1 to DIN VDE 0207 part 2
- Cores colour coded to DIN 47100
- Cores twisted in layers with optimal lay-length
- Halogen-free outer sheath, to DIN VDE 0207 part 24, compound type HM2
- Sheath colour grey, RAL 7005
- with meter marking, change-over in 2011

Properties

- Halogen-free according to VDE 0482 part 267/ DIN EN 50267-2-1/ IEC 60754-1 (equivalent DIN VDE 0472 part 815)
- Corrosiveness of combustion gases according to VDE 0482 part 267/ DIN EN 50267-2-2/ IEC 60754-2 (equivalent DIN VDE 0472 part 813)
- Halogen-free sheath compound, self-extinguishing and flame retardant according to DIN VDE 0482 part 265-2-1/ EN 50265-2-1/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)

Note

- **screened analogue type:**
DATAFLAMM-C

Application

DATAFLAMM halogen-free data cables are used as connecting cable for signal, measuring, control, call-announcing and two-way intercom speaking systems, clock installations, electronic weighing equipment and electrical apparatus for office requirements. The cables are suitable for installation in dry, damp and wet environments as well as in masonry and concrete.

PE-insulated-cores, compared with the conventional PVC-insulated cores, assure a remarkable and more favourable capacitance values. These cables are generally installed in telecommunication apparatus and data transmission systems in public buildings, laboratories, trading centres where the freedom from halogen in case of fire and the flame propagation must be avoided.

The halogen-free thermoplastic sheath produce neither corrosive nor toxic gases.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
52300	2 x 0,14	3,3	2,6	14,0	26
52301	3 x 0,14	3,5	4,0	17,0	26
52302	4 x 0,14	3,7	5,3	19,0	26
52303	5 x 0,14	4,0	6,6	23,0	26
52304	6 x 0,14	4,3	7,9	25,0	26
52305	7 x 0,14	4,3	9,2	27,0	26
52306	8 x 0,14	4,6	10,5	30,0	26
52307	10 x 0,14	5,4	13,2	38,0	26
52308	12 x 0,14	5,7	16,0	45,0	26
52309	15 x 0,14	6,2	20,1	57,0	26
52310	18 x 0,14	6,7	23,7	65,0	26
52311	21 x 0,14	7,3	27,9	76,0	26
52312	25 x 0,14	7,9	33,4	88,0	26
52313	30 x 0,14	8,1	39,3	98,0	26
52314	34 x 0,14	8,9	45,5	111,0	26
52315	40 x 0,14	9,5	53,6	139,0	26
52316	50 x 0,14	10,5	64,9	164,0	26
52317	2 x 0,25	3,7	4,7	18,0	24
52318	3 x 0,25	3,9	7,1	21,0	24
52319	4 x 0,25	4,2	9,5	26,0	24
52320	5 x 0,25	4,6	12,0	31,0	24
52321	7 x 0,25	5,1	16,6	40,0	24
52322	10 x 0,25	6,4	24,0	56,0	24
52323	12 x 0,25	6,5	28,6	64,0	24
52324	15 x 0,25	7,3	36,0	80,0	24
52430	18 x 0,25	7,8	43,2	90,0	24
52431	21 x 0,25	8,3	50,4	105,0	24
52325	25 x 0,25	9,3	59,8	121,0	24
52326	34 x 0,25	10,8	81,3	168,0	24
52327	40 x 0,25	11,7	96,0	196,0	24
52328	2 x 0,34	4,3	6,4	25,0	22
52329	3 x 0,34	4,5	9,7	30,0	22

Part no.	No.cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
52330	4 x 0,34	4,9	13,0	35,0	22
52331	5 x 0,34	5,4	16,4	43,0	22
52332	7 x 0,34	5,9	22,7	58,0	22
52333	10 x 0,34	7,8	32,4	80,0	22
52334	12 x 0,34	8,0	39,1	91,0	22
52335	15 x 0,34	9,0	49,1	115,0	22
52336	18 x 0,34	9,6	59,1	135,0	22
52337	21 x 0,34	10,1	68,3	154,0	22
52338	25 x 0,34	11,9	81,4	180,0	22
52339	34 x 0,34	13,3	111,1	233,0	22
52340	40 x 0,34	14,4	130,5	272,0	22
52341	2 x 0,5	4,6	9,5	30,0	20
52342	3 x 0,5	4,9	14,2	36,0	20
52343	4 x 0,5	5,3	19,2	43,0	20
52344	5 x 0,5	5,9	24,0	56,0	20
52345	7 x 0,5	6,4	33,7	70,0	20
52346	10 x 0,5	8,4	48,0	101,0	20
52347	12 x 0,5	8,6	57,4	117,0	20
52348	15 x 0,5	9,8	72,0	145,0	20
52349	18 x 0,5	10,5	86,4	171,0	20
52350	21 x 0,5	11,1	101,0	197,0	20
52351	25 x 0,5	12,6	120,0	230,0	20
52352	30 x 0,5	13,3	142,6	269,0	20
52353	34 x 0,5	14,5	163,1	301,0	20
52354	40 x 0,5	15,8	192,0	365,0	20
52355	2 x 0,75	5,2	14,3	40,0	18
52356	3 x 0,75	5,5	21,5	51,0	18
52357	4 x 0,75	6,0	28,6	61,0	18
52358	5 x 0,75	6,7	36,1	76,0	18
52359	7 x 0,75	7,3	50,3	97,0	18
52360	10 x 0,75	9,8	72,0	137,0	18
52361	12 x 0,75	10,0	86,2	167,0	18

Dimensions and specifications may be changed without prior notice. (RB01)

Prices on request.

DATAFLAMM-C EMC-preferred type, halogen-free, screened, meter marking



Technical data

- Special data cable
- **Temperature range**
flexing +5 °C to +70 °C
fixed installation -40 °C to +70 °C
- **Operating top level voltage**
(not for purposes of high current and power installation)
0,14 mm² = 350 V
>0,14 mm² = 500 V
- **Test voltage**
0,14 mm² = 800 V
>0,14 mm² = 1200 V
- **Insulation resistance**
min. 2 GOhm x km
- **Capacitance**
core/core <70 nF/km
- **Minimum bending radius**
approx. 7,5x cable ø
- **Coupling resistance**
max. 250 Ohm/km
- **Radiation resistance**
up to 100x10⁶ cJ/kg (up to 100 Mrad)

Cable structure

- Bare copper, fine wire conductors to DIN VDE 0812, conductor make-up for 0,34 mm² - 7x0,25 mm
- PE-insulation, compound type 2YJ1 to DIN VDE 0207 part 2
- Cores colour coded to DIN 47100
- Cores twisted in layers with optimal lay-length
- Core wrapping with polyester (PETP) foil
- Tinned copper screened braiding, approx. 85% coverage
- Halogen-free outer sheath, to DIN VDE 0207 part 24, compound type HM2
- Sheath colour grey (RAL 7005)
- with meter marking, change-over in 2011

Properties

- Halogen-free according to VDE 0482 part 267/ DIN EN 50267-2-1/ IEC 60754-1 (equivalent DIN VDE 0472 part 815)
- Corrosiveness of combustion gases according to VDE 0482 part 267/ DIN EN 50267-2-2/ IEC 60754-2 (equivalent DIN VDE 0472 part 813)
- Halogen-free sheath compound, self-extinguishing and flame retardant according to VDE 0482 part 265-2-1/ DIN EN 50265-2-1/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- PE-insulated cores, compared with the conventional PVC-insulated cores, assure a remarkable and more favourable capacitance values
- The halogen-free thermoplastic sheath produce neither corrosive nor toxic gases

Note

- **unscreened analogue type:**
DATAFLAMM

Application

Are used as connecting cable for signal, measuring, control, call-announcing and two-way intercom speaking systems, clock installations, electronic weighing equipment and electrical apparatus for office requirements. The cables are suitable for installation in dry, damp and wet environments as well as in masonry and concrete. These cables are generally installed in telecommunication apparatus and data transmission systems in public buildings, laboratories, trading centres where the freedom from halogen in case of fire and the flame propagation must be avoided. With screened braiding offers interference-free signal transfer.

CE – The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
52365	2 x 0,14	3,7	12,4	21,0	26	52398	4 x 0,34	5,5	24,5	47,0	22
52366	3 x 0,14	3,9	14,0	25,0	26	52399	5 x 0,34	6,0	30,0	58,0	22
52367	4 x 0,14	4,1	15,8	26,0	26	52400	7 x 0,34	6,5	38,2	76,0	22
52368	5 x 0,14	4,4	19,5	32,0	26	52401	10 x 0,34	8,4	62,2	110,0	22
52369	7 x 0,14	4,7	23,4	39,0	26	52402	12 x 0,34	8,7	69,4	123,0	22
52370	10 x 0,14	5,9	28,4	54,0	26	52403	14 x 0,34	9,0	82,1	140,0	22
52371	12 x 0,14	6,0	31,4	69,0	26	52404	16 x 0,34	9,7	95,0	157,0	22
52372	14 x 0,14	6,4	37,5	76,0	26	52405	18 x 0,34	10,4	107,3	172,0	22
52373	16 x 0,14	6,7	43,4	82,0	26	52406	21 x 0,34	10,8	122,4	195,0	22
52374	18 x 0,14	7,0	51,4	90,0	26	52407	25 x 0,34	12,4	142,2	226,0	22
52375	21 x 0,14	7,8	61,8	102,0	26	52408	30 x 0,34	12,9	162,6	261,0	22
52376	25 x 0,14	8,4	76,0	121,0	26	52409	34 x 0,34	13,8	178,9	285,0	22
52377	30 x 0,14	8,6	92,7	146,0	26	52410	40 x 0,34	15,1	203,3	330,0	22
52378	34 x 0,14	9,4	121,0	167,0	26	52411	2 x 0,5	5,1	23,0	37,0	20
52379	40 x 0,14	10,2	126,1	170,0	26	52412	3 x 0,5	5,5	30,0	46,0	20
52380	2 x 0,25	4,2	14,6	23,0	24	52413	4 x 0,5	5,9	35,3	57,0	20
52381	3 x 0,25	4,4	17,0	28,0	24	52414	5 x 0,5	6,6	52,5	77,0	20
52382	4 x 0,25	4,7	20,6	34,0	24	52415	7 x 0,5	7,1	65,3	92,0	20
52384	5 x 0,25	5,1	24,7	42,0	24	52416	10 x 0,5	9,3	88,7	135,0	20
52385	7 x 0,25	5,6	31,2	49,0	24	52417	12 x 0,5	9,4	98,7	148,0	20
52386	10 x 0,25	7,1	42,1	81,0	24	52418	18 x 0,5	11,1	141,2	210,0	20
52387	12 x 0,25	7,3	47,5	88,0	24	52419	21 x 0,5	12,3	161,0	242,0	20
52388	14 x 0,25	7,7	52,7	100,0	24	52420	25 x 0,5	13,4	187,2	285,0	20
52389	16 x 0,25	8,1	58,1	113,0	24	52421	30 x 0,5	14,1	223,2	340,0	20
52390	18 x 0,25	8,9	78,0	126,0	24	52422	40 x 0,5	16,4	294,9	445,0	20
52391	21 x 0,25	9,2	94,3	144,0	24	52423	2 x 0,75	5,9	30,6	45,0	18
52392	25 x 0,25	10,3	116,5	164,0	24	52424	3 x 0,75	6,2	38,1	60,0	18
52393	30 x 0,25	10,8	132,2	191,0	24	52425	4 x 0,75	6,9	58,0	80,0	18
52394	34 x 0,25	11,6	144,6	214,0	24	52426	5 x 0,75	7,5	68,4	97,0	18
52395	40 x 0,25	12,5	163,3	245,0	24	52427	7 x 0,75	8,1	88,4	127,0	18
52396	2 x 0,34	4,8	16,9	31,0	22	52428	10 x 0,75	10,6	122,5	175,0	18
52397	3 x 0,34	5,1	20,6	38,0	22	52429	12 x 0,75	10,9	137,2	196,0	18

Dimensions and specifications may be changed without prior notice. (RB01)

Prices on request.

DATAFLAMM-C-PAAR EMC-preferred type, halogen-free, screened, meter marking



Technical data

- Special data cable
- **Temperature range**
flexing +5 °C to +70 °C
fixed installation -40 °C to +70 °C
- **Operating top level voltage**
(not for purposes of high current and power installation)
0,14 mm² = 350 V
>0,14 mm² = 500 V
- **Test voltage**
0,14 mm² = 800 V
>0,14 mm² = 1200 V
- **Insulation resistance**
min. 2 GOhm x km
- **Capacitance**
core/core <70 nF/km
- **Minimum bending radius**
approx. 7,5x cable ø
- **Coupling resistance**
max. 250 Ohm/km
- **Radiation resistance**
up to 100x10⁶ cJ/kg (up to 100 Mrad)

Cable structure

- Bare copper, fine wire conductors to DIN VDE 0812, conductor make-up for 0,34 mm² - 7x0,25 mm
- PE-insulation, compound type 2YJ1 to DIN VDE 0207 part 2
- Cores colour coded to DIN 47100
- Cores twisted in layers
- Core wrapping with polyester (PETP) foil
- Tinned copper screened braiding, approx. 85% coverage
- Halogen-free outer sheath, to DIN VDE 0207 part 24, compound type HM2
- Sheath colour grey (RAL 7005)
- with meter marking, change-over in 2011

Properties

- Halogen-free according to VDE 0482 part 267/ DIN EN 50267-2-1/ IEC 60754-1 (equivalent DIN VDE 0472 part 815)
- Corrosiveness of combustion gases according to VDE 0482 part 267/ DIN EN 50267-2-2/ IEC 60754-2 (equivalent DIN VDE 0472 part 813)
- Halogen-free sheath compound, self-extinguishing and flame retardant according to VDE 0482 part 265-2-1/ DIN EN 50265-2-1/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)

Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm².

Application

Are used as connecting cable for signal, measuring, control, call-announcing and two-way intercom speaking systems, clock installations, electronic weighing equipment and electrical apparatus for office requirements. The cables are suitable for installation in dry, damp and wet environments as well as in masonry and concrete. PE-insulated cores, compared with the conventional PVC-insulated cores, assure a remarkable and more favourable capacitance values. These cables are generally installed in telecommunication apparatus and data transmission systems in public buildings, laboratories, trading centres where the freedom from halogen in case of fire and the flame propagation must be avoided. With screened braiding offers interference-free signal transfer. The halogen-free thermoplastic sheath produce neither corrosive nor toxic gases.

EMC = Electromagnetic compatibility

To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.pairs x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No.pairs x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
52435	2 x 2 x 0,14	5,1	22,5	37,0	26	52460	7 x 2 x 0,34	10,4	89,8	154,0	22
52436	3 x 2 x 0,14	6,1	25,6	47,0	26	52461	10 x 2 x 0,34	11,5	119,8	209,0	22
52437	4 x 2 x 0,14	6,3	39,1	66,0	26	52462	12 x 2 x 0,34	12,6	139,4	245,0	22
52438	5 x 2 x 0,14	7,4	45,3	76,0	26	52463	15 x 2 x 0,34	14,3	160,0	279,0	22
52439	6 x 2 x 0,14	8,0	51,4	87,0	26	52464	18 x 2 x 0,34	15,5	207,2	363,0	22
52440	7 x 2 x 0,14	8,2	54,2	94,0	26	52465	2 x 2 x 0,5	7,6	50,2	76,0	20
52441	10 x 2 x 0,14	8,6	68,7	119,0	26	52466	3 x 2 x 0,5	9,1	64,5	107,0	20
52442	12 x 2 x 0,14	9,6	78,3	135,0	26	52467	4 x 2 x 0,5	9,8	77,2	134,0	20
52443	15 x 2 x 0,14	10,0	79,9	157,0	26	52468	5 x 2 x 0,5	11,0	96,2	150,0	20
52444	18 x 2 x 0,14	10,4	99,2	190,0	26	52469	6 x 2 x 0,5	11,5	107,4	176,0	20
52445	2 x 2 x 0,25	5,8	27,1	44,0	24	52470	7 x 2 x 0,5	11,8	117,3	185,0	20
52446	3 x 2 x 0,25	7,0	42,4	66,0	24	52471	10 x 2 x 0,5	13,4	158,2	275,0	20
52447	4 x 2 x 0,25	7,6	54,5	81,0	24	52472	12 x 2 x 0,5	14,8	177,8	330,0	20
52448	5 x 2 x 0,25	8,3	59,8	98,0	24	52473	15 x 2 x 0,5	16,1	236,4	380,0	20
52449	6 x 2 x 0,25	9,2	64,6	116,0	24	52474	18 x 2 x 0,5	17,4	265,4	450,0	20
52450	7 x 2 x 0,25	9,4	71,3	120,0	24	52475	2 x 2 x 0,75	9,0	64,6	105,0	18
52451	10 x 2 x 0,25	10,7	93,3	153,0	24	52476	3 x 2 x 0,75	10,2	81,7	137,0	18
52452	12 x 2 x 0,25	11,2	108,0	175,0	24	52477	4 x 2 x 0,75	11,2	107,6	166,0	18
52453	15 x 2 x 0,25	11,7	123,4	213,0	24	52478	5 x 2 x 0,75	12,2	126,1	200,0	18
52454	18 x 2 x 0,25	12,9	139,7	248,0	24	52479	6 x 2 x 0,75	13,1	138,6	236,0	18
52455	2 x 2 x 0,34	6,8	43,3	68,0	22	52480	7 x 2 x 0,75	13,5	153,7	255,0	18
52456	3 x 2 x 0,34	7,7	55,0	92,0	22	52481	10 x 2 x 0,75	15,0	220,0	363,0	18
52457	4 x 2 x 0,34	8,4	64,0	110,0	22	52482	12 x 2 x 0,75	17,0	265,5	434,0	18
52458	5 x 2 x 0,34	9,4	74,5	128,0	22	52483	15 x 2 x 0,75	18,3	327,6	500,0	18
52459	6 x 2 x 0,34	10,1	85,0	147,0	22	52484	18 x 2 x 0,75	19,6	374,6	580,0	18

Dimensions and specifications may be changed without prior notice. (RB01)

Prices on request.

Command Cable UL (LiYY) style 2464/300 V, (80°C)



Technical data

- Special PVC command cable, approved to UL-Style 2464, cores according AWG 26-20 to UL-Style 1061/1729 AWG 18-16 to UL-Style 1007/1569
- **Temperature range**
flexing -10 °C to +80 °C
fixed installation -20 °C to +80 °C
- **Nominal voltage** 300 V
- **Test voltage** 1500 V
- **Breakdown voltage**
min. 3000 V
- **Minimum bending radius**
fixed approx. 7,5x cable ø
flexing approx. 15 cable ø

Cable structure

- Tinned copper, fine wire conductors AWG 26-20, gemäß ASTM-B 174-95 class J-M,
AWG 18-16 gemäß ASTM-B 286
Conductor make-up to:
0,14 mm² = 7x0,162 mm
0,23 mm² = 7x0,202 mm
0,34 mm² = 7x0,254 mm
0,56 mm² = 7x0,32 mm
0,82 mm² = 19x0,235 mm
1,30 mm² = 19x0,31 mm
- Special PVC core insulation class 43, semirigid to UL-Std. 1581 table 50.182 and 50.183
- Colour coded to DIN 47100 or international colour code
- Cores stranded in layers with optimal lay-length
- Special PVC outer jacket class 43 to UL-Std. 1581 table 50.182
- Outer jacket colour
black (international colour code)
grey (DIN 47100 / preferred type for stock)

Properties

- PVC flame retardant according to UL VW-1/CSA FT1
- **Conditionally resistant to**
Oil
Solvents
Acids
Lyes
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm².
- **screened analogue type:**
Command Cable UL (LIYCY)

Application

Suitable for use as a command, measuring and control cable in tool making machinery conveyor system and production lines, in industrial plants and in air conditioning as well as in the steel producing industries.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no. Jacket colour	Part no. Jacket colour	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. approx. weight kg / km	Weight approx. kg / km
83137	83045	2 x 0,14	26	3,6	3,6	13,0
83138	83046	3 x 0,14	26	3,8	4,0	15,0
83139	83047	4 x 0,14	26	4,0	5,4	18,0
83140	83048	6 x 0,14	26	4,6	8,1	25,0
83141	83049	10 x 0,14	26	5,6	13,4	38,0
83142	83050	12 x 0,14	26	5,8	16,2	46,0
83143	83055	16 x 0,14	26	6,3	21,5	56,0
83144	83056	18 x 0,14	26	6,6	34,4	62,0
83145	83057	24 x 0,14	26	7,5	32,4	82,0
83146	83058	27 x 0,14	26	7,6	36,3	97,0
83147	83059	30 x 0,14	26	8,0	40,4	110,0
83153	83130	2 x 0,23	24	3,8	4,6	16,0
83154	83131	3 x 0,23	24	4,0	7,1	19,0
83155	83132	4 x 0,23	24	4,3	9,4	23,0
83156	83133	6 x 0,23	24	4,9	14,2	32,0
83157	83134	10 x 0,23	24	6,0	23,8	55,0
83158	83135	12 x 0,23	24	6,2	28,5	60,0
83159	83136	16 x 0,23	24	6,8	38,1	75,0
83160	83371	18 x 0,23	24	7,1	43,1	82,0
83161	83372	24 x 0,23	24	8,1	59,7	116,0
83162	83373	27 x 0,23	24	8,4	64,7	140,0
83163	83374	30 x 0,23	24	8,9	71,9	150,0
83169	83375	2 x 0,34	22	4,1	6,5	25,0
83170	83376	3 x 0,34	22	4,3	9,8	30,0
83171	83377	4 x 0,34	22	4,6	13,0	45,0
83172	83378	6 x 0,34	22	5,4	19,6	60,0
83173	83379	10 x 0,34	22	6,6	32,5	80,0
83174	83380	12 x 0,34	22	6,8	39,1	105,0
83175	83381	16 x 0,34	22	7,5	52,0	130,0
83176	83382	18 x 0,34	22	8,1	59,0	140,0
83177	83383	24 x 0,34	22	9,4	79,0	190,0
83178	83384	27 x 0,34	22	9,7	88,0	207,0
83179	83385	30 x 0,34	22	10,2	97,8	225,0
83185	83386	2 x 0,56	20	4,6	9,8	30,0
83186	83387	3 x 0,56	20	4,8	14,6	33,0
83187	83388	4 x 0,56	20	5,2	19,4	41,0

Part no. Jacket colour	Part no. Jacket colour	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. approx. weight kg / km	Weight approx. kg / km
83188	83389	6 x 0,56	20	6,1	29,0	65,0
83189	83390	10 x 0,56	20	7,6	48,2	102,0
83190	83391	12 x 0,56	20	7,8	58,2	120,0
83191	83392	16 x 0,56	20	8,7	77,3	152,0
83192	83393	18 x 0,56	20	9,3	87,0	168,0
83193	83394	24 x 0,56	20	10,9	116,3	224,0
83194	83395	27 x 0,56	20	11,2	129,8	260,0
83195	83396	30 x 0,56	20	11,8	144,6	300,0
83201	83397	2 x 0,82	18	6,1	15,2	50,0
83202	83398	3 x 0,82	18	6,4	23,2	62,0
83203	83399	4 x 0,82	18	6,9	31,3	72,0
83204	83474	6 x 0,82	18	8,1	47,0	100,0
83205	83475	10 x 0,82	18	10,4	78,2	180,0
83206	83476	12 x 0,82	18	10,9	94,0	182,0
83207	83477	16 x 0,82	18	12,2	125,1	240,0
83208	83478	18 x 0,82	18	13,0	141,1	270,0
83209	83479	24 x 0,82	18	15,2	188,2	370,0
83210	83480	27 x 0,82	18	15,8	212,0	400,0
83211	83481	30 x 0,82	18	16,3	235,6	470,0
83217	83482	2 x 1,3	16	6,6	24,4	70,0
83218	83483	3 x 1,3	16	7,0	37,1	90,0
83219	83484	4 x 1,3	16	7,6	49,4	110,0
83220	83491	6 x 1,3	16	9,2	74,2	160,0
83221	83492	10 x 1,3	16	11,8	124,0	250,0
83222	83493	12 x 1,3	16	12,2	149,0	300,0
83223	83494	16 x 1,3	16	13,7	198,7	400,0
83224	83495	18 x 1,3	16	14,6	224,0	450,0
83225	83496	24 x 1,3	16	17,0	298,4	650,0
83226	83497	27 x 1,3	16	17,6	336,0	680,0
83227	83498	30 x 1,3	16	18,6	373,6	750,0

Dimensions and specifications may be changed without prior notice. (RN02)

Prices on request.

Command Cable UL (LiYCY) style 2464, 300V, 80°C,

EMC-preferred type



Technical data

- Special PVC command cable, approved to UL-Style 2464, cores according AWG 26-20 to UL-Style 1061/1729 AWG 18-16 to UL-Style 1007/1569
- **Temperature range**
flexing -10 °C to +80 °C
fixed installation -20 °C to +80 °C
- **Nominal voltage** 300 V
- **Test voltage** 1500 V
- **Breakdown voltage**
min. 3000 V
- **Minimum bending radius**
fixed approx. 7,5 cable ø
flexing approx. 15 cable ø
- **Coupling resistance**
max. 250 Ohm/km

Cable structure

- Tinned copper, fine wire conductors
AWG 26-20 gem. ASTM-B 174-95 class J-M,
AWG 18-16 gem. ASTM-B 286
conductor make-up to
0,14 mm² = 7x0,162 mm
0,23 mm² = 7x0,202 mm
0,34 mm² = 7x0,254 mm
0,56 mm² = 7x0,32 mm
0,82 mm² = 19x0,235 mm
1,30 mm² = 19x0,31 mm
- Special PVC core insulation class 43, semirigid to UL-Std. 1581 table 50.182 and 50.183
- Colour coded to DIN 47100 or international colour code
- Cores stranded in layers with optimal lay-length
- Separator-foil
- Drain wire
- Tinned copper wire braiding, approx. 85% coverage
- Special PVC outer jacket class 43 to UL-Std. 1581 table 50.182
- Outer jacket colour
black (international colour code)
grey (DIN 47100 / preferred type from stock)

Properties

- PVC flame retardant according to UL VW-1/CSA FT1
- **Conditionally resistant to**
Oil
Solvents
Acids
Lyes
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm².
- **non-screened analogue types:**
Command Cable UL (LiYY)

Application

This cable type is suitable for use as a flexible connector cable in the fields of electronics, control and command technology as well as for measuring, signal and impulse transfer. Quick and cost favourable connections through cutting and clamping technics.

EMC = Electromagnetic compatibility

To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	Part no.	No. cores x	AWG-No.	Outer Ø	Cop.	Weight
Jacket colour	Jacket colour	cross-sec.		approx.	approx.	approx.
grey	black	mm ²		mm	kg / km	kg / km
83254	83976	2 x 0,14	26	3,9	12,6	20,0
83255	83977	3 x 0,14	26	4,2	13,7	25,0
83256	83978	4 x 0,14	26	4,4	14,9	28,0
83257	83979	6 x 0,14	26	5,0	18,9	30,0
83258	83980	10 x 0,14	26	6,1	29,5	50,0
83259	83981	12 x 0,14	26	6,3	31,4	53,0
83260	83982	16 x 0,14	26	6,8	43,9	60,0
83261	83983	18 x 0,14	26	7,1	52,1	70,0
83262	83984	24 x 0,14	26	8,0	62,8	100,0
83263	83985	27 x 0,14	26	8,4	66,3	105,0
83264	83986	30 x 0,14	26	8,6	70,4	110,0

Part no.	Part no.	No. cores x	AWG-No.	Outer Ø	Cop.	Weight
Jacket colour	Jacket colour	cross-sec.		approx.	approx.	approx.
grey	black	mm ²		mm	kg / km	kg / km
83270	83987	2 x 0,23	24	4,3	16,1	20,0
83271	83988	3 x 0,23	24	4,5	18,9	25,0
83272	83989	4 x 0,23	24	4,8	23,0	30,0
83273	83990	6 x 0,23	24	5,4	32,8	40,0
83274	83991	10 x 0,23	24	6,5	50,9	60,0
83275	83992	12 x 0,23	24	6,7	59,1	70,0
83276	83993	16 x 0,23	24	7,4	68,4	90,0
83277	83994	18 x 0,23	24	7,7	79,5	123,0
83278	83995	24 x 0,23	24	8,8	97,3	131,0
83279	83996	27 x 0,23	24	9,0	122,0	160,0
83280	83997	30 x 0,23	24	9,3	132,0	170,0

Prices on request.

Continuation ▶

Command Cable UL (LiYCY) Style 2464, 300V, 80°C,

EMC-preferred type



Part no. Jacket colour grey	Part no. Jacket colour black	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
83286	65044	2 x 0,34	22	4,6	18,1	40,0
83287	65045	3 x 0,34	22	4,8	22,2	50,0
83288	65046	4 x 0,34	22	5,1	28,7	60,0
83289	65047	6 x 0,34	22	6,0	45,4	80,0
83290	65048	10 x 0,34	22	7,3	66,1	130,0
83291	65049	12 x 0,34	22	7,5	70,8	140,0
83292	65050	16 x 0,34	22	8,2	88,4	160,0
83293	65051	18 x 0,34	22	8,7	104,1	170,0
83294	65052	24 x 0,34	22	9,9	129,0	220,0
83295	65053	27 x 0,34	22	10,4	138,4	250,0
83296	65054	30 x 0,34	22	10,9	159,0	280,0
83302	65055	2 x 0,56	20	5,1	29,4	50,0
83303	65056	3 x 0,56	20	5,3	39,7	55,0
83304	65057	4 x 0,56	20	5,6	46,1	61,0
83305	65058	6 x 0,56	20	6,6	66,8	90,0
83306	65059	10 x 0,56	20	8,1	93,1	133,0
83307	65060	12 x 0,56	20	8,4	117,4	151,0
83308	65061	16 x 0,56	20	9,5	130,4	190,0
83309	65062	18 x 0,56	20	9,9	151,4	216,0
83310	65063	24 x 0,56	20	11,5	237,0	339,0
83311	65064	27 x 0,56	20	12,0	257,4	374,0
83312	65065	30 x 0,56	20	12,4	297,0	397,0
83318	65066	2 x 0,82	18	6,5	39,1	60,0
83319	65067	3 x 0,82	18	6,8	50,0	75,0
83320	65068	4 x 0,82	18	7,4	59,1	90,0
83321	65069	6 x 0,82	18	8,8	89,1	125,0
83322	65070	10 x 0,82	18	10,9	141,4	180,0
83323	65071	12 x 0,82	18	11,2	152,8	220,0
83324	65072	16 x 0,82	18	12,9	184,1	290,0
83325	65073	18 x 0,82	18	13,5	207,2	300,0
83326	65074	24 x 0,82	18	15,6	272,6	450,0
83327	65075	27 x 0,82	18	15,9	289,1	470,0
83328	65076	30 x 0,82	18	16,6	317,4	490,0
83334	65077	2 x 1,3	16	6,9	59,1	90,0
83335	65078	3 x 1,3	16	7,3	74,1	160,0
83336	65079	4 x 1,3	16	7,9	96,4	200,0
83337	65080	6 x 1,3	16	9,6	137,4	290,0
83338	65081	10 x 1,3	16	12,4	191,7	450,0
83339	65082	12 x 1,3	16	12,8	251,7	600,0
83340	65083	16 x 1,3	16	12,8	276,1	650,0
83341	65084	18 x 1,3	16	15,5	364,1	680,0
83342	65085	24 x 1,3	16	18,1	442,4	900,0
83343	65086	27 x 1,3	16	18,7	494,7	990,0
83344	65087	30 x 1,3	16	19,5	521,4	1050,0

Dimensions and specifications may be changed without prior notice. (RN02)

Prices on request.



Photo: REpower

Command Cable UL (LiYY-TP) style 2464/300V, 80°C



Technical data

- Special PVC command cable, approved to UL-Style 2464, cores according, UL-Style 1061/1729
- **Temperature range**
flexing -10 °C to +80 °C
fixed installation -20 °C to +80 °C
- **Nominal voltage** 300 V
- **Test voltage** 1500 V
- **Breakdown voltage**
min. 3000 V
- **Insulation resistance**
min. 100 MOhm x km
- **Minimum bending radius**
fixed approx. 7,5 cable ø
flexing approx. 15 cable ø

Cable structure

- Tinned copper, fine wire conductors to ASTM-B 174-95 class J-M conductor make-up to
0,14 mm² = 7x0,162 mm
0,23 mm² = 7x0,202 mm
0,34 mm² = 7x0,254 mm
0,56 mm² = 7x0,32 mm
- Special PVC core insulation class 43, semirigid to UL-Std. 1581 table 50.182 and 50.183
- Colour coded to DIN 47100 with colour repetition from pair no. 23 and above or international colour code
- Cores stranded in pairs with optimal lay-length
- Pairs stranded in layers with optimal lay-length
- Separator-foil
- Special PVC outer jacket class 43 to UL-Std. 1581 table 50.182
- Outer jacket colour
black (international colour code)
grey (DIN 47100 / preferred type)

Properties

- PVC flame retardant according to UL VW-1/CSA FT1
- **Conditionally resistant to**
Oil
Solvents
Acids
Lyes
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm².
- **screened analogue type:**
Command Cable UL (LiYCY-TP)

Application

Twisted pair control cable for use in tool making machinery conveyor system and production lines, in industrial plants and in air conditioning as well as in the steel producing industries.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no. Jacket colour	No. pairs x cross-sec. mm ²	AWG-No. approx.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
grey					
83904	1 x 2 x 0,14	26	3,6	2,7	20,0
83905	2 x 2 x 0,14	26	5,1	5,4	24,0
83906	3 x 2 x 0,14	26	5,3	8,1	30,0
83907	4 x 2 x 0,14	26	5,8	10,8	38,0
83908	5 x 2 x 0,14	26	6,2	13,6	44,0
83909	6 x 2 x 0,14	26	6,8	16,2	51,0
83910	7 x 2 x 0,14	26	6,8	19,0	57,0
83911	8 x 2 x 0,14	26	7,3	21,7	64,0
83912	10 x 2 x 0,14	26	7,4	26,7	76,0
83913	12 x 2 x 0,14	26	9,1	32,6	93,0
83914	14 x 2 x 0,14	26	9,8	37,4	103,0
83915	15 x 2 x 0,14	26	10,6	40,7	109,0
83916	16 x 2 x 0,14	26	10,6	43,4	112,0
83917	18 x 2 x 0,14	26	11,1	48,5	119,0
83918	20 x 2 x 0,14	26	11,9	54,2	130,0
83919	22 x 2 x 0,14	26	12,4	59,3	150,0
83920	24 x 2 x 0,14	26	13,1	64,7	169,0
83921	25 x 2 x 0,14	26	13,4	67,2	178,0
83922	1 x 2 x 0,23	24	3,8	4,8	32,0
83923	2 x 2 x 0,23	24	5,4	9,7	36,0
83924	3 x 2 x 0,23	24	5,7	14,7	48,0
83925	4 x 2 x 0,23	24	6,2	19,6	56,0
83926	5 x 2 x 0,23	24	6,6	24,6	71,0
83927	6 x 2 x 0,23	24	7,2	29,3	80,0
83928	7 x 2 x 0,23	24	7,2	34,1	89,0
83929	8 x 2 x 0,23	24	7,8	39,1	98,0
83930	10 x 2 x 0,23	24	9,2	48,9	111,0
83931	12 x 2 x 0,23	24	9,7	59,4	135,0
83932	14 x 2 x 0,23	24	10,2	68,7	160,0

Part no. Jacket colour	No. pairs x cross-sec. mm ²	AWG-No. approx.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
black					
65214	1 x 2 x 0,14	26	3,6	2,7	20,0
65215	2 x 2 x 0,14	26	5,1	5,4	24,0
65216	3 x 2 x 0,14	26	5,3	8,1	30,0
65217	4 x 2 x 0,14	26	5,8	10,8	38,0
65218	5 x 2 x 0,14	26	6,2	13,6	44,0
65219	6 x 2 x 0,14	26	6,8	16,2	51,0
65220	7 x 2 x 0,14	26	6,8	19,0	57,0
65221	8 x 2 x 0,14	26	7,3	21,7	64,0
65222	10 x 2 x 0,14	26	7,4	26,7	76,0
65223	12 x 2 x 0,14	26	9,1	32,6	93,0
65224	14 x 2 x 0,14	26	9,8	37,4	103,0
65225	15 x 2 x 0,14	26	10,6	40,7	109,0
65226	16 x 2 x 0,14	26	10,6	43,4	112,0
65227	18 x 2 x 0,14	26	11,1	48,5	119,0
65228	20 x 2 x 0,14	26	11,9	54,2	130,0
65229	22 x 2 x 0,14	26	12,4	59,3	150,0
65230	24 x 2 x 0,14	26	13,1	64,7	169,0
65231	25 x 2 x 0,14	26	13,4	67,2	178,0
65232	1 x 2 x 0,22	24	3,8	4,8	32,0
65233	2 x 2 x 0,22	24	4,0	9,7	36,0
65234	3 x 2 x 0,22	24	5,7	14,7	48,0
65235	4 x 2 x 0,22	24	2,0	19,6	56,0
65236	5 x 2 x 0,22	24	6,0	24,6	56,0
65237	6 x 2 x 0,22	24	7,2	29,3	80,0
65238	7 x 2 x 0,22	24	7,2	34,1	89,0
65239	8 x 2 x 0,22	24	7,8	39,1	98,0
65240	10 x 2 x 0,22	24	9,2	48,9	111,0
65241	12 x 2 x 0,22	24	9,7	59,4	135,0
65242	14 x 2 x 0,22	24	10,2	68,7	160,0

Preise auf Anfrage.

Continuation ▶

Command Cable UL (LiYY-TP) style 2464/300V, 80°C



Part no. Jacket colour	No.pairs x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
grey					
83933	15 x 2 x 0,23	24	10,9	73,7	171,0
83934	16 x 2 x 0,23	24	10,9	79,1	185,0
83935	18 x 2 x 0,23	24	11,5	88,9	209,0
83936	20 x 2 x 0,23	24	12,2	98,4	230,0
83937	22 x 2 x 0,23	24	13,0	108,6	248,0
83938	24 x 2 x 0,23	24	13,7	117,9	279,0
83939	25 x 2 x 0,23	24	14,2	123,5	292,0
83940	1 x 2 x 0,34	22	4,2	6,5	38,0
83941	2 x 2 x 0,34	22	5,9	13,0	44,0
83942	3 x 2 x 0,34	22	6,3	19,5	60,0
83943	4 x 2 x 0,34	22	7,0	26,1	79,0
83944	5 x 2 x 0,34	22	7,6	32,6	92,0
83945	6 x 2 x 0,34	22	8,2	39,2	119,0
83946	7 x 2 x 0,34	22	8,2	45,7	128,0
83947	8 x 2 x 0,34	22	9,0	52,3	139,0
83948	10 x 2 x 0,34	22	10,7	65,3	171,0
83949	12 x 2 x 0,34	22	11,3	78,4	194,0
83950	14 x 2 x 0,34	22	12,1	91,5	222,0
83951	15 x 2 x 0,34	22	12,7	97,8	231,0
83952	16 x 2 x 0,34	22	12,7	104,6	240,0
83953	18 x 2 x 0,34	22	13,6	117,8	264,0
83954	20 x 2 x 0,34	22	14,4	130,7	291,0
83955	22 x 2 x 0,34	22	15,1	143,6	300,0
83956	24 x 2 x 0,34	22	16,2	156,8	359,0
83957	25 x 2 x 0,34	22	16,7	163,3	381,0
83958	1 x 2 x 0,56	20	4,6	10,8	60,0
83959	2 x 2 x 0,56	20	6,5	21,5	80,0
83960	3 x 2 x 0,56	20	7,1	32,3	94,0
83961	4 x 2 x 0,56	20	7,8	43,1	104,0
83962	5 x 2 x 0,56	20	8,6	53,8	130,0
83963	6 x 2 x 0,56	20	9,6	64,6	151,0
83964	7 x 2 x 0,56	20	9,6	75,3	174,0
83965	8 x 2 x 0,56	20	12,2	86,1	262,0
83966	10 x 2 x 0,56	20	12,5	107,7	298,0
83967	12 x 2 x 0,56	20	13,1	129,1	302,0
83968	14 x 2 x 0,56	20	13,8	150,6	327,0
83969	15 x 2 x 0,56	20	14,7	161,3	370,0
83970	16 x 2 x 0,56	20	14,7	172,1	402,0
83971	18 x 2 x 0,56	20	15,7	193,6	480,0
83972	20 x 2 x 0,56	20	16,7	215,1	551,0
83973	22 x 2 x 0,56	20	17,2	236,6	621,0
83974	24 x 2 x 0,56	20	18,6	258,0	703,0
83975	25 x 2 x 0,56	20	19,2	268,9	721,0

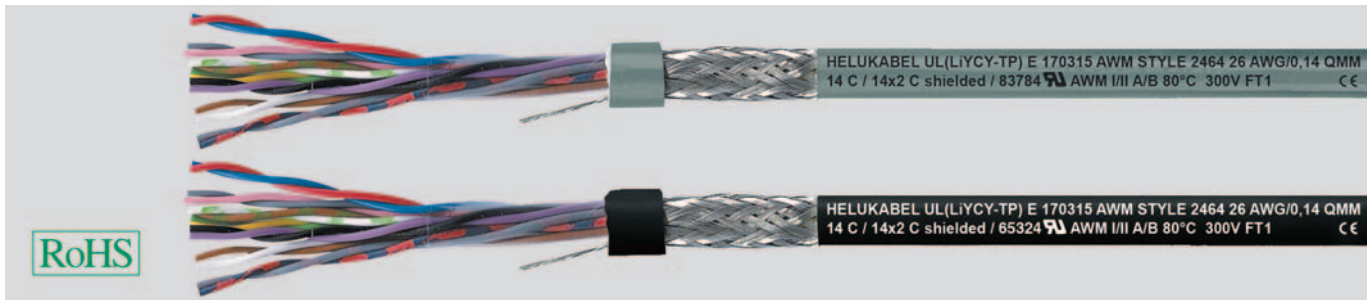
Part no. Jacket colour	No.pairs x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
black					
65243	15 x 2 x 0,22	24	10,9	73,7	171,0
65244	16 x 2 x 0,22	24	10,9	79,1	185,0
65245	18 x 2 x 0,22	24	11,5	88,9	209,0
65246	20 x 2 x 0,22	24	12,2	98,4	230,0
65247	22 x 2 x 0,22	24	13,0	108,6	248,0
65248	24 x 2 x 0,22	24	13,7	117,9	279,0
65249	25 x 2 x 0,22	24	14,2	123,5	292,0
65250	1 x 2 x 0,34	22	4,2	6,5	38,0
65251	2 x 2 x 0,34	22	5,9	13,0	44,0
65252	3 x 2 x 0,34	22	6,3	19,5	60,0
65253	4 x 2 x 0,34	22	7,0	26,1	79,0
65254	5 x 2 x 0,34	22	7,6	32,6	92,0
65255	6 x 2 x 0,34	22	8,2	39,2	119,0
65256	7 x 2 x 0,34	22	8,2	45,7	128,0
65257	8 x 2 x 0,34	22	9,0	52,3	139,0
65258	10 x 2 x 0,34	22	10,7	65,3	171,0
65259	12 x 2 x 0,34	22	11,3	78,4	194,0
65260	14 x 2 x 0,34	22	12,1	91,5	222,0
65261	15 x 2 x 0,34	22	12,7	97,8	231,0
65262	16 x 2 x 0,34	22	12,7	104,6	240,0
65263	18 x 2 x 0,34	22	13,6	117,8	264,0
65264	20 x 2 x 0,34	22	14,4	130,7	291,0
65265	22 x 2 x 0,34	22	15,1	143,6	300,0
65266	24 x 2 x 0,34	22	16,2	156,8	359,0
65267	25 x 2 x 0,34	22	16,7	163,3	381,0
65268	1 x 2 x 0,56	20	4,6	10,8	60,0
65269	2 x 2 x 0,56	20	6,5	21,5	80,0
65270	3 x 2 x 0,56	20	7,1	32,3	94,0
65271	4 x 2 x 0,56	20	7,8	43,1	104,0
65272	5 x 2 x 0,56	20	8,6	53,8	130,0
65273	6 x 2 x 0,56	20	9,6	64,6	151,0
65274	7 x 2 x 0,56	20	9,6	75,3	174,0
65275	8 x 2 x 0,56	20	12,2	86,1	262,0
65276	10 x 2 x 0,56	20	12,5	107,7	298,0
65277	12 x 2 x 0,56	20	13,1	129,1	302,0
65278	14 x 2 x 0,56	20	13,8	150,6	327,0
65279	15 x 2 x 0,56	20	14,7	161,3	370,0
65280	16 x 2 x 0,56	20	14,7	172,1	402,0
65281	18 x 2 x 0,56	20	15,7	193,6	480,0
65282	20 x 2 x 0,56	20	16,7	215,1	551,0
65283	22 x 2 x 0,56	20	17,2	236,6	621,0
65284	24 x 2 x 0,56	20	18,6	258,0	703,0
65285	25 x 2 x 0,56	20	19,2	268,9	721,0

Dimensions and specifications may be changed without prior notice. (RN02)

Prices on request.

Command Cable UL (LiYCY-TP) style 2464/300 V, 80°C,

EMC-preferred type



Technical data

- Special PVC command cable, approved to UL-Style 2464, cores according, UL-Style 1061/1729
- **Temperature range**
flexing -10 °C to +80 °C
fixed installation -20 °C to +80 °C
- **Nominal voltage** 300 V
- **Test voltage** 1500 V
- **Breakdown voltage**
min. 3000 V
- **Insulation resistance**
min. 100 MOhm x km
- **Minimum bending radius**
fixed approx. 7,5 cable ø
flexing approx. 15 cable ø
- **Coupling resistance**
max. 250 Ohm/km

Cable structure

- Tinned copper, fine wire conductors to ASTM-B 174-95 class J-M
Conductor make-up to
0,14 mm² = 7x0,162 mm
0,23 mm² = 7x0,202 mm
0,34 mm² = 7x0,254 mm
0,56 mm² = 7x0,32 mm
- Special PVC core insulation class 43, semirigid to UL-Std. 1581 table 50.182 and 50183
- Colour coded to DIN 47100 with colour repetition from pair no. 22 and above or international colour code
- Cores stranded in pairs with optimal lay-length
- Pairs stranded in layers with optimal lay-length
- Separator-foil
- Drain wire
- Tinned copper wire braiding, approx. 85% coverage
- Special PVC outer jacket class 43 to UL-Std. 1581 table 50.182
- Outer jacket colour
black (international colour code)
grey (DIN 47100 / preferred type from stock)

Properties

- PVC flame retardant according to UL VW-1/CSA FT1
- **Conditionally resistant to**
Oil
Solvents
Acids
Lyes
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm².
- **non-screened analogue type:**
Command Cable UL (LiY-TP)

Application

Twisted pair control cable for use in tool making machinery conveyor system and production lines, in industrial plants and in air conditioning as well as in the steel producing industries.

EMC = Electromagnetic compatibility

To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	Jacket colour	Jacket colour	No.pairs x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	Part no.	Jacket colour	Jacket colour	No.pairs x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
83774	grey	black	1 x 2 x 0,14	26	4,0	15,7	32,0	83792	grey	black	1 x 2 x 0,23	24	4,2	16,4	46,0
83775	65314	65315	2 x 2 x 0,14	26	5,6	19,5	39,0	83793	65332	65333	2 x 2 x 0,23	24	5,9	27,4	53,0
83776	65316	65317	3 x 2 x 0,14	26	5,8	23,7	47,0	83794	65334	65335	3 x 2 x 0,23	24	6,2	31,7	65,0
83777	65317	65318	4 x 2 x 0,14	26	6,3	26,9	55,0	83795	65336	65337	4 x 2 x 0,23	24	6,7	37,4	79,0
83778	65318	65319	5 x 2 x 0,14	26	6,7	31,2	68,0	83796	65338	65339	5 x 2 x 0,23	24	7,2	54,7	98,0
83779	65319	65320	6 x 2 x 0,14	26	7,3	49,7	86,0	83797	65340	65341	6 x 2 x 0,23	24	7,7	65,6	114,0
83780	65320	65321	7 x 2 x 0,14	26	7,3	52,0	92,0	83798	65342	65343	7 x 2 x 0,23	24	7,7	60,2	121,0
83781	65321	65322	8 x 2 x 0,14	26	7,8	55,9	97,0	83799	65344	65345	8 x 2 x 0,23	24	8,4	74,1	129,0
83782	65322	65323	10 x 2 x 0,14	26	9,1	59,6	111,0	83800	65346	65347	10 x 2 x 0,23	24	9,9	109,3	152,0
83783	65323	65324	12 x 2 x 0,14	26	9,8	67,1	141,0	83801	65348	65349	12 x 2 x 0,23	24	10,2	115,8	189,0
83784	65324	65325	14 x 2 x 0,14	26	10,5	75,2	150,0	83802	65342	65343	14 x 2 x 0,23	24	10,9	120,7	213,0
83785	65325	65326	15 x 2 x 0,14	26	11,1	77,3	154,0	83803	65344	65345	15 x 2 x 0,23	24	11,4	132,4	225,0
83786	65326	65327	16 x 2 x 0,14	26	11,1	80,4	155,0	83804	65346	65347	16 x 2 x 0,23	24	11,4	141,6	227,0
83787	65327	65328	18 x 2 x 0,14	26	11,8	84,2	170,0	83805	65348	65349	18 x 2 x 0,23	24	12,2	146,6	238,0
83788	65328	65329	20 x 2 x 0,14	26	12,4	98,2	183,0	83806	65342	65343	20 x 2 x 0,23	24	12,7	160,6	270,0
83789	65329	65330	22 x 2 x 0,14	26	13,1	104,1	207,0	83807	65344	65345	22 x 2 x 0,23	24	13,5	170,8	300,0
83790	65330	65331	24 x 2 x 0,14	26	13,6	112,0	228,0	83808	65346	65347	24 x 2 x 0,23	24	14,5	229,7	321,0
83791	65331		25 x 2 x 0,14	26	15,1	114,4	239,0	83809	65348	65349	25 x 2 x 0,23	24	14,8	251,4	340,0

Prices on request.

Continuation ►

Command Cable UL (LiYCY-TP) Style 2464/300 V, 80°C,

EMC-preferred type



Part no.	Jacket colour	Jacket colour	No.pairs x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
83810	grey	black	1 x 2 x 0,34	22	4,6	17,0	58,0
83811	grey	black	2 x 2 x 0,34	22	6,4	36,7	65,0
83812	grey	black	3 x 2 x 0,34	22	6,9	44,6	78,0
83813	grey	black	4 x 2 x 0,34	22	7,5	54,1	88,0
83814	grey	black	5 x 2 x 0,34	22	8,1	63,4	110,0
83815	grey	black	6 x 2 x 0,34	22	8,8	73,4	126,0
83816	grey	black	7 x 2 x 0,34	22	8,8	79,4	140,0
83817	grey	black	8 x 2 x 0,34	22	9,7	88,4	148,0
83818	grey	black	10 x 2 x 0,34	22	11,5	107,0	184,0
83819	grey	black	12 x 2 x 0,34	22	12,0	122,4	210,0
83820	grey	black	14 x 2 x 0,34	22	12,6	138,2	241,0
83821	grey	black	15 x 2 x 0,34	22	13,4	154,3	245,0
83822	grey	black	16 x 2 x 0,34	22	13,4	161,4	251,0
83823	grey	black	18 x 2 x 0,34	22	14,4	197,9	275,0
83824	grey	black	20 x 2 x 0,34	22	15,0	211,4	300,0
83825	grey	black	22 x 2 x 0,34	22	15,9	217,6	320,0
83826	grey	black	24 x 2 x 0,34	22	17,0	230,4	371,0
83827	grey	black	25 x 2 x 0,34	22	17,3	138,5	402,0

Part no.	Jacket colour	Jacket colour	No.pairs x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
83828	grey	black	1 x 2 x 0,56	20	5,0	26,0	70,0
83829	grey	black	2 x 2 x 0,56	20	7,0	56,1	89,0
83830	grey	black	3 x 2 x 0,56	20	7,6	71,7	102,0
83831	grey	black	4 x 2 x 0,56	20	8,3	92,4	119,0
83832	grey	black	5 x 2 x 0,56	20	9,1	107,4	140,0
83833	grey	black	6 x 2 x 0,56	20	10,1	122,4	162,0
83834	grey	black	7 x 2 x 0,56	20	10,1	131,7	198,0
83835	grey	black	8 x 2 x 0,56	20	12,7	144,3	272,0
83836	grey	black	10 x 2 x 0,56	20	13,2	179,6	307,0
83837	grey	black	12 x 2 x 0,56	20	13,6	201,7	318,0
83838	grey	black	14 x 2 x 0,56	20	14,4	221,4	342,0
83839	grey	black	15 x 2 x 0,56	20	15,5	231,6	381,0
83840	grey	black	16 x 2 x 0,56	20	15,5	257,1	417,0
83841	grey	black	18 x 2 x 0,56	20	16,3	282,4	494,0
83842	grey	black	20 x 2 x 0,56	20	17,1	306,7	570,0
83843	grey	black	22 x 2 x 0,56	20	18,0	321,8	643,0
83844	grey	black	24 x 2 x 0,56	20	19,4	342,4	724,0
83845	grey	black	25 x 2 x 0,56	20	19,8	361,2	740,0

Dimensions and specifications may be changed without prior notice. (RN02)

Prices on request.



Photo: HELUKABEL®



HELUKABEL SUPERTRONIC-PURö 4x0,25 QMM / 49596 350 V 001042052

CE



Technical data

- Special PUR drag chain cables adapted to DIN VDE 0281 part 13
- Very high flexible due to special construction
- **Temperature range**
flexing -5 °C to +70 °C
fixed installation -40 °C to +70 °C
- **Nominal voltage** 350 V
- **Test voltage** 1500 V
- **Breakdown voltage** min. 3000 V
- **Insulation resistance**
min. 20 MΩm x km
- **Minimum bending radius**
flexing 5x cable ø
fixed installation 3x cable ø
- **Radiation resistance**
up to 100x10⁶ cJ/kg (up to 100 Mrad)

Cable structure

- Bare copper, extra fine wire conductors, to DIN VDE 0295 cl. 6, col. 4 and 5, cl. 6 and IEC 60228 cl. 6
- **Oil resistant** PVC core insulation TI2, in adapted to DIN VDE 0281 part 1, for better sliding abilities
- Cores are stranded in layer with short lay-length
- Cores colour coded to DIN 47100
- Core wrapping with textile tape
- Special **full-polyurethane** outer jacket TMPU to DIN VDE 0282 part 10, appendix A
- Outer jacket grey (RAL 7001), surface mat
- with meter marking, change-over in 2011

Properties

- **Features**
High flexibility at low temperature, high abrasion resistance, break and cut-resistant, tear resistant, flame retardant.
- **Resistant to** UV-radiation, Oxygen, Ozone, Hydrolyse, Oil.
- **Conditional resistant to** Microbes, Hydraulic liquidity, Alkalis, Lye.
- The PUR outer jacket is extremely robust with high tear, abrasion and oil-resistance. Adhesion-free.
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm².

Application

Perfect for use with cable trays. This highly flexible and screened PUR control cable is ideal for use wherever frequent high flexing motion is required, e.g. in robotics or all moving parts. The long working life of this cable makes it both efficient and economic. For applications which go beyond standard solutions (for example for composting appliances or high shelf conveyors with extremely high processing speeds etc.) we recommend for our especially developed enquiry sheet for energy guiding systems. Before installation in cable trays please read the instructions. Further technical details see selection table for drag chain cables, see lead text. CE – The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
49583	2 x 0,14	3,5	2,8	22,0	26
49584	3 x 0,14	3,7	4,1	24,0	26
49585	4 x 0,14	3,9	5,6	29,0	26
49586	5 x 0,14	4,2	7,0	33,0	26
49587	7 x 0,14	4,9	9,8	47,0	26
49588	10 x 0,14	6,2	14,0	59,0	26
49589	12 x 0,14	6,4	16,8	67,0	26
49590	14 x 0,14	6,6	19,6	74,0	26
49591	18 x 0,14	7,3	25,2	86,0	26
49592	24 x 0,14	8,5	33,6	115,0	26
49593	25 x 0,14	8,6	35,0	120,0	26
49594	2 x 0,25	4,1	5,0	27,0	24
49595	3 x 0,25	4,3	7,5	33,0	24
49596	4 x 0,25	4,8	10,0	40,0	24
49597	5 x 0,25	5,2	12,5	48,0	24
49598	7 x 0,25	6,2	17,5	60,0	24
49599	10 x 0,25	7,4	25,0	79,0	24

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
49600	12 x 0,25	7,6	30,1	91,0	24
49601	14 x 0,25	7,9	35,0	102,0	24
49602	18 x 0,25	8,9	45,0	125,0	24
49603	24 x 0,25	10,0	60,0	163,0	24
49604	25 x 0,25	10,6	62,5	170,0	24
49605	2 x 0,34	4,5	6,8	32,0	22
49606	3 x 0,34	4,9	10,2	40,0	22
49607	4 x 0,34	5,3	13,6	55,0	22
49608	5 x 0,34	5,8	17,0	60,0	22
49609	7 x 0,34	6,9	23,8	80,0	22
49610	10 x 0,34	8,4	34,0	112,0	22
49611	12 x 0,34	8,6	40,8	127,0	22
49612	14 x 0,34	9,0	47,6	142,0	22
49613	18 x 0,34	10,1	61,2	175,0	22
49614	24 x 0,34	12,0	81,5	229,0	22
49615	25 x 0,34	12,2	85,0	238,0	22

Dimensions and specifications may be changed without prior notice. (RC03)

Prices on request.

SUPERTRONIC®-C-PURÖ special cable for drag chains, halogen-free, EMC-preferred type, meter marking



HELUKABEL SUPERTRONIC-C-PURÖ 4x0,25 QMM / 49666 500 V 001042077



Technical data

- Special PUR drag chain cables, screened, in adapted to DIN VDE 0281 part 13
- **Temperature range**
flexing -40 °C to +70 °C
fixed installation -50 °C to +70 °C
- **Nominal voltage**
0,14 mm² 350 V
0,25 and 0,34 mm² 500 V
- **Test voltage**
0,14 mm² 800 V
0,25 and 0,34 mm² 1200 V
- **Capacitance** core/core <80 nF/km
- **Minimum bending radius**
flexing 7,5x cable ø
fixed installation 4x cable ø
- **Radiation resistance**
up to 100x10

Cable structure

- Plain copper conductors extra fine wire stranded to DIN VDE 0295 cl. 6, col. 4 and 5, IEC 60228 cl. 6
- **Oil resistant** TPE core insulation
- Cores are stranded in layer with short lay-length
- Cores colour coded to DIN 47100
- Core wrapping with textile tape
- Tinned copper screened braiding. Due to the technical facilities, the copper braiding can be mixed and webbed with a portion of synthetic fibres
- Special **full-polyurethane** outer jacket TMPU to DIN VDE 0282 part 10, appendix A
- Outer jacket grey (RAL 7001)
- with meter marking, change-over in 2011

Properties

- **Features**
High flexibility at low temperature, high abrasion resistance, break and cut-resistant, tear resistant, flame retardant.
- **Resistant to** UV-radiation, Oxygen, Ozone, Hydrolyse, Oil.
- **Conditional resistant to** Microbes, Hydraulic liquidity, Alkalis, Lye.
- The PUR outer jacket is extremely robust with high tear, abrasion and oil-resistance.
- Adhesion-free.
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm².

Application

Used for installation in dry, moist and wet environments as well as for outdoors, for free movement without forced motion and for flexible routing without forced motion, for proven use as drag-chain cables. Suitable as a highly flexible control cable for fast hoisting and bending stresses in machinery and tooling construction, in robotics engineering and for continuously moving machinery parts.

The long working life of this cable makes it both efficient and economic. The copper braided screening offers effective protection from both internal and external interference.

For applications which go beyond standard solutions (for example for composting appliances or high shelf conveyors with extremely high processing speeds etc.) we recommend for our especially developed enquiry sheet for energy guiding systems.

Before installation in cable trays please read the instructions. Further technical details see selection table for drag chain cables, see lead text.

EMC = Electromagnetic compatibility

To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.	Part no.	No. cores x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
49653	2 x 0,14	4,1	11,2	32,0	26	49670	12 x 0,25	8,4	59,1	124,0	24
49654	3 x 0,14	4,3	14,1	35,0	26	49671	14 x 0,25	8,7	64,2	135,0	24
49655	4 x 0,14	4,5	15,5	40,0	26	49672	18 x 0,25	9,5	78,4	160,0	24
49656	5 x 0,14	4,8	18,3	45,0	26	49673	24 x 0,25	11,0	89,9	202,0	24
49657	7 x 0,14	5,7	27,8	66,0	26	49674	25 x 0,25	11,1	101,0	211,0	24
49658	10 x 0,14	6,7	39,3	86,0	26	49675	2 x 0,34	5,0	18,1	45,0	22
49659	12 x 0,14	6,9	42,1	94,0	26	49676	3 x 0,34	5,4	28,7	60,0	22
49660	14 x 0,14	7,1	45,3	102,0	26	49677	4 x 0,34	6,2	35,7	76,0	22
49661	18 x 0,14	7,8	54,1	118,0	26	49678	5 x 0,34	6,7	39,1	82,0	22
49662	24 x 0,14	9,0	66,3	149,0	26	49679	7 x 0,34	7,6	52,7	110,0	22
49663	25 x 0,14	9,1	68,4	156,0	26	49680	10 x 0,34	9,2	67,4	148,0	22
49664	2 x 0,25	4,6	14,9	38,0	24	49681	12 x 0,34	9,4	76,4	166,0	22
49665	3 x 0,25	4,8	18,8	44,0	24	49682	14 x 0,34	10,0	85,5	185,0	22
49666	4 x 0,25	5,3	21,3	51,0	24	49683	18 x 0,34	10,9	99,7	216,0	22
49667	5 x 0,25	5,7	31,0	68,0	24	49684	24 x 0,34	12,6	147,1	300,0	22
49668	7 x 0,25	6,7	39,6	82,0	24	49685	25 x 0,34	12,8	155,0	313,0	22
49669	10 x 0,25	8,2	53,9	110,0	24						

Dimensions and specifications may be changed without prior notice. (RC03)

Prices on request.

SUPERTRONIC-330 PURö cable for drag chains, halogen-free, meter marking



HELUKABEL SUPERTRONIC 330 PURö 4x0,34 QMM E 170515 AWM STYLE
20233 22 AWG 4C WV-1c AWM I/II A/B 80°C 300V FT1/ 49788 001070789



Technical data

- Special PUR sheathed cable
- **Temperature range**
flexing -40 °C to +80 °C
fixed -50 °C to +80 °C
- **Nominal voltage** 300 V
- **Test voltage**
core/core 1500 V
- **Insulation resistance**
min. 100 MOhm x km
- **Capacitance**
core/core 60 nF/km
- **Minimum bending radius**
flexing 5 x cable ø
fixed 3 x cable ø
- **Radiation resistance**
up to 100x10⁶ cJ/kg (up to 100 Mrad)

Cable structure

- Bare copper, extra fine-wire to DIN VDE 0295 cl. 6, col. 4, BS 6360 cl. 6
- Polyolefine core insulation
- Cores stranded in layers with optimally adjusted lay-lengths
- Cores colour coded to DIN 47100
- Foil wrapping over the outer layer
- Special **full-polyurethane** outer sheath TPU to DIN VDE 0282 Part 10, Annex A and acc. to UL std. 1581 Tab. 50227 80 °C
- Sheath colour grey (RAL 7001)
- with meter marking, change-over in 2011

Properties

- PUR flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- Low adhesion
- High flexibility at low temperatures
- High abrasion resistance
- Tear and cut-resistant
- Notch resistant
- **Resistant to**
UV-radiation, Oxygen, Ozone, Hydrolysis, Oil
- **Partially resistant to**
Microbial attack, Hydraulic fluids, Coolant emulsion, Alkalis
- The materials used in manufacture are silicon and cadmium-free and contain no substances harmful to the wetting properties of lacquers

Application

For installation in dry, moist and wet rooms and outdoors with free movement without tensile stress or forced movements, impressively proven in drag chain application.

A highly flexible PUR control cable, suitable for frequent and quick lifting and bending stresses in machine engineering and construction, in robot technology and on permanently moving machine components. Long service life guarantees reliable function and high cost-efficiency. For applications which go beyond standard solutions (for example for composting appliances or high shelf conveyors with extremely high processing speeds etc.) we recommend for our especially developed enquiry sheet for energy guiding systems. Before installation in cable trays please read the instructions. Further technical details see selection table for drag chain cables, see lead text.

Attractive for export-oriented mechanical engineering.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
49764	2 x 0,14	26	3,9	2,8	22,0
49765	3 x 0,14	26	4,0	4,1	24,0
49766	4 x 0,14	26	4,3	5,6	29,0
49767	5 x 0,14	26	4,7	7,0	33,0
49768	7 x 0,14	26	5,3	9,8	47,0
49769	10 x 0,14	26	6,1	14,0	57,0
49770	12 x 0,14	26	6,2	16,8	63,0
49771	14 x 0,14	26	6,5	19,6	72,0
49772	18 x 0,14	26	7,2	25,2	80,0
49773	24 x 0,14	26	8,2	33,6	110,0
49774	25 x 0,14	26	8,6	35,0	115,0
49775	2 x 0,25	24	4,3	5,0	26,0
49776	3 x 0,25	24	4,5	7,5	30,0
49777	4 x 0,25	24	4,8	10,0	39,0
49778	5 x 0,25	24	5,2	12,5	44,0
49779	7 x 0,25	24	6,0	17,5	52,0
49780	10 x 0,25	24	6,9	25,0	70,0
49781	12 x 0,25	24	7,1	30,1	84,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
49782	14 x 0,25	24	7,4	35,0	97,0
49783	18 x 0,25	24	8,2	45,0	114,0
49784	24 x 0,25	24	9,6	60,0	157,0
49785	25 x 0,25	24	10,1	62,5	160,0
49786	2 x 0,34	22	4,6	6,8	31,0
49787	3 x 0,34	22	4,8	10,2	38,0
49788	4 x 0,34	22	5,2	13,6	51,0
49789	5 x 0,34	22	5,6	17,0	54,0
49790	7 x 0,34	22	6,5	23,8	77,0
49791	10 x 0,34	22	7,5	34,0	104,0
49792	12 x 0,34	22	7,7	40,8	122,0
49793	14 x 0,34	22	8,1	47,6	140,0
49794	18 x 0,34	22	9,2	61,2	162,0
49795	24 x 0,34	22	10,7	81,5	204,0
49796	25 x 0,34	22	11,2	85,0	229,0

Dimensions and specifications may be changed without prior notice. (RN05)

Prices on request.

SUPERTRONIC-330 C-PURö cable for drag chains, halogen-free, EMC-preferred type, meter marking



Technical data

- Special PUR sheathed cable, screened
- **Temperature range**
flexing -40 °C to +80 °C
fixed -50 °C to +80 °C
- **Nominal voltage** 300 V
- **Test voltage**
core/core 1500 V
core/screen 1000 V
- **Insulation resistance**
min. 100 MOhm x km
- **Capacitance**
core/core 60 nF/km
- **Minimum bending radius**
flexing 7,5 x cable ø
fixed 4 x cable ø
- **Radiation resistance**
up to 100x10⁶ cJ/kg (up to 100 Mrad)
- **Coupling resistance**
max. 250 Ohm/km

Cable structure

- Bare copper conductor, extra fine wire to DIN VDE 0295 cl. 6, col. 4, BS 6360 cl. 6
- Polyolefine core insulation
- Colour coded to DIN 47100
- Cores stranded in layers with optimal lay-length
- Wrapping over the outer layer
- Braided screen of tinned Cu wires, coverage approx. 85%
- Core wrapping with fleece
- Special **full polyurethane** outer sheath TMPU acc. to DIN VDE 0281 Part 10, Annex A and acc. to UL std. 1581 Tab. 50227 80 °C
- Sheath colour grey (RAL 7001)
- with meter marking, change-over in 2011

Properties

- Flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- Low-adhesion
- High flexibility at low temperatures
- High abrasion resistance
- Tear and cut-resistant
- Notch resistant
- **Resistant to**
UV-radiation, Oxygen, Ozone, Hydrolysis, Oil
- **Partially resistant to**
Microbial attack, Hydraulic fluid, Coolant emulsion, Alkalis
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Application

Especially suited for drag chain installation in dry, moist and wet environments and outdoors with flexible movement and without tensile stress or forced movements. A highly-flexible PVC control cable suitable for frequent and fast lifting and bending stresses in machines and tool building, robot systems and on constantly moving machine components. Long service lives guarantee reliable function and good cost efficiency. The dense screening assures interference-free transmission of all signals and impulses. An ideal interference-free control cable for the above applications.

For applications which go beyond standard solutions (for example for composting appliances or high shelf conveyors with extremely high processing speeds etc.) we recommend for our especially developed enquiry sheet for energy guiding systems. Before installation in cable trays please read the instructions. Further technical details see selection table for drag chain cables, see lead text.

EMC = Electromagnetic compatibility

To optimise the EMC characteristics we recommend a large area of contact of the copper braiding around the entire circumference on both ends.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
49797	2 x 0,14	26	4,4	11,2	32,0
49798	3 x 0,14	26	4,5	14,1	35,0
49799	4 x 0,14	26	4,8	15,5	40,0
49800	5 x 0,14	26	5,0	18,3	45,0
49801	7 x 0,14	26	5,8	27,8	66,0
49802	10 x 0,14	26	6,7	39,3	86,0
49803	12 x 0,14	26	6,8	42,1	94,0
49804	14 x 0,14	26	7,1	45,3	102,0
49805	18 x 0,14	26	7,8	54,1	118,0
49806	24 x 0,14	26	8,8	66,3	149,0
49807	25 x 0,14	26	9,2	68,4	156,0
49808	2 x 0,25	24	4,8	14,9	38,0
49809	3 x 0,25	24	5,0	18,8	44,0
49810	4 x 0,25	24	5,3	21,3	51,0
49811	5 x 0,25	24	5,7	31,0	68,0
49812	7 x 0,25	24	6,6	39,6	82,0
49813	10 x 0,25	24	7,5	53,9	110,0
49814	12 x 0,25	24	7,7	59,1	124,0

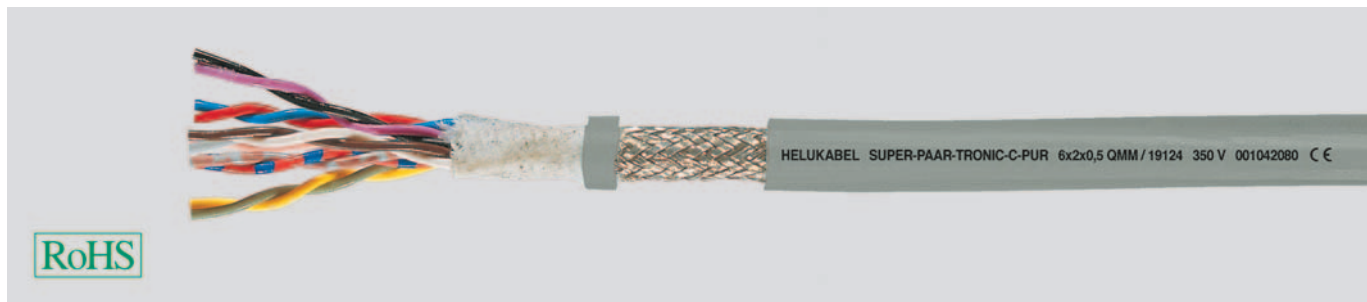
Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
49815	14 x 0,25	24	8,0	64,2	135,0
49816	18 x 0,25	24	8,8	78,4	150,0
49817	24 x 0,25	24	10,2	89,9	194,0
49818	25 x 0,25	24	10,7	101,0	204,0
49819	2 x 0,34	22	5,1	18,1	45,0
49820	3 x 0,34	22	5,3	28,7	60,0
49821	4 x 0,34	22	5,7	35,7	76,0
49822	5 x 0,34	22	6,1	39,1	82,0
49823	7 x 0,34	22	7,1	52,7	110,0
49824	10 x 0,34	22	8,1	67,4	148,0
49825	12 x 0,34	22	8,3	76,4	166,0
49826	14 x 0,34	22	8,7	85,5	185,0
49827	18 x 0,34	22	9,8	99,7	216,0
49828	24 x 0,34	22	11,3	147,1	291,0
49829	25 x 0,34	22	11,8	155,0	305,0

Dimensions and specifications may be changed without prior notice. (RN05)

Prices on request.

SUPER-PAAR-TRONIC-C-PUR cable for drag chains,

halogen-free, EMC-preferred type, meter marking



Technical data

- Special PETP-PUR cable, twisted in pairs, adapted to DIN VDE 0245, 0812
- **Conductor and loop resistance** as per DIN VDE 0295, for 0,25 mm² see pages Technical-Informationen
- **Temperature range**
flexing -40 °C to +70 °C
fixed installation -50 °C to +70 °C
- **Nominal voltage** 350 V
- **Test voltage** 1500 V
- **Insulation resistance**
min. 100 MOhm x km
- **Mutual capacitance**
approx. 135 nF/km
- **Minimum bending radius**
flexing at 0,25 mm²
approx. 7,5xcable ø
fixed installation at 0,25 mm²
approx. 4xcable ø
flexing at 0,5-1,0 mm²
approx. 10xcable ø
fixed installation at 0,5-1,0 mm²
approx. 5xcable ø
- **Coupling resistance**
max. 250 Ohm/km
- **Radiation resistance**
up to 100x10⁶ cJ/kg (up to 100 Mrad)

Cable structure

- Plain copper conductors, extra fine wire stranded to DIN VDE 0295 cl. 6, col. 4, BS 6360 cl. 6 and IEC 60228 cl. 6
- Special core insulation of TPE
- Core identification as per DIN 47100
- Cores twisted in pairs, the pairs torsion-free stranded in layers
- Special fleece over outer layer
- Tinned copper screened braiding, approx. 85% coverage
- **Full-polyurethane** outer jacket TPU, to DIN VDE 0282 part 10, appendix A
- Outer jacket grey (RAL 7001)
- with meter marking, change-over in 2011

Properties

- Very good oil resistant, test method according to DIN VDE 0472 part 803
- Resistant to weather, ozone and UV-radiation
- Chemical resistant to solvents, acids, lyes and hydraulic liquidity
- Flame retardant
- Guaranteed permanent application in multi-shift operation under extreme high bending stress
- High resistant to mechanical strain
- High property of alternating bending strength
- Long life durabilities through low friction-resistance by using the TPE-core insulation where the core are stranded in layers
- High tensile strength-, abrasion- and impact resistant at low temperature
- Adhesion-low
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Note

- AWG sizes are approximate equivalent values. The actual cross-section is in mm².

Application

These pair stranded and overall screened special cables for drag chains offer the operational possibilities where the outer electrical influences at high frequency cause interference of impulse transmission, are applied for permanent flexible operations in machineries, machine tools, robot technics, for movable automated machinery parts and multi-shift-operation as a transmission-cable.

These high flexible data cables are developed according to the newest state of technology improvement and with its sliding abilities by using the PETP-core insulation and adhesion-low and cut-resistant PUR-outer jacket, guaranteed an optimum life durabilities and highly economic. For applications which go beyond standard solutions (for example for composting appliances or high shelf conveyors with extremely high processing speeds etc.) we recommend for our especially developed enquiry sheet for energy guiding systems.

Before installation in cable trays please read the instructions. Further technical details see selection table for drag chain cables, see lead text.

EMC = Electromagnetic compatibility

To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.pairs x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
19101	1 x 2 x 0,25	4,7	14,0	28,0	24
19102	2 x 2 x 0,25	6,5	32,0	61,0	24
19103	3 x 2 x 0,25	6,6	38,4	73,0	24
19104	4 x 2 x 0,25	7,1	43,2	90,0	24
19105	5 x 2 x 0,25	8,2	51,5	105,0	24
19106	6 x 2 x 0,25	8,5	71,8	133,0	24
19107	8 x 2 x 0,25	9,2	74,4	156,0	24
19108	10 x 2 x 0,25	10,7	90,0	188,0	24
19109	14 x 2 x 0,25	11,5	111,2	220,0	24
19119	1 x 2 x 0,5	5,5	22,0	47,0	20
19120	2 x 2 x 0,5	7,9	50,0	100,0	20
19121	3 x 2 x 0,5	8,2	71,8	131,0	20
19122	4 x 2 x 0,5	8,9	74,4	149,0	20
19123	5 x 2 x 0,5	10,3	84,5	169,0	20
19124	6 x 2 x 0,5	10,7	99,6	196,0	20
19125	8 x 2 x 0,5	11,8	144,3	285,0	20
19126	10 x 2 x 0,5	13,5	176,0	344,0	20
19127	14 x 2 x 0,5	14,8	215,4	401,0	20

Part no.	No.pairs x cross-sec. mm ²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
19128	1 x 2 x 0,75	6,3	34,0	61,0	18
19129	2 x 2 x 0,75	9,0	60,0	113,0	18
19130	3 x 2 x 0,75	9,1	85,7	158,0	18
19131	4 x 2 x 0,75	9,9	93,6	173,0	18
19132	5 x 2 x 0,75	11,5	113,0	203,0	18
19133	6 x 2 x 0,75	11,9	130,4	231,0	18
19134	8 x 2 x 0,75	13,1	192,2	343,0	18
19135	10 x 2 x 0,75	15,0	258,0	467,0	18
19136	14 x 2 x 0,75	16,4	316,6	546,0	18
19137	1 x 2 x 1	6,9	42,0	71,0	17
19138	2 x 2 x 1	10,0	73,0	130,0	17
19139	3 x 2 x 1	10,2	93,6	170,0	17
19140	4 x 2 x 1	11,3	117,8	204,0	17
19141	5 x 2 x 1	13,1	139,0	238,0	17

Dimensions and specifications may be changed without prior notice. (RC03)

Prices on request.

SUPER-PAAR-TRONIC 340-C-PUR cable for drag

chains, halogen-free, EMC-preferred type, meter marking



Technical data

- Special drag chain cable, stranded in pairs
- **Temperature range**
flexing -20 °C to +80 °C
fixed -40 °C to +80 °C
- **Nominal voltage** 300 V
- **Test voltage**
core/core 1500 V
core/screen 1000 V
- **Insulation resistance**
min. 100 MOhm x km
- **Mutual capacitance**
core/core approx. 60 nF/km
- **Minimum bending radius**
for permanent bending
at 0,25 mm²
flexing 7,5x cable ø
fixed 4x cable ø
at 0,5-1,0 mm²
flexing 10x cable ø
fixed 5x cable ø
- **Coupling resistance**
max. 250 Ohm/km
- **Radiation resistance**
up to 100x10⁶ cJ/kg (up to 100 Mrad)

Cable structure

- Bare copper conductor, fine or extra fine wire to DIN VDE 0295 cl. 6, col. 4, BS 6360 cl. 6 and IEC 60228 cl. 6
- **Polyolefin** core insulation
- Colour coded to DIN 47100
- Cores stranded in pairs, pairs stranded torsion-free in layers with optimal lay-length
- Core wrapping between the layers of stranding
- Braided screen of tinned Cu wires, coverage approx. 85%
- Core wrapping with fleece
- **Full polyurethane** outer sheath TMPU acc. to DIN VDE 0281 Part 10, Annex A and acc. to UL std. 1581 Tab. 50227 80 °C
- Sheath colour grey (RAL 7001)
- with meter marking, change-over in 2011

Properties

- Flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- Oil resistance according to IEC 60092-350
- Halogen free
- Weather, ozone and UV-resistant
- Chemical resistance to solvents, acids, alkalis and hydraulic fluids
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Advantages

- Very high resistance to mechanical stresses
- Very good alternating bending strength
- High tear, abrasion and impact resistance, even at low temperatures

Application

Stranded in pairs, these fully-screened special drag chain cables can also be used where external, high-frequency interference influences pulse transfer. They are used for permanently flexible stresses in machine and tool building, in robot technology, on constantly moving machine components and for extended use in multi-shift operations.

Developed to state-of-the-art technology, these highly-flexible data cable, with a cut resistant and low-adhesion PUR outer sheath guaranteeing optimal service life and extremely good cost efficiency. This two-approvals single-core cable is preferred for use in export-oriented mechanical engineering, in machine tools, production lines and systems engineering. Guaranteed extended use in multi-shift operations with extremely high bending stresses.

EMC = Electromagnetic compatibility

To optimise the EMC characteristics we recommend a large area of contact of the copper braiding around the entire circumference on both ends.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.pairs x no.cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
49830	1 x 2 x 0,25	24	4,8	14,0	26,0
49831	2 x 2 x 0,25	24	6,7	32,0	61,0
49832	3 x 2 x 0,25	24	7,1	38,4	70,0
49833	4 x 2 x 0,25	24	7,6	43,2	82,0
49834	5 x 2 x 0,25	24	8,3	51,5	99,0
49835	6 x 2 x 0,25	24	9,0	71,8	126,0
49836	8 x 2 x 0,25	24	10,5	74,4	147,0
49837	10 x 2 x 0,25	24	11,9	90,0	179,0
49838	14 x 2 x 0,25	24	12,7	111,2	210,0
49839	1 x 2 x 0,34	22	5,1	20,0	35,0
49840	2 x 2 x 0,34	22	7,2	41,0	80,0
49841	3 x 2 x 0,34	22	7,6	52,2	100,0
49842	4 x 2 x 0,34	22	8,3	59,1	118,0
49843	5 x 2 x 0,34	22	9,0	67,0	134,0
49844	6 x 2 x 0,34	22	9,9	86,4	162,0
49845	8 x 2 x 0,34	22	11,9	107,5	214,0
49846	10 x 2 x 0,34	22	13,9	131,0	270,0
49847	14 x 2 x 0,34	22	14,1	150,0	304,0
49848	1 x 2 x 0,5	20	5,8	22,5	47,0
49849	2 x 2 x 0,5	20	8,4	53,0	100,0
49850	3 x 2 x 0,5	20	9,0	72,8	131,0
49851	4 x 2 x 0,5	20	10,0	75,6	149,0
49852	5 x 2 x 0,5	20	11,0	85,7	169,0

Part no.	No.pairs x no.cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
49853	6 x 2 x 0,5	20	11,8	103,0	181,0
49854	8 x 2 x 0,5	20	14,2	148,4	274,0
49855	10 x 2 x 0,5	20	16,5	180,0	332,0
49856	14 x 2 x 0,5	20	16,9	218,3	390,0
49857	1 x 2 x 0,75	19	6,2	35,2	56,0
49858	2 x 2 x 0,75	19	9,2	61,4	102,0
49859	3 x 2 x 0,75	19	9,8	87,1	144,0
49860	4 x 2 x 0,75	19	11,2	95,2	160,0
49861	5 x 2 x 0,75	19	12,2	115,0	193,0
49862	6 x 2 x 0,75	19	13,2	137,1	216,0
49863	8 x 2 x 0,75	19	15,6	184,4	327,0
49864	10 x 2 x 0,75	19	18,4	259,8	451,0
49865	14 x 2 x 0,75	19	18,9	318,4	521,0
49866	1 x 2 x 1	18	6,7	42,0	64,0
49867	2 x 2 x 1	18	10,0	73,0	120,0
49868	3 x 2 x 1	18	10,8	93,6	160,0
49869	4 x 2 x 1	18	11,7	117,8	184,0
49870	5 x 2 x 1	18	13,2	139,0	217,0

Dimensions and specifications may be changed without prior notice. (RN05)

Prices on request.

NFPA 79 Edition 2012 – Challenges and solutions



The first edition of the Electrical Code (NEC), also referred to as NFPA 70, was published in 1897. The NEC is the only code for electrical installations that enjoys national recognition in the USA. It addresses the causes of electricity-induced fire. The code is updated every three years, that means in 2011 appeared the edition of 2012. In Article 670 "Industrial Machinery" the NEC refers to the NFPA 79 (Electrical Standard for Industrial Machinery).

This standard specifies the safety requirements for electrical equipment of industrial machinery or industrial manufacturing systems. Manufacturers and operators of plant and machinery have to comply with this and other standards in order to fulfil their product liability and satisfy insurance requirements.

Machines commissioned in the USA are always subject to approval, which can be obtained in two different ways. One is through a testing institute accredited in the USA, alternatively the machine concerned is subjected to an acceptance procedure in Germany, for example. The final decision on whether a machine is to be commissioned is always taken by a local inspector, who does not necessarily have to be an expert in electrical systems. If the inspector is in any doubt as to whether the machine complies with the relevant US standards, he may order a temporary stoppage.

The NFPA 79: 2007 allowed for the use of AWM wires in chapter 12.2.7.3 „When part of a listed assembly suitable for the intended application, type AWM shall be permissible“.

However, there are applications for which there had up to now not been any NFPA 79-relevant wires. This applies to wires used for power track chains or wires with special-purpose bodies. There were objections and protests from the industry in this regard. The NFPA responded accordingly and appointed an expert commission. As a result, the NFPA 79: Edition 2012 once again allows for the use of AWM wires under certain conditions. As before, usage is not unrestricted. Rather, responsibility for their usage now lies with the manufacturer or builder of the system.

Article 12.2.7.of Edition 2007 was deleted entirely. The new article 12.9 summarizes all recommendations.

The complete original text:

- 12.9 Special Cables and Conductors
- 12.9.1 Other listed cables and conductors shall be permitted where identified as suitable for the identified use.
- 12.9.2 Appliance Wiring Material (AWM) shall be permitted under 12.9.2.1 through 12.9.2.3
- 12.9.2.1 Where part of an assembly that has been identified for intended use
- 12.9.2.2 Where specified for use with approved equipment and used in accordance with the equipment manufacturers instructions.
- 12.9.2.3 Where its construction meets all applicable requirements of sections 12.2 – 12.6 with modifications as follows:
 - (1) Stranded conductors with wire sizes smaller than those listed in 12.2.2 shall have a minimum of 7 strands.
 - (2) Conductor insulation and cable jacket materials not specified in 12.3.1 have flame resistant properties in compliance with applicable standards for intended use such as FT2 (horizontal wire) flame test or VW-1 (Vertical Wire) flame test in ANSI/UL 1581-2001, Reference Standard for Electrical Wires, Cables and Flexible Cords.
 - (3) Minimum insulation thickness for single conductor AWM shall be as specified in 12.3.2. Minimum insulation thickness for conductors that are part of a multi conductor jacketed AWM cable shall be as specified by the AWM Style number and by the marked voltage rating of the cable.
 - (4) AWM shall be marked in accordance with 12.4.1, 12.4.3 and 12.4.4. The legend shall include manufacturer's name or trademark, AWM style number, voltage rating (unless marking is prohibited by 12.4.2), wire gauge(s), temperature rating and flame resistance. Additional markings for properties such as oil, water, UV and chemical resistance identifiers shall be permitted where in compliance with applicable standards for intended use. Where markings alone are insufficient to identify for the intended application, suitable information shall be included with the technical machine documentation.

Summary

- Plant and machinery with certification (e.g. from UL) can continue to be repaired, modified or upgraded in accordance with existing rules.
- Newly certified plant and machinery can continue to be constructed in accordance with existing rules. The certification is recognised.
- In certain sectors, new plant and machinery without certification may need to satisfy tougher requirements for certain cables (e.g. UL Listing). In this case, consultation is required with the certifying body concerned.

HELUKABEL recommends in many cases still the use of UL-listed cables.

The following pages present a broad range of cables that already meet the requirements of the 2007 Edition of NFPA 79.

If you have any further questions, please contact our cable experts on +49 (0)7150 9209 -0.

NFPA 79 Edition 2012 – Challenges and solutions



all UL LISTED

Flexible Control Cables

TRAYCONTROL 500 & TRAYCONTROL 500-C **NEW**

Flexible, extremely oil-resistant control cables for open installation (ER)
UL: TC-ER, PLTC-ER, ITC-ER, MTW, DP-1, WTTTC 1000V, OIL RES I & II
CSA: CIC-TC FT4, AWM I/II A/B FT4
See page 138 and 140

TRAYCONTROL 600 & TRAYCONTROL 600-C **NEW**

Flexible, oil-resistant TRAY CABLE for open installation (ER)
UL: TC-ER, PLTC-ER, ITC-ER, MTW, DP-1, WTTTC 1000V, OIL RES I & II
CSA: CIC-TC FT4, AWM I/II A/B FT4
See page 145 and 147

JZ 604 TC & JZ 604-FCY/YCY TC

Flexible, oil-resistant TRAY CABLE for open installation (ER)
UL: TC-ER
See page 142 and 144

Hochflexible Steuerleitungen

MULTIFLEX 600 & MULTIFLEX 600-C **NEW**

Highly-flexible, extremely oil-resistant cables for open installation (ER)
UL: TC-ER, PLTC-ER, ITC-ER, MTW, DP-1, WTTTC 1000V, OIL RES I & II
CSA: CIC-TC FT4, AWM I/II A/B FT4
See page 150 and 151

Data Cables

TRAYCONTROL 300 & TRAYCONTROL 300-C **NEW**

Flexible, extremely oil-resistant data and control cables for open installation (ER)*
UL: PLTC-ER, ITC-ER, CM, OIL RES I & II;
CSA: CIC-TC FT4, CMG
See page 130 and 132

TRAYCONTROL 300 TP & TRAYCONTROL 300-C TP **NEW**

Flexible, extremely oil-resistant data and control cables for open installation (ER)*
UL: PLTC-ER, ITC-ER, CM, OIL RES I & II;
CSA: CIC-TC FT4, CMG
See page 134 and 136

Single Conductors

FIVENORM

The jumper wire that meets five different standards
HAR: H05 V2-K/H07 V2-K;
UL: MTW, AWM Style 10269;
CSA: TEW bzw. AWM I/A/B
See page 106

* AWG 22 - AWG 16

THHN/THWM

Flexible jumper wire
UL: MTW, THHN, THWN, GASOLINE, OIL RES II,
AWM W-51554
See page 109

Servo and Motor Cables

TOPFLEX® 600 VFD **NEW**

Flexible, extremely oil-resistant motor connection cables for open installation (ER)
UL: TC-ER, PLTC-ER, ITC-ER, MTW, WTTTC 1000V, OIL RES I & II
CSA: CIC-TC FT4, AWM I/II A/B FT4
See page 152

TOPFLEX® 650 VFD **NEW**

Flexible, extremely oil-resistant motor connection cables with control pair for open installation (ER)
UL: TC-ER, PLTC-ER, ITC-ER, MTW, WTTTC 1000V, OIL RES I & II
CSA: CIC-TC FT4, AWM I/II A/B FT4
See page 153

TOPSERV® 600 VFD **NEW**

Highly-flexible, extremely oil-resistant motor connection cables for open installation (ER)
UL: TC-ER, PLTC-ER, ITC-ER, MTW, WTTTC 1000V, OIL RES I & II
CSA: CIC-TC FT4, AWM I/II A/B FT4
See Cables & Wires page N 139

TOPSERV® 650 VFD **NEW**

Highly-flexible, extremely oil-resistant motor connection cables for open installation (ER)
UL: TC-ER, PLTC-ER, ITC-ER, MTW, WTTTC 1000V, OIL RES I & II
CSA: CIC-TC FT4, AWM I/II A/B FT4
See Cables & Wires page N 140

HELUKAT® Copper Data Cables

HELUKAT® 155 UTP 4x2xAWG24/1 UL CMX 444
HELUKAT® 200 FTP FLEX 4x2xAWG26/7 UL CMX 444
HELUKAT® 300 UTP 4x2xAWG24/1 UL CMX 444
HELUKAT® 300 U-STP 4x2xAWG26/7 UL CMX 444
See Cables & Wires page R 51 et seq.

Bus Cables

PROFINet Typ A UL CMG or PLTC, CSA FT4
PROFINet Typ B UL CMG or PLTC
PROFINet Typ B SHIPLINE UL CMG or PLTC, CSA FT4
PROFINet Typ C UL CMG
Profibus L2 Torsion UL CMX
Profibus L2 Festoon UL CMX, CSA FT4
Profibus SK inside UL CMG, CSA FT4
Profibus SK FRNC UL CM
Profibus SK drag chain UL CMX
DeviceNet™PVC small UL CMG FT4
DeviceNet™PVC thick UL CMG FT4
See Cables & Wires Chapter R



HELUKABEL TRAYCONTROL 300 24AWG/0,25QMM 6C/62652

CE



Technical data

- Flexible PVC data and control cable
- **Temperature range**
-25 °C to +105 °C
- **Nominal voltage** 300 V
- **Test voltage** 2000 V
- **Minimum bending radius**
Flexing 4x cable Ø

Cable structure

- Tinned copper conductor, fine wire stranded, with AWG measures
- Special PVC core insulation (AWG 22 - AWG 16 with transparent nylon skin)
Core identification according to international colour code
- Cores stranded in layers with optimal lay-lengths
- Separator
- Special PVC outer sheath
- Sheath colour - grey (RAL 7001)
- With length marking in feet

Properties

- Self-extinguishing and flame retardant in accordance with CSA FT4
- The materials used in manufacture are free of silicone, cadmium and substances that impair paint wetting
- **Tests**
UL (AWG 22 - AWG 16): PLTC-ER, ITC-ER, Type CM, NFPA 79 2007, OIL RES I & II, Class I Div. 2, NEC Art. 501, 725, 760 & 800, AWM 2464
UL (AWG 24 - AWG 28): CM, AWM 2464, rated OIL RES I & II, NEC Art. 725, 760 & 800, NFPA 79 2007
CSA: CSA CMG FT4, AWM I/II A/B

Note

Advantages

- highly-flexible easy to install
- Oil-resistant to OIL RES I & II

Available on request

- PUR or TPE outer sheath
- Sheath colour to suit customer requirements

Application

HELUKABEL®TRAYCONTROL 300 is a multi-core PVC data and control cable. Cross-sections with PLTC-ER and ITC-ER approval suitable for open, unprotected installation in cable trays to the machine; their outstanding oil resistance (OIL RES I & II) makes them ideally suited as connecting and joining cables and also for control, signal and measuring systems in industrial plants. The flexible cable structure facilitates installation inside and outside of machines and switch cabinets.

Applications: tool machines, control panels, control and instrumentation technology, production automation, cable ducts, renewable energies.

CE = The product conforms to the EG Low-Voltage Directive 2006/95/EG

Part no.	No.cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
62625	2 x 0,08	28	3,7	1,6	12,0
62626	3 x 0,08	28	4,0	2,0	18,0
62627	4 x 0,08	28	4,2	3,0	21,0
62628	6 x 0,08	28	4,7	5,0	27,0
62629	8 x 0,08	28	5,0	6,0	30,0
62630	10 x 0,08	28	5,6	8,0	30,0
62631	15 x 0,08	28	6,2	12,0	43,0
62632	20 x 0,08	28	6,8	15,0	54,0
62633	25 x 0,08	28	7,8	19,0	63,0
62634	30 x 0,08	28	8,2	23,0	73,0
62635	40 x 0,08	28	8,9	31,0	89,0
62636	50 x 0,08	28	9,9	38,0	109,0
62637	2 x 0,14	26	4,0	3,0	18,0
62638	3 x 0,14	26	4,1	4,0	21,0
62639	4 x 0,14	26	4,3	5,0	24,0
62640	6 x 0,14	26	5,0	8,0	30,0
62641	8 x 0,14	26	5,3	11,0	34,0
62642	10 x 0,14	26	6,0	13,0	42,0
62643	15 x 0,14	26	6,6	20,0	52,0
62644	20 x 0,14	26	7,5	27,0	67,0
62645	25 x 0,14	26	8,3	34,0	80,0
62646	30 x 0,14	26	8,6	40,0	92,0
62647	40 x 0,14	26	9,4	54,0	116,0
62648	50 x 0,14	26	10,6	67,0	145,0
62649	2 x 0,25	24	4,2	5,0	19,0
62650	3 x 0,25	24	4,4	7,0	22,0
62651	4 x 0,25	24	4,7	10,0	27,0
62652	6 x 0,25	24	5,4	14,0	33,0
62653	8 x 0,25	24	5,7	19,0	42,0
62654	10 x 0,25	24	6,4	24,0	49,0

Part no.	No.cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
62655	15 x 0,25	24	7,2	36,0	69,0
62656	20 x 0,25	24	8,2	48,0	86,0
62657	25 x 0,25	24	9,1	60,0	103,0
62658	30 x 0,25	24	9,4	72,0	131,0
62659	40 x 0,25	24	11,0	96,0	173,0
62660	50 x 0,25	24	12,2	120,0	219,0
62661	2 x 0,34	22	4,6	7,0	22,0
62662	3 x 0,34	22	4,8	10,0	28,0
62663	4 x 0,34	22	5,1	13,0	32,0
62664	6 x 0,34	22	5,8	20,0	46,0
62665	8 x 0,34	22	6,2	26,0	54,0
62666	10 x 0,34	22	7,3	33,0	66,0
62667	15 x 0,34	22	8,3	49,0	90,0
62668	20 x 0,34	22	9,1	65,0	115,0
62669	25 x 0,34	22	10,5	82,0	141,0
62670	30 x 0,34	22	10,9	98,0	176,0
62671	40 x 0,34	22	12,1	131,0	234,0
62672	50 x 0,34	22	13,5	163,0	293,0
62673	2 x 0,75	20	5,7	14,0	57,0
62674	3 x 0,75	20	6,0	22,0	60,0
62675	4 x 0,75	20	6,5	29,0	73,0
62676	6 x 0,75	20	7,8	43,0	97,0
62677	8 x 0,75	20	8,4	58,0	133,0
62678	10 x 0,75	20	9,6	72,0	143,0
62679	15 x 0,75	20	11,4	108,0	177,0
62680	20 x 0,75	20	12,7	144,0	261,0
62681	25 x 0,75	20	14,1	180,0	353,0
62682	30 x 0,75	20	14,7	216,0	419,0
62683	40 x 0,75	20	16,9	288,0	562,0
62684	50 x 0,75	20	18,9	360,0	699,0

Prices on request.

Continuation ▶

TRAYCONTROL 300 flexible, oil-resistant, NFPA 79 Edition 2007



Part no.	No.cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
62685	2 x 1	18	6,2	19,0	61,0
62686	3 x 1	18	6,5	29,0	64,0
62687	4 x 1	18	7,3	38,0	77,0
62688	6 x 1	18	8,5	58,0	101,0
62700	6 x 1	16	9,3	86,0	162,0
62689	8 x 1	18	9,1	77,0	142,0
62702	8 x 1	16	10,6	115,0	243,0
62690	10 x 1	18	11,1	96,0	195,0
62691	15 x 1	18	12,6	144,0	247,0
62692	20 x 1	18	13,9	192,0	328,0
62693	25 x 1	18	16,6	240,0	407,0
62694	30 x 1	18	16,7	288,0	539,0

Part no.	No.cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
62695	40 x 1	18	18,5	384,0	717,0
62696	50 x 1	18	20,8	480,0	894,0
62697	2 x 1,5	16	6,7	28,0	83,0
62698	3 x 1,5	16	7,4	43,0	91,0
62699	4 x 1,5	16	8,0	58,0	109,0
62703	10 x 1,5	16	12,2	144,0	267,0
62704	15 x 1,5	16	13,9	216,0	364,0
62705	20 x 1,5	16	15,3	288,0	493,0
62706	25 x 1,5	16	17,7	360,0	608,0
62707	30 x 1,5	16	18,4	432,0	729,0
62708	40 x 1,5	16	20,5	576,0	967,0
62709	50 x 1,5	16	23,1	720,0	1214,0

Dimensions and specifications may be changed without prior notice. (RN02)

Prices on request.

Colour codes

TRAYCONTROL 300 / TRAYCONTROL 300-C (AWG 28-22)

Conductor	Colour	Conductor	Colour	Conductor	Colour
1	black	18	white/violet	35	white/red/orange
2	brown	19	white/grey	36	white/red/yellow
3	red	20	white/black/brown	37	white/red/green
4	orange	21	white/black/red	38	white/red/blue
5	yellow	22	white/black/orange	39	white/red/violet
6	green	23	white/black/yellow	40	white/red/grey
7	blue	24	white/black/green	41	white/orange/yellow
8	violet	25	white/black/blue	42	white/orange/green
9	grey	26	white/black/violet	43	white/orange/blue
10	white	27	white/black/grey	44	white/orange/violet
11	white/black	28	white/brown/red	45	white/orange/grey
12	white/brown	29	white/brown/orange	46	white/yellow/green
13	white/red	30	white/brown/yellow	47	white/yellow/blue
14	white/orange	31	white/brown/green	48	white/yellow/violet
15	white/yellow	32	white/brown/blue	49	white/yellow/grey
16	white/green	33	white/brown/violet	50	white/green/blue
17	white/blue	34	white/brown/grey		

TRAYCONTROL 300 / TRAYCONTROL 300-C (AWG 20-16)

Conductor	Colour	Conductor	Colour	Conductor	Colour
1	black	18	white/green	35	white/red/red
2	red	19	white/yellow	36	white/red/green
3	white	20	white/blue	37	white/red/blue
4	green	21	white/brown	38	white/red/brown
5	orange	22	white/orange	39	white/red/violet
6	blue	23	white/grey	40	white/green/black
7	brown	24	white/violet	41	white/green/red
8	yellow	25	white/black/red	42	white/green/green
9	violet	26	white/black/green	43	white/green/blue
10	grey	27	white/black/yellow	44	white/green/brown
11	pink	28	white/black/blue	45	white/green/violet
12	light brown	29	white/black/brown	46	white/blue/black
13	red/green	30	white/black/orange	47	white/blue/red
14	red/yellow	31	white/black/grey	48	white/blue/green
15	red/black	32	white/black/violet	49	white/blue/blue
16	white/black	33	white/black/black	50	white/blue/brown
17	white/red	34	white/red/black		

TRAYCONTROL 300-C flexible, oil-resistant, screened, EMC-preferred type, NFPA 79 Edition 2007



HELUKABEL TRAYCONTROL 300-C 24AWG/0,25QMM 6C/62737

CE



Technical data

- Flexible screened PVC data and control cable
- **Temperature range**
-25 °C to +105 °C
- **Nominal voltage** 300 V
- **Test voltage** 2000 V
- **Minimum bending radius**
Flexing 6x cable ø
- **Coupling resistance**
max. 250 Ohm/km

Cable structure

- Tinned copper conductor, fine wire stranded, with AWG measures
- Special PVC core insulation (AWG 22 - AWG 16 with transparent nylon skin)
- Core identification according to international colour code
- Cores stranded in layers with optimal lay-lengths
- 1. Screening with special aluminium foil
- 2. Screening with braid of tinned copper wires, optimal coverage, approx. 85%
- Separator
- Special PVC outer sheath
- Sheath colour - grey (RAL 7001)
- With length marking in feet

Properties

- Self-extinguishing and flame retardant in accordance with CSA FT4
- The materials used in manufacture are free of silicone, cadmium and substances that impair paint wetting
- **Tests**
UL (AWG 22 - AWG 16): PLTC-ER, ITC-ER, Type CM, NFPA 79 2007, OIL RES I & II, Class I Div. 2, NEC Art. 501, 725, 760 & 800, AWM 2464
UL (AWG 24 - AWG 28): CM, AWM 2464, rated OIL RES I & II, NEC Art. 725, 760 & 800, NFPA 79 2007
CSA: CSA CMG FT4, AWM I/II A/B

Note

Advantages

- Highly-flexible, easy to install
- Oil-resistant to OIL RES I & II

Available on request

- PUR or TPE outer sheath
- Sheath colour to suit customer requirement

Application

HELUKABEL® TRAYCONTROL 300 is a screened, multi-core PVC data and control cable. Cross-sections with PLTC-ER and ITC-ER approval suitable for open, unprotected installation in cable trays to the machine; their outstanding oil resistance (OIL RES I & II) makes them ideally suited as connecting and joining cables and also for control, signal and measuring systems in industrial plants. The flexible cable structure facilitates installation inside and outside of machines and switch cabinets. The double-screening with aluminium foil (100% coverage) and copper braid (approx. 85% coverage) guarantee superior EMC protection.

Applications: tool machines, control panels, measuring devices, production automation, cable ducts, renewable energies.

EMC = Electromagnetic compatibility.

To optimise EMC characteristics, we recommend a large contact area for the copper braiding around the entire circumference on both ends.

CE = The product conforms to the EG Low-Voltage Directive 2006/95/EG

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
62710	2 x 0,08	28	4,4	6,0	16,0
62711	3 x 0,08	28	4,6	7,0	22,0
62712	4 x 0,08	28	4,9	9,0	27,0
62713	6 x 0,08	28	5,4	12,0	34,0
62714	8 x 0,08	28	5,7	15,0	37,0
62715	10 x 0,08	28	6,3	18,0	43,0
62716	15 x 0,08	28	6,9	24,0	52,0
62717	20 x 0,08	28	7,5	30,0	67,0
62718	25 x 0,08	28	8,5	37,0	79,0
62719	30 x 0,08	28	8,8	43,0	88,0
62720	40 x 0,08	28	9,6	54,0	112,0
62721	50 x 0,08	28	11,3	67,0	131,0
62722	2 x 0,14	26	4,6	9,0	24,0
62723	3 x 0,14	26	4,8	10,0	27,0
62724	4 x 0,14	26	5,0	12,0	31,0
62725	6 x 0,14	26	5,6	16,0	39,0
62726	8 x 0,14	26	5,9	19,0	43,0
62727	10 x 0,14	26	6,6	24,0	51,0
62728	15 x 0,14	26	7,3	31,0	66,0
62729	20 x 0,14	26	8,1	40,0	79,0
62730	25 x 0,14	26	9,0	49,0	92,0
62731	30 x 0,14	26	9,3	57,0	110,0
62732	40 x 0,14	26	10,2	72,0	136,0
62733	50 x 0,14	26	11,9	88,0	165,0
62734	2 x 0,25	24	4,9	15,0	30,0
62735	3 x 0,25	24	5,1	16,0	33,0
62736	4 x 0,25	24	5,3	19,0	37,0
62737	6 x 0,25	24	6,0	27,0	48,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
62738	8 x 0,25	24	6,3	31,0	57,0
62739	10 x 0,25	24	7,1	39,0	67,0
62740	15 x 0,25	24	8,2	51,0	85,0
62741	20 x 0,25	24	8,9	64,0	106,0
62742	25 x 0,25	24	9,8	77,0	128,0
62743	30 x 0,25	24	10,1	92,0	155,0
62744	40 x 0,25	24	11,2	118,0	206,0
62745	50 x 0,25	24	13,0	148,0	249,0
62746	2 x 0,34	22	5,3	19,0	34,0
62747	3 x 0,34	22	5,5	22,0	40,0
62748	4 x 0,34	22	5,8	27,0	46,0
62749	6 x 0,34	22	6,5	34,0	60,0
62750	8 x 0,34	22	6,9	45,0	72,0
62751	10 x 0,34	22	8,1	69,0	85,0
62752	15 x 0,34	22	9,0	77,0	115,0
62753	20 x 0,34	22	9,7	92,0	140,0
62754	25 x 0,34	22	11,4	121,0	176,0
62755	30 x 0,34	22	11,8	139,0	210,0
62756	40 x 0,34	22	12,9	177,0	273,0
62757	50 x 0,34	22	14,3	215,0	331,0
62758	2 x 0,75	20	6,4	28,0	73,0
62759	3 x 0,75	20	6,7	34,0	77,0
62760	4 x 0,75	20	7,2	40,0	91,0
62761	6 x 0,75	20	8,6	54,0	118,0
62762	8 x 0,75	20	9,1	70,0	158,0
62763	10 x 0,75	20	10,4	83,0	173,0
62764	15 x 0,75	20	12,3	119,0	218,0
62765	20 x 0,75	20	13,6	130,0	298,0

Prices on request.

Continuation ▶

TRAYCONTROL 300-C flexible, oil-resistant, screened, EMC-preferred

type, NFPA 79 Edition 2007



Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
62766	25 x 0,75	20	15,0	186,0	401,0
62767	30 x 0,75	20	15,5	224,0	477,0
62768	40 x 0,75	20	17,7	288,0	623,0
62769	50 x 0,75	20	19,7	337,0	752,0
62770	2 x 1	18	6,9	37,0	80,0
62771	3 x 1	18	7,2	49,0	86,0
62772	4 x 1	18	8,0	58,0	101,0
62773	6 x 1	18	9,2	82,0	130,0
62774	8 x 1	18	9,8	100,0	168,0
62775	10 x 1	18	12,0	124,0	226,0
62776	15 x 1	18	13,5	180,0	295,0
62777	20 x 1	18	14,7	234,0	386,0
62778	25 x 1	18	16,9	277,0	462,0
62779	30 x 1	18	17,6	323,0	590,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
62780	40 x 1	18	19,4	416,0	773,0
62781	50 x 1	18	21,6	508,0	958,0
62782	2 x 1,5	16	7,4	51,0	110,0
62783	3 x 1,5	16	8,1	63,0	116,0
62784	4 x 1,5	16	8,7	76,0	139,0
62785	6 x 1,5	16	10,0	104,0	195,0
62786	8 x 1,5	16	11,2	134,0	283,0
62787	10 x 1,5	16	13,1	168,0	316,0
62788	15 x 1,5	16	14,7	234,0	410,0
62789	20 x 1,5	16	16,2	301,0	551,0
62790	25 x 1,5	16	18,6	367,0	675,0
62791	30 x 1,5	16	19,3	428,0	794,0
62792	40 x 1,5	16	21,5	550,0	1033,0
62793	50 x 1,5	16	24,3	669,0	1274,0

Dimensions and specifications may be changed without prior notice. (RN02)

Prices on request.

Colour codes

TRAYCONTROL 300 / TRAYCONTROL 300-C (AWG 28-22)

Conductor	Colour	Conductor	Colour	Conductor	Colour
1	black	18	white/violet	35	white/red/orange
2	brown	19	white/grey	36	white/red/yellow
3	red	20	white/black/brown	37	white/red/green
4	orange	21	white/black/red	38	white/red/blue
5	yellow	22	white/black/orange	39	white/red/violet
6	green	23	white/black/yellow	40	white/red/grey
7	blue	24	white/black/green	41	white/orange/yellow
8	violet	25	white/black/blue	42	white/orange/green
9	grey	26	white/black/violet	43	white/orange/blue
10	white	27	white/black/grey	44	white/orange/violet
11	white/black	28	white/brown/red	45	white/orange/grey
12	white/brown	29	white/brown/orange	46	white/yellow/green
13	white/red	30	white/brown/yellow	47	white/yellow/blue
14	white/orange	31	white/brown/green	48	white/yellow/violet
15	white/yellow	32	white/brown/blue	49	white/yellow/grey
16	white/green	33	white/brown/violet	50	white/green/blue
17	white/blue	34	white/brown/grey		

TRAYCONTROL 300 / TRAYCONTROL 300-C (AWG 20-16)

Conductor	Colour	Conductor	Colour	Conductor	Colour
1	black	18	white/green	35	white/red/red
2	red	19	white/yellow	36	white/red/green
3	white	20	white/blue	37	white/red/blue
4	green	21	white/brown	38	white/red/brown
5	orange	22	white/orange	39	white/red/violet
6	blue	23	white/grey	40	white/green/black
7	brown	24	white/violet	41	white/green/red
8	yellow	25	white/black/red	42	white/green/green
9	violet	26	white/black/green	43	white/green/blue
10	grey	27	white/black/yellow	44	white/green/brown
11	pink	28	white/black/blue	45	white/green/violet
12	light brown	29	white/black/brown	46	white/blue/black
13	red/green	30	white/black/orange	47	white/blue/red
14	red/yellow	31	white/black/grey	48	white/blue/green
15	red/black	32	white/black/violet	49	white/blue/blue
16	white/black	33	white/black/black	50	white/blue/brown
17	white/red	34	white/red/black		

TRAYCONTROL 300 TP stranded pair, flexible, oil-resistant,

NFPA 79 Edition 2007



Technical data

- Flexible PVC data and control cable
- **Temperature range**
-25 °C to +105 °C
- **Nominal voltage** 300 V
- **Test voltage** 2000 V
- **Minimum bending radius**
Flexing 6x cable ø

Cable structure

- Tinned copper conductor, fine wire stranded, with AWG measures
- Special PVC core insulation (AWG 22 - AWG 18 with transparent nylon skin)
- Pair identification according to international colour code
- Cores stranded in pairs with optimal lay-length
- Pairs stranded in layers with optimal lay-length
- Separator
- Special PVC outer sheath
- Sheath colour - grey (RAL 7001)
- With length marking in feet

Properties

- Self-extinguishing and flame retardant in accordance with CSA FT4
- The materials used in manufacture are free of silicone, cadmium and substances that impair paint wetting

Tests

- **UL (AWG 22 - AWG 18):** PLTC-ER, ITC-ER, Type CM, NFPA 79 2007, OIL RES I & II, Class I Div. 2, NEC Art. 501, 725, 760 & 800, AWM 2464
- **UL (AWG 24 - AWG 26):** CM, AWM 2464, rated OIL RES I & II, NEC Art. 725, 760 & 800, NFPA 79 2007
- **CSA:** CSA CMG FT4, AWM I/II A/B

Note

Advantages

- Highly-flexible, easy to install
- Oil-resistant to OIL RES I & II

Available on request

- PUR or TPE outer sheath
- Sheath colour to suit customer requirement

Application

HELUKABEL®TRAYCONTROL 300 TP is a stranded pair data and control cable. Cross-sections with PLTC-ER and ITC-ER approval for open, unprotected installation in cable trays to the machine; their outstanding oil resistance (OIL RES I & II) makes them ideally suited as connecting and joining cables and also for control, signal and measuring systems in industrial plants. The flexible cable structure facilitates installation inside and outside of machines and switch cabinets.

Applications: tool machines, control panels, measuring devices, production automation, cable ducts, renewable energies.

CE – The product conforms to the EC Low-Voltage Directive 2006/95/EC

Part no.	No.pairs x no.cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
62794	1 x 2 x 0,14	26	3,6	3,0	20,0
62795	2 x 2 x 0,14	26	5,1	5,0	24,0
62796	3 x 2 x 0,14	26	5,3	8,0	30,0
62797	4 x 2 x 0,14	26	5,8	11,0	38,0
62798	5 x 2 x 0,14	26	6,2	14,0	44,0
62799	6 x 2 x 0,14	26	6,8	16,0	51,0
62800	7 x 2 x 0,14	26	6,9	19,0	57,0
61928	8 x 2 x 0,14	26	7,3	22,0	64,0
61929	10 x 2 x 0,14	26	7,4	27,0	76,0
61930	12 x 2 x 0,14	26	9,1	33,0	93,0
61931	14 x 2 x 0,14	26	9,8	38,0	103,0
61932	15 x 2 x 0,14	26	10,6	41,0	109,0
61933	16 x 2 x 0,14	26	10,7	43,0	112,0
61934	18 x 2 x 0,14	26	11,1	49,0	119,0
61935	20 x 2 x 0,14	26	11,9	54,0	130,0
61936	22 x 2 x 0,14	26	12,4	59,0	150,0
61937	24 x 2 x 0,14	26	13,1	65,0	169,0
61938	25 x 2 x 0,14	26	13,4	67,0	178,0
61939	1 x 2 x 0,25	24	3,9	5,0	32,0
61940	2 x 2 x 0,25	24	5,9	10,0	36,0
61941	3 x 2 x 0,25	24	6,2	15,0	48,0
61942	4 x 2 x 0,25	24	6,5	20,0	56,0
61943	5 x 2 x 0,25	24	7,2	25,0	71,0
61944	6 x 2 x 0,25	24	8,1	29,0	80,0
61945	7 x 2 x 0,25	24	8,2	34,0	89,0
61946	8 x 2 x 0,25	24	8,9	39,0	98,0
61947	10 x 2 x 0,25	24	10,5	49,0	111,0
61948	12 x 2 x 0,25	26	11,0	59,0	135,0
61949	14 x 2 x 0,25	24	11,6	69,0	160,0
61950	15 x 2 x 0,25	24	12,0	74,0	171,0

Part no.	No.pairs x no.cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
61951	16 x 2 x 0,25	24	12,1	79,0	185,0
61952	18 x 2 x 0,25	24	13,5	89,0	209,0
61953	20 x 2 x 0,25	24	14,4	98,0	230,0
61954	22 x 2 x 0,25	24	15,3	109,0	248,0
61955	24 x 2 x 0,25	24	16,1	118,0	279,0
61956	25 x 2 x 0,25	24	16,7	124,0	292,0
61957	1 x 2 x 0,34	22	4,2	7,0	38,0
61958	2 x 2 x 0,34	22	6,4	13,0	44,0
61959	3 x 2 x 0,34	22	6,8	20,0	60,0
61960	4 x 2 x 0,34	22	7,9	7,6	26,0
61961	5 x 2 x 0,34	22	8,2	33,0	92,0
61962	6 x 2 x 0,34	22	8,9	39,0	119,0
61963	7 x 2 x 0,34	22	9,0	46,0	128,0
61964	8 x 2 x 0,34	22	9,9	52,0	139,0
61965	10 x 2 x 0,34	22	11,7	65,0	171,0
61966	12 x 2 x 0,34	22	12,4	78,0	194,0
61967	14 x 2 x 0,34	22	13,0	92,0	222,0
61968	15 x 2 x 0,34	22	13,2	98,0	231,0
61969	16 x 2 x 0,34	22	13,3	105,0	240,0
61970	18 x 2 x 0,34	22	14,2	118,0	264,0
61971	20 x 2 x 0,34	22	15,1	131,0	291,0
61972	22 x 2 x 0,34	22	15,8	144,0	300,0
61973	24 x 2 x 0,34	22	17,0	157,0	359,0
61974	25 x 2 x 0,34	22	17,5	163,0	381,0
61975	1 x 2 x 0,75	20	5,2	11,0	60,0
61976	2 x 2 x 0,75	20	8,8	22,0	80,0
61977	3 x 2 x 0,75	20	9,3	32,0	94,0
61978	4 x 2 x 0,75	20	10,2	43,0	104,0
61979	5 x 2 x 0,75	20	11,3	54,0	130,0
61980	6 x 2 x 0,75	20	12,5	65,0	151,0

Prices on request.

Continuation ▶

TRAYCONTROL 300 TP stranded pair, flexible, oil-resistant,

NFPA 79 Edition 2007



Part no.	No.pairs x no.cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
61981	7 x 2 x 0,75	20	12,6	75,0	174,0
61982	8 x 2 x 0,75	20	15,9	86,0	262,0
61983	10 x 2 x 0,75	20	16,4	108,0	298,0
61984	12 x 2 x 0,75	20	17,2	129,0	302,0
61985	14 x 2 x 0,75	20	18,1	151,0	327,0
61986	15 x 2 x 0,75	20	18,5	161,0	370,0
61987	16 x 2 x 0,75	20	18,6	172,0	402,0
61988	18 x 2 x 0,75	20	19,9	194,0	480,0
61989	20 x 2 x 0,75	20	21,1	215,0	551,0

Part no.	No.pairs x no.cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
61990	22 x 2 x 0,75	20	21,8	237,0	621,0
61991	24 x 2 x 0,75	20	23,5	258,0	703,0
61992	25 x 2 x 0,75	20	24,3	269,0	721,0
61993	1 x 2 x 1	18	5,6	18,0	61,0
61994	1 x 2 x 1	18	9,6	36,0	77,0
61995	3 x 2 x 1	18	10,6	54,0	103,0
61996	6 x 2 x 1	18	13,7	107,0	216,0
61997	9 x 2 x 1	18	16,4	162,0	328,0
61998	15 x 2 x 1	18	20,4	271,0	542,0

Dimensions and specifications may be changed without prior notice. (RN02)

Prices on request.

Colour codes

TRAYCONTROL 300 TP / TRAYCONTROL 300 TP-C (AWG 26-22)

Stranded pair Pair No.	Core	Colour	Stranded pair Pair No.	Core	Colour	Stranded pair Pair No.	Core	Colour
1	a	black	10	a	red	19	a	white
	b	red		b	blue		b	blue
2	a	black	11	a	red	20	a	white
	b	white		b	yellow		b	brown
3	a	black	12	a	red	21	a	white
	b	green		b	brown		b	orange
4	a	black	13	a	red	22	a	white
	b	blue		b	orange		b	yellow
5	a	black	14	a	green	23	a	blue
	b	brown		b	blue		b	brown
6	a	black	15	a	green	24	a	blue
	b	yellow		b	white		b	orange
7	a	black	16	a	green	25	a	blue
	b	orange		b	brown		b	yellow
8	a	red	17	a	green			
	b	green		b	orange			
9	a	red	18	a	green			
	b	white		b	yellow			

TRAYCONTROL 300 TP / TRAYCONTROL 300 TP-C (AWG 20-18)

Stranded pair Pair No.	Core	Colour	Stranded pair Pair No.	Core	Colour	Stranded pair Pair No.	Core	Colour
1	a	white	10	a	black	19	a	brown
	b	black		b	brown		b	orange
2	a	white	11	a	black	20	a	brown
	b	brown		b	red		b	yellow
3	a	white	12	a	black	21	a	brown
	b	red		b	orange		b	green
4	a	white	13	a	black	22	a	brown
	b	orange		b	yellow		b	blue
5	a	white	14	a	black	23	a	brown
	b	yellow		b	green		b	violet
6	a	white	15	a	black	24	a	brown
	b	green		b	blue		b	grey
7	a	white	16	a	black	25	a	red
	b	blue		b	violet		b	orange
8	a	white	17	a	black			
	b	violet		b	grey			
9	a	white	18	a	brown			
	b	grey		b	red			

TRAYCONTROL 300-C TP stranded pair, flexible, screened, oil-resistant, EMC-preferred type, NFPA 79 Edition 2007



Technical data

- Flexible screened PVC data and control cable
- **Temperature range**
-25 °C to +105 °C
- **Nominal voltage** 300 V
- **Test voltage** 2000 V
- **Minimum bending radius**
Flexing 6x cable ø
- **Coupling resistance**
max. 250 Ohm/km

Cable structure

- Tinned copper conductor, fine wire stranded, with AWG measures
- Special PVC core insulation (AWG 22 - AWG 18 with transparent nylon skin)
- Pair identification according to international colour code
- Cores stranded in pairs with optimal lay-length
- Pairs stranded in layers with optimal lay-length
- 1. Screening with special aluminium foil
2. Screening with braid of tinned copper wires, optimal coverage, approx. 85%
- Separator
- Special PVC outer sheath
- Sheath colour - grey (RAL 7001)
- With length marking in feet

Properties

- Self-extinguishing and flame retardant in accordance with CSA FT4
- The materials used in manufacture are free of silicone, cadmium and substances that impair paint wetting

Tests

UL (AWG 22 - AWG 18): PLTC-ER, ITC-ER, CM, NFPA 79 2007, OIL RES I & II, Class I Div. 2, NEC Art. 501, 725, 760 & 800, AWM 2464
UL (AWG 24 - AWG 26): CM, AWM 2464, rated OIL RES I & II, NEC Art. 725, 760 & 800, NFPA 79 2007
CSA: CSA CMG FT4, AWM I/II A/B

Note

Advantages

- Highly-flexible, easy to install
- Oil-resistant to OIL RES I & II

Available on request

- PUR or TPE outer sheath
- Sheath colour to suit customer requirement

Application

HELUKABEL® TRAYCONTROL 300 is a screened, stranded pair data and control cable. Cross-sections with PLTC-ER and ITC-ER approval suitable for open, unprotected installation in cable trays to the machine; their outstanding oil resistance (OIL RES I & II) makes them ideally suited as connecting and joining cables and also for control, signal and measuring systems in industrial plants. The flexible cable structure facilitates installation inside and outside of machines and switch cabinets. The double-screening with aluminium foil (100% coverage) and copper braid (approx. 85% coverage) guarantee superior EMC protection.

Applications: tool machines, control panels, measuring devices, production automation, cable ducts, renewable energies.

EMC = Electromagnetic compatibility.

To optimise EMC characteristics, we recommend a large contact area for the copper braiding around the entire circumference on both ends.

CE – The product conforms to the EG Low-Voltage Directive 2006/95/EG

Part no.	No.pairs x no.cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
61999	1 x 2 x 0,14	26	4,0	16,0	32,0
59760	2 x 2 x 0,14	26	5,6	20,0	39,0
59761	3 x 2 x 0,14	26	5,8	24,0	47,0
59762	4 x 2 x 0,14	26	6,3	27,0	55,0
59763	5 x 2 x 0,14	26	6,7	31,0	68,0
59764	6 x 2 x 0,14	26	7,3	50,0	86,0
59765	7 x 2 x 0,14	26	7,4	52,0	92,0
59766	8 x 2 x 0,14	26	7,8	54,0	97,0
59767	10 x 2 x 0,14	26	9,1	60,0	111,0
59768	12 x 2 x 0,14	26	9,8	67,0	141,0
59769	14 x 2 x 0,14	26	10,5	75,0	150,0
59770	15 x 2 x 0,14	26	11,1	77,0	154,0
59771	16 x 2 x 0,14	26	11,2	80,0	155,0
59772	18 x 2 x 0,14	26	11,8	84,0	170,0
59773	20 x 2 x 0,14	26	12,4	98,0	183,0
59774	22 x 2 x 0,14	26	13,1	104,0	207,0
59775	24 x 2 x 0,14	26	13,6	112,0	228,0
59776	25 x 2 x 0,14	26	15,1	114,0	239,0
59777	1 x 2 x 0,25	24	4,6	16,0	46,0
59778	2 x 2 x 0,25	24	6,6	27,0	53,0
59779	3 x 2 x 0,25	24	6,9	32,0	65,0
59780	4 x 2 x 0,25	26	7,5	37,0	79,0
59781	5 x 2 x 0,25	24	8,0	55,0	98,0
59782	6 x 2 x 0,25	24	8,8	66,0	114,0
59783	7 x 2 x 0,25	24	8,9	60,0	121,0
59784	8 x 2 x 0,25	24	9,7	74,0	129,0

Part no.	No.pairs x no.cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
59785	10 x 2 x 0,25	24	11,4	109,0	152,0
59786	12 x 2 x 0,25	24	11,8	116,0	189,0
59787	14 x 2 x 0,25	24	12,6	121,0	213,0
59788	15 x 2 x 0,25	24	12,8	132,0	225,0
59789	16 x 2 x 0,25	24	12,9	142,0	227,0
59790	18 x 2 x 0,25	24	13,8	147,0	238,0
59791	20 x 2 x 0,25	24	14,4	161,0	270,0
59792	22 x 2 x 0,25	24	15,3	171,0	300,0
59793	24 x 2 x 0,25	24	16,4	230,0	321,0
59794	25 x 2 x 0,25	24	16,7	231,0	340,0
59795	1 x 2 x 0,34	22	4,9	17,0	58,0
59796	2 x 2 x 0,34	22	7,1	37,0	65,0
59797	3 x 2 x 0,34	22	7,7	45,0	79,0
59798	4 x 2 x 0,34	22	8,4	54,0	88,0
59799	5 x 2 x 0,34	22	9,0	63,0	110,0
59800	6 x 2 x 0,34	22	9,6	73,0	126,0
59801	7 x 2 x 0,34	22	9,7	79,0	140,0
59802	8 x 2 x 0,34	22	10,7	88,0	148,0
59803	10 x 2 x 0,34	22	12,7	107,0	184,0
59804	12 x 2 x 0,34	22	13,2	122,0	210,0
59805	14 x 2 x 0,34	22	13,9	138,0	241,0
59806	15 x 2 x 0,34	22	14,1	154,0	245,0
59807	16 x 2 x 0,34	22	14,2	161,0	251,0
59808	18 x 2 x 0,34	22	15,3	198,0	275,0
59809	20 x 2 x 0,34	22	15,9	211,0	300,0
59810	22 x 2 x 0,34	22	16,8	218,0	320,0

Prices on request.

Continuation ▶

TRAYCONTROL 300-C TP stranded pair, flexible, screened, oil-resistant, EMC-preferred type, NFPA 79 Edition 2007



Part no.	No.pairs x no.cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	Part no.	No.pairs x no.cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
59811	24 x 2 x 0,34	22	18,0	230,0	371,0	59824	15 x 2 x 0,75	20	19,4	232,0	381,0
59812	25 x 2 x 0,34	22	18,3	239,0	402,0	59825	16 x 2 x 0,75	20	19,5	257,0	417,0
59813	1 x 2 x 0,75	20	9,4	26,0	70,0	59826	18 x 2 x 0,75	20	20,5	282,0	494,0
59814	2 x 2 x 0,75	20	9,4	56,0	89,0	59827	20 x 2 x 0,75	20	21,5	307,0	570,0
59815	3 x 2 x 0,75	20	10,5	72,0	102,0	59828	22 x 2 x 0,75	20	22,6	322,0	643,0
59816	4 x 2 x 0,75	20	11,5	92,0	119,0	59829	24 x 2 x 0,75	20	24,4	342,0	724,0
59817	5 x 2 x 0,75	20	12,6	107,0	140,0	59830	25 x 2 x 0,75	20	24,9	361,0	740,0
59818	6 x 2 x 0,75	20	13,3	122,0	162,0	59831	1 x 2 x 1	18	6,3	28,0	104,0
59819	7 x 2 x 0,75	20	13,4	132,0	198,0	59832	2 x 2 x 1	18	10,2	57,0	121,0
59820	8 x 2 x 0,75	20	16,8	144,0	272,0	59833	3 x 2 x 1	18	11,5	75,0	150,0
59821	10 x 2 x 0,75	20	17,5	180,0	307,0	59834	6 x 2 x 1	18	14,6	139,0	328,0
59822	12 x 2 x 0,75	20	18,0	202,0	318,0	59835	9 x 2 x 1	18	17,2	212,0	490,0
59823	14 x 2 x 0,75	20	19,1	221,0	342,0	59836	15 x 2 x 1	18	21,3	358,0	811,0

Dimensions and specifications may be changed without prior notice. (RN02)

Prices on request.

Colour codes

TRAYCONTROL 300 TP / TRAYCONTROL 300 TP-C (AWG 26-22)

Stranded pair Pair No.	Core	Colour	Stranded pair Pair No.	Core	Colour	Stranded pair Pair No.	Core	Colour
1	a	black	10	a	red	19	a	white
	b	red		b	blue		b	blue
2	a	black	11	a	red	20	a	white
	b	white		b	yellow		b	brown
3	a	black	12	a	red	21	a	white
	b	green		b	brown		b	orange
4	a	black	13	a	red	22	a	white
	b	blue		b	orange		b	yellow
5	a	black	14	a	green	23	a	blue
	b	brown		b	blue		b	brown
6	a	black	15	a	green	24	a	blue
	b	yellow		b	white		b	orange
7	a	black	16	a	green	25	a	blue
	b	orange		b	brown		b	yellow
8	a	red	17	a	green			
	b	green		b	orange			
9	a	red	18	a	green			
	b	white		b	yellow			

TRAYCONTROL 300 TP / TRAYCONTROL 300 TP-C (AWG 20-18)

Stranded pair Pair No.	Core	Colour	Stranded pair Pair No.	Core	Colour	Stranded pair Pair No.	Core	Colour
1	a	white	10	a	black	19	a	brown
	b	black		b	brown		b	orange
2	a	white	11	a	black	20	a	brown
	b	brown		b	red		b	yellow
3	a	white	12	a	black	21	a	brown
	b	red		b	orange		b	green
4	a	white	13	a	black	22	a	brown
	b	orange		b	yellow		b	blue
5	a	white	14	a	black	23	a	brown
	b	yellow		b	green		b	violet
6	a	white	15	a	black	24	a	brown
	b	green		b	blue		b	grey
7	a	white	16	a	black	25	a	red
	b	blue		b	violet		b	orange
8	a	white	17	a	black			
	b	violet		b	grey			
9	a	white	18	a	brown			
	b	grey		b	red			

TRAYCONTROL 500 flexible, oil-resistant, open installation TC-ER, PLTC-ER, ITC-ER, NFPA 79 Edition 2007



HELUKABEL TRAYCONTROL 500 P/N 63111 12AWG 2.5QMM 4C (UL) TC-ER 90°C DRY 75°C WET 600 V SUN RES DIR BUR OIL RES I/II E330430 OR MTW "FLEXING" OR WTTC 1000 V OR c(UL)CIC TC FT4 LL41103 CSA AWM I/II 90°C 600 V FT4 CE ROHS



Technical data

- PVC control cable according to UL Standard 1277
- **Temperature range**
Flexing -5 °C to +90 °C
Fixed installation -40 °C to +90 °C
- **Nominal voltage**
TC 600 V
AWM 1000 V
TC Wind Turbine (WTTC) 1000 V
- **Test voltage** 3000 V
- **Minimum bending radius**
Flexing 4x cable ø
- **Insulation resistance**
Min. 20 MΩm x km
- **Radiation resistance**
up to 80x10⁶ cJ/kg (up to 80 Mrad)

Cable structure

- Bare copper conductor, fine wire stranded
- Special PVC core insulation with transparent nylon skin
- Black cores with continuous white numbering
- Green-yellow earth core in the outer layer, 3 cores and more
- Cores stranded in layers with optimal lay-lengths
- Separator
- Special PVC outer jacket
- Sheath colour - grey (RAL 7001)
- With length marking in feet

Properties

- Self-extinguishing and flame retardant in accordance with CSA FT4
- The materials used in manufacture are free of silicone, cadmium and substances that impair paint wetting
- **Tests**
UL: TC-ER, PLTC-ER (AWG 18 - AWG 12), ITC-ER (AWG 18 - AWG 12), MTW, NFPA 79 2007, WTTC 1000V, DP-1, OIL RES I & II, 90 °C dry / 75 °C wet, Class 1 Div. 2 per NEC Art 336, 392, 501, crush impact test in accordance with UL 1277
CSA: c(UL) CIC-TC FT4, CSA AWM I/II A/B FT4

Note

Advantages

- Highly-flexible, easy to install

Available on request

- with blue cores (DC)
- with red cores (AC)
- Black or TPE outer sheath

Application

HELUKABEL® TRAYCONTROL 500 is a flexible, oil-resistant control cable. The special combination of TC-ER, PLTC-ER and ITC-ER allows this cable to be used as a connecting cable for industrial plant and machinery in accordance with NFPA 79 Edition 2007. Approved for open, unprotected installation in cable trays to the machine. Its outstanding oil resistance (OIL RES I & II) guarantees a long service life for industrial applications in dry, damp and wet environments. Recommended applications: production lines, bottling plants, machine construction, switch cabinets, conveyor systems, packaging machines, automotive industry.

CE – The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
63079	2 x 0,5	20	6,4	10,0	58,0
63080	3 G 0,5	20	6,7	14,0	61,0
63081	4 G 0,5	20	7,2	19,0	76,0
63082	5 G 0,5	20	7,8	24,0	89,0
63083	7 G 0,5	20	8,4	34,0	120,0
63084	9 G 0,5	20	9,6	43,0	201,0
63085	12 G 0,5	20	10,7	58,0	250,0
63086	18 G 0,5	20	12,4	86,0	295,0
63087	25 G 0,5	20	14,9	120,0	362,0
63088	2 x 1	18	7,0	19,0	68,0
63089	3 G 1	18	7,1	29,0	88,0
63090	4 G 1	18	8,0	38,0	98,0
63091	5 G 1	18	8,6	48,0	116,0
63092	7 G 1	18	9,5	67,0	149,0
63093	9 G 1	18	10,7	86,0	186,0
63094	10 G 1	18	11,6	96,0	199,0
63095	12 G 1	18	11,9	115,0	245,0
63096	15 G 1	18	13,2	144,0	292,0
63097	16 G 1	18	13,5	154,0	306,0
63098	18 G 1	18	366,0	14,6	173,0
63099	19 G 1	18	14,7	182,0	384,0
63100	25 G 1	18	17,0	240,0	451,0
63101	27 G 1	18	17,4	259,0	521,0
63102	34 G 1	18	19,5	326,0	625,0
63103	37 G 1	18	19,8	355,0	684,0
63104	41 G 1	18	20,7	394,0	744,0
63105	50 G 1	18	23,5	480,0	933,0
63106	61 G 1	18	24,9	586,0	1095,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
63107	2 x 1,5	16	7,7	29,0	80,0
63108	3 G 1,5	16	8,1	43,0	86,0
63109	4 G 1,5	16	8,8	58,0	115,0
63110	5 G 1,5	16	9,5	72,0	126,0
63111	4 G 2,5	14	9,8	96,0	141,0
63112	6 G 1,5	16	10,0	86,0	164,0
63113	7 G 1,5	16	10,3	101,0	171,0
63114	8 G 1,5	16	10,9	115,0	201,0
63115	9 G 1,5	16	11,9	130,0	237,0
63116	10 G 1,5	16	12,9	144,0	259,0
63117	12 G 1,5	16	14,2	173,0	301,0
63118	14 G 1,5	16	14,5	202,0	365,0
63119	15 G 1,5	16	15,2	216,0	379,0
63120	16 G 1,5	16	15,9	14,0	61,0
63121	18 G 1,5	16	16,4	259,0	443,0
63122	19 G 1,5	16	16,5	274,0	458,0
63123	20 G 1,5	16	17,0	288,0	491,0
63124	25 G 1,5	16	18,6	360,0	564,0
63125	27 G 1,5	16	19,0	389,0	629,0
63126	30 G 1,5	16	19,6	432,0	701,0
63127	34 G 1,5	16	20,5	490,0	775,0
63128	40 G 1,5	16	22,9	576,0	946,0
63129	41 G 1,5	16	23,4	590,0	967,0
63130	50 G 1,5	16	25,1	720,0	1137,0
63131	61 G 0,5	16	27,2	878,0	1345,0
63132	2 x 2,5	14	8,6	48,0	100,0
63133	3 G 2,5	14	8,9	72,0	112,0
63164	5 G 2,5	14	10,6	120,0	152,0

Prices on request.

Continuation ►

TRAYCONTROL 500 flexible, oil-resistant, open installation TC-ER, PLTC-ER, ITC-ER, NFPA 79 Edition 2007



Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
63165	6 G 2,5	14	11,2	144,0	205,0
63166	7 G 2,5	14	11,6	168,0	216,0
63167	9 G 2,5	14	14,3	216,0	312,0
63168	10 G 2,5	14	15,5	240,0	378,0
63169	12 G 2,5	14	15,9	288,0	434,0
63170	16 G 2,5	14	17,6	384,0	550,0
63171	18 G 2,5	14	18,4	432,0	616,0
63172	19 G 2,5	14	18,6	456,0	634,0
63173	25 G 2,5	14	22,2	600,0	817,0
63174	2 x 4	14	9,5	76,8	132,0
63175	3 G 4	14	10,6	115,0	177,0
63176	4 G 4	14	11,5	154,0	201,0
63177	5 G 4	14	12,6	192,0	274,0
63178	6 G 4	12	14,1	230,0	315,0
63179	7 G 4	12	14,6	269,0	353,0
63180	9 G 4	12	16,9	346,0	476,0
63181	12 G 4	12	18,9	461,0	613,0
63182	16 G 4	12	19,8	614,0	783,0
63183	19 G 4	12	23,1	768,0	918,0
63184	20 G 4	12	24,3	768,0	961,0
63185	25 G 4	12	26,3	960,0	1236,0
63186	2 x 6	10	11,9	115,0	213,0
63187	3 G 6	10	12,6	173,0	283,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
63188	4 G 6	10	14,7	230,0	387,0
63189	5 G 6	10	16,0	288,0	473,0
63190	7 G 6	10	17,4	403,0	607,0
63191	9 G 6	10	20,4	518,0	771,0
63192	12 G 6	10	23,9	691,0	1061,0
63193	19 G 6	10	27,9	1094,0	1528,0
63194	3 G 10	8	17,0	288,0	420,0
63195	4 G 10	8	19,7	384,0	662,0
63196	5 G 10	8	21,7	480,0	784,0
63197	3 G 16	6	19,5	461,0	701,0
63198	4 G 16	6	21,9	614,0	908,0
63199	5 G 16	6	24,0	768,0	1149,0
62802	3 G 25	4	24,3	720,0	1061,0
62803	4 G 25	4	27,1	960,0	1366,0
62804	5 G 25	4	29,3	1200,0	1631,0
62805	3 G 35	2	27,9	1008,0	1480,0
62806	4 G 35	2	31,4	1344,0	1922,0
62807	5 G 35	2	34,0	1680,0	2363,0
62808	4 G 42,3	1	34,8	1624,0	2397,0
62809	4 G 52,9	1/0	37,9	2031,0	2938,0
62810	4 G 67,3	2/0	41,3	2584,0	3559,0
62811	4 G 84,4	3/0	48,6	3256,0	4181,0
62812	4 G 106,7	4/0	51,2	4097,0	5747,0

Dimensions and specifications may be changed without prior notice. (RN01)

Prices on request.

Research and Development

Our design engineers develop and test new cable and wire types up to series maturity.

New products are tested for their applicability and their readiness for production in the state-of-the-art equipped test centre at our factory in Windsbach. In-process measurements and random samples secure our high quality standard.

Products for continuous flex applications with a very high depth of manufacturing build up a main core of the range. Extreme chemical, electrical and mechanical loads paired with small bending radii, a high number of alternating bending cycles and exceptional service lives are customer requirements that we meet and exceed.

We would also be glad to develop your cable made to measure. Give us a call at Ph. +49 7150 9209-731 or -135

A development example:

The cargo ship MS Beluga is being pulled by the SkySail using wind power. The traction cable including the control wire was designed, developed and produced by HELUKABEL®.



TRAYCONTROL 500-C flexible, oil-resistant, screened, EMC-preferred type, open installation TC-ER, PLTC-ER, ITC-ER, NFPA 79 Edition 2007



HELUKABEL TRAYCONTROL 500-C P/N 62855 12AWG 3,31QMM 4C (UL) TC-ER 90°C DRY 75°C WET 600 V SUN RES DIR BUR OIL RES I/II E330430 OR MTW "FLEXING" OR WTTC 1000 V OR c(UL)CIC TC FT4 LL41103 CSA AWM I/II 90°C 600 V FT4 CE ROHS



Technical data

- PVC control cable according to UL Standard 1277
- **Temperature range**
Flexing -5 °C to +90 °C
Fixed installation -40 °C to +90 °C
- **Nominal voltage**
TC 600 V
AWM 1000 V
TC Wind Turbine (WTTC) 1000 V
- **Test voltage** 3000 V
- **Coupling resistance**
max. 250 Ohm/km
- **Minimum bending radius**
Flexing 6x cable ø
- **Insulation resistance**
Min. 20 MOhm x km
- **Radiation resistance**
up to 80x106 cJ/kg (up to 80 Mrad)

Cable structure

- Bare copper conductor, fine wire stranded
- Special PVC core insulation with transparent nylon skin
- Black cores with continuous white numbering
- Green-yellow earth core in the outer layer, 3 cores and more
- Cores stranded in layers with optimal lay-lengths
- Separating foil
- Braided screening of tinned copper wires, coverage approx. 85%
- Separator
- Special PVC outer jacket
- Sheath colour - grey (RAL 7001)
- With length marking in feet

Properties

- Self-extinguishing and flame retardant in accordance with CSA FT4
- The materials used in manufacture are free of silicone, cadmium and substances that impair paint wetting

Tests

UL: TC-ER, PLTC-ER (AWG 18 - AWG 12), ITC-ER (AWG 18 - AWG 12), MTW, NFPA 79 2007, WTTC 1000V, DP-1, OIL RES I & II, 90°C dry / 75 °C wet, Class 1 Div. 2 per NEC Art 336, 392, 501, crush impact test in accordance with UL 1277

CSA: c(UL) CIC-TC FT4, CSA AWM I/II A/B FT4

Note

Advantages

- Highly-flexible, easy to install

Available on request

- with blue cores (DC)
- with red cores (AC)
- Black or TPE outer sheath

Application

HELUKABEL TRAYCONTROL 500-C is a flexible, screened and oil-resistant control cable. The special combination of TC-ER, PLTC-ER and ITC-ER allows this cable to be used as a connecting cable for industrial plant and machinery in accordance with NFPA 79 2007. Approved for open, unprotected installation in cable trays to the machine. Its outstanding oil resistance (OIL RES I & II) guarantees a long service life for industrial applications in dry, damp and wet environments. Recommended applications: production lines, bottling plants, machine construction, switch cabinets, conveyor systems, packaging machines, automotive industry.

EMC = Electromagnetic compatibility. To optimise EMC characteristics, we recommend a large contact area for the copper braiding around the entire circumference on both ends.

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
62813	2 x 0,5	20	7,0	35,0	95,0
62814	3 G 0,5	20	7,6	42,0	115,0
62815	7 G 0,5	20	9,4	69,0	164,0
62816	12 G 0,5	20	11,0	108,0	266,0
62817	25 G 0,5	20	16,1	240,0	435,0
62818	2 x 1	18	8,1	50,0	110,0
62819	3 G 1	18	8,2	60,0	118,0
62820	4 G 1	18	8,8	71,0	136,0
62821	5 G 1	18	9,4	88,0	148,0
62822	7 G 1	18	10,1	111,0	192,0
62823	9 G 1	18	11,4	140,0	244,0
62824	10 G 1	18	11,6	150,0	283,0
62825	12 G 1	18	12,9	184,0	329,0
62826	15 G 1	18	14,8	207,0	377,0
62827	18 G 1	18	15,7	260,0	435,0
62828	19 G 1	18	15,7	280,0	443,0
62829	25 G 1	18	17,7	349,0	571,0
62830	3 G 1,5	16	8,9	74,0	144,0
62831	4 G 1,5	16	9,6	90,0	172,0
62832	5 G 1,5	16	10,3	104,0	188,0
62833	6 G 1,5	16	10,5	120,0	203,0
62834	7 G 1,5	16	11,3	134,0	244,0
62835	9 G 1,5	16	12,6	165,0	308,0
62836	10 G 1,5	16	12,9	180,0	346,0
62837	12 G 1,5	16	15,1	244,0	423,0
62838	15 G 1,5	16	16,4	270,0	441,0
62839	18 G 1,5	16	17,3	319,0	512,0
62840	19 G 1,5	16	17,6	327,0	503,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
62841	20 G 1,5	16	17,5	340,0	524,0
62842	25 G 1,5	16	19,6	434,0	704,0
62843	3 G 2,08	14	9,8	112,0	179,0
62844	4 G 2,08	14	10,7	121,0	222,0
62845	5 G 2,08	14	11,6	150,0	266,0
62846	7 G 0,5	14	12,5	200,0	326,0
62847	9 G 2,08	14	15,0	240,0	435,0
62848	10 G 2,08	14	16,3	264,0	427,0
62849	12 G 2,08	14	16,9	350,0	592,0
62850	15 G 2,08	14	18,3	409,0	635,0
62851	18 G 2,08	14	19,5	471,0	780,0
62852	19 G 2,08	14	19,7	505,0	799,0
62853	25 G 2,08	14	23,3	652,0	1042,0
62854	3 G 3,31	12	11,4	137,0	237,0
62855	4 G 3,31	12	12,5	169,0	314,0
62856	5 G 3,31	12	14,4	201,0	386,0
62857	6 G 3,31	12	14,6	236,0	425,0
62858	7 G 3,31	12	15,5	262,0	496,0
62859	9 G 3,31	12	17,7	334,0	740,0
62860	12 G 3,31	12	19,7	434,0	887,0
62861	15 G 3,31	12	21,0	531,0	903,0
62862	19 G 3,31	12	23,1	720,0	1123,0
62863	20 G 3,31	12	25,0	764,0	1490,0
62864	25 G 3,31	12	27,1	914,0	1865,0
62865	3 G 6	10	14,1	240,0	389,0
62866	4 G 6	10	15,5	305,0	549,0
62867	5 G 6	10	16,8	399,0	610,0
62868	7 G 6	10	18,2	505,0	851,0

Prices on request.

Continuation ▶

TRAYCONTROL 500-C flexible, oil-resistant, screened, EMC-preferred type, open installation TC-ER, PLTC-ER, ITC-ER, NFPA 79 Edition 2007



Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
62869	9 G 6	10	20,9	704,0	1132,0
62870	12 G 6	10	24,4	940,0	1523,0
62871	19 G 6	10	27,5	1210,0	1952,0
62872	4 G 10	8	18,7	535,0	852,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
62873	4 G 16	6	23,3	740,0	1202,0
62874	4 G 25	4	28,6	1140,0	1971,0
62875	4 G 35	2	33,2	1576,0	2887,0

Dimensions and specifications may be changed without prior notice. (RN01)

Prices on request.



Photo: REpower

JZ 604 TC TRAY CABLE

PVC power cable, exposed run, 90°C,
600V, meter marking



HELUKABEL JZ-604 TC-ER MTW UL 1277 18AWG / 1 QMM 7C 600V 90C DRY 75C WET SUN RES
DIR BUR FT4 OR AWN STYLE 2587 CSA AWM I/II A/B 90C FT4 600V LL113926 CE



Technical data

- PVC power cable to UL-standard 1277 TRAY CABLE
- **Multinorm**
The TRAY CABLE also conforms to the following standards:
AWM-Style 2587 to UL-Std. 758 and CSA C22.2 No 210.2 I/II A/B 90C 600 V
- **Temperature range**
dry environment
flexing -5 °C to +90 °C
fixed installation -25 °C to +90 °C
wet environment
flexing -5 °C to +75 °C
fixed installation -25 °C to +75 °C
- **Nominal voltage** to UL 600 V
- **Test voltage** 3000 V
- **Breakdown voltage** min. 6000 V
- **Insulation resistance**
min. 20 MΩm x km
- **Minimum bending radius**
7,5x cable ø
- **Radiation resistance**
up to 80x10⁶ cJ/kg (up to 80 Mrad)

Cable structure

- Bare copper, fine wire conductors, according to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Special PVC core insulation class 12 B to table 50.155 UL-standard 1581, type TFF to UL-Std. 66 (AWG 20-AWG 16), type THHW to UL-Std. 83 (≥ AWG 14)
- Black cores with continuous white numbering according to DIN VDE 0293
- Green-yellow earth core in the outer layer (3 cores and above)
- Cores stranded in layers with optimal lay-length
- Special PVC outer sheath, to UL-Std. 1277 table 11.2
- Sheath colour black (RAL 9005)
- with meter marking, change-over in 2011

Properties

- Material self-extinguishing and flame retardant
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Note

- G = with green-yellow earth core; x = without green-yellow earth core (OZ).
- AWG sizes are approximate equivalent values. The actual cross-section is in mm².
- **unscreened analogue type:**
JZ 604-FCY TC TRAY CABLE
JZ 604-YCY TC TRAY CABLE

Application

USA NFPA79, edition 2007 conformant flexible power cables up to 600 V, for all machinery in tool and plant construction, suitable for installation in dry, humid and damp environments, in the open and in pipes. For underground installation and for open, unprotected installation from the cable rack to machines and industrial plants.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
69661	2 x 1	18	8,0	19,2	72,0
69662	3 G 1	18	8,4	29,0	84,0
69663	4 G 1	18	9,1	39,0	96,0
69664	5 G 1	18	10,0	48,0	114,0
69665	7 G 1	18	11,7	67,0	147,0
69666	9 G 1	18	12,6	84,0	172,0
69667	10 G 1	18	14,3	96,0	206,0
69668	12 G 1	18	14,7	115,0	256,0
69669	18 G 1	18	17,1	173,0	367,0
69670	25 G 1	18	20,3	240,0	477,0
69671	34 G 1	18	23,7	326,0	551,0
69672	50 G 1	18	26,1	480,0	959,0
69673	2 x 1,5	16	8,4	28,8	88,0
69674	3 G 1,5	16	8,8	43,0	102,0
69675	4 G 1,5	16	9,6	58,0	119,0
69676	5 G 1,5	16	10,5	72,0	144,0
69677	7 G 1,5	16	12,3	101,0	192,0
69678	8 G 1,5	16	13,5	115,0	213,0
69679	9 G 1,5	16	13,3	130,0	261,0
69680	10 G 1,5	16	15,1	144,0	294,0
69681	12 G 1,5	16	15,6	173,0	328,0
69682	16 G 1,5	16	17,1	230,0	402,0
69683	18 G 1,5	16	18,2	259,0	427,0
69684	25 G 1,5	16	22,7	360,0	594,0
69685	34 G 1,5	16	25,3	489,0	714,0
69686	41 G 1,5	16	27,0	590,0	803,0
69687	50 G 1,5	16	27,3	720,0	1021,0
69688	61 G 1,5	16	29,4	878,0	1258,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
69689	2 x 2,5	14	9,4	48,0	108,0
69690	3 G 2,5	14	9,9	72,0	137,0
69691	4 G 2,5	14	10,8	96,0	157,0
69692	5 G 2,5	14	11,8	120,0	190,0
69693	7 G 2,5	14	14,7	168,0	253,0
69694	8 G 2,5	14	16,0	192,0	339,0
69695	9 G 2,5	14	16,0	216,0	341,0
69696	10 G 2,5	14	17,1	240,0	392,0
69697	12 G 2,5	14	17,7	288,0	470,0
69698	18 G 2,5	14	20,8	432,0	682,0
69699	25 G 2,5	14	25,8	600,0	891,0
69700	3 G 4	12	11,0	115,0	187,0
69701	4 G 4	12	12,0	154,0	226,0
69702	5 G 4	12	13,2	192,0	280,0
69703	7 G 4	12	16,5	269,0	390,0
69704	9 G 4	12	17,8	346,0	480,0
69705	12 G 4	12	19,9	461,0	841,0
69706	18 G 4	12	24,2	691,0	981,0
69707	3 G 6	10	12,5	173,0	290,0
69708	4 G 6	10	14,5	230,0	381,0
69709	5 G 6	10	15,8	288,0	465,0
69710	7 G 6	10	17,3	403,0	654,0
69711	3 G 10	8	16,9	288,0	511,0
69712	4 G 10	8	18,6	384,0	584,0
69713	5 G 10	8	20,4	480,0	781,0
69714	7 G 10	8	23,5	672,0	970,0

Prices on request.

Continuation ▶

JZ 604 TC TRAY CABLE PVC power cable, exposed run, 90°C, 600V, meter marking



Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
69715	3 G 16	6	21,0	461,0	651,0
69716	4 G 16	6	25,9	614,0	866,0
69717	5 G 16	6	26,3	768,0	1117,0
69718	7 G 16	6	28,8	1075,0	1364,0
69719	3 G 25	4	24,9	720,0	1090,0
69720	4 G 25	4	27,2	960,0	1421,0
69721	5 G 25	4	30,5	1200,0	1611,0
69722	7 G 25	4	33,1	1680,0	1943,0
69723	3 G 35	2	27,1	1008,0	1734,0
69724	4 G 35	2	29,8	1344,0	2011,0
69725	5 G 35	2	33,0	1680,0	2347,0
69726	3 G 50	1	33,2	1440,0	2041,0
69727	4 G 50	1	36,7	1920,0	2539,0
69728	5 G 50	1	41,5	2400,0	2894,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
69729	3 G 70	2/0	37,6	2016,0	2831,0
69730	4 G 70	2/0	42,0	2688,0	3494,0
69731	5 G 70	2/0	47,6	3360,0	4260,0
69732	3 G 95	3/0	41,8	2736,0	5010,0
69733	4 G 95	3/0	47,0	3648,0	6104,0
69734	5 G 95	3/0	52,5	4560,0	7891,0
69735	3 G 120	4/0	46,0	3456,0	5940,0
69736	4 G 120	4/0	51,5	4608,0	7604,0
69737	5 G 120	4/0	56,5	5760,0	8751,0

Dimensions and specifications may be changed without prior notice. (RN01)

Prices on request.

Cable Accessories

The logical complement to our cable assortment.

As a meaningful addition to our comprehensive program of cables and wires, HELUKABEL® has created a convincing cable accessory program that complies with the latest directives and standards.

Some of the topics covered are:

- Cable glands
- Protective tubes
- Drag and guidance chains
- Insulation, shrunk, braided and high temperature tubes
- Termination and connection sleeves
- Bundling, binding and fixing
- Identification and marking
- Terminals and cable lugs
- Tools
- Signal and power connectors

Ask for more information, available in our catalogue „Cable Accessories“ via Internet or Fax (for Fax enquiry see last page).



JZ 604-YCY TC TRAY CABLE PVC power cable, exposed

run, screened, NFPA 79 Edition 2007, 90°C, 600V, EMC-preferred type, meter marking



Technical data

- PVC power cable, screened to UL-standard 1277 TRAY CABLE
- **Multinorm**
also conforms to the following standards: AWM-Style 2587 to UL-Std. 758 (cUL) and CSA type TC FT4 to C22.2 no 230, CSA C22.2 No 210.2 I/II A/B 90 °C 600 V FT4
- **Temperature range**
dry environment
flexing -5 °C to +90 °C
fixed installation -25 °C to +90 °C
wet environment
flexing -5 °C to +75 °C
fixed installation -25 °C to +75 °C
- **Nominal voltage** to UL 600 V
- **Test voltage** 3000 V
- **Breakdown voltage** min. 6000 V
- **Insulation resistance**
min. 20 MΩm x km
- **Minimum bending radius**
10x cable ø
- **Radiation resistance**
up to 80x10⁶ cJ/kg (up to 80 Mrad)
- **Coupling resistance**
max. 250 Ωm/km

Cable structure

- Bare copper, fine wire conductors, according to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Spezial PVC core insulation class 12 B to table 50.155 UL-standard 1581, type TFF to UL-Std. 66 (AWG 20-AWG 16), type THHW to UL-Std. 83 (≥AWG 14)
- Black cores with continuous white numbering according to DIN VDE 0293
- Green-yellow earth core in the outer layer (3 cores and above)
- Cores stranded in layers with optimal lay-length
- PVC-inner sheath, to UL-Std. 1277 table 11.2
- Tinned copper braided screening, approx. 85% coverage
- Special PVC outer sheath, to UL-Std. 1277 table 11.2,
- Sheath colour black (RAL 9005)
- with meter marking, change-over in 2011

Properties

- Material self-extinguishing and flame retardant to CSA FT4
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Note

- G = with green-yellow earth core;
x = without green-yellow earth core (OZ).
- AWG sizes are approximate equivalent values. The actual cross-section is in mm².
- **unscreened analogue type:**
JZ 604 TC TRAY CABLE

Application

UL-approved, flexible high current cables for use up to 600 V, for all machines, tools and installation work. Suitable for use in dry, damp and wet areas, outside, in cable ducts, open cable trays. Also in pipes, in the ground and for open installation in machinery and industrial areas.

EMC = Electromagnetic compatibility

To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
69804	3 G 16	6	25,2	653,0	1385,0
69805	4 G 16	6	27,8	807,0	1861,0
69806	5 G 16	6	31,2	940,0	2614,0
69807	7 G 16	6	34,5	1345,0	3211,0
69808	3 G 25	4	29,0	920,0	2455,0
69809	4 G 25	4	32,4	1169,0	2721,0
69810	5 G 25	4	34,2	1420,0	3490,0
69811	7 G 25	4	40,3	1921,0	4960,0
69812	3 G 35	2	32,4	1250,0	3130,0
69813	4 G 35	2	36,2	1680,0	4100,0
69814	5 G 35	2	40,5	2020,0	4921,0
69815	3 G 50	1	40,4	1887,0	4560,0
69816	4 G 50	1	45,5	2370,0	5761,0
69817	5 G 50	1	50,0	2880,0	7186,0
69818	3 G 70	2/0	47,1	2516,0	5580,0
69819	4 G 70	2/0	51,1	3257,0	7387,0
69820	5 G 70	2/0	56,0	4032,0	9290,0
69821	3 G 95	3/0	50,1	3086,0	8520,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
69822	4 G 95	3/0	55,0	4060,0	10200,0
69823	5 G 95	3/0	60,5	5244,0	13800,0
69824	3 G 120	4/0	54,0	4176,0	11090,0
69825	4 G 120	4/0	59,5	5231,0	13620,0
69826	5 G 120	4/0	64,5	6624,0	15420,0

Dimensions and specifications may be changed without prior notice. (RN01)

Prices on request.

TRAYCONTROL 600 flexible, oil-resistant, open installation (TC-ER),

NFPA 79 Edition 2007



Technical data

- PVC-power cable according to UL Standard 1277
- **Temperature range**
UL / CSA TC -40 °C to +90 °C
UL / AWM -40 °C to +90 °C
- **Nominal voltage**
TC 600 V
AWM 1000 V
WTTC 1000 V
- **Test voltage**
3000 V
- **Minimum bending radius**
Approx. 5x cable ø
- **Insulation resistance**
Min. 20 MOhm x km
- **Radiation resistance**
up to 80x10⁶ cJ/kg (up to 80 Mrad)

Cable structure

- Bare copper conductor, fine wire stranded with AWG dimensions
- Special PVC core insulation with transparent nylon skin
- Black cores with continuous white numbering
- Green-yellow earth core in the outer layer, 3 cores and more
- Cores stranded in layers with optimal lay-lengths
- Separator
- Special PVC outer jacket
- Sheath colour - black (RAL 9005)
- With length marking in feet

Properties

- Material self-extinguishing and flame retardant to UL-Standard in accordance CSA FT4
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers
- UV-resistant
- **Tests**
UL: TC-ER, PLTC-ER (AWG 18 - AWG 12), ITC-ER (AWG 18 - AWG 12), UL 1277, UL Type WTTC, UL Type MTW, NFPA 79 2007, Oil Res I (Oil Res II also available), 90° C dry / 75° C wet
CSA: c(UL) CIC-TC FT4
CSA AWM I/II A/B FT4

Note

- G = with green-yellow earth core
x = without earth core (OZ)

Advantages

- TC-ER, Tray Cable Exposed Run
- simple installation
- outstanding flexibility

Application

USA NFPA79, edition 2007 conformant flexible power cables up to 600 V (WTTC 1000 V), for all machinery in tool and plant construction, suitable for installation in dry, humid and damp environments, in the open and in pipes. For underground installation and for open, unprotected installation from the cable rack to machines and industrial plants.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
62902	2 x 1	18	7,0	19,0	68,0
62903	3 G 1	18	7,1	29,0	88,0
62904	4 G 1	18	8,0	39,0	97,0
62905	5 G 1	18	8,6	48,0	116,0
62906	7 G 1	18	9,3	67,0	147,0
62907	9 G 1	18	10,7	86,0	186,0
62908	10 G 1	18	11,6	96,0	199,0
62909	12 G 1	18	11,9	115,0	250,0
62910	15 G 1	18	13,2	144,0	292,0
62911	16 G 1	18	13,3	154,0	306,0
62912	18 G 1	18	14,6	173,0	365,0
62913	19 G 1	18	14,7	182,0	384,0
62914	25 G 1	18	17,0	240,0	480,0
62915	27 G 1	18	17,4	259,0	521,0
62916	34 G 1	18	19,3	326,0	625,0
62940	34 G 1	16	20,5	431,0	775,0
62917	37 G 1	18	19,8	355,0	684,0
62941	40 G 1	16	22,9	507,0	946,0
62918	41 G 1	18	20,7	394,0	744,0
62942	41 G 1	16	23,4	519,0	967,0
62919	50 G 1	18	23,5	480,0	933,0
62920	61 G 1	18	24,9	586,0	1095,0
62970	2 x 6	10	11,9	115,0	213,0
62971	3 G 6	10	12,6	173,0	283,0
62972	4 G 6	10	14,7	230,0	387,0
62973	5 G 6	10	16,0	288,0	473,0
62974	7 G 6	10	17,4	403,0	607,0
62975	9 G 6	10	20,4	518,0	771,0
62976	12 G 6	10	23,9	691,0	1061,0
62977	19 G 6	10	27,9	1094,0	1528,0

Part no.	No. cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
62978	4 G 10	8	19,7	384,0	615,0
62979	5 G 10	8	21,7	480,0	768,0
62980	3 G 16	6	19,5	461,0	700,0
62981	4 G 16	6	21,9	614,0	907,0
62982	5 G 16	6	24,0	768,0	1100,0
62983	3 G 25	4	24,3	720,0	1061,0
62984	4 G 25	4	27,1	960,0	1366,0
62985	5 G 25	4	29,3	1200,0	1631,0
62986	3 G 35	2	27,9	1008,0	1480,0
62987	4 G 35	2	31,4	1344,0	1922,0
62988	5 G 35	2	34,0	1680,0	2360,0
62921	2 x 1,32	16	7,5	25,0	80,0
62922	3 G 1,32	16	7,8	38,0	86,0
62923	4 G 1,32	16	8,5	51,0	120,0
62924	5 G 1,32	16	9,3	65,0	130,0
62925	6 G 1,32	16	10,0	76,0	164,0
62926	7 G 1,32	16	10,1	89,0	188,0
62927	8 G 1,32	16	10,9	101,0	201,0
62928	9 G 1,32	16	11,7	114,0	238,0
62929	10 G 1,32	16	12,4	127,0	259,0
62930	12 G 1,32	16	12,9	152,0	301,0
62931	14 G 1,32	16	14,5	177,0	356,0
62932	15 G 1,32	16	15,0	190,0	379,0
62933	16 G 1,32	16	15,2	203,0	405,0
62934	18 G 1,32	16	15,9	228,0	430,0
62935	19 G 1,32	16	16,0	241,0	450,0
62936	20 G 1,32	16	16,5	253,0	481,0
62937	25 G 1,32	16	18,6	317,0	564,0
62938	27 G 1,32	16	19,0	342,0	629,0
62939	30 G 1,32	16	19,6	380,0	701,0

Prices on request.

Continuation ▶

TRAYCONTROL 600 flexible, oil-resistant, open installation (TC-ER),

NFPA 79 Edition 2007



Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
62943	50 G 1,32	16	25,1	634,0	1137,0
62944	61 G 1,32	16	27,2	773,0	1345,0
62945	2 x 2,08	14	8,6	40,0	100,0
62946	3 G 2,08	14	8,9	60,0	117,0
62947	4 G 2,08	14	9,8	80,0	141,0
62948	5 G 2,08	14	10,6	100,0	152,0
62949	6 G 2,08	14	11,6	120,0	216,0
62950	7 G 2,08	14	11,9	140,0	255,0
62951	9 G 2,08	14	13,5	180,0	312,0
62952	10 G 2,08	14	15,5	200,0	378,0
62953	12 G 2,08	14	15,9	240,0	434,0
62954	16 G 2,08	14	17,6	319,0	550,0
62955	18 G 2,08	14	18,3	359,0	616,0
62956	19 G 2,08	14	18,5	380,0	634,0
62957	25 G 2,08	14	21,6	500,0	817,0
62958	2 x 3,31	12	9,5	63,0	132,0
62959	3 G 3,31	12	10,0	95,0	177,0
62960	4 G 3,31	12	10,9	127,0	201,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
62961	5 G 3,31	12	11,9	159,0	274,0
62962	6 G 3,31	12	13,0	191,0	315,0
62963	7 G 3,31	12	13,1	222,0	353,0
62964	9 G 3,31	12	15,9	286,0	476,0
62965	12 G 3,31	12	17,8	381,0	613,0
62966	16 G 3,31	12	19,8	508,0	785,0
62967	19 G 3,31	12	20,8	604,0	918,0
62968	20 G 3,31	12	21,9	636,0	916,0
62969	25 G 3,31	12	25,3	794,0	1286,0
62989	4 G 42,3	1	34,8	1624,0	2397,0
62990	4 G 52,9	1/0	37,9	2031,0	2938,0
62991	4 G 67,3	2/0	41,3	2584,0	3569,0
62992	4 G 84,4	3/0	48,6	3256,0	4181,0
62993	4 G 106,7	4/0	51,2	4097,0	5747,0
62994	4 G 128,4	250 kcmil	55,0	4931,0	7591,0
62995	4 G 181,9	350 kcmil	63,5	6985,0	8299,0
62996	4 G 257,6	500 kcmil	73,7	9892,0	11549,0

Dimensions and specifications may be changed without prior notice. (RN01)

Prices on request.

TRAYCONTROL 600-C flexible, oil-resistant, screened, EMC-preferred type, open installation (TC-ER), NFPA 79 Edition 2007



Technical data

- PVC power cable according to UL 1277
- **Temperature range**
UL / CSA TC -40 °C to +90 °C
UL / AWM -40 °C to +90 °C
- **Nominal voltage**
TC 600 V
AWM 1000 V
WTTTC 1000 V
- **Test voltage**
3000 V
- **Coupling resistance**
max. 250 Ohm/km
- **Minimum bending radius**
approx. 6x cable ø
- **Insulation resistance**
Min. 20 MOhm x km
- **Radiation resistance**
Up to 80x106 cJ/kg (up to 80 Mrad)

Cable structure

- Bare copper conductor, fine wire stranded with AWG dimensions
- Special PVC core insulation with transparent nylon skin
- Black cores with continuous white numbering
- Green-yellow earth core in the outer layer, 3 cores and more
- Cores stranded in layers with optimal lay-lengths
- Separating foil
- Braided screening of tinned copper wires, coverage approx. 85%
- Separator
- Special PVC outer jacket
- Sheath colour - black (RAL 9005)
- With length marking in feet

Properties

- Self-extinguishing and flame retardant material in accordance with CSA FT4
- The materials used in manufacture are free of silicone, cadmium and substances that impair paint wetting
- UV-resistant
- **Tests**
UL:
TC-ER, PLTC-ER (AWG 18 - AWG 12), ITC-ER (AWG 18 - AWG 12), UL 1277, UL Type WTTTC, UL Type MTW
NFPA 79 2007, Oil Res I (Oil Res II also available), 90 °C dry / 75 °C wet
CSA:
c (UL) CIC-TC FT4,
CSA AWM I/II A/B FT4

Note

- G = with green-yellow earth core
- X = without earth core (OZ)

Advantages

- TC-ER, Tray Cable Exposed Run
- Simple installation
- Outstanding flexibility

Application

USA NFPA 79, Edition 2007 compliant, screened, flexible power cable to 600 V (WTTTC 1000 V), for all tool and plant construction machinery, suitable for installation in dry, damp and wet environments, outdoors and in pipes. For underground installation and for open, unprotected installation from the cable tray to the machine and industrial plants.

EMC = Electromagnetic compatibility. To optimise EMC characteristics, we recommend a large contact area for the copper braiding around the entire circumference on both ends.

CE – The product conforms to the EC Low-Voltage Directive 2006/95/EG.

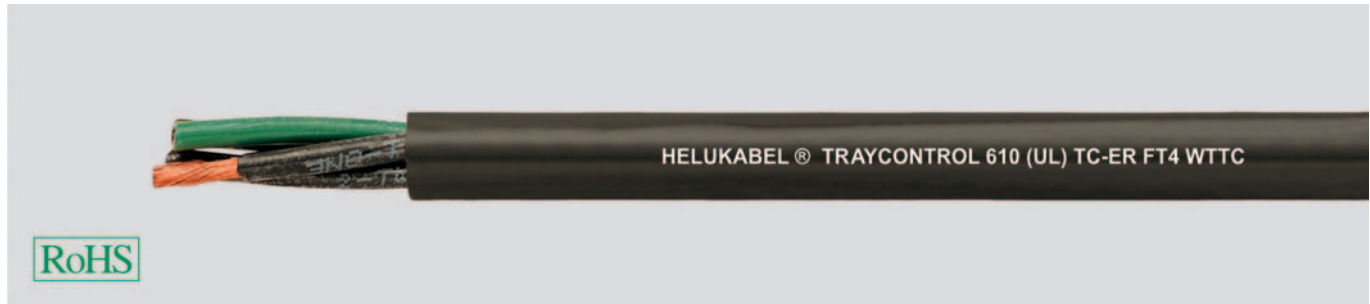
Part no.	No. cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
63049	3 G 1	18	8,2	31,0	118,0
63050	4 G 1	18	8,8	52,0	136,0
63051	5 G 1	18	9,4	62,0	149,0
63052	7 G 1	18	10,1	83,0	193,0
63053	12 G 1	18	12,9	143,0	328,0
63054	18 G 1	18	15,7	207,0	431,0
63055	25 G 1	18	17,7	284,0	569,0
62997	3 G 1,32	16	8,9	57,0	144,0
63056	4 G 1,32	16	9,6	72,0	172,0
63057	5 G 1,32	16	10,3	84,0	186,0
63058	7 G 1,32	16	11,3	124,0	243,0
63059	12 G 1,32	16	15,1	199,0	421,0
63060	18 G 1,32	16	17,3	290,0	510,0
63061	25 G 1,32	16	19,6	384,0	704,0
63062	3 G 2,08	14	9,8	85,0	178,0
63063	4 G 2,08	14	10,7	115,0	220,0

Part no.	No. cores x cross-sec. mm²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
63064	5 G 2,08	14	11,6	139,0	264,0
63065	7 G 2,08	14	12,5	185,0	325,0
63066	12 G 2,08	14	16,9	309,0	591,0
63067	18 G 2,08	14	19,5	448,0	780,0
63068	25 G 2,08	14	23,3	632,0	1041,0
63069	4 G 3,31	12	12,5	179,0	313,0
63070	5 G 3,31	12	14,4	223,0	384,0
63071	7 G 3,31	12	15,5	298,0	492,0
63072	4 G 6	10	15,5	256,0	547,0
63073	5 G 6	10	16,8	312,0	608,0
63074	7 G 6	10	18,2	430,0	850,0
63075	4 G 10	8	18,7	426,0	851,0
63076	4 G 16	6	23,3	657,0	1197,0
63077	4 G 25	4	28,6	1026,0	1970,0
63078	4 G 35	2	33,2	1412,0	2874,0

Dimensions and specifications may be changed without prior notice. (RN01)
Prices on request.

TRAYCONTROL 610 OIL RES II, WTTC (2277),

FT4 TRAY CABLE for open installation (TC-ER), NFPA 79 Edition 2007



Technical data

Special compound blend jacketed power cable in accordance with UL 1277; WTTC (2277)

- Temperature range:
UL / CSA TC -40°C to +90°C / AWM -40°C to +90°C
- Nominal voltage:
TC 600 VAWM 1000 VWTTC 1000 V
- Test voltage:
3000 V
- Min. bending radius:
approx. 5x cable ø
- **Approvals:**
UL: Oil Res I/II, Class1, Div. 2 per NEC Art. 336, 392, 501
UL Type 2277 (WTTC), UL: TC-ER, PLTC-ER (AWG 18 - AWG 12), ITC-ER (AWG 18 - AWG 12), UL 1277 (TC), UL Type MTW or Type AWM, NFPA 79 2007, 90° C dry / 75° C wet
CSA: c(UL) Type TC & CIC FT4, CSA AWM I/II A/B FT4
- Insulation resistance:
min. 20 MΩ x km
- Radiation resistance:
up to 80x10⁶cJ/kg (up to 80Mrad)

Application

USA NFPA79, Edition 2007 compliant flexible power cables to 600 V (WTTC 1000 V) for all wind energy, tool and plant construction machinery applications. Suitable for installation in dry, damp and wet environments, outdoors and in pipes. For underground installation and for open, unprotected installation from the cable rack to machines and industrial plants.

☞ The product conforms to the EC low-voltage directive 2006/95/EG.

Cable structure

- bare copper conductors, fine wire stranded to DIN VDE 0295 cl.5, BS 6360 cl.5 and IEC 60228 cl.5 with AWG dimensions
- Special PVC core insulation with transparent Nylon skin
- Core identification black with numbers + gnye (JZ)
G = with green-yellow ground (JZ)
X = without ground (OZ)
- Multiconductor conductors stranded
- Separator
- Special compound blend outer jacket
- Jacket colour black
- length marking in feet

Properties

- Self-extinguishing and flame retardant material acc. to CSA FT4
- The materials used in manufacture are free of silicone, - cadmium and substances that impair paint wetting.
- UV-resistant

Note

Advantages:

- TC-ER Rated
 - meets TC (UL-1277) & WTTC (UL-2277) Requirements
 - Simple installation
 - Outstanding flexibility
 - Exceptional abrasion resistance
 - Oil Res I/II Approved
 - Torsion resistant for Wind Power application
- Other diameters, part-numbers and prices on request.

Continuation ▶

TRAYCONTROL 610 OIL RES II, WTTC (2277),

FT4 TRAY CABLE for open installation (TC-ER), NFPA 79 Edition 2007



Part no.	No.cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
706194	2 G 1	18	7,0	19,0	68,0
706195	3 G 1	18	7,3	29,0	88,0
706196	4 G 1	18	8,0	39,0	98,0
706197	5 G 1	18	8,6	48,0	116,0
706198	7 G 1	18	10,0	67,0	149,0
706199	9 G 1	18	10,7	86,0	186,0
706200	10 G 1	18	11,6	96,0	199,0
706201	12 G 1	18	11,8	115,0	245,0
706202	15 G 1	18	13,2	144,0	292,0
706203	16 G 1	18	13,3	154,0	306,0
706204	18 G 1	18	13,9	173,0	366,0
706205	19 G 1	18	14,7	182,0	384,0
706206	25 G 1	18	17,0	240,0	451,0
706207	27 G 1	18	17,4	259,0	521,0
706208	34 G 1	18	19,3	326,0	625,0
706209	37 G 1	18	19,8	355,0	684,0
706210	41 G 1	18	20,7	384,0	744,0
706211	50 G 1	18	23,5	480,0	933,0
706212	61 G 1	18	24,9	586,0	1095,0
706213	2 G 1,32	16	7,5	25,0	80,0
706214	3 G 1,32	16	8,0	38,0	86,0
706215	4 G 1,32	16	8,9	51,0	115,0
706216	5 G 1,32	16	9,7	63,0	126,0
706217	6 G 1,32	16	10,0	76,0	164,0
706218	7 G 1,32	16	12,0	89,0	171,0
706219	8 G 1,32	16	10,9	101,0	201,0
706220	9 G 1,32	16	11,7	114,0	237,0
706221	10 G 1,32	16	12,4	127,0	259,0
706222	12 G 1,32	16	14,3	152,0	301,0
706223	14 G 1,32	16	14,5	177,0	365,0
706224	15 G 1,32	16	15,0	190,0	379,0
706225	16 G 1,32	16	15,2	203,0	405,0
706226	18 G 1,32	16	16,8	228,0	443,0
706227	19 G 1,32	16	16,0	241,0	458,0
706228	20 G 1,32	16	16,5	253,0	491,0
706229	25 G 1,32	16	18,6	317,0	564,0
706230	27 G 1,32	16	19,0	342,0	629,0
706231	30 G 1,32	16	19,6	380,0	701,0
706232	34 G 1,32	16	20,5	420,0	775,0
706233	40 G 1,32	16	22,9	482,0	946,0
706234	41 G 1,32	16	23,4	513,0	967,0
706235	50 G 1,32	16	25,1	626,0	1137,0
706236	61 G 1,32	16	27,2	762,0	1345,0
706237	2 G 2,08	14	8,6	40,0	100,0
706238	3 G 2,08	14	10,0	60,0	112,0
706239	4 G 2,08	14	10,5	80,0	141,0
706240	5 G 2,08	14	10,9	100,0	152,0
706241	6 G 2,08	14	11,6	120,0	205,0
706242	9 G 2,08	14	13,5	180,0	312,0
706243	10 G 2,08	14	15,5	200,0	378,0
706244	12 G 2,08	14	15,9	240,0	434,0
706245	16 G 2,08	14	17,6	319,0	550,0
706246	18 G 2,08	14	18,3	359,0	616,0
706247	19 G 2,08	14	18,5	380,0	634,0
706248	25 G 2,08	14	21,6	500,0	817,0

Part no.	No.cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
706249	2 G 3,31	12	9,5	63,0	132,0
706250	3 G 3,31	12	10,8	95,0	177,0
706251	4 G 3,31	12	12,0	127,0	201,0
706252	5 G 3,31	12	13,6	159,0	274,0
706253	6 G 3,31	12	13,0	191,0	315,0
706254	7 G 3,31	12	15,9	222,0	353,0
706255	9 G 3,31	12	15,9	286,0	476,0
706256	12 G 3,31	12	17,8	381,0	613,0
706257	16 G 3,31	12	19,8	508,0	783,0
706258	19 G 3,31	12	20,8	604,0	918,0
706259	20 G 3,31	12	21,9	636,0	961,0
706260	25 G 3,31	12	25,3	794,0	1236,0
706261	2 G 6	10	11,9	115,0	213,0
706262	3 G 6	10	13,1	173,0	283,0
706263	4 G 6	10	14,7	230,0	387,0
706264	5 G 6	10	16,3	288,0	473,0
706265	7 G 6	10	19,6	403,0	607,0
706266	9 G 6	10	20,4	518,0	771,0
706267	12 G 6	10	23,9	691,0	1061,0
706268	19 G 6	10	27,9	1094,0	1528,0
706269	4 G 10	8	17,4	384,0	662,0
706270	5 G 10	8	20,1	480,0	784,0
706271	3 G 16	6	18,5	461,0	701,0
706272	4 G 16	6	20,7	614,0	908,0
706273	5 G 16	6	25,8	768,0	1149,0
706274	3 G 25	4	24,3	720,0	1060,0
706275	4 G 25	4	26,5	960,0	1366,0
706276	5 G 25	4	28,2	1200,0	1631,0
706277	3 G 35	2	27,9	1008,0	1480,0
706278	4 G 35	2	31,4	1344,0	1922,0
706279	5 G 35	2	35,4	1680,0	2363,0
706280	4 G 42,3	1	34,1	360,0	2397,0
706281	4 G 52,9	1/0	37,9	441,0	2938,0
706282	4 G 67,3	2/0	41,3	584,0	3559,0
706283	4 G 84,8	3/0	48,6	741,0	4181,0
706284	4 G 106,7	4/0	51,2	932,0	5747,0
706285	4 G 128,4	250 kcmil	55,0	4931,0	7591,0
706286	4 G 181,9	350 kcmil	63,5	6985,0	8299,0
706287	4 G 257,6	500 kcmil	73,7	9892,0	10549,0

Dimensions and specifications may be changed without prior notice.

MULTIFLEX 600 highly flexible, oil-resistant, open installation

TC-ER, PLTC-ER, NFPA 79 Edition 2007



HELUKABEL MULTIFLEX 600 P/N 63136 14AWG 2,5QMM 4C (UL) TC-ER 90°C DRY 75°C WET 600 V SUN RES DIR BUR OIL RES I/II E330430 OR MTW "HIGH FLEXIBLE" OR WTTC 1000 V OR c(UL)CIC TC FT4 LL41103 CSA AWM I/II 90°C 600 V FT4 CE ROHS



Technical data

- Highly-flexible PVC control cable according to UL Standard 1277
- **Temperature range**
Flexing -5 °C to +90 °C
Fixed installation -40 °C to +90 °C
- **Nominal voltage**
TC 600 V
TC Wind Turbine (WTTC) 1000 V
- **Test voltage** 3000 V
- **Minimum bending radius**
Permanently flexing
7,5x cable ø
- **Insulation resistance**
Min. 20 MΩm x km
- **Radiation resistance**
Up to 80x10⁶ cJ/kg (up to 80 Mrad)

Cable structure

- Bare copper conductor, extra-fine wire stranded, with AWG measures
- Special PVC core insulation with transparent nylon skin
- Black cores with continuous white numbering
- Green-yellow earth core in the outer layer (3 cores and more)
- Cores stranded in layers with optimal lay-lengths
- Separator
- Special PVC outer sheath
- Sheath colour - black (RAL 9005)
- With length marking in feet

Properties

- Self-extinguishing and flame retardant in accordance with CSA FT4
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers
- UV-resistant
- **Tests**
UL:
TC-ER, PLTC-ER (AWG 18 - AWG 12), ITC-ER (AWG 18 - AWG 12), MTW, NFPA 79 2007. WTTC 1000 V, DP-1, OIL RES I&II, 90 °C dry / 75 °C wet, Class 1 Div. 2 per NEC Art 336, 392, 501, crush impact test in accordance with UL 1277
- **CSA:**
c(UL) CIC-TC FT4, CSA AWM I/II A/B FT4

Note

Advantages

- Highly-flexible, simple installation
- **Available on request**
- with blue cores (DC)
- with red cores (AC)
- Grey or TPE outer sheath

Application

HELUKABEL®MULTIFLEX 600 is a highly-flexible, oil-resistant control cable. The special combination of TC-ER, PLTC-ER and ITC-ER allows this cable to be used as a connecting cable for industrial plant and machinery in accordance with NFPA 79 2007. Approved for open, unprotected installation in cable trays to the machine. Its outstanding oil resistance (OIL RES I & II) guarantees a long service life; for industrial applications in dry, damp and wet environments. Recommended applications: production lines, bottling plants, machine construction, switch cabinets, conveyor systems, packaging machines, automotive industry.

Please observe applicable installation regulations for use in energy supply chains.

☑ The product conforms to the EG Low-Voltage Directive 2006/95/EG

Part no.	No.cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
62502	2 x 0,5	20	6,9	10,0	53,0
62503	3 G 0,5	20	7,3	14,0	61,0
62504	4 G 0,5	20	8,0	19,0	72,0
62505	5 G 0,5	20	8,6	24,0	85,0
62506	7 G 0,5	20	9,9	34,0	110,0
62507	12 G 0,5	20	11,4	58,0	158,0
62508	18 G 0,5	20	14,2	86,0	241,0
62509	25 G 0,5	20	17,0	120,0	316,0
62510	34 G 0,5	20	18,9	163,0	439,0
62511	3 G 0,75	18	7,8	22,0	75,0
62512	4 G 0,75	18	8,6	29,0	91,0
62513	5 G 0,75	18	9,3	36,0	103,0
62514	7 G 0,75	18	10,8	50,0	136,0
62515	12 G 0,75	18	12,4	86,0	228,0
62516	15 G 0,75	18	13,8	108,0	273,0
62517	18 G 0,75	18	15,4	130,0	311,0
62518	25 G 0,75	18	18,5	180,0	498,0
62519	34 G 0,75	18	20,5	245,0	550,0
62520	36 G 0,75	18	20,6	259,0	570,0
62521	42 G 0,75	18	22,3	302,0	600,0
62522	3 G 1,5	16	8,6	43,0	100,0
62523	4 G 1,5	16	9,5	58,0	122,0
62524	5 G 1,5	16	10,3	72,0	148,0
62525	7 G 1,5	16	12,0	101,0	197,0
62526	9 G 1,5	16	14,2	130,0	244,0
62527	12 G 1,5	16	14,7	173,0	328,0
62528	18 G 1,5	16	17,2	259,0	459,0

Part no.	No.cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
62529	25 G 1,5	16	20,8	360,0	665,0
62530	34 G 1,5	16	23,0	490,0	1084,0
62531	41 G 1,5	16	25,1	590,0	1260,0
62532	50 G 1,5	16	27,7	720,0	1521,0
62533	60 G 1,5	16	29,5	864,0	1885,0
62534	3 G 2,5	14	9,8	72,0	160,0
63136	4 G 2,5	14	10,6	96,0	173,0
62535	5 G 2,5	14	11,9	120,0	268,0
62536	7 G 2,5	14	13,6	168,0	307,0
62537	9 G 2,5	14	16,1	216,0	437,0
62538	12 G 2,5	14	16,9	288,0	572,0
62539	18 G 2,5	14	20,1	432,0	800,0
62540	25 G 2,5	14	25,1	600,0	1100,0
62541	3 G 4	12	11,3	115,0	221,0
62542	4 G 4	12	12,4	154,0	247,0
62543	5 G 4	12	13,8	192,0	318,0
62544	7 G 4	12	16,9	269,0	438,0
62545	4 G 6	10	15,3	230,0	383,0
62546	5 G 6	10	16,6	288,0	481,0
62547	7 G 6	10	18,2	403,0	800,0
62548	4 G 10	8	19,7	384,0	671,0
62549	5 G 10	8	22,0	480,0	990,0
62550	4 G 16	6	23,7	614,0	951,0
62551	5 G 16	6	26,1	768,0	1500,0
62552	4 G 25	4	34,0	960,0	1700,0
62554	4 G 35	2	37,0	1344,0	2300,0

Dimensions and specifications may be changed without prior notice. (RN01)

Prices on request.

MULTIFLEX 600-C highly-flexible, oil-resistant, screened, EMC-preferred type, control cable for open installation TC-ER, PLTC-ER, NFPA 79 Edition 2007



Technical data

- Highly-flexible PVC control cable according to UL Standard 1277
- **Temperature range**
Flexing -5 °C to +90 °C
Fixed installation -40 °C to +90 °C
- **Nominal voltage**
TC 600 V
TC Wind Turbine (WTTC) 1000 V
- **Test voltage** 3000 V
- **Coupling resistance**
max. 250 Ohm/km
- **Minimum bending radius**
Permanently flexing
10x cable ø
- **Insulation resistance**
Min. 20 MOhm x km
- **Radiation resistance**
Up to 80x10⁶ cJ/kg (up to 80 Mrad)

Cable structure

- Bare copper conductor, extra-fine wire stranded, with AWG measures
- Special PVC core insulation with transparent nylon skin
- Black cores with continuous white numbering
- Green-yellow earth core in the outer layer (3 cores and more)
- Cores stranded in layers with optimal lay-lengths
- Separating foil
- Braided screening of tinned copper wires, coverage approx. 85%
- Separator
- Special PVC outer sheath
- Sheath colour - black (RAL 9005)
- With length marking in feet

Properties

- Self-extinguishing and flame retardant in accordance with CSA FT4
- The materials used in manufacture are free of silicone, cadmium and substances that impair paint wetting
- UV-resistant
- **Tests**
UL:
TC-ER, PLTC-ER (AWG 18 - AWG 12), ITC-ER (AWG 18 - AWG 12), MTW, NFPA 79 2007.
WTTC 1000 V, DP-1, OIL RES I&II, 90 °C dry / 75 °C wet, Class 1 Div. 2 per NEC Art 336, 392, 501, crush impact test in accordance with UL 1277
CSA:
c(UL) CIC-TC FT4, CSA AWM I/II A/B FT4

Note

Advantages

- Highly-flexible, simple installation
- **Available on request**
- with blue cores (DC)
- with red cores (AC)
- Grey or TPE outer sheath

Application

HELUKABEL® MULTIFLEX 600-C is a highly-flexible, screened, oil-resistant control cable. The special combination of TC-ER, PLTC-ER and ITC-ER allows this cable to be used as a connecting cable for industrial plant and machinery in accordance with NFPA 79 2007. Approved for open, unprotected installation in cable trays to the machine. Its outstanding oil resistance (OIL RES I & II) guarantees a long service life; for industrial applications in dry, damp and wet environments. Recommended applications: Production lines, bottling plants, machine construction, switch cabinets, conveyor systems, packaging machines, automotive industry.

Please observe applicable installation regulations for use in energy supply chains.

EMC = Electromagnetic compatibility. To optimise EMC characteristics, we recommend a large contact area for the copper braiding around the entire circumference on both ends.

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
62556	2 x 0,5	20	7,7	30,0	80,0
62557	3 G 0,5	20	8,0	37,0	85,0
62558	4 G 0,5	20	8,7	46,0	100,0
62559	5 G 0,5	20	9,3	54,0	113,0
62560	7 G 0,5	20	10,7	70,0	152,0
62561	12 G 0,5	20	12,3	112,0	210,0
62562	18 G 0,5	20	15,1	153,0	304,0
62563	25 G 0,5	20	18,1	225,0	408,0
62564	34 G 0,5	20	19,8	267,0	530,0
62565	3 G 0,75	18	8,5	55,0	101,0
62566	4 G 0,75	18	9,3	69,0	127,0
62567	5 G 0,75	18	10,0	82,0	148,0
62568	7 G 0,75	18	11,6	119,0	186,0
62569	12 G 0,75	18	14,1	178,0	286,0
62570	15 G 0,75	18	15,2	175,0	455,0
62571	18 G 0,75	18	16,3	252,0	383,0
62572	25 G 0,75	18	19,6	362,0	514,0
62573	34 G 0,75	18	21,9	473,0	685,0
62574	3 G 1,5	16	9,3	75,0	131,0
62575	4 G 1,5	16	10,2	93,0	165,0
62576	5 G 1,5	16	11,0	113,0	195,0
62577	7 G 1,5	16	12,9	162,0	250,0
62578	9 G 1,5	16	15,2	193,0	340,0
62579	12 G 1,5	16	15,6	249,0	393,0

Part no.	No. cores x cross-sec. mm ²	AWG-No.	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km
62580	18 G 1,5	16	18,4	376,0	559,0
62581	25 G 1,5	16	23,1	510,0	788,0
62582	34 G 1,5	16	25,8	674,0	1203,0
62583	3 G 2,5	14	10,3	141,0	218,0
62584	4 G 2,5	14	11,5	149,0	222,0
62585	5 G 2,5	14	12,4	195,0	350,0
62586	7 G 2,5	14	15,4	243,0	373,0
62587	9 G 2,5	14	16,8	312,0	479,0
62588	12 G 2,5	14	18,5	368,0	730,0
62589	18 G 2,5	14	22,4	639,0	1140,0
62590	25 G 2,5	14	25,5	796,0	1530,0
62591	3 G 4	12	11,7	180,0	296,0
62592	4 G 4	12	13,3	221,0	305,0
62593	5 G 4	12	14,7	330,0	450,0
62594	7 G 4	12	17,8	363,0	536,0
62595	4 G 6	10	16,1	314,0	469,0
62596	5 G 6	10	17,5	441,0	772,0
62597	7 G 6	10	20,6	505,0	1028,0
62598	4 G 10	8	21,9	526,0	790,0
62599	5 G 10	8	24,1	610,0	1096,0
62600	4 G 16	6	24,8	730,0	1621,0
62602	5 G 16	6	27,2	1050,0	1759,0
62603	4 G 25	4	33,1	1450,0	2100,0
62605	4 G 35	2	37,8	37,0	2550,0

Dimensions and specifications may be changed without prior notice. (RN01)

TOPFLEX® 600 VFD EMC-preferred type, flexible motor power supply cable, oil-resistant, NFPA 79 Edition 2007



Technical data

- PVC motor supply cable according to UL 1277
- **Temperature range**
-25°C to +90°C
- **Nominal voltage**
TC 600 V
WTTC 1000 V
- **Test voltage** 4000 V
- **Minimum bending radius**
Flexing 6x cable ø
- **Coupling resistance**
Max. 250 Ohm/km

Cable structure

- Tinned copper conductor, fine wire stranded with AWG measures
- Special PVC core insulation with transparent nylon skin
- Black cores with continuous white numbering
- Green-yellow earth core in the outer layer
- Cores stranded in layers with optimal lay-lengths
- Fleece
- 1. Screening with special aluminium foil
- 2. Screening with braid of tinned copper wires, optimal coverage, approx. 85%
- Separator
- Special PVC outer jacket
- Sheath colour - black (RAL 9005) or orange (RAL 2003)
- With length marking in feet

Properties

- Self-extinguishing and flame retardant in accordance with CSA FT4
- The materials used in manufacture are free of silicone, cadmium and substances that impair paint wetting
- UV-resistant
- **Tests**
UL:
TC-ER, WTTC 1000 V, MTW, NFPA 79 2007, UL 1277, PLTC-ER (AWG 18 - AWG 12), ITC-ER (AWG 18 - AWG 12) OIL RES I & II, 90° C dry / 75° C wet, Cold Bend Test -40°C Class 1 Div. 2 per NEC Art. 336, 392, 501
CSA:
c (UL) CIC-TC FT4,
AWM I/II A/B FT4

Note

- VFD = Variable Frequency Drive

Application

Flexible, extremely oil-resistant motor supply cable for modern servomotors; the double-screening with special aluminium foil (100% coverage) and tinned copper braid (approx. 85% coverage) provides effective protection against electrical disturbance and the resultant failures. Approved to NFPA 79 2007 for open, unprotected installation on cable trays and from cable trays to the machine. The special PVC sheath is extremely resistant to oil, coolants and solvents and hence the perfect solution for industrial applications with open installation, installation in pipes and in the earth.

EMC = Electromagnetic compatibility

To optimise EMC characteristics, we recommend a large contact area for the copper braiding around the entire circumference on both ends.

CE= The product conforms to the EG Low-Voltage Directive 2006/95/EG

Sheath colour black

Part No.	Number of cores	Outer Ø approx. mm	Cop.Weight kg / km	Weight approx. kg / km
18 AWG / 1 mm ² (19/30)				
63139	4	9,9	52,0	164,0
16 AWG / 1,50 mm ² (26/30)				
63140	4	11,4	72,0	183,0
14 AWG / 2,50 mm ² (41/30)				
63137	4	12,5	118,0	197,0
12 AWG / 4 mm ² (65/30)				
63141	4	14,0	182,0	267,0
10 AWG / 6 mm ² (105/30)				
63142	4	17,1	256,0	402,0
8 AWG / 10 mm ² (168/30)				
63143	4	22,3	417,0	668,0
6 AWG / 16 mm ² (266/30)				
63144	4	25,4	651,0	918,0
4 AWG / 25 mm ² (413/30)				
63145	4	30,1	910,0	1363,0
2 AWG / 35 mm ² (665/30)				
63146	4	35,3	1411,0	1994,0

Sheath colour orange, Desina

Part No.	Number of cores	Outer Ø approx. mm	Cop.Weight kg / km	Weight approx. kg / km
18 AWG / 1 mm ² (19/30)				
63147	4	9,9	52,0	164,0
16 AWG / 1,50 mm ² (26/30)				
63148	4	11,4	72,0	183,0
14 AWG / 2,50 mm ² (41/30)				
63149	4	12,5	118,0	197,0
12 AWG / 4 mm ² (65/30)				
63150	4	14,0	182,0	267,0
10 AWG / 6 mm ² (105/30)				
63151	4	17,1	256,0	402,0
8 AWG / 10 mm ² (168/30)				
63152	4	22,3	417,0	668,0
6 AWG / 16 mm ² (266/30)				
63153	4	25,4	651,0	918,0
4 AWG / 25 mm ² (413/30)				
63154	4	30,1	910,0	1363,0
2 AWG / 35 mm ² (665/30)				
63155	4	35,3	1411,0	1994,0

Dimensions and specifications may be changed without prior notice. (RN01)

Prices on request.

TOPFLEX® 650 VFD EMC-preferred type, flexible motor power supply cable with control cores, oil-resistant, NFPA 79 Edition 2007



Technical data

- TPE motor supply cable according to UL 1277
- **Temperature range**
Flexing -25°C to +105°C
- **Nominal voltage**
TC 600 V
WTTC 1000 V
- **Test voltage**
Power supply cores 4000 V
Control cores 2000 V
- **Minimum bending radius**
Flexing 6x cable Ø
- **Coupling resistance**
Max. 250 Ohm/km

Cable structure

- Tinned copper conductor, fine wire stranded, with AWG measures
- Special PVC core insulation with transparent nylon skin
- Black supply cores with continuous white numbering
- Green-yellow earth core in the outer layer
- 2 black control cores with marking 5 and 6
- Control cores screened in pairs with plastic-coated aluminium foil, tinned drain wire
- Control cores stranded in pairs and laid up in layers with optimal lay-length with the power supply cores
- 1. Screening with plastic-coated aluminium foil
- 2. Screening from tinned Cu-braid, optimal coverage approx. 85%
- Separator
- Special TPE outer jacket
- Sheath colour - black (RAL 9005) or orange (RAL 2003)
- With length marking in feet

Properties

- Self-extinguishing and flame retardant in accordance with CSA FT4
- The materials used in manufacture are free of silicone, cadmium and substances that impair paint wetting
- UV-resistant
- **Tests**
UL:
TC-ER, WTTC 1000 V, MTW, NFPA 79 2007, UL 1277, PLTC-ER (AWG 18 - AWG 12), ITC-ER (AWG 18 - AWG 12) OIL RES I & II, 90° C dry / 75° C wet
Class 1 Div. 2 per NEC Art. 336, 392, 501
Cold Bend Test -40°C
CSA:
c (UL) CIC-TC FT4
AWM I/II A/B FT4

Note

- VFD = Variable Frequency Drive

Application

Flexible, extremely oil-resistant motor supply cable for modern servomotors; the double-screening with special aluminium foil (100% coverage) and tinned copper braid (approx. 85% coverage) provides effective protection against electrical disturbance and the resultant failures. Approved to NFPA 79 2007 for open, unprotected installation on cable trays and from cable trays to the machine. The special PVC sheath is extremely resistant to oil, coolants and solvents and hence the perfect solution for industrial applications with open installation, installation in pipes and in the earth.

EMC = Electromagnetic compatibility

To optimise EMC characteristics, we recommend a large contact area for the copper braiding around the entire circumference on both ends.

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Sheath colour black

Part No.	Number of cores	Outer Ø approx. mm	Cop.Weight kg / km	Weight approx. kg / km
16 AWG / 1,50 mm ² (26/30)				
63156	4c/16 + 2c/18	13,0	88,0	259,0
14 AWG / 2,50 mm ² (41/30)				
63157	4c/14 + 2c/18	14,0	133,0	370,0
63138	4c/14 + 2c/14	14,6	159,0	399,0
12 AWG / 4 mm ² (65/30)				
63158	4c/12 + 2c/18	15,3	197,0	435,0
63159	4c/12 + 2c/14	15,7	224,0	466,0
10 AWG / 6 mm ² (105/30)				
63160	4c/10 + 2c/14	18,2	301,0	703,0
8 AWG / 10 mm ² (168/30)				
63161	4c/8 + 2c/14	24,1	457,0	901,0
6 AWG / 16 mm ² (266/30)				
63162	4c/6 + 2c/14	27,4	615,0	1275,0
4 AWG / 25 mm ² (413/30)				
63163	4c/4 + 2c/14	33,4	1450,0	1861,0

Sheath colour orange, Desina

Part No.	Number of cores	Outer Ø approx. mm	Cop.Weight kg / km	Weight approx. kg / km
16 AWG / 1,50 mm ² (26/30)				
62876	4c/16 + 2c/18	13,0	88,0	259,0
14 AWG / 2,50 mm ² (41/30)				
62877	4c/14 + 2c/18	14,0	133,0	370,0
62878	4c/14 + 2c/14	14,6	159,0	399,0
12 AWG / 4 mm ² (65/30)				
62879	4c/12 + 2c/18	15,3	197,0	435,0
62880	4c/12 + 2c/14	15,7	224,0	466,0
10 AWG / 6 mm ² (105/30)				
62881	4c/10 + 2c/14	18,2	301,0	703,0
8 AWG / 10 mm ² (168/30)				
62882	4c/8 + 2c/14	24,1	457,0	901,0
6 AWG / 16 mm ² (266/30)				
62883	4c/6 + 2c/14	27,4	615,0	1275,0
4 AWG / 25 mm ² (413/30)				
62884	4c/4 + 2c/14	33,4	1450,0	1861,0

Dimensions and specifications may be changed without prior notice. (RN01)

Prices on request.



Communication technology for wind turbines



The new HELUKABEL®
Data, Network & Bus Technology catalog.

Now request it free at www.helukabel.com

We offer an extensive range of products and customized application solutions for the fibre optic and copper data cable industry. Our in-house manufactured products meet the demands of the world's largest manufacturers and is the foundation of our company's portfolio.

Our widely known products are marketed and available under the following registered trademark names:

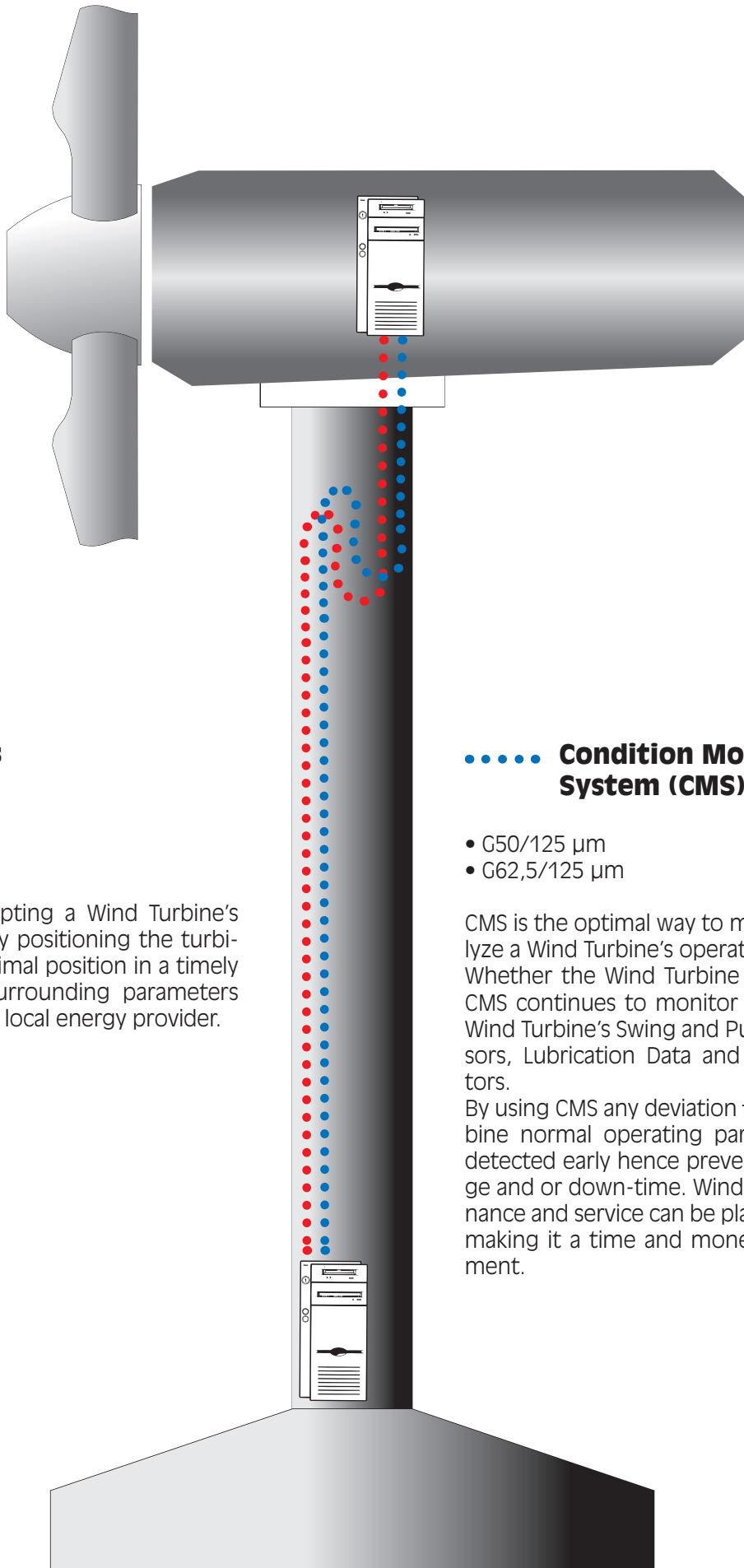
HELUCOM®, HELUCOM® Connecting Systems, HELUKAT®, and HELUKAT® Connecting Systems.

We offer the complete spectrum of professional consulting services from design to delivery and final installation.

This includes the following categories:

- Fibre optic cables
- Copper data cables
- Prefabricated components

Fiber Optic Communication



..... **Fast Bus**

- HCS 200/230 μm
- G50/125 μm
- G62,5/125 μm

Controlling and adapting a Wind Turbine's (WT) performance by positioning the turbine blades in the optimal position in a timely manner to meet surrounding parameters and demands of the local energy provider.

..... **Condition Monitoring System (CMS)**

- G50/125 μm
- G62,5/125 μm

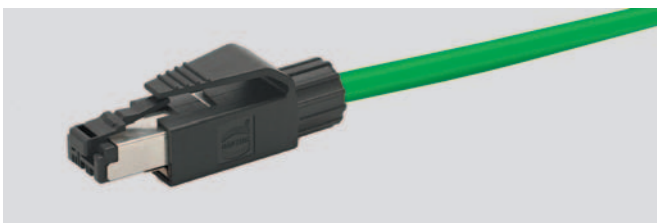
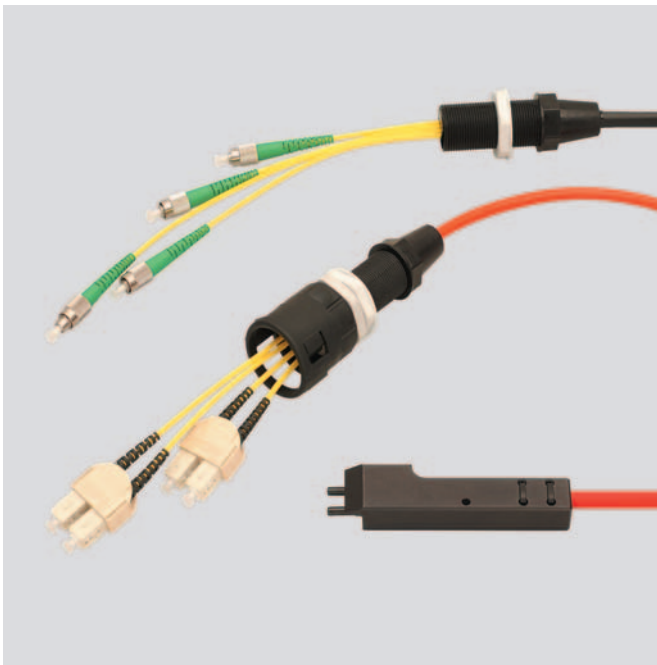
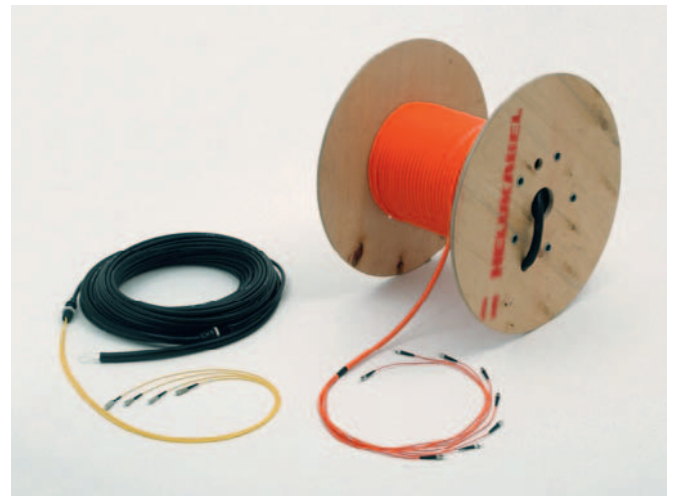
CMS is the optimal way to measure and analyze a Wind Turbine's operating data. Whether the Wind Turbine is on or offline, CMS continues to monitor and analyze the Wind Turbine's Swing and Push Impulse Sensors, Lubrication Data and Thermal indicators.

By using CMS any deviation from a Wind Turbine normal operating parameters will be detected early hence preventing any damage and or down-time. Wind Turbine maintenance and service can be planned using CMS making it a time and money saving investment.

Fibre optic cabling made easy – pre-assembled fibre optic cable systems

No special knowledge or tools are needed to install HELUCOM® pre-assembled fibre optic cables. The cable comes pre-assembled and can be connected immediately after it has been laid. As a result, the installation process of complete sections of fibre optic connections actually involves nothing more than laying the cable itself. The pulling aid is connected to the pull cable. As a result, it is possible to lay the cable together with the pre-assembled distributor just as you would lay a standard cable.

The advantage of a pre-assembled cable is in the considerable time savings in installing the fibre optic cable.



Connection equipment

In addition to the corresponding cables, passive connection components for copper and fibre-optic technology are needed for the network infrastructure. The components can be divided into two groups, independently of the transmission medium. On the one hand, there are jumpering and distribution devices and on the other hand there are patch cables or terminal cables. This includes system-conformant bus connecting cables, patch panels, outlet boxes, connector systems and patch cables.

- RJ 45 jumper cable PUR / IP20
- PROFIBUS jumper cable M12 / PUR
- Fibre optic jumper cable ST /ST, 50/125, clx
- Modular Patch Panel (DIN rail)
- 19" Fibre optic splice box
- POF jumper cable (duplex)

Our activities are identified by the brands



The entire range can be found in our Data, Network & Bus Technology catalogue.

Connection equipment



No special knowledge or tools are needed to install HELUCOM® pre-assembled fibre optic cables. The cable is pre-assembled and can be connected immediately after it has been laid. As a result, the installation process actually comprises nothing more than laying the cable itself. In the distributor bodies, the fibres from the loose-tube cable are conducted through the individual simplex cables without splicing. The simplex cables are terminated using pre-assembled plugs. Included in delivery is a plug shield that protects the plugs, simplex cables and distributor body

while the cable is being laid. The pulling aid is connected to the pull cable. As a result, it is possible to lay the cable together with the pre-assembled distributor just as you would lay a standard cable. The benefits of pre-assembled and pre-assembled cables are easy to see: The fibre optic cables are cut to the desired length, and the fibres are glued to different plug models in a clean and dust-free environment (Sr. SC, FDDI, E-2000 etc.). Pre-assembled fibre-optic cables.

Features:

Applications:

1. Outdoor wiring
2. Indoor wiring

Cable types:

- Zipcords with halogen-free outer jacket
- Breakout cables with halogen-free outer jacket
- Mini breakout cables with halogen-free outer jacket
- Fibre optic cables with central / stranded loose-tube cable
- Plastic fibre cables (POF)

Fibre types:

- E9/125 IJm
- G50/125 IJm
- G62.5/125 IJm
- 200/230 IJm
- 980/1000 IJm

Plug systems:

- Sr. SC, SCdx, LC, MTRJ, E-2000, DIN, FDDI, FC-PC and F-SMA

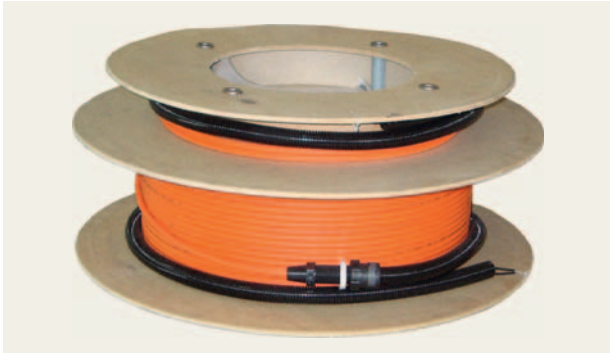
Additional pre-assembled kits:

- Pulling aid
- Pulling tube
- Core coding



HELUCOM®
CONNECTING SYSTEMS

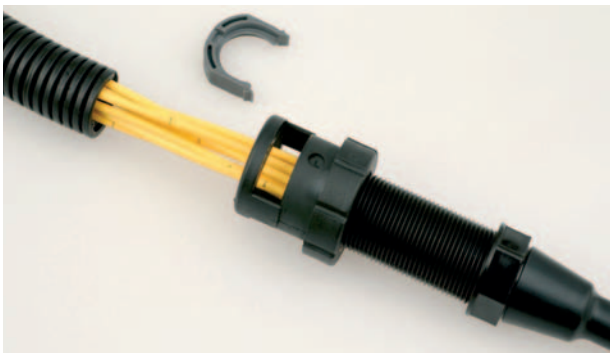
Connection equipment



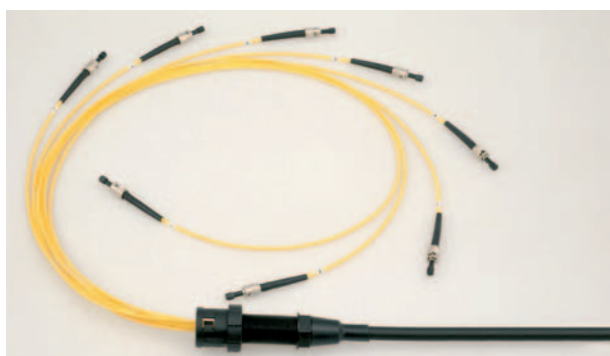
The pre-assembled loose-tube cable together with distributor body and pulling protection as it appears just before shipment. Depending on the length of the cable, the cable can be shipped as a ring or on a disposable shipping reel.



Detailed view from the end of the cable with pulling aid.



Detailed view of the robust, cast distributor body. The distributor body is equipped with a compatible plastic gland for installation in splice boxes. In addition, the system can be reused in a new installation.



Mini loose-tube cables designed to allow easy insertion into prepared splice boxes. In addition, the mini loose-tube cables are number-coded.



Glass fibre splice box used as cable end enclosure for multi-core fibreoptic cables in 19" cabinets. The splice box is particularly suitable as a connecting unit for our pre-fabricated fibre-optic grooved cables.

Matrix Distributor bodies

Designation	Figure	Top view	
		compact fibre	empty fibre
WKOM-01			
WKOM-02			
WKOM-03			
WKOM-04			
WKOM-05			

Designation	Figure	Top view	
		compact fibre	empty fibre
WKOM-100			
WKOM-101			
WKOM-102-4			
WKOM-102-5			

Cable allocation

Designation	Figure	Top view	
		compact fibre	empty fibre
WKOM-105			
WKOM-106			
WKOM-107			

Fibre Optic connecting technic



	Compact fibre	Empty fibre	Thread	Fibre-optic cable	Allocation table			
	max. number	max. number	type	max ø [mm]	length [mm]	D [mm]	d _A [mm]	d _I [mm]
	24	-	PG21	12	80	39	34	28
	12	-	PG16	12	80	34	28	23
	4	12	PG11	10	66	29	26	18,5
	4	12	-	10	35	17	-	-
	4	4	-	5	29	12	-	-
	Thread	Cable A	Cable B	Cable B	Allocation table			
	type	max ø [mm]	number	ø [mm]	length [mm]	D [mm]	d _A [mm]	d _I [mm]
	PG16	12	2	6	80	34	28	23
	PG16	12	3	6	80	34	28	23
	PG21	12	4	8	80	39	34	28
	PG21	12	5	6	80	39	34	28

	Thread	Cable A	Cable B	Cable B	Allocation table			
	type	max ø [mm]	number	ø [mm]	length [mm]	D [mm]	d _A [mm]	d _I [mm]
	-	14	2	12	110	-	18	14
	-	10	2	8	100	-	14	10
	-	8	2	6	100	-	12	8

ST plug



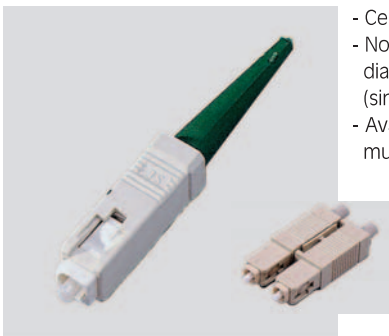
- Ceramic ferrule
- Available for single mode or multi-mode

ST adapter



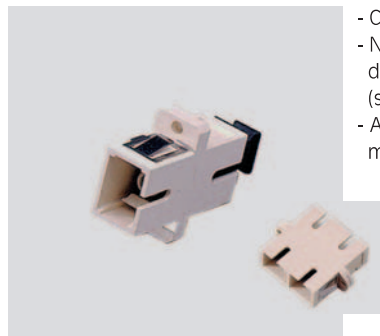
- Ceramic ferrule
- Available for single mode or multi-mode

SC/SCdx plug



- Ceramic ferrule
- Normal cross section or 8° diagonal cross section (single mode only)
- Available for single mode or multi-mode

SC/SCdx adapter



- Ceramic ferrule
- Normal cross section or 8° diagonal cross section (single mode only)
- Available for single mode or multi-mode

MTRJ plug



- Ceramic ferrule
- Available for single mode or multi-mode

MTRJ adapter



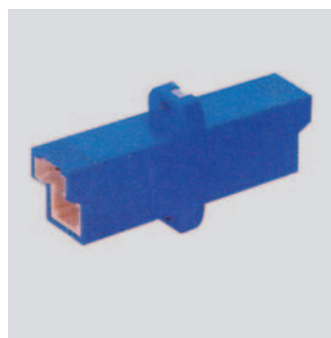
- Ceramic ferrule
- Available for single mode or multi-mode

E-2000 plug



- Ceramic ferrule
- Normal cross section or 8° diagonal cross section (single mode only)
- Available for single mode or multi-mode

E-2000 adapter



- Ceramic ferrule
- Normal cross section or 8° diagonal cross section (single mode only)
- Available for single mode or multi-mode

DIN plug



- Ceramic ferrule
- Available for single mode or multi-mode

DIN adapter



- Ceramic ferrule
- Available for single mode or multi-mode

LC plug



- Ceramic ferrule
- Available for single mode or multi-mode

LC adapter



- Ceramic ferrule
- Available for single mode or multi-mode

PC plug



- Ceramic ferrule
- Normal cross section or 8° diagonal cross section (single mode only)
- Available for single mode or multi-mode

FC PC adapter



- Ceramic ferrule
- Normal cross section or 8° diagonal cross section (single mode only)
- Available for single mode or multi-mode

F-SMA plug



- Ceramic ferrule
- Available for single mode or multi-mode

F-SMA adapter



- Ceramic ferrule
- Available for single mode or multi-mode

Machine outlet IP67

INDUSTRIAL ETHERNET



SC MM, IP67



Type

Industrial Ethernet, SCdx multimode outlets IP67

Configuration

Housing material: Aluminium die-cast
Colour: Grey
Outlet direction: Straight
Type of fastening: Screw
Dust protection: Hinged cover
Protection classification (IP): 67

Equipment

Type: Coupler
Number of couplings: SC
Suitable for fibre type: 2
Multi-mode

Dimension

175 x 110 x 45mm

Area of application

Industrial environment

Part no.

801354

Dimensions and specifications may be changed without prior notice.

Packing unit

5

Norms and standards

HELUCOM CONNECTING SYSTEMS® INDUSTRY component suitable for multimode fibre applications (G50/125µm and G62.5/125µm). Moreover it satisfies the MICE specifications (class 3), EMC requirements in accordance with DIN EN 6100, and the requirements of the IP 67 housing protection class.

Application

Robust data connection socket (shielded) for the extreme implementation. Robust aluminum die-cast housing; meets all mechanical requirements like vibration, shock, and transverse forces. The socket is used either on the machine distributor (MD) or wall mounted directly on the machine (MC) as connection unit.

Machine outlet IP65

INDUSTRIAL ETHERNET



SC MM, IP65



Type

Industrial Ethernet outlet plastic IP 65, SCdx POF/HCS/MM

Configuration

Housing material:
Colour:
Outlet direction:
Type of fastening:
Dust protection:
Protection classification (IP):

Aluminium die-cast
Grey similar to RAL 7032
Straight
Screw
Hinged cover
65

Equipment

Type:
Number of couplings:
Suitable for fibre type:

Coupler
SC
2
POF/HCS/MM

Dimension

125 x 80 x 57mm

Area of application

Industrial environment

Part no.

801421

Dimensions and specifications may be changed without prior notice.

Packing unit

5

Norms and standards

HELUCOM CONNECTING SYSTEMS® INDUSTRY component suitable for POF, HCS and multimode fibre applications (980/1000µm, 200/230µm, 50/125µm and 62.5/125µm). More they satisfy the MICE specifications, EMC requirements in accordance with DIN EN 61000, and the IP65 housing protection class requirements. The socket can be used in a temperature range of 0°C to +70°C.

Application

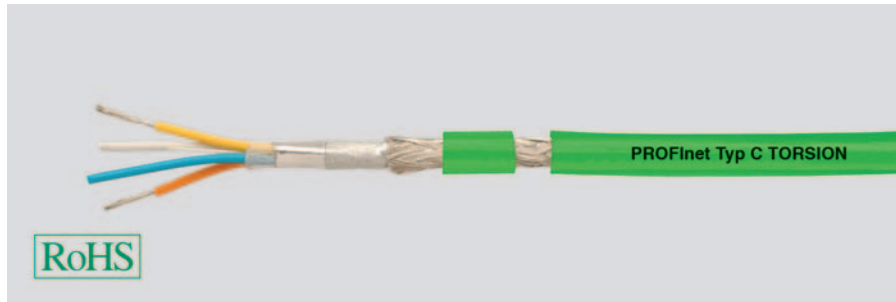
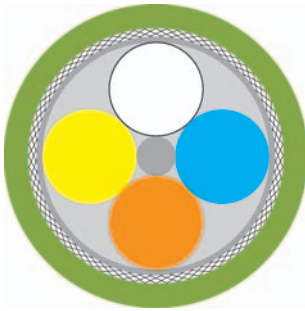
Robust data connection socket (shielded) for extreme implementation. Robust plastic housing, and satisfies all mechanical requirements like vibration, shock, and transverse forces. The socket is used either on the machine distributor (MD) or wall mounted directly on the machine (MC) as connection unit.

Industrial Ethernet

PROFINet Type C

HELUKAT[®]

Torsion



Type Cable structure

Inner conductor diameter:
Core insulation:
Core colours:
Stranding element:
Shielding 1:
Shielding 2:
Total shielding:
Outer sheath material:
Cable external diameter:
Outer sheath colour:

Torsional applications 2x2x0,75 mm (stranded)

Copper, tinned (AWG 22/19)
Foam-skin-PE
wh, ye, bu, og
Star quad
Polyester foil over stranded bundle
Polyester foil, aluminium-lined
Cu braid, tinned
PUR
approx. 6,5 mm ± 0,2 mm
Green similar to RAL 6018

Electrical data

Characteristic impedance: 100 Ohm ± 15 ohm at 1 to 100 MHz
Conductor resistance, max.: 60 Ohm/km
Insulation resistance, min.: 0,5 GOhm x km
Loop resistance: 120 Ohm/km max.
Mutual capacitance: 52 nF/km nom.
Test voltage: 0,7 kV

Typical values

Frequency (MHz)	10	16	62,5	100
Attenuation (db/100m)	7,6	10,0	26,5	41,0
ELFEXT (db)	43,8	39,7	24,0	20,0

Technical data

Weight: approx. 54 kg/km
bending radius, repeated: 70 mm
Operating temperature range min.: -40°C
Operating temperature range max.: +80°C
Caloric load, approx. value: 0,45 MJ/m
Copper weight: 32,00 kg/km

Norms

Applicable standards: PROFINet Guideline
Category 5e
Halogen-free acc. to 60754-2
Flame-retardant acc. to IEC 60332-1
Corrosiveness acc. to EN50267-2-3
Low-smoke acc. to EN50268-2
UL Style: AWM Style 21161 80°C

Application

This copper data cable, designed especially for heavy-duty industrial applications is very well suited for Ethernet applications. It ensures superior transmission properties and can be used even under most severe conditions. The lines specified here corresponds the PROFINet types C, i.e. they are designed for torsion applications, such as roboter arms.

Part no. **802186**, PROFINet type C (SK)

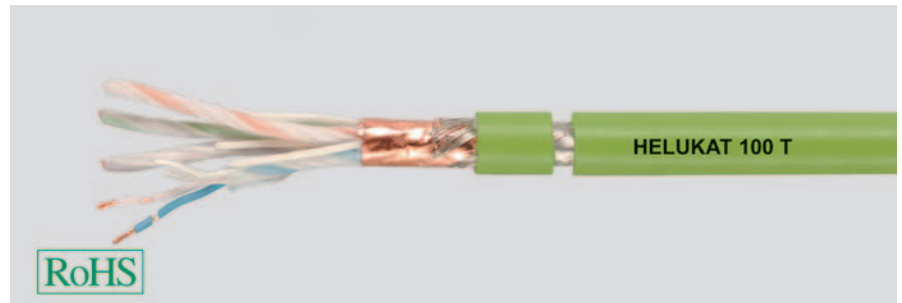
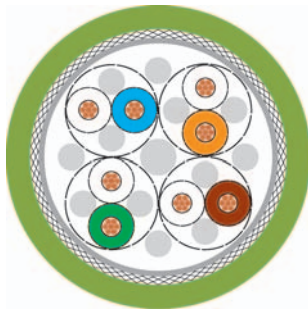
Dimensions and specifications may be changed without prior notice.

Industrial Ethernet

TORDIERFLEX

HELUKAT® 100T

SF/UTP, Category 5



Type

Cable structure

Inner conductor diameter:
Core insulation:
Core colours:
Stranding element:
Shielding 1:
Shielding 2:
Screen 1 over stranding:
Screen 2 over stranding:
Outer sheath material:
Cable external diameter:
Outer sheath colour:

Torsion Patch Cables

SF/UTP 4x2xAWG 26/19 PUR (stranded)

Copper, bare (AWG 26/19)
PP
wh/bu, wh/og, wh/gn, wh/bn
Double core
Polyester foil over stranded bundle
-
Polyester foil copper, bare
Cu braid
PUR
approx. 7,5 mm
Green similar to RAL 6018

Electrical data

Characteristic impedance: 100 Ohm \pm 15 ohm at 1 to 100 MHz
Loop resistance: 260 Ohm/km max.
Mutual capacitance: 50 nF/km nom.
Relative propagation velocity: 68 %

Typical values

Frequency (MHz)	10	16	62,5	100
Attenuation (dB/10m)	1,3	1,6	3,2	4,0
Next (db)	47,0	44,0	35,0	32,0
ACR (db)	45,7	42,4	31,8	28,0

Technical data

Weight: approx. 63 kg/km
bending radius, repeated: 80 mm
Operating temperature range min.: -40°C
Operating temperature range max.: +80°C
Caloric load, approx. value: 1,234 MJ/m
Copper weight: 29,50 kg/km

Norms

Acc. to ISO/IEC 11801, Acc. to EN 50173, Acc. to EIA/TIA 568-A, Category 5, Flame-retardant acc. to IEC 60332-1, Smoke density acc. to IEC 61034, Halogen-free acc. to 60754-2, Oil-resistant, AWM 20963 (80°C/30V)

Application

HELUKAT®100T TORDIERFLEX data cables were designed for the most extreme requirements in the industry and other heavy-duty environments in torsion applications. They are characterized by large performance reserves and outstanding performance, even under extreme conditions. Long mechanical service life is also ensured due to a thought-out design. These lines are manufacturable with conventional Sub-D plugs or with various RJ45 plugs.

Part no.

800067, SF/UTP 4x2xAWG 26/19 PUR (S-FTP)

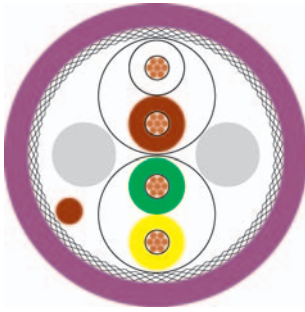
Dimensions and specifications may be changed without prior notice.

BUS Cables

CAN Bus

HELUKABEL

fixed installed, 105°C



Type

Cable structure

Inner conductor diameter:
Core insulation:
Core colours:
Stranding element:
Shielding 1:
Shielding 2:
Total shielding:
Outer sheath material:
Cable external diameter:
Outer sheath colour:

Industrial Area

2x2xAWG 24/19 mm² (stranded)

Copper, bare (AWG 24/19)
XLPE ray cross-linking
wh/bn, gn/ye
Double core
Polyester foil over stranded bundle
-
Cu braid, tinned
PUR
approx. 8,4 mm ± 0,3 mm
Violet similar to RAL 4001

Electrical data

Characteristic impedance: 120 Ohm ± 10 %
Conductor resistance, max.: 87,2 Ohm/km
Insulation resistance, min.: 1 GOhm x km
Loop resistance: 84 Ohm/km max.
Mutual capacitance: 42 nF/km nom.
Nominal voltage: 600 V
Test voltage: 2,5 kV

Technical data

Weight: approx. 80 kg/km
bending radius, repeated: 126 mm
Operating temperature range min.: -40°C
Operating temperature range max.: +105°C *
Caloric load, approx. value: 1,31 MJ/m
Copper weight: 40,00 kg/km

Norms

Applicable standards: Profibus acc. to DIN 19245 T3 and EN50170
Halogen-free acc. to 60754-2
Flame-retardant acc. to IEC 60332-1
UL/CSA 21223 80°C, 600V

UL Style:

Application

The CAN bus series (control area network) is a variable field bus system. In the area of automation technology, complex controllers and control units are networked. Industries, such as the textile or construction machine industry and the medical technology, use this series. The above mentioned types are suitable for fixed laying in indoor applications. This is also a very economical solution of a BUS system. Cable with oil-resistant FRNC sheath and increased temperature resistance for use in the wind turbine and similar sectors. Certified to UL, the cable can also be used in the USA and Canada.

* = with limited service life

Part no.

801982, CAN BUS

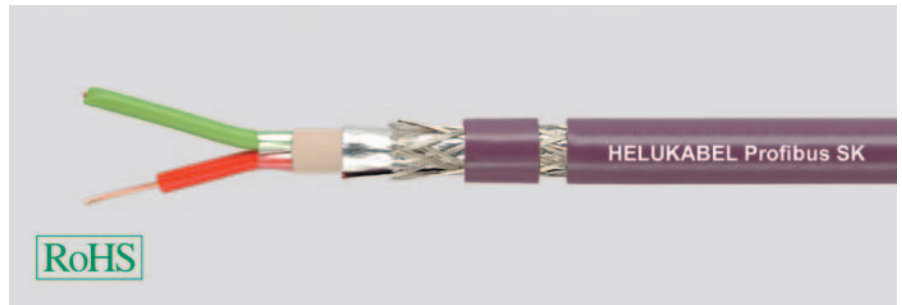
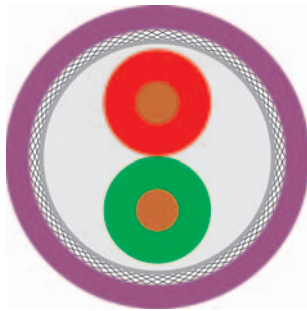
Dimensions and specifications may be changed without prior notice.

BUS Cables

Profibus SK



Indoor + Outdoor



Type

Cable structure

Inner conductor diameter:
Core insulation:
Core colours:
Stranding element:
Shielding 1:
Inner sheath material:
Shielding 2:
Total shielding:
Outer sheath material:
Cable external diameter:
Outer sheath colour:

Fixed installation, indoor

1x2x0.64 mm

Copper, bare (AWG 22/1)
Foam-skin-PE
rd, gn
Double core
Polyester foil over stranded bundle
PVC
Polyester foil, aluminium-lined
Cu braid, tinned
PVC
approx. 8,0 mm ± 0,4 mm
Violet similar to RAL 4001

Fixed installation, outdoor

1x2x0.64 mm

Copper, bare (AWG 22/1)
Foam-skin-PE
rd, gn
Double core
Polyester foil over stranded bundle
PE
Polyester foil, aluminium-lined
Cu braid, tinned
PE
approx. 8,0 mm ± 0,4 mm
Black similar to RAL 9005

Electrical data

Characteristic impedance:
Conductor resistance, max.:
Insulation resistance, min.:
Loop resistance:
Mutual capacitance:
Test voltage:
Attenuation:

150 Ohm ± 10 %
55 Ohm/km
1 GOhm x km
110 Ohm/km max.
35 nF/km nom.
1,5 kV
9,6 kHz < 2,5 dB/km
38,4 kHz < 4,0 dB/km
4,0 MHz < 22,0 dB/km
16,0 MHz < 42,0 dB/km

150 Ohm ± 10 %
55 Ohm/km
1 GOhm x km
110 Ohm/km max.
35 nF/km nom.
1,5 kV
9,6 kHz < 2,5 dB/km
38,4 kHz < 4,0 dB/km
4 MHz < 22,0 dB/km
16 MHz < 42,0 dB/km

Technical data

Weight:
bending radius, repeated:
Operating temperature range min.:
Operating temperature range max.:
Caloric load, approx. value:
Copper weight:

approx. 79 kg/km
120 mm
-40°C
+80°C
1,068 MJ/m
24,00 kg/km

approx. 65 kg/km
120 mm
-20°C
+70°C
1,451 MJ/m
24,00 kg/km

Norms

Applicable standards:
UL Style:
CSA standard:

Profibus acc. to DIN 19245 T3 and EN50170
Flame-retardant acc. to IEC 60332-3
CMG 75°C or CL3 or AWM 21694 600V
CSA FT 4

Profibus acc. to DIN 19245 T3 and EN50170
Halogen-free acc. to 60754-2
-
-

Application

The application of these Profibus SK cables are in the cell and field area, just as for conventional types. The great advantage of this new system is the quick connection of the cable to the respective plugs. This type of processing also avoids errors. The above mentioned types are suitable for indoor- or outdoor installation and are equipped with a special PVC or PE sheath.

Part no.

81903, Profibus SK

81904, Profibus SK

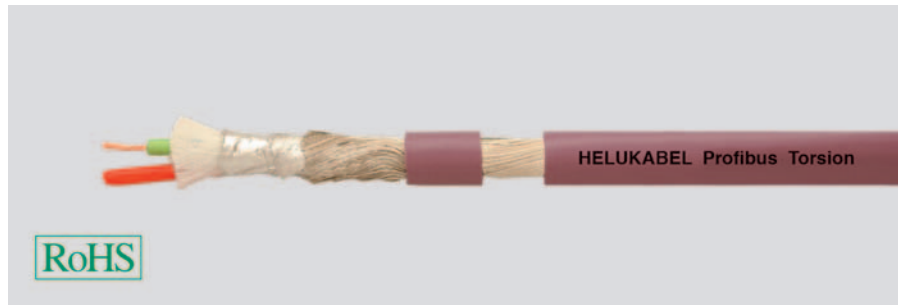
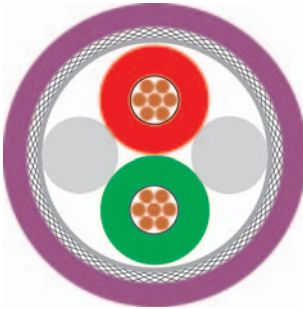
Dimensions and specifications may be changed without prior notice.

BUS Cables

Profibus L2



TORSION + FESTOON



Type

Cable structure

Inner conductor diameter:
Core insulation:
Core colours:
Stranding element:
Shielding 1:
Shielding 2:
Total shielding:
Outer sheath material:
Cable external diameter:
Outer sheath colour:

Torsional applications

1x2x0.80 mm (stranded)

Copper, bare (AWG 22/19)
Foam-skin-PE
rd, gn
2 cores + filler
Polyester foil over stranded bundle
Polyester foil, aluminium-lined
Cu braid, tinned
PUR
approx. 8,0 mm ± 0,4 mm
Violet similar to RAL 4001

Mobile use

1x2x0.65 mm (stranded)

Copper, bare (AWG 24/19)
Cell PE
rd, gn
2 cores + 2 fillers stranded together
Polyester foil over stranded bundle
Polyester foil, aluminium-lined
Cu braid, tinned
PVC
approx. 8,0 mm ± 0,3 mm
Petrol similar to RAL 5018

Electrical data

Characteristic impedance:
Conductor resistance, max.:
Insulation resistance, min.:
Loop resistance:
Mutual capacitance:
Test voltage:
Relative propagation velocity:
Attenuation:

150 Ohm ± 10 %
49 Ohm/km
1 GOhm x km
98 Ohm/km max.
29 nF/km nom.
3,6 kV
-
9,6 kHz < 3,0 dB/km
38,4 kHz < 5,0 dB/km
4 MHz < 25,0 dB/km
16 MHz < 51,0 dB/km

150 Ohm ± 10 %
66,5 Ohm/km
1,6 GOhm x km
133 Ohm/km max.
28 nF/km nom.
2 kV
81 %
9,6 kHz ≤ 3,0 dB/km
38,4 kHz ≤ 4,0 dB/km
4 MHz ≤ 25,0 dB/km
16 MHz ≤ 49,0 dB/km

Technical data

Weight:
bending radius, repeated:
Operating temperature range min.:
Operating temperature range max.:
Caloric load, approx. value:
Copper weight:

approx. 66 kg/km
100 mm
-25°C
+75°C
0,89 MJ/m
32,00 kg/km

approx. 64 kg/km
70 mm
-40°C
+60°C
1,09 MJ/m
23,00 kg/km

Norms

Applicable standards:

Profibus acc. to DIN 19245 T3 and EN50170
Halogen-free acc. to 60754-2
Flame-retardant acc. to IEC 60332-1
CMX 75°C (shielded)

Profibus acc. to DIN 19245 T3 and EN50170
Flame-retardant acc. to EN 50265-2-1

UL Style:
CSA standard:

CMG 75°C or CL2 or AWM 20201 600V
CSA FT 4

Application

The series TORSION and FESTOON are used to interconnect Profibus BUS components. This BUS system is a very economical solution for the field area. For the information exchange between different automation systems as well as for communication with the connected decentralized field units, serial field bus systems are used. The lines described here are designed torsionable or hanging movable construction. Areas such as robot applications and/or garland suspension are easily realized.

Part no.

800109, Profibus L2

800649, Profibus L2

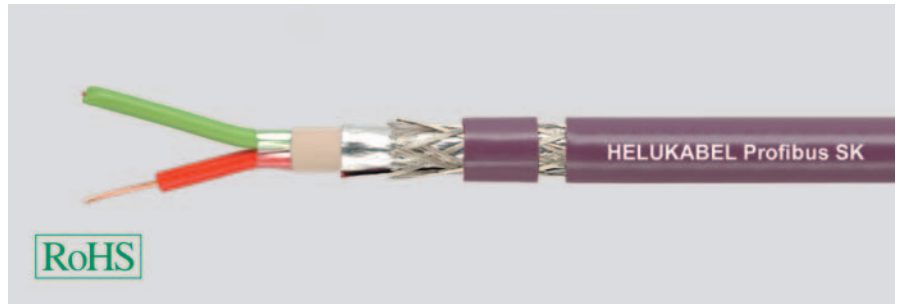
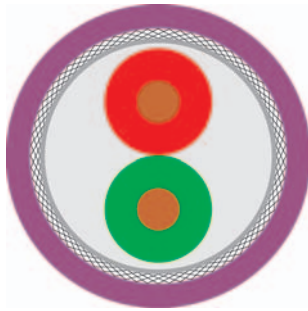
Dimensions and specifications may be changed without prior notice.

BUS Cables

Profibus SK

HELUKABEL®

FRNC + Robust



Type Cable structure

Inner conductor diameter:
Core insulation:
Core colours:
Stranding element:
Shielding 1:
Inner sheath material:
Shielding 2:
Total shielding:
Outer sheath material:
Cable external diameter:
Outer sheath colour:

Fixed installation, indoor 1x2x0.64 mm

Copper, bare (AWG 22/1)
Foam-skin-PE
rd, gn
Double core
Polyester foil over stranded bundle
FRNC
Polyester foil, aluminium-lined
Cu braid, tinned
FRNC
approx. 8,0 mm ± 0,4 mm
Violet similar to RAL 4001

Industrial Area 1x2x0.64 mm

Copper, bare (AWG 22/1)
Foam-skin-PE
rd, gn
Double core
Polyester foil over stranded bundle
PE
Polyester foil, aluminium-lined
Cu braid, tinned
PUR
approx. 8,0 mm ± 0,4 mm
Violet similar to RAL 4001

Electrical data

Characteristic impedance:
Conductor resistance, max.:
Insulation resistance, min.:
Loop resistance:
Mutual capacitance:
Test voltage:
Attenuation:

150 Ohm ± 10 %
55 Ohm/km
1 GOhm x km
110 Ohm/km max.
35 nF/km nom.
1,5 kV
9,6 kHz < 2,5 dB/km
38,4 kHz < 4,0 dB/km
4 MHz < 22,0 dB/km
16 MHz < 42,0 dB/km

150 Ohm ± 10 %
55 Ohm/km
1 GOhm x km
110 Ohm/km max.
35 nF/km nom.
1,5 kV
9,6 kHz < 2,5 dB/km
38,4 kHz < 4,0 dB/km
4 MHz < 22,0 dB/km
16 MHz < 42,0 dB/km

Technical data

Weight:
bending radius, repeated:
Operating temperature range min.:
Operating temperature range max.:
Caloric load, approx. value:
Copper weight:

approx. 73 kg/km
160 mm
-25°C
+70°C
1,203 MJ/m
24,00 kg/km

approx. 71 kg/km
120 mm
-40°C
+70°C
1,574 MJ/m
24,00 kg/km

Norms

Applicable standards:

Profibus acc. to DIN 19245 T3 and EN50170
Halogen-free acc. to 60754-2
Flame-retardant acc. to EN 50265-2-1
CM 750C (shielded)

Profibus acc. to DIN 19245 T3 and EN50170
Halogen-free acc. to 60754-2
Flame-retardant acc. to IEC 60332-1
AWM Style 20236 AWM I/II A/B 80°C 30V FT1
CSA FT1

UL Style:
CSA standard:

-

Application

The application of these Profibus SK cables are in the cell and field area, just as for conventional types. The great advantage of this new system is the quick connection of the cable to the respective plugs. This type of processing also avoids errors. The types mentioned here are suitable for indoor laying (special FRNC sheath) and heavy industry laying (PUR sheath).

Part no.

81501, Profibus SK

81905, Profibus SK

Dimensions and specifications may be changed without prior notice.

Fibre Optic Cable flexible

WK robust PUR + PVC (UL/CSA)

HELUCOM® WK

AT-V(ZN)H(ZN)11Y, AT-V(ZN)Y(ZN)Y



Cable structure

Core type: Composite buffered
Strain relief elements: Aramide
Outer sheath colour: Black

Temperature range

Laying, min.: -10°C
Laying, max.: +50°C
Operating, min.: -40°C
Operating, max.: +90°C

Other data

Max. tensile force: 4800 N
Max. transverse pressure: 200 N / cm
Longitudinally water-tight acc. to IEC 60794-1-2-F5
UV-resistant
Resistant to hammer impact acc. to IEC 60794-1-2-E6
Bending cycles acc. to IEC 60794-1-2-E6: 9.000
Oil-resistant

Designation	Number of Fibre type fibres		Outer Ø approx. mm	Outer sheath material	Inner sheath material	Min. stat. bending radius mm	Flame proof	halogen-free	UL	Weight kg / km	Part no.
AT-V(ZN)H(ZN)11Y	4	Multimode G50/125	8,5	PUR	ULSZH	100	yes	yes	no	125	803346
AT-V(ZN)Y(ZN)Y	4	Multimode G50/125	8,5	PVC	PVC	130	yes	no	yes	125	803348
AT-V(ZN)H(ZN)11Y	12	Multimode G50/125	12,4	PUR	ULSZH	190	yes	yes	no	320	803347
AT-V(ZN)Y(ZN)Y	12	Multimode G50/125	12,4	PVC	PVC	190	yes	no	yes	320	803349

Dimensions and specifications may be changed without prior notice.

Application

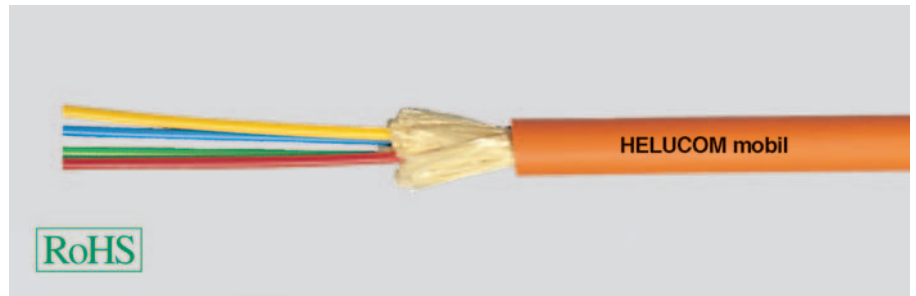
The HELUCOM® WK range is set apart by its extreme rugged yet highly-flexible design. It is used wherever demanding environmental conditions and extreme movements occur. The tight buffer structure enables the cable to be pre-assembled on site with ease. Applications are for example Windturbines, TV transmissions, mobile field applications, etc..

Fibre Optic Cable flexible

WK - mobile

HELUCOM® WK

A-V(ZN)11Y



Cable structure

Core type: Tight buffer
Strain relief elements: Kevlar
Outer sheath colour: Orange

Temperature range

Laying, min.: +5°C
Laying, max.: +50°C
Operating, min.: -30°C
Operating, max.: +70°C

Other data

Max. tensile force: 650 N
Max. transverse pressure: 40 N / cm
Longitudinally water-tight acc. to IEC 60794-1-2-F5
UV-resistant
Resistant to hammer impact acc. to IEC 60794-1-2-E6
Bending cycles acc. to IEC 60794-1-2-E6: 500.000
Oil-resistant

Designation	Number of fibres	Fibre type	Outer Ø approx. mm	Outer sheath material	Min. stat. bending radius mm	Flame proof	halogen-free	UL	Weight kg / km	Part no.
Fibre-optic cable	2	Multimode G50/125	5,0	PUR	75	yes	yes	no	20	80382
Fibre-optic cable	2	Multimode G62.5/125	5,0	PUR	75	yes	yes	no	20	80363
Fibre-optic cable	4	Multimode G50/125	5,8	PUR	90	yes	yes	no	31	80534
Fibre-optic cable	4	Multimode G62.5/125	5,8	PUR	90	yes	yes	no	31	81036
Fibre-optic cable	4	Single-mode E9/125	5,8	PUR	90	yes	yes	no	31	801727
Fibre-optic cable	8	Multimode G50/125	7,0	PUR	105	yes	yes	no	47	81037
Fibre-optic cable	8	Multimode G62.5/125	7,0	PUR	105	yes	yes	no	47	81038

Dimensions and specifications may be changed without prior notice.

Application

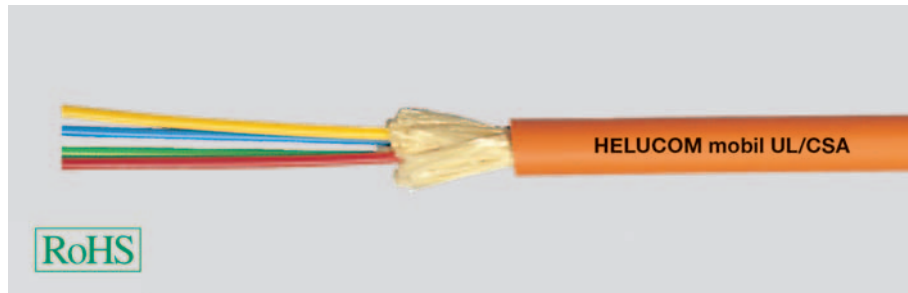
These HELUCOM® cables were designed as mobile field cables. They are easily wound up on a drum and are very tension-proof. As the outer sheath is tightly anchored on the aramid braiding, it is especially suitable for mobile use. The advantage of these cables is evident especially where mobile fibre-optic lines are to be installed, such as for drag chains, TV transmission, supervision of protected areas, etc.

Fibre Optic Cable flexible

WK - UL/CSA

HELUCOM® WK

A-V(ZN)YY



Cable structure

Core type: Tight buffer
Strain relief elements: Aramide
Outer sheath colour: Orange

Temperature range

Laying, min.: 0°C
Laying, max.: +50°C
Operating, min.: -30°C
Operating, max.: +80°C

Other data

Max. tensile force: 1200 N
Max. transverse pressure: 44 N / cm
Longitudinally water-tight acc. to IEC 60794-1-2-F5
UV-resistant
Bending cycles acc. to IEC 60794-1-2-E6: 9.000
Oil-resistant

Designation	Number of Fibre type fibres		Outer Ø approx. mm	Outer sheath material	Inner sheath material	Min. stat. bending radius mm	Flame proof	halogen-free	UL	Weight kg / km	Part no.
Fibre-optic cable	4	Multimode G50/125	7,0	PVC	PVC	75	yes	no	yes	50	802792
Fibre-optic cable	4	Multimode G62.5/125	7,0	PVC	PVC	75	yes	no	yes	50	803934
Fibre-optic cable	4	Single-mode E9/125	7,0	PVC	PVC	75	yes	no	yes	50	803935

Dimensions and specifications may be changed without prior notice.

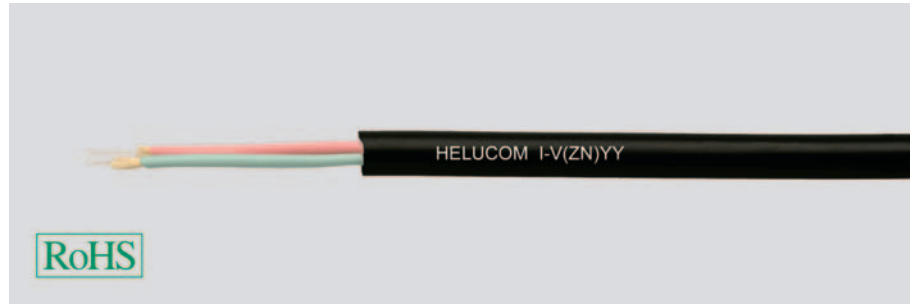
Application

These HELUCOM® cables were designed as mobile field cables. They are easily wound up on a drum and are very tension-proof. As the outer sheath is tightly anchored on the aramid braiding, it is especially suitable for mobile use. The advantage of these cables is evident especially where mobile fibre-optic lines are to be installed, such as windturbine projects, TV transmission, supervision of protected areas, etc.. This series with PVC jacket is certified according to the **UL/CSA standard OFNG/ FT4**.

Fibre Optic Breakout Cable robust, flexible

HCS UL/CSA

HELUCOM®
I-V(ZN)YY



Cable structure

Core type: Composite buffered
Strain relief elements: Aramide
Outer sheath material: PVC
Outer sheath colour: Black

Temperature range

Laying, min.: -20°C
Laying, max.: +75°C
Operating, min.: -30°C
Operating, max.: +85°C

Other data

Flame-resistance acc. to IEC 60332-1 and IEC 60332-3
UV-resistant
Oil-resistant

Designation	Number of fibres	Fibre type	Number of fibres per core	Outer Ø approx. mm	Max. tensile force N	Min. stat. bending radius mm	Max. transverse pressure N / cm	Caloric load approx. MJ / m	Weight kg / km	Part no.
I-V(ZN)YY	2	HCS 200/230	1	7,5	800	100,0	300	1,40	68,0	801733

Dimensions and specifications may be changed without prior notice.

Application

This HELUCOM® HCS fibre cable is suitable for fixed and normal flexible installations. Possible applications are normal and heavy-duty mechanical requirements for example in industrial environments. Because of a special PVC jacket this construction is certified by UL (FT1 and FT4). With the tight buffer construction, direct plug manufacturing, even on site, poses no problems. With a HCS fibre transmission lengths of up to 300m can be achieved.

Fibre Optic Breakout Cable robust flexible

HCS

HELUCOM®

I-V(ZN)Y11Y



Cable structure

Core type: Composite buffered
Strain relief elements: Aramide
Outer sheath material: PUR
Outer sheath colour: Red

Temperature range

Laying, min.: -5°C
Laying, max.: +50°C
Operating, min.: -20°C
Operating, max.: +70°C

Other data

Oil-resistant

Designation	Number of fibres	Fibre type	Number of fibres per core	Outer Ø approx. mm	Max. tensile force N	Min. stat. bending radius mm	Max. transverse pressure N / cm	Caloric load approx. MJ / m	Weight kg / km	Part no.
I-V(ZN)Y11Y	2	HCS 200/230	1	7,0	800	50,0	150	1,014	43,0	800980

Dimensions and specifications may be changed without prior notice.

Application

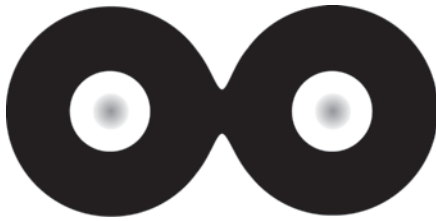
This HELUCOM® HCS fibre cable is suitable for fixed installation. Possible applications are normal and heavy-duty mechanical requirements for example in industrial environments. With the tight buffer construction, direct plug manufacturing, even on site, poses no problems. With a HCS fibre transmission lengths of up to 300m can be achieved.

Plastic-fibre cable industry

POF/PE

HELUCOM®

I-V2Y, I-V2Y(ZN)11Y



Cable structure

Fibre type: POF 980/1000
Fibre cladding: PE

Optical characteristic

Refractive index core: 1,492
Refractive index cladding: 1,419
Numerical aperture: 0,5
Attenuation see table

Temperature range

Laying, min.: -20°C
Laying, max.: +80°C
Operating, min.: -20°C
Operating, max.: +80°C

Designation	Outer sheath material	Jacket colour	Outer Ø approx. mm	Max. tensile force N	Min. stat. bending radius mm	Fibre attenuation	Oil-resistant	Acc. to DESINA	Weight kg / km	Part no.
I-V2Y 1P 980/1000	PE	Black	2,2	70	25,0	160A1	no	no	4,0	80532
I-V2Y 2P 980/1000	PE	Black	2,2 x 4,4	140	25,0	160A1	no	no	8,0	80388
I-V2Y(ZN)11Y 1P 980/1000	PUR	Violet	5,8	400	30,0	230A1	yes	yes	30,0	81611
I-V2Y(ZN)11Y 2P 980/1000	PUR	Violet	6,0	400	31,0	230A1	yes	yes	36,0	80629
I-V2Y(ZN)11Y 2P 980/1000	PUR	Violet	6,0	400	31,0	230A1	yes	yes	36,0	81882
I-V2Y(ZN)11Y 4P 980/1000	PUR	Violet	7,1	400	45,0	230A1	yes	yes	65,0	80630
I-V2Y(ZN)11Y 2P 980/1000 + 2x1mm ² Cu	PUR	Red	7,8	200	70,0	230A1	yes	no	60,0	82032
I-V2Y(ZN)11Y 2P 980/1000 + 3x1,5mm ² Cu	PUR	Red	11,0	200	70,0	230A1	yes	no	132,0	82033

Dimensions and specifications may be changed without prior notice.

Application

HELUCOM® plastic-fibre cables are used in mechanical engineering, both in mobile and fixed applications. With different constructions, such as PUR outer sheaths, special strain relief components, hybrid construction with copper cores for power supply or only raw fibre cables, any possible fields of application are covered. Due to their solidity and their simple adjustability on site, the plastic-fibres (PMMA) are particularly suitable for applications where trouble-free data transmission is necessary under heavy-duty conditions.

Fibre Optic Indoor/Outdoor Cable

acc. DIN VDE 0888

HELUCOM®

A/I-DQ(ZN)BH, central



Cable structure

Core type: Loose tube
Strain relief elements: Glass yarns
Type of armouring: Glass yarns
Outer sheath material: FRNC
Outer sheath colour: Black

Temperature range

Laying, min.: -5°C
Laying, max.: +50°C
Operating, min.: -20°C
Operating, max.: +60°C

Other data

Corrosiveness acc. to EN50267-2-3
Halogen-free acc. to 60754-2
Flame-resistance acc. to IEC 60332-1
Smoke density acc. to IEC 61034
Longitudinally water-tight acc. to IEC 60794-1-2-F5
UV-resistant

Designation	No. of fibres	Fibre type	Fibre category	Number of fibres per core	Outer Ø approx. mm	Max. tensile force N	Min. stat. bending radius mm	Caloric load approx. MJ / m	Max. transverse pressure N / cm	Weight kg / km	Part no.
A/I-DQ(ZN)BH	4	Multimode G50/125	OM2	4	10,0	2500	150,0	1,50	300	75,0	80270
A/I-DQ(ZN)BH	4	Multimode G62.5/125	OM1	4	10,0	2500	150,0	1,50	300	75,0	80276
A/I-DQ(ZN)BH	4	Single-mode E9/125	ITU-T G.652	4	10,0	2500	150,0	1,50	300	75,0	80264
A/I-DQ(ZN)BH	6	Multimode G50/125	OM2	6	10,0	2500	150,0	1,50	300	75,0	80271
A/I-DQ(ZN)BH	6	Multimode G62.5/125	OM1	6	10,0	2500	150,0	1,50	300	75,0	80265
A/I-DQ(ZN)BH	6	Single-mode E9/125	ITU-T G.652	6	10,0	2500	150,0	1,50	300	75,0	80272
A/I-DQ(ZN)BH	8	Multimode G50/125	OM2	8	10,0	2500	150,0	1,50	300	75,0	80273
A/I-DQ(ZN)BH	8	Multimode G62.5/125	OM1	8	10,0	2500	150,0	1,50	300	75,0	80274
A/I-DQ(ZN)BH	8	Single-mode E9/125	ITU-T G.652	8	10,0	2500	150,0	1,50	300	75,0	80275
A/I-DQ(ZN)BH	12	Multimode G50/125	OM2	12	10,0	2500	150,0	1,50	300	75,0	80681
A/I-DQ(ZN)BH	12	Multimode G62.5/125	OM1	12	10,0	2500	150,0	1,50	300	75,0	80278
A/I-DQ(ZN)BH	12	Single-mode E9/125	ITU-T G.652	12	10,0	2500	150,0	1,50	300	75,0	80279
A/I-DQ(ZN)BH	16	Multimode G50/125	OM2	16	10,0	2500	150,0	1,50	300	85,0	80280
A/I-DQ(ZN)BH	16	Multimode G62.5/125	OM1	16	10,0	2500	150,0	1,50	300	85,0	80281
A/I-DQ(ZN)BH	16	Single-mode E9/125	ITU-T G.652	16	10,0	2500	150,0	1,50	300	85,0	80851
A/I-DQ(ZN)BH	24	Multimode G50/125	OM2	24	10,0	2500	150,0	1,50	300	85,0	80725
A/I-DQ(ZN)BH	24	Multimode G62.5/125	OM1	24	10,0	2500	150,0	1,50	300	85,0	82431

Dimensions and specifications may be changed without prior notice.

Application

These HELUCOM® fibre-optic cables are available either as central bundle core cable or as stranded versions. They are suitable for indoor and outdoor cabling of buildings and facilities. They are used in particular if the installation is to be done in one piece from the inside to the outside without additional use of couplings. With their black UV-resistant outer sheath and the non-metallic rodent protection, they are perfectly suited for outdoor use. The halogen-free outer sheath makes installation inhouse possible without any problems.

Fibre Optic Outdoor Cable

acc. DIN VDE 0888

HELUCOM[®] pact

A-DQ(ZN)B2Y, central



Cable structure

Core type: Loose tube
Strain relief elements: Glass yarns
Type of armouring: Glass yarns
Outer sheath material: PE
Outer sheath colour: Black

Temperature range

Laying, min.: -5°C
Laying, max.: +50°C
Operating, min.: -20°C
Operating, max.: +60°C

Other data

Corrosiveness acc. to EN50267-2-3
Halogen-free acc. to 60754-2
Longitudinally water-tight acc. to IEC 60794-1-2-F5
UV-resistant

Designation	No. of fibres	Fibre type	Fibre category	Number of fibres per core	Outer Ø approx. mm	Max. tensile force N	Min. stat. bending radius mm	Caloric load approx. MJ / m	Max. transverse pressure N / cm	Weight kg / km	Part no.
A-DQ(ZN)B2Y	2	Multimode G50/125	OM2	2	7,5	1500	150,0	1,60	300	40,0	800754
A-DQ(ZN)B2Y	2	Multimode G62.5/125	OM1	2	7,5	1500	150,0	1,60	300	40,0	802131
A-DQ(ZN)B2Y	2	Single-mode E9/125	ITU-T G.652	2	7,5	1500	150,0	1,60	300	40,0	802137
A-DQ(ZN)B2Y	4	Multimode G50/125	OM2	4	7,5	1500	150,0	1,60	300	40,0	800755
A-DQ(ZN)B2Y	4	Multimode G62.5/125	OM1	4	7,5	1500	150,0	1,60	300	40,0	802132
A-DQ(ZN)B2Y	4	Single-mode E9/125	ITU-T G.652	4	7,5	1500	150,0	1,60	300	40,0	802138
A-DQ(ZN)B2Y	6	Multimode G50/125	OM2	6	7,5	1500	150,0	1,60	300	40,0	800756
A-DQ(ZN)B2Y	6	Multimode G62.5/125	OM1	6	7,5	1500	150,0	1,60	300	40,0	802133
A-DQ(ZN)B2Y	6	Single-mode E9/125	ITU-T G.652	6	7,5	1500	150,0	1,60	300	40,0	802139
A-DQ(ZN)B2Y	8	Multimode G50/125	OM2	8	7,5	1500	150,0	1,60	300	40,0	800757
A-DQ(ZN)B2Y	8	Multimode G62.5/125	OM1	8	7,5	1500	150,0	1,60	300	40,0	802134
A-DQ(ZN)B2Y	8	Single-mode E9/125	ITU-T G.652	8	7,5	1500	150,0	1,60	300	40,0	802140
A-DQ(ZN)B2Y	12	Multimode G50/125	OM2	12	7,5	1500	150,0	1,60	300	40,0	800759
A-DQ(ZN)B2Y	12	Multimode G62.5/125	OM1	12	7,5	1500	150,0	1,60	300	40,0	802135
A-DQ(ZN)B2Y	12	Single-mode E9/125	ITU-T G.652	12	7,5	1500	150,0	1,60	300	40,0	802141
A-DQ(ZN)B2Y	24	Single-mode E9/125	ITU-T G.652	24	8,5	1500	170,0	1,90	300	60,0	802142
A-DQ(ZN)B2Y	24	Multimode G50/125	OM2	24	8,5	1500	170,0	1,90	300	60,0	800762
A-DQ(ZN)B2Y	24	Multimode G62.5/125	OM1	24	8,5	1500	170,0	1,90	300	60,0	802136

Dimensions and specifications may be changed without prior notice.

Application

These HELUCOM[®] pact fibre-optic cables are characterized by a design that is particularly easy to mount and is rodent-protected. Around a central grooved cable, there is a composite of glass yarns and swelling fleece with characteristics that ensure rodent protection, strain relief, and waterproofing in longitudinal direction of the cable. In addition, these cables are designed grease-free. Wiping the jelly off is therefore unnecessary. This construction is particularly used in underground, tubes and channel areas, where normal tensile stresses and/or transverse compressions occur and rodent infestation is to be expected.

Fibre Optic Outdoor Cable

acc. DIN VDE 0888

HELUCOM®

A-DQ(ZN)B2Y, central



Cable structure

Core type: Loose tube
Strain relief elements: Glass yarns
Type of armouring: Glass yarns
Outer sheath material: PE
Outer sheath colour: Black

Temperature range

Laying, min.: -5°C
Laying, max.: +50°C
Operating, min.: -20°C
Operating, max.: +60°C

Other data

Corrosiveness acc. to EN50267-2-3
Halogen-free acc. to 60754-2
Longitudinally water-tight acc. to IEC 60794-1-2-F5
UV-resistant

Designation	No. of fibres	Fibre type	Fibre category	Number of fibres per core	Outer Ø approx. mm	Max. tensile force N	Min. stat. bending radius mm	Caloric load approx. MJ / m	Max. transverse pressure N / cm	Weight kg / km	Part no.
A-DQ(ZN)B2Y	2	Multimode G50/125	OM2	2	10,0	2500	160,0	1,60	300	85,0	80196
A-DQ(ZN)B2Y	2	Multimode G62.5/125	OM1	2	10,0	2500	160,0	1,60	300	85,0	80212
A-DQ(ZN)B2Y	2	Single-mode E9/125	ITU-T G.652	2	10,0	2500	160,0	1,60	300	85,0	80180
A-DQ(ZN)B2Y	4	Multimode G50/125	OM2	4	10,0	2500	160,0	1,60	300	85,0	80197
A-DQ(ZN)B2Y	4	Multimode G62.5/125	OM1	4	10,0	2500	160,0	1,60	300	85,0	80213
A-DQ(ZN)B2Y	4	Single-mode E9/125	ITU-T G.652	4	10,0	2500	160,0	1,60	300	85,0	80181
A-DQ(ZN)B2Y	6	Multimode G50/125	OM2	6	10,0	2500	160,0	1,60	300	85,0	80198
A-DQ(ZN)B2Y	6	Multimode G62.5/125	OM1	6	10,0	2500	160,0	1,60	300	85,0	80214
A-DQ(ZN)B2Y	6	Single-mode E9/125	ITU-T G.652	6	10,0	2500	160,0	1,60	300	85,0	80182
A-DQ(ZN)B2Y	8	Multimode G50/125	OM2	8	10,0	2500	160,0	1,60	300	85,0	80199
A-DQ(ZN)B2Y	8	Multimode G62.5/125	OM1	8	10,0	2500	160,0	1,60	300	85,0	80215
A-DQ(ZN)B2Y	8	Single-mode E9/125	ITU-T G.652	8	10,0	2500	160,0	1,60	300	85,0	80183
A-DQ(ZN)B2Y	12	Multimode G50/125	OM2	12	10,0	2500	160,0	1,60	300	85,0	80201
A-DQ(ZN)B2Y	12	Multimode G62.5/125	OM1	12	10,0	2500	160,0	1,60	300	85,0	80217
A-DQ(ZN)B2Y	12	Single-mode E9/125	ITU-T G.652	12	10,0	2500	160,0	1,60	300	85,0	80185
A-DQ(ZN)B2Y	16	Multimode G50/125	OM2	16	10,0	2500	180,0	1,80	300	95,0	80202
A-DQ(ZN)B2Y	16	Multimode G62.5/125	OM1	16	10,0	2500	180,0	1,80	300	95,0	80218
A-DQ(ZN)B2Y	16	Single-mode E9/125	ITU-T G.652	16	10,0	2500	180,0	1,80	300	95,0	80186
A-DQ(ZN)B2Y	24	Multimode G50/125	OM2	24	10,0	2500	180,0	1,80	300	95,0	80204
A-DQ(ZN)B2Y	24	Multimode G62.5/125	OM1	24	10,0	2500	180,0	1,80	300	95,0	80220
A-DQ(ZN)B2Y	24	Single-mode E9/125	ITU-T G.652	24	10,0	2500	180,0	1,80	300	95,0	80187

Dimensions and specifications may be changed without prior notice.

Application

These HELUCOM® fibre-optic cables are characterized by a design that is particularly easy to mount and is rodent-protected. Around a central grooved cable, there is a composite of glass yarns and swelling fleece with characteristics that ensure rodent protection, strain relief, and waterproofing in longitudinal direction of the cable. In addition, these cables are designed grease-free. Wiping the jelly off is therefore unnecessary. This construction is particularly used in underground, tubes and channel areas, where normal tensile stresses and/or transverse compressions occur and rodent infestation is to be expected.

Fibre Optic Outdoor Cable

acc. DIN VDE 0888

HELUCOM®

A-DQ(ZN)B2Y, stranded



Cable structure

Core type: Loose tube
GRP support element
Strain relief elements: Glass yarns
Type of armouring: Glass yarns
Outer sheath material: PE
Outer sheath colour: Black

Temperature range

Laying, min.: -5°C
Laying, max.: +50°C
Operating, min.: -20°C
Operating, max.: +60°C

Other data

Corrosiveness acc. to EN50267-2-3
Halogen-free acc. to 60754-2
Longitudinally water-tight acc. to IEC 60794-1-2-F5
UV-resistant

Designation	No. of fibres	Fibre type	Fibre category	Number of fibres per core	Outer Ø approx. mm	Max. tensile force N	Min. stat. bending radius mm	Caloric load approx. MJ / m	Max. transverse pressure N / cm	Weight kg / km	Part no.
A-DQ(ZN)B2Y	24	Multimode G50/125	OM2	12	10,5	2700	210,0	2,70	600	95,0	81382
A-DQ(ZN)B2Y	24	Multimode G62.5/125	OM1	12	10,5	2700	210,0	2,70	600	95,0	80219
A-DQ(ZN)B2Y	24	Single-mode E9/125	ITU-T G.652	12	10,5	2700	210,0	2,70	600	95,0	80188
A-DQ(ZN)B2Y	36	Multimode G50/125	OM2	12	10,5	2700	210,0	2,70	600	95,0	81108
A-DQ(ZN)B2Y	36	Multimode G62.5/125	OM1	12	10,5	2700	210,0	2,70	600	95,0	81109
A-DQ(ZN)B2Y	36	Single-mode E9/125	ITU-T G.652	12	10,5	2700	210,0	2,70	600	95,0	81110
A-DQ(ZN)B2Y	48	Multimode G50/125	OM2	12	10,5	2700	210,0	2,70	600	95,0	82648
A-DQ(ZN)B2Y	48	Multimode G62.5/125	OM1	12	10,5	2700	210,0	2,70	600	95,0	81112
A-DQ(ZN)B2Y	48	Single-mode E9/125	ITU-T G.652	12	10,5	2700	210,0	2,70	600	95,0	81113
A-DQ(ZN)B2Y	60	Multimode G50/125	OM2	12	10,5	2700	210,0	2,70	600	95,0	80207
A-DQ(ZN)B2Y	60	Multimode G62.5/125	OM1	12	10,5	2700	210,0	2,70	600	95,0	80223
A-DQ(ZN)B2Y	60	Single-mode E9/125	ITU-T G.652	12	10,5	2700	210,0	2,70	600	95,0	80191
A-DQ(ZN)B2Y	72	Multimode G50/125	OM2	12	11,0	2700	220,0	2,90	600	100,0	81133
A-DQ(ZN)B2Y	72	Multimode G62.5/125	OM1	12	11,0	2700	220,0	2,90	600	100,0	81134
A-DQ(ZN)B2Y	72	Single-mode E9/125	ITU-T G.652	12	11,0	2700	220,0	2,90	600	100,0	81120
A-DQ(ZN)B2Y	84	Multimode G50/125	OM2	12	12,0	3000	240,0	3,60	600	140,0	80208
A-DQ(ZN)B2Y	84	Multimode G62.5/125	OM1	12	12,0	3000	240,0	3,60	600	140,0	80224
A-DQ(ZN)B2Y	84	Single-mode E9/125	ITU-T G.652	12	12,0	3000	240,0	3,60	600	140,0	80192
A-DQ(ZN)B2Y	96	Multimode G50/125	OM2	12	12,0	3000	240,0	3,60	600	140,0	81135
A-DQ(ZN)B2Y	96	Multimode G62.5/125	OM1	12	12,0	3000	240,0	3,60	600	140,0	81136
A-DQ(ZN)B2Y	96	Single-mode E9/125	ITU-T G.652	12	12,0	3000	240,0	3,60	600	140,0	81121
A-DQ(ZN)B2Y	108	Multimode G50/125	OM2	12	13,5	3000	270,0	4,30	600	155,0	80209
A-DQ(ZN)B2Y	108	Multimode G62.5/125	OM1	12	13,5	3000	270,0	4,30	600	155,0	80225
A-DQ(ZN)B2Y	108	Single-mode E9/125	ITU-T G.652	12	13,5	3000	270,0	4,30	600	155,0	80193
A-DQ(ZN)B2Y	120	Multimode G50/125	OM2	12	13,5	3000	270,0	4,30	600	155,0	80210
A-DQ(ZN)B2Y	120	Multimode G62.5/125	OM1	12	13,5	3000	270,0	4,30	600	155,0	80226
A-DQ(ZN)B2Y	120	Single-mode E9/125	ITU-T G.652	12	13,5	3000	270,0	4,30	600	155,0	80194
A-DQ(ZN)B2Y	144	Multimode G50/125	OM2	12	14,5	3000	290,0	5,40	600	200,0	80211
A-DQ(ZN)B2Y	144	Multimode G62.5/125	OM1	12	14,5	3000	290,0	5,40	600	200,0	80227
A-DQ(ZN)B2Y	144	Single-mode E9/125	ITU-T G.652	12	14,5	3000	290,0	5,40	600	200,0	80195

Dimensions and specifications may be changed without prior notice.

Application

These HELUCOM® fibre-optic cables are characterized by a design that is particularly easy to mount, extremely tension-resistant and rodent-proof. Around a stranded grooved cable and filler elements, there is a composite of glass yarns and swelling fleece with characteristics that ensure rodent protection, strain relief, and waterproofing in longitudinal direction of the cable. In addition, these cables are designed grease-free. Wiping the jelly off is therefore unnecessary. This construction is particularly used in underground, tubes and channel areas, where above-average tensile stresses and/or transverse compressions occur and rodent infestation is to be expected.

Fibre Optic Outdoor Cable

acc. DIN VDE 0888

HELUCOM[®] pact

A-DQ(ZN)B2Y fibre combi, stranded



Cable structure

Core type: Loose tube
 GRP support element
 Strain relief elements: Glass yarns
 Type of armouring: Glass yarns
 Outer sheath material: PE
 Outer sheath colour: Black

Temperature range

Laying, min.: -5°C
 Laying, max.: +50°C
 Operating, min.: -20°C
 Operating, max.: +60°C

Other data

Corrosiveness acc. to EN50267-2-3
 Longitudinally water-tight acc. to IEC 60794-1-2-F5
 UV-resistant

Designation	No. of fibres	Fibre type	Fibre category	Number of fibres per core	Outer Ø approx. mm	Max. tensile force N	Min. stat. bending radius mm	Caloric load approx. MJ / m	Max. transverse pressure N / cm	Weight kg / km	Part no.
A-DQ(ZN)B2Y	24	Single- and multimode G50/125	OM2 + ITU-T G.652	12	9,5	2500	200,0	2,50	400	90,0	803037
A-DQ(ZN)B2Y	24	Single- und Multimode G50/125 OM3	OM3 + ITU-T G.652	12	9,5	2500	200,0	2,50	400	90,0	803923
A-DQ(ZN)B2Y	48	Single- and multimode G50/125	OM2 + ITU-T G.652	12	9,5	2500	200,0	2,50	400	90,0	803038
A-DQ(ZN)B2Y	48	Single- und Multimode G50/125 OM3	OM3 + ITU-T G.652	12	9,5	2500	200,0	2,50	400	90,0	803924

Dimensions and specifications may be changed without prior notice.

Application

These HELUCOM[®] pact fibre-optic cables are characterized by a design that is particularly easy to mount, tension-resistant and rodent-proof. Around a stranded grooved cable and filler elements, there is a composite of glass yarns and swelling fleece with characteristics that ensure rodent protection, strain relief and waterproofing in longitudinal direction of the cable. In addition, these cables are designed grease-free. Wiping the jelly off is therefore unnecessary. This construction is particularly used in underground, tubes and channel areas, where packing density also plays a role.

Cable accessories for wind power plants



As a practical supplement to the extensive assortment of cables and lines; HELUKABEL® has established a cable accessory program corresponding to the most current guidelines and standards; it is impressive.

The following topics are included in this:

- cable screwed connections
- protective cable hose systems
- power supply chains
- industrial plug connectors
- insulating and shrink tubes
- cable terminations & connection sleeves
- bundling, binding, fastening
- identifying and marking
- ferrules & cable lugs
- tools

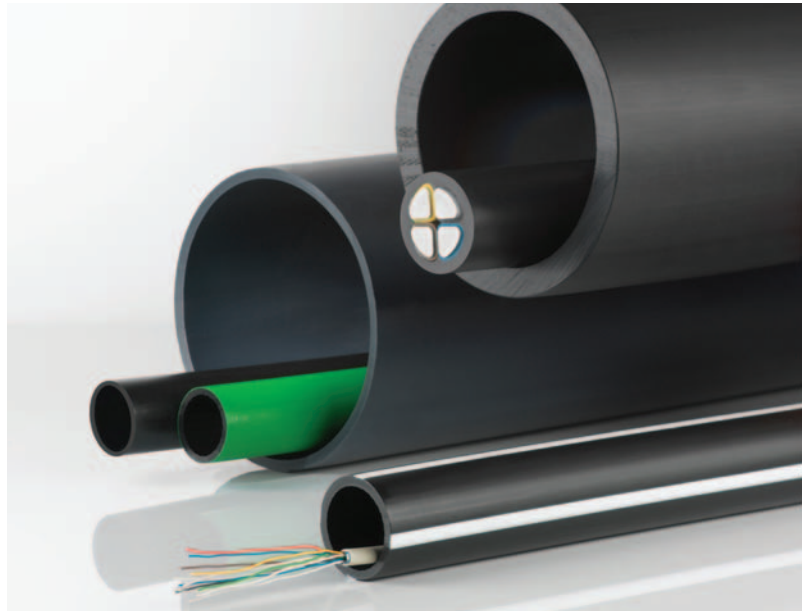


The new
HELUKABEL® accessory catalog.

Now request it free at www.helukabel.com

Cable conduit with inner striations

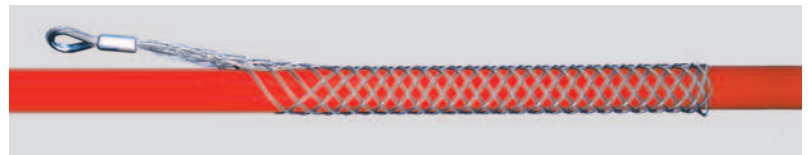
Suitable for plowing-in, laying in trenches, for blowing-in and pulling-in fiber optic cable, outside diameter 32 to 50 mm.



Cable installation grips with side loop

Properties:

- with thimble and press clamp
- self-tightening under tension load
- back-woven



Material:

galvanized stranded wire

Application

Employed as a cable installation grip. For anti-slip installation of vertically attached cables.

Cable installation grips with side loop, laterally displaced, open

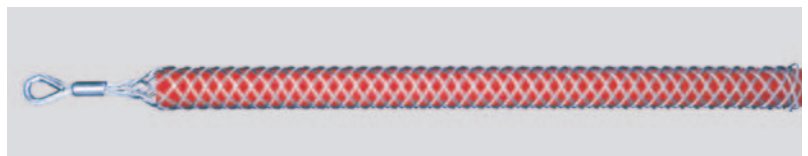
Part no.	Min. interior diameter mm	Max. interior diameter mm	Length mm	Loadability in kN	Weight kg
905909	8	10	500	2,2	0,07
905601	10	15	500	3,4	0,08
905602	15	20	500	4,3	0,14
905603	20	25	500	6,8	0,16
905604	25	30	500	8,1	0,18
905597	30	40	500	11,7	0,4
905605	40	50	800	16,0	0,45
905606	50	60	800	16,0	0,6
905607	60	70	800	21,0	0,7
905918	70	90	800	21,0	0,9
905919	90	110	800	26,7	1,2

Dimensions and specifications may be changed without prior notice. Prices on request.

Cable grips with thimble and press clamp

Properties:

- with thimble and press clamp
- self-tightening under tension load
- back-woven



Material:

galvanized stranded wire

Application

This cable grip is used wherever cables with high tensile forces are routed.

Cable grips with thimble and press clamp, closed

Part no.	Min. interior diameter mm	Max. interior diameter mm	Length mm	Loadability in kN	Weight kg
905891	6	10	600	2,2	0,07
905892	10	15	600	3,4	0,08
905893	15	20	600	6,8	0,14
905375	20	25	600	6,8	0,15
905371	25	30	1000	8,1	0,18
905376	30	40	1250	11,7	0,4
905894	40	50	1250	16,0	0,45
905163	50	60	1500	16,0	0,6
905895	60	70	1500	21,3	0,7
905896	70	90	1500	27,9	0,9
905897	90	110	1500	34,9	1,5

Dimensions and specifications may be changed without prior notice. Prices on request.

Cable gland – HELUTOP®

HELUTOP® HT

The plastic cable gland with vibration protection.

Properties:

- Optimum strain relief through clamping plates
- Easy to assemble
- Large clamping areas



Technical Data:

Protection classification: IP 68 - 5 bar
 Temperature range: -30°C up to +80°C
 Testing standard: EN50262

Material:

- Halogen-free
 - Silicone-free
 - Cadmium-free
- Shell: polyamide PA 6
 Moulded seal: Neoprene

HELUTOP® HT-MS

The cable gland made of nickel-plated brass.

Properties:

- Optimum strain relief through clamping plates
- Easy to assemble
- Large clamping areas



Technical Data:

Protection classification: IP 68 - 5 bar
 Temperature range: -40°C up to +100°C
 Testing standard: EN50262

Material:

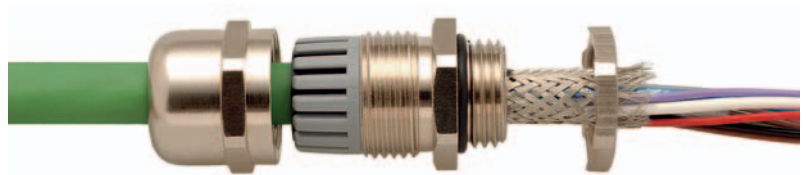
Shell: brass, nickel-plated
 Terminal insert: polyamide PA 6
 Moulded seal: Neoprene
 O-ring: Buna-N

HELUTOP® MS-EP4

The new generation of EMC and earth glands with integrated contact system for reliable, quick assembly and contacting.

Properties:

- Optimum strain relief by means of clamping plates
- Large clamping areas
- Simple installation with open contact springs and rotating spring ring
- Reliable contact with high-quality copper-beryllium springs
- Highly vibration-resistant due to short distance from clamping to contact range
- Reliable EMC screening even in rugged applications



Technical Data:

Protection classification: IP68 – 5bar
 Temperature range: -40°C bis +100°C
 Testing standard: EN 50262

Material:

Shell: brass, nickel-plated
 Contact spring: Copper-beryllium
 Terminal insert: polyamide PA 6
 Gasket: Neoprene
 O-ring: NBR

HELUTOP® HT-E

The stainless steel cable gland for use in high-stress applications.

Properties:

- Optimum strain relief through clamping plates
- Highly corrosion-resistant
- Highly durable
- Easy to assemble
- Large clamping areas



Technical Data:

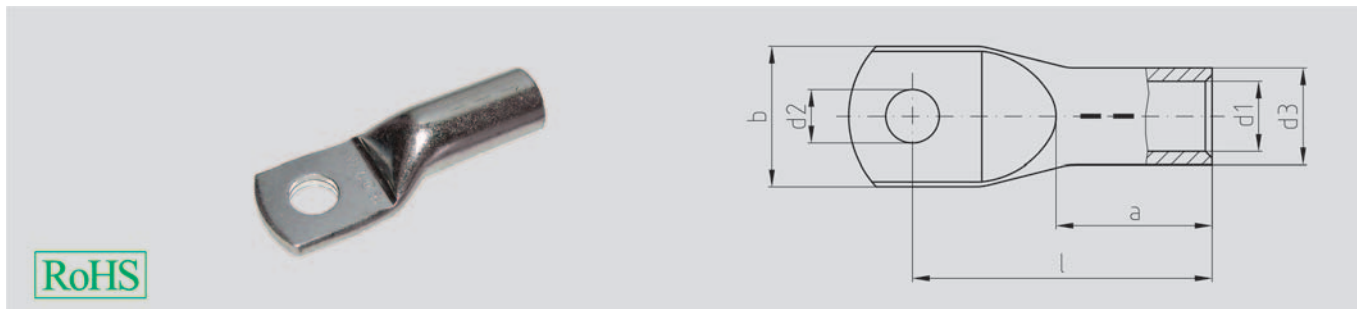
Protection classification: IP 68 - 5 bar
 Temperature range: -40°C up to +100°C
 Testing standard: EN50262

Material:

stainless steel 1.4305
 Terminal insert: polyamide PA 6
 Moulded seal: Neoprene
 O-ring: Buna-N

WK-CU compression cable lug

DIN 46235, straight ring design



Technical Data

Material:

CU-HCP according to DIN EN 13600

Surface:

tin plated

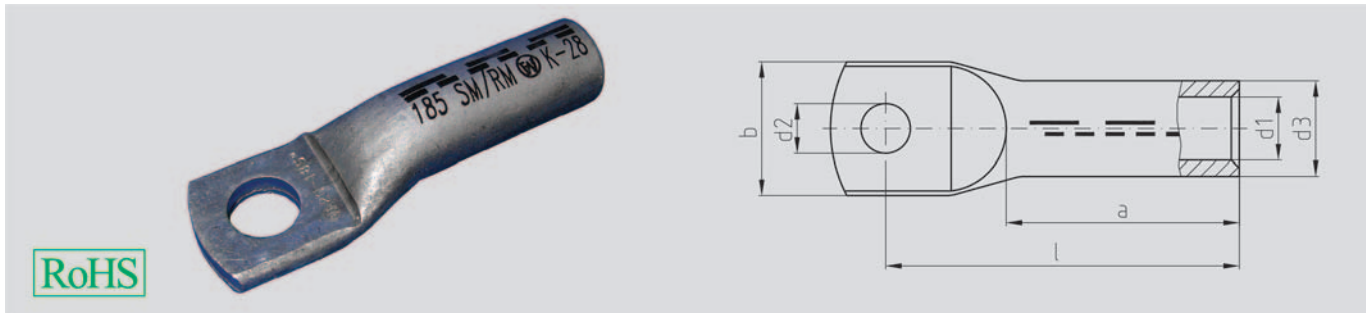
WK-CU compression cable lug

Part No.	Cross section mm ²	Hole M	Key figures	Dimension in mm						Weight 100 pcs. approx. kg	VPE pcs.
				d1	d3	d2	b	l	a		
906524	95	10	18	13,5	19,0	10,5	28,0	65,5	35,0	9,55	50
906525	95	12	18	13,5	19,0	13,0	28,0	65,5	35,0	9,45	50
906526	120	10	20	15,5	21,0	10,5	31,0	70,0	35,0	11,40	50
906527	120	12	20	15,5	21,0	13,0	31,0	70,5	35,0	11,44	50
906528	150	12	22	17,0	23,5	13,0	34,0	78,5	35,0	16,76	25
906529	150	16	22	17,0	23,5	17,0	34,0	78,0	35,0	16,35	25
906530	185	12	25	19,0	25,5	13,0	37,0	82,5	40,0	18,95	25
906531	185	16	25	19,0	25,5	17,0	37,0	82,0	40,0	18,78	25
906532	240	12	28	21,5	29,0	13,0	42,5	92,0	40,0	27,08	20
906533	240	16	28	21,5	29,0	17,0	42,5	92,0	40,0	27,45	20
906534	300	16	32	24,5	32,0	17,0	48,5	100,0	50,0	33,72	10
906535	300	20	32	24,5	32,0	21,0	48,5	100,0	50,0	34,37	10
906536	400	16	38	27,5	38,5	17,0	55,0	117,0	70,0	70,28	5
906537	400	20	38	27,5	38,5	21,0	55,0	117,0	70,0	70,60	5
906538	500	20	42	31,0	42,0	21,0	60,0	130,0	70,0	87,66	5

Other dimensions available on request. Subject to technical changes.
Prices available on request.

WK-AL compression cable lug

straight ring design



Technical Data

Material: Aluminium AL 99.5
Surface: bright

Instructions

- Sleeve filled with contact lubricant and closed against drying out
- Strain-relieved for aluminum conductors

WK-AL compression cable lug

Part No.	Cross section mm ²		Hole M	for *ALU Powerline (Conductor category 5)	Key figures	Dimension in mm						Weight 100 pcs. approx. kg	VPE pcs.
	rm/sm*	se**				d1	d3	d2	b	l	a		
906459	150	185	10	150	25	16,5	25	10,5	35	104	64	10,00	10
906436	150	185	12	150	25	16,5	25	13	35	104	64	10,03	10
906461	150	185	16	150	25	16,5	25	17	35	104	64	10,08	10
906462	150	185	20	150	25	16,5	25	21	35	104	64	10,02	10
906463	185	240	12		28	18,5	28,5	13	40	109	66	13,39	10
906464	185	240	16		28	18,5	28,5	17	40	109	66	13,75	10
906465	185	240	20		28	18,5	28,5	21	40	109	66	13,76	10
906466	240	300	12	185	32	21,3	32	13	46	119	70	17,58	10
906467	240	300	16	185	32	21,3	32	17	46	119	70	17,62	10
906468	240	300	20	185	32	21,3	32	21	46	119	70	17,90	10
906469	300	-	12	240	34	23,3	34	13	50	125	70	18,00	5
906470	300	-	16	240	34	23,3	34	17	50	125	70	22,10	5
906471	300	-	20	240	34	23,3	34	21	50	125	70	19,43	5
906472	400	-	12	300	38	26	38,5	13	55	120	70	24,40	5
906473	400	-	16	300	38	26	38,5	17	55	120	70	24,40	5
906474	400	-	20	300	38	26	38,5	21	55	120	70	24,00	5
906475	500	-	12	400	44	29	44	13	63	140	80	38,00	5
906476	500	-	16	400	44	29	44	17	63	140	80	37,80	5
906477	500	-	20	400	44	29	44	21	63	140	80	37,35	5

rm = round cable multi-wire
 sm = sector cable multi-wire
 se = sector cable single-wire (must be preformed)

Other dimensions available on request. Subject to technical changes.
 Prices available on request.

* Please observe: Processing must be done exclusively with the C8 compression intended for it. Only then can you achieve the required pull-out values according to DIN EN 61238 Part 1. The key figures on the compression cable lugs and the compression die must match.

KAC-U washers

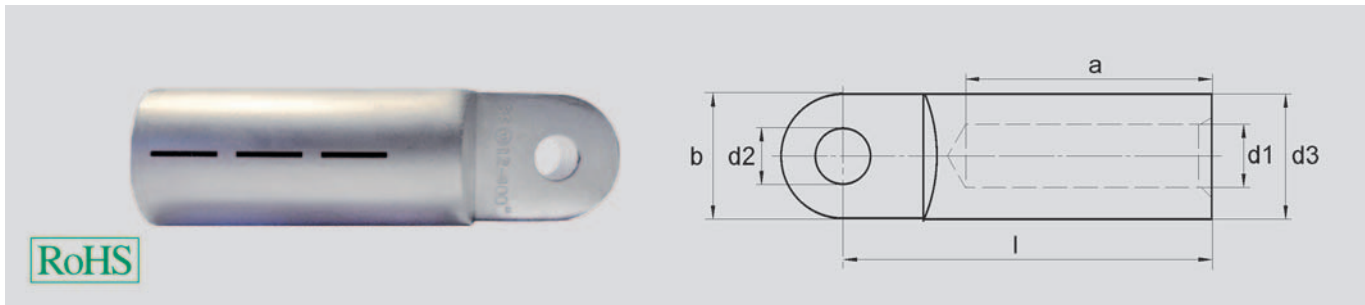
Aluminum sheet metal plated with copper.
 For securely connection aluminum conductors on copper terminals.

More information is found in our cable accessories catalog.



WK-AL compression cable lug FG extruded

straight ring design



Technical Data

Material: Aluminum AL 99.5
Surface: bright or tinned

Instructions

- Sleeve filled with contact lubricant and closed against drying out
- Strain-relieved for aluminum conductors
- DIN 46329

WK-AL compression cable lug FG extruded

Part No. bright	Part No. tinned	Cross section mm ² rm/sm*	Hole M	for *ALU Powerline (Conductor category 5)	Key figures	Dimension in mm					
						d1	d3	d2	b	l	a
906539	906562	95	10	95	22	13,2	22	10,5	25	75	56
906540	906563	95	12	95	22	13,2	22	13	25	75	56
906541	906564	120	10	120	22	14,7	14,7	10,5	30	80	56
906542	906565	120	12	120	22	14,7	14,7	13	30	80	56
906543	906566	120	16	120	22	14,7	14,7	17	30	80	56
906544	906567	150	10	150	25	16,3	25	10,5	30	90	60
906545	906568	150	12	150	25	16,3	25	13	30	90	60
906546	906569	150	16	150	25	16,3	25	17	30	90	60
906547	906570	185	10		28	18,3	28,5	10,5	30	91	60
906548	906571	185	12		28	18,3	28,5	13	30	91	60
906549	906572	185	16		28	18,3	28,5	17	30	91	60
906550	906573	240	12	185	32	21	32	13	38	103	70
906551	906574	240	16	185	32	21	32	17	38	103	70
906552	906575	240	20	185	32	21	32	21	38	103	70
906553	906576	300	12	240	34	23,3	34	13	38	103	70
906554	906577	300	16	240	34	23,3	34	17	38	103	70
906555	906578	300	20	240	34	23,3	34	21	38	103	70
906556	906579	400	12	300	38	26	38,5	13	38	116	73
906557	906580	400	16	300	38	26	38,5	17	38	116	73
906558	906581	400	20	300	38	26	38,5	21	38	116	73
906559	906582	500	12	400	44	29	44	13	44	122	79
906560	906583	500	16	400	44	29	44	17	44	122	79
906561	906584	500	20	400	44	29	44	21	44	122	79

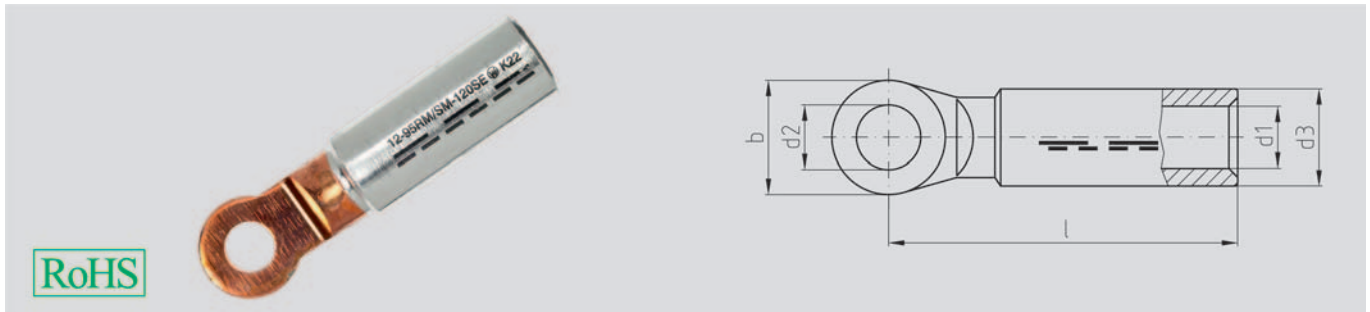
rm = round cable multi-wire
 sm = sector cable multi-wire

Other dimensions available on request. Subject to technical changes.
 Prices available on request.

* Please observe: Processing must be done exclusively with the C8 compression intended for it. Only then can you achieve the required pull-out values according to DIN EN 61238 Part 1. The key figures on the compression cable lug and the compression die must match.

WK-AL/CU compression cable lugs

straight ring design



Technical Data

Material: Aluminum AL 99.5
CU-ETP according to DIN EN 13601

Surface: bright

Instructions

- Sleeve filled with contact lubricant and closed against drying out
- Strain-relieved for aluminum conductors

WK-AL/CU compression cable lugs

Part No.	Cross section mm ²		Hole M	for *ALU Powerline (Conductor category 5)	Key figures K	Dimension in mm					Weight 100 pcs. approx. kg		VPE pcs.
	rm/sm*	se**				d1	d3	d2	b	l	Total	Cu	
906478	150	185	10	150	25	16,3	25	10,5	30	100	13,80	8,31	5
906172	150	185	12	150	25	16,3	25,5	13	30	100	13,57	8,07	5
906173	150	185	16	150	25	16,3	25,5	17	30	100	12,88	7,18	5
906479	185	185	10		28	18,3	28,5	10,5	30	102	17,60	10,30	5
906480	185	240	12		28	18,3	28,5	13	30	102	17,31	10,00	5
906481	185	240	16		28	18,3	28,5	17	36	105	19,68	12,40	5
906482	185	240	20		28	18,3	28,5	21	36	105	18,96	11,68	5
906483	240	300	10	185	32	21	32	10,5	30	112	20,41	10,00	5
906185	240	300	12	185	32	21,5	32	13	30	112	20,41	10,00	5
906484	240	300	16	185	32	21,5	32	17	36	115	22,58	12,00	5
906485	240	300	20	185	32	21	32	21	36	115	21,85	11,28	5
906486	300	10	10	240	34	23,3	34	10,5	30	115	21,84	10,80	5
906487	300	-	12	240	34	23,3	34	13	30	115	21,84	10,80	5
906488	300	-	16	240	34	23,3	34	17	36	116	23,20	12,80	5
906489	300	-	20	240	34	23,3	34	21	36	116	22,49	12,10	5
906490	400	10	10	300	38	26	38,5	10,5	36	125	32,87	17,67	5
906212	400	12	12	300	38	26	38,5	13	36	125	33,27	17,39	5
906174	400	-	16	300	38	26	38,5	17	36	125	31,99	16,80	5
906175	400	-	20	300	38	26	38,5	21	36	125	31,25	16,05	5
906491	500	10	10	400	44	29	44	10,5	44	140	43,70	21,57	1
906492	500	12	12	400	44	29	44	13	44	140	43,33	21,20	1
906493	500	-	16	400	44	29	44	17	44	140	42,83	20,70	1
906494	500	-	20	400	44	29	44	21	44	140	42,08	19,96	1

rm = round cable multi-wire
sm = sector cable multi-wire
se = sector cable single-wire (must be preformed)

Other dimensions available on request. Subject to technical changes.
Prices available on request.

* Please observe: Processing must be done exclusively with the C8 compression intended for it. Only then can you achieve the required pull-out values according to DIN EN 61238 Part 1. The key figures on the compression cable lug and the compression die must match.

WK-AL compression connector



Technical Data

Material: Aluminum AL 99.5
Surface: bright

Instructions

- Sleeve filled with contact lubricant and closed against drying out
- DIN 46267 Part 2

WK-AL compression connector

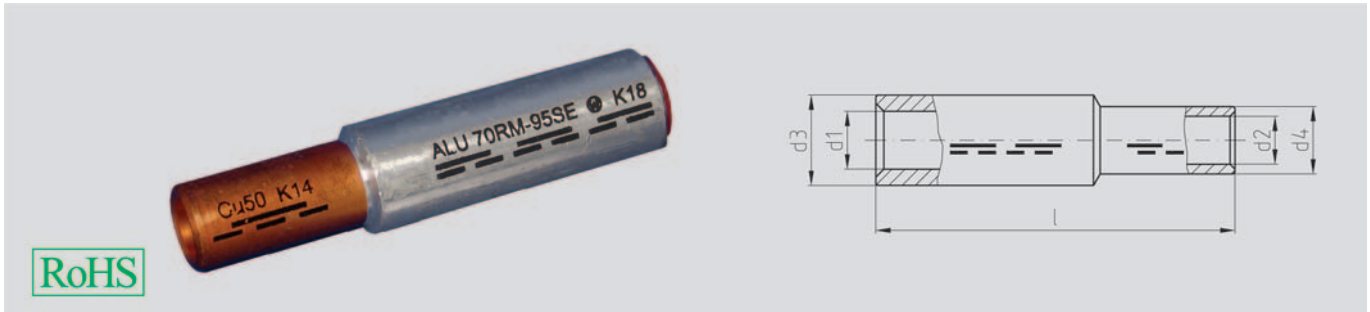
Part No.	Cross section mm ²		for *ALU Powerline	Key figures	Dimension in mm			Weight 100 pcs. approx. kg	VPE pcs.
	rm/sm	se			d1	d3	l		
906511	25	35		12	7	12	70	1,78	50
906512	35	50		14	8	14	85	2,85	50
906513	50	70		16	10	16	85	3,40	25
906514	70	95		18	11,5	18,5	105	5,59	25
906515	95	120	95	22	13,4	22	105	8,49	10
906516	120	150	120	22	15	23	105	8,68	10
906406	150	185	150	25	16,5	25	125	11,13	10
906517	185	240		28	18,5	28,5	125	14,35	10
906518	240	300	185	32	21,3	32	145	19,17	10
906519	300	-	240	34	23,3	34	145	22,71	10
906520	400	-	300	38	26	38,5	210	35,90	5
906521	500	-	400	44	29	44	210	48,80	5

rm = round cable multi-wire
 sm = sector cable multi-wire
 se = sector cable single-wire (must be preformed)

Other dimensions available on request. Subject to technical changes.
 Prices available on request.

* Please observe: Processing must be done exclusively with the C8 compression intended for it. Only then can you achieve the required pull-out values according to DIN EN 61238 Part 1. The key figures on the compression cable lug and the compression die must match.

WK-AL/CU compression connector



Technical Data

Material: Aluminum AL 99.5
CU-ETP according to DIN EN 13601

Surface: bright

Instructions

- Sleeve filled with contact lubricant and closed against drying out
- Strain-relieved for aluminum conductors

WK-AL/CU compression connector

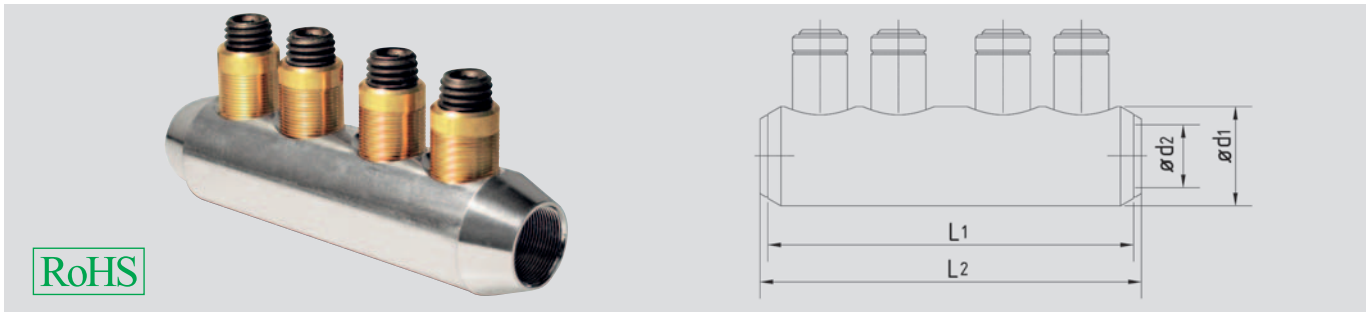
Part No.	Cross section mm ²		for *ALU Powerline (Conductor category 5)	Key figures		Dimension in mm					Weight 100 pcs. approx. kg		VPE pcs.
	Al rm/sm	Cu rm/sm		Al	Cu	d1	d3	d2	d4	l	Total	Cu	
906460	150	70	150	25	16	16,3	25	11,5	16,5	101	9,59	3,58	5
906495	150	95	150	25	18	16,3	25,5	13,5	19	108	11,66	5,62	5
906209	150	120	150	25	20	16,3	25,5	15,5	21	108	12,59	6,61	5
906496	150	150	150	25	22	16,3	25	17	23,5	113	15,5	9,46	5
906497	185	95		28	18	18,3	28,5	13,5	19	108	13	5,62	5
906498	185	120		28	20	18,3	28,5	15,5	21	108	14,01	6,61	5
906499	185	150		28	22	18,3	28,5	17	23,5	113	16,93	9,47	5
906500	185	185		28	25	18,3	28,5	19	25,5	116	18,53	10,97	5
906501	240	120	185	32	20	21	32	15,5	21	120	17,36	6,60	5
906502	240	150	185	32	22	21,5	32,5	17	23,5	124	20,08	9,27	5
906503	240	185	185	32	25	21,5	32,5	19	25,5	127	21,84	10,97	5
906504	240	240	185	32	28	21	32	21,5	29	128	25,85	14,89	5
906505	300	150	240	34	22	23,3	34	17	23,5	124	20,51	9,27	5
906506	300	185	240	34	25	23,3	34	19	25,5	128	22,58	11,19	5
906507	300	240	240	34	28	23,3	34	21,5	29	128	25,63	13,71	5
906508	300	300	240	34	32	23,3	34	24,5	32	138	30,56	18,58	5
906509	400	185	300	38	25	26	38,5	19	25,5	131	26,7	11,20	1
906210	400	240	300	38	28	26	38,5	21,5	29	129	29,3	13,70	1
906510	400	300	300	38	32	26	38,5	24,5	32	129	34,3	18,60	1

rm = round cable multi-wire
sm = sector cable multi-wire

Other dimensions available on request. Subject to technical changes.
Prices available on request.

* Please observe: Processing must be done exclusively with the C8 compression intended for it. Only then can you achieve the required pull-out values according to DIN EN 61238 Part 1. The key figures on the compression cable lug and the compression die must match.

Bolt connector



RoHS

Technical Data

Material: Aluminum alloy
Surface: tin plated
Dimensions: $d_1 = 42 \text{ mm}$
 $d_2 = 26.2 \text{ mm}$
 $L_1 = 220 \text{ mm}$

Design

- with divider
- the conductor terminal channel is provided with transverse grooves and oxidation protection

IEC test as per DIN EN 61238-1 Class A

These bolt connectors were developed especially for the ALU Powerline and successfully tested according to IEC– DIN EN 61238-1 Class A.

SICON bolt connector

185-400 + 500 mm² RE Al/Cu + 300 flex

The special design of the bolts has no fixed predetermined breaking point in the threads. Instead the bolt always reliably rips the surface of the terminal body.

- No protrusions on the terminal body
- Full utilization of the thread load carrying capacity for every conductor cross section
- No special tool required
- Gentle shearing off of the shear bolt makes tightening easier

Incorporate conductor cross section table

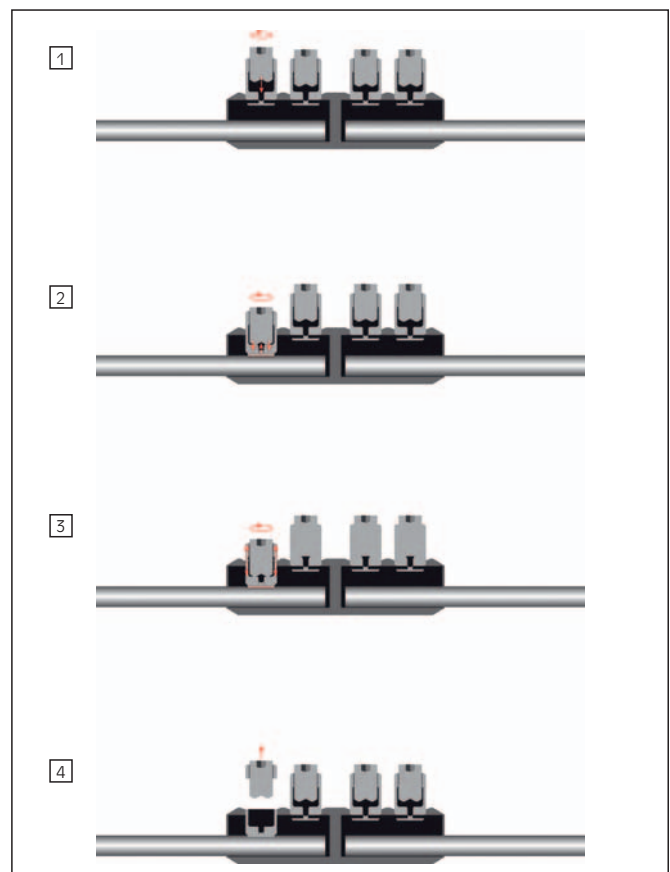
Conductor types as per DIN 60228 - 09/2005	Cross section area aluminum conductor	Cross section area copper conductor
fine-wire	185 - 240 (300 max. Ø 26 mm)	185 - 240 (300 max. Ø 26 mm)
SM 120°	185 (240 pressed round)	185 (240 pressed round)
SE 120°	185 - 240	
SM 90°	185 - 240	185 - 240
SE 90°	185 - 240	
RE	185 - 500	185 - 500
RMV	185 - 400	185 - 400
RM	185 - 400	185 - 400

Other conductor cross sections and dimensions on request.

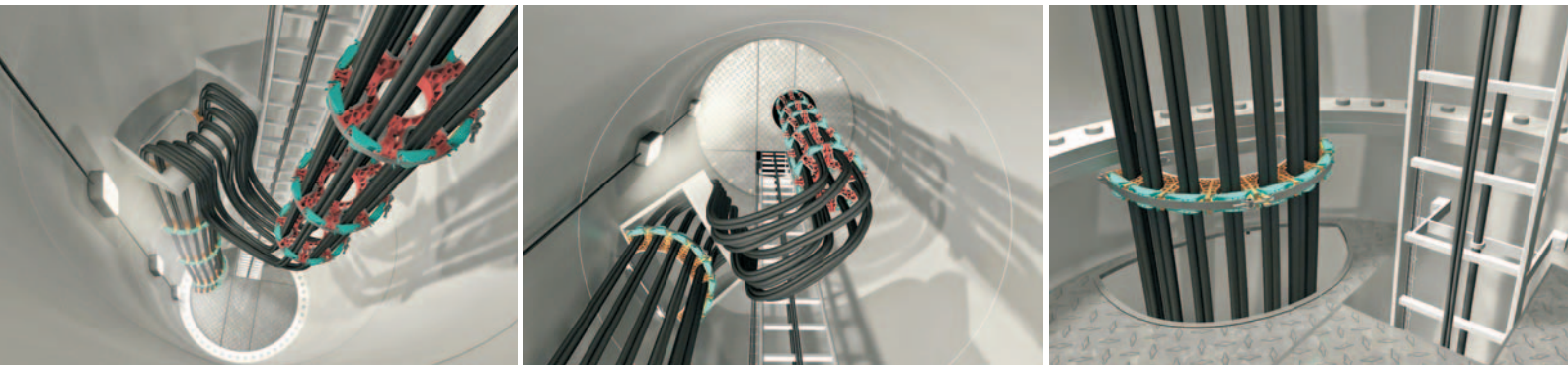
SICON –

The first stepless shear bolt

- 1 A standard hexagonal wrench works on a threaded pin which will be screwed into the hole of the stepless compression bolt. The traction is not interrupted by any step or notch on the bolt.
- 2 When screwing in the SICON bolt, the pressure plate loosens on the bottom of the bolt. The bolt now turns on this plate, in contrast to the conventional bolts, no head friction occurs on the conductor. The torque of the bolt creates the pressing pressure almost independently of the conductor material. With this significantly higher pressing pressures are achieved for aluminum conductors and even fine-wired conductors are not damaged.
- 3 The SICON bolt continues to turn until it reaches the shearing moment. When screwing in it is loaded in tension and when the shear moment is reached it is axially elongated and tears. In comparison to the conventional shear bolts, the bolt tears shears very gently and almost jerk-free.
- 4 The SICON bolt always shears directly on the surface of the terminal body. Thus the minimum possible protrusion is always achieved – independent of the conductor to be connected.



HYDAC - Fastening systems in the turret



TURRET - "half-moon" HRFLEX 3x to 9x (AC)



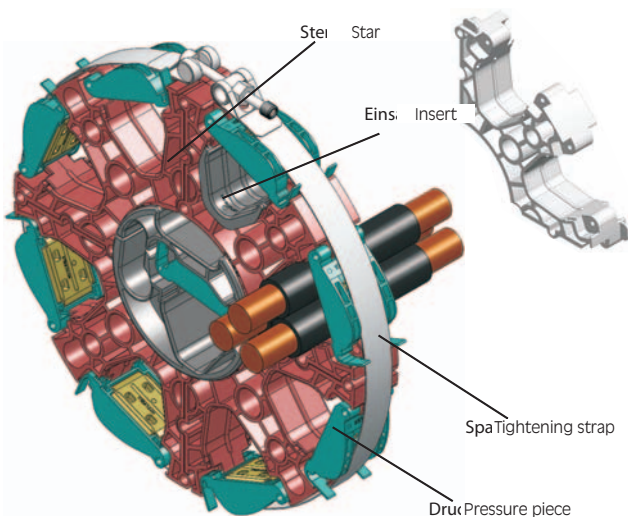
Requirements from the customer for the new cable fastening:

- Modular construction system
- Compact design
- Turret: Simple assembly of the fastening system
- Cable: Fast and simple type of fastening
- Good accessibility to all cables
- Simple to replace the cable
- Compensation of the cable tolerances up to 10%
- Short-circuit proof up to 20 kA
- Fire resistant material
- Temperature independent and reliable retention force of the cable
- No damage of the cable insulation (e.g., pinching)

Advantages:

- Flexible for power cable up to 10% Ø difference
- Cable diameter up to 35mm
- Fast and maintenance friendly assembly in the horizontal and vertical turret.
- For 1 – 3 power cables through inserts
- Fire resistant acc. to UL94-class V0
- Designed for short-circuit current up to 20 kA
- Better protection of insulation of the power cable
- Suitable for temperatures from -40°C (survival) bis +90°C
- Fast replacability of the individual cables
- Constant pressure force through spring assemblies

TURRET - "star" spacer



Test and inspections performed:

- Short-circuit test up to 41 kA (Short-circuit test with ASTA certificate existing)
- Cold test under load -40°C, 20h
- Hot test +90°C (copper core) under load
- Material acc. to UL94 – V0 (fire resistant)
- Load test > 30 days, outside of the premises
- Tensile test of the trigger
- Loading and bending test of the base frame
- Loop test
- Lifetime and aging test of the material
- Salt and spray test

Outstanding tests and certificates:

- GL - certificate

Cable clamps



Cable clamps K

For fastening single-wire and multiple-wire cables.

With additional elastic insert:

- 1) For padding the cable (over an outside diameter of ≥ 60 mm), to avoid damage during loading, or change of the ambient temperature.
- 2) In the area of riser lines of a desired height to accept the weight forces and secure fixation of the cables.
- 3) Fastening of cables with smaller outside diameter to expand the clamping range of the clamp.

Technical Data

Material:	Polyamide, glass fiber reinforced
Diameter range:	18 to 90 mm
Mechanical short-circuit protection:	10000 N
Max. tightening torque of the fastening screws:	5 Nm



Cable clamps KS

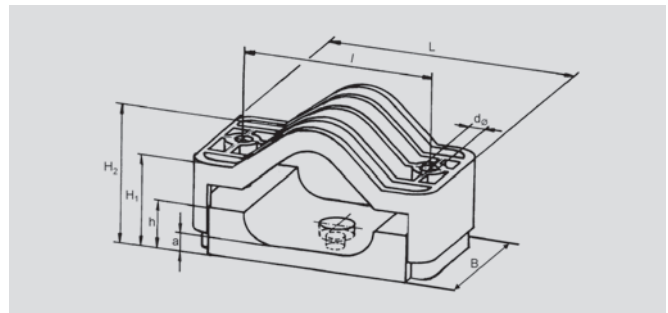
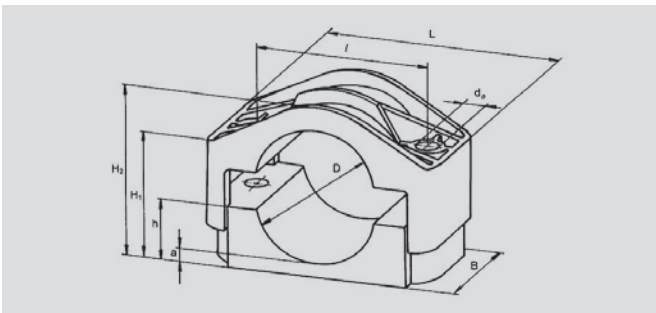
For fastening single-wire cable in diagonal bracing.

With additional elastic insert:

- 1) In the area of riser lines of a desired height to accept the weight forces and secure fixation of the cables.
- 2) Expansion of the clamping range of the clamp to fasten cables with smaller outside diameter.
- 3) The hole for a M10 bolt in the lower part of the cable clamps enables a direct fastening, e.g., on floors, walls, lattice, concrete or wood masts.

Technical Data

Material:	Polyamide, glass fiber reinforced
Diameter range:	22 to 46 mm
Mechanical short-circuit protection:	12500 N
Max. tightening torque of the fastening screws:	5 Nm



Cable clamps K

Type	D mm	Diameter with an elastic insert in mm	Diameter with an elastic insert in mm	L in mm	B in mm	l in mm	d in mm	H1 in mm	H2 in mm	h in mm	a in mm
K26/38	24-38	21-35	18-32	91	60	60	12	36-47	46-57	19	7
K36/52	36-52	32-49	29-46	108	60	75	12	43-56	56-72	24	8
K50/75	50-75	47-72	44-69	126	60	95	12	51-77	74-98	30	9
K66/90	66-90	63-87	60-84	158	70	120	14	65-89	91-115	42	10

Cable clamps KS

Type	D mm	Diameter with an elastic insert in mm	L in mm	B in mm	l in mm	d in mm	H1 in mm	H2 in mm	h in mm	a in mm
KS 25/36	25-36	22-33	150	80	110	12	55-75	77-97	35	15
KS 33/46	33-46	30-43	170	80	130	12	55-85	95-115	35	19

HELUWIND® WK-Multiclamp



Requirements of the customer for the new cable fastening

- Modular construction: For single or surface mounting (with several layers)
- Clamp bodies and inner adapter made of flame-retardant plastic PPV0:
 - Test and V0 classification corresponding to UL 94 (Vertical Burning Test)
- Fastening accessories (as for example, threaded pins, nuts, cover plates and any kind of sub-construction) made of steel or stainless steel – selection of suitable fastenings based on various test routines – dependent on application surroundings (e.g., dimensions, weight, and insulation of the used cables).

Material PPV0

To further improve the preventative fire protection, wind energy clamps are made out of the flame-retardant plastic PPV0. These were tested corresponding to UL 94 (Vertical Burning Test) and classified in the category V0.

UL 94 is a test method of the Underwriters Laboratories for inter-branch evaluation and classification of the flammability of plastics:

A test specimen is fastened in the vertical position and subjected to a flame for a duration of 10 seconds from the bottom out over an open ignition source.

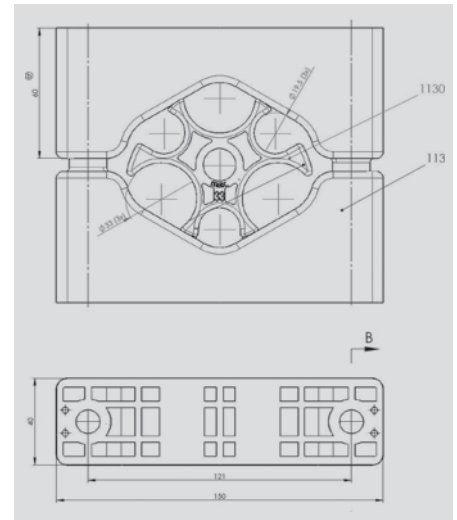
A second flame treatment was introduced for a duration of 10 seconds directly after extinguishing the test specimen.

V0 then the highest level and classified as the most flame resistant materials: Extinguish clamped test specimen within 10 seconds without burning drops of melted plastic.

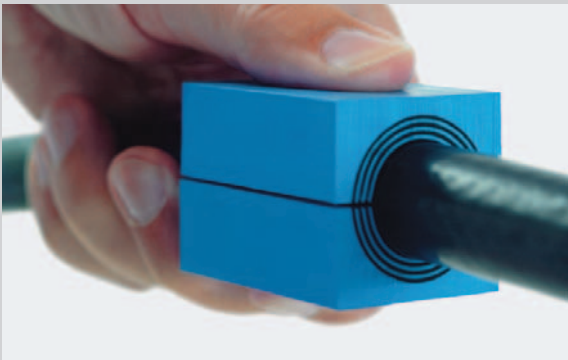
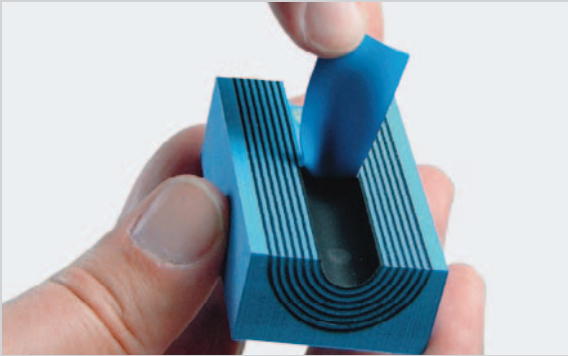
Special clamps

Individually fabricated fastening solutions for pipes, cables and other parts:

- Fabricated according to customer specifications or on the basis of own developments
- As machined or die cast version, depending on material, dimensions and quantity
- Fabrication of various plastics (PP oder PA), thermoplastics, elastomer or non-ferrous metals
- Flame-retardant materials according to various international fire protection standards



The Roxtec Sealing Solution



The Roxtec module partitions secure cable and pipe installations in demanding applications in wind-turbine engineering.

Special products for the housing insert and control-cabinet construction sectors are available.

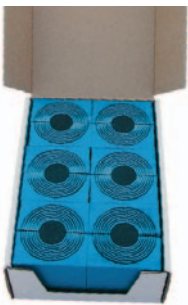
The solution:

Multidiameter™ – the flexible, adaptable Roxtec delayering technology provides thousands of constructors, fitters and operators secure and sophisticated lead-throughs for cables and pipes.

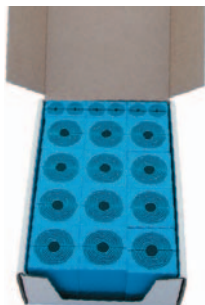
With our wide spectrum of frames and inserts you will achieve perfect sealing in every outer diameter. Even subsequent expansions to finished installations become problem-free.



Multidiameter™ Module kits for frame size 6



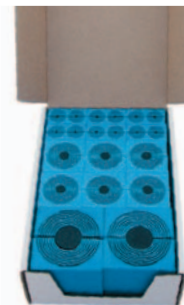
RM Kit 601



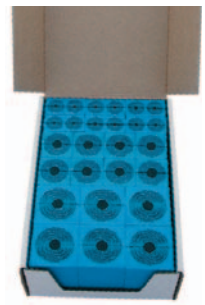
RM Kit 602



RM Kit 603

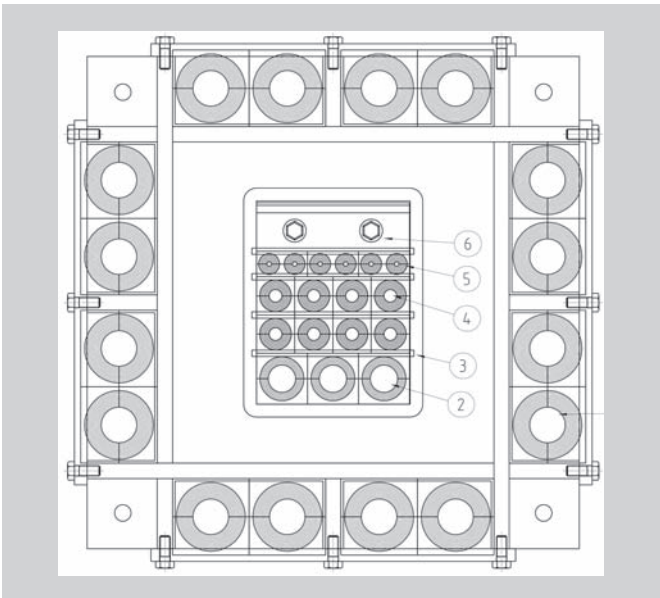
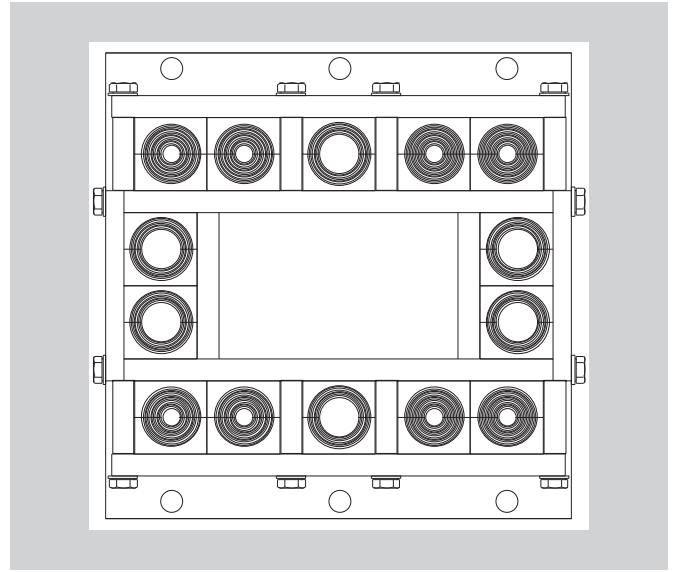


RM Kit 604

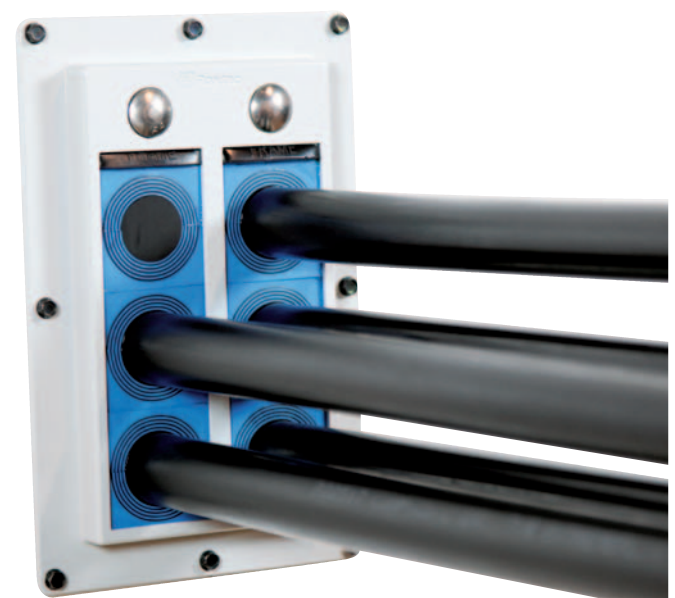


RM Kit 605

Example of use

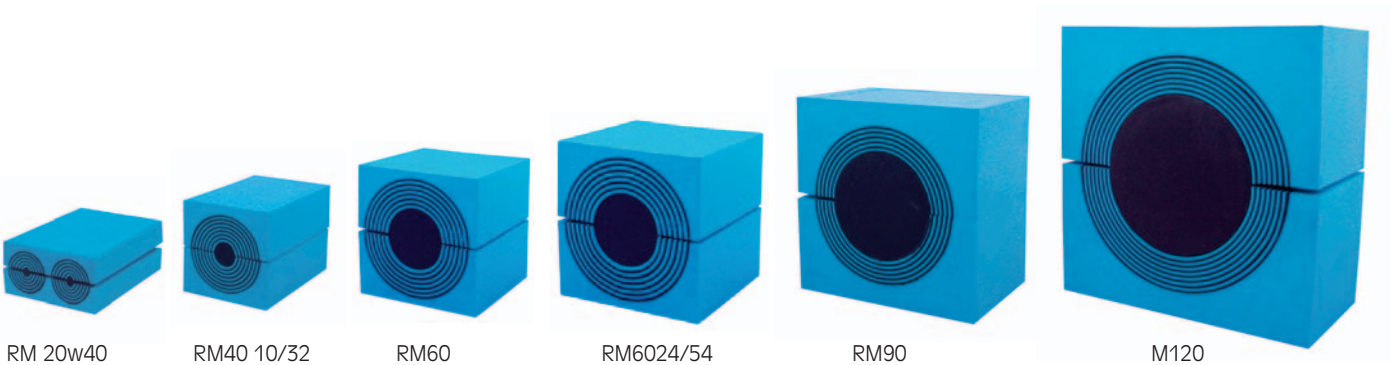


This layout facilitates separating power cables from signal and OWG connections



Separating the power cable in the cable retainers positively influences any arising stagnation temperatures

Multidiameter™ Modules with core



RM 20w40

RM40 10/32

RM60

RM6024/54

RM90

M120

Cable fittings from Tyco Electronics Raychem GmbH

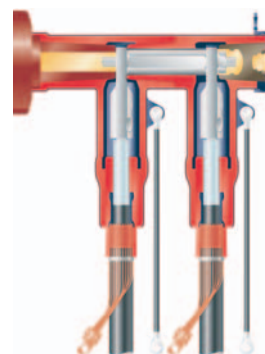
Cable connection RSTI

Screened, separable connection system RSTI, 630A up to 36kV, cross section: 25mm² - 630mm² for SF6-insulated switchgear with 630A bushings, Type C, 630/1250A according to CENELEC HD506 S1, EN 50180 and EN 50181



Coupling plug RSTI-CC

Screened, separable coupling connection system RSTI-CC, 630A up to 36kV, cross section: 25mm² - 630mm² in combination with connection system RSTI for SF6-insulated switchgear with 630A bushings, Type C, 630/1250A according to CENELEC HD506 S1, EN 50180 and EN 50181



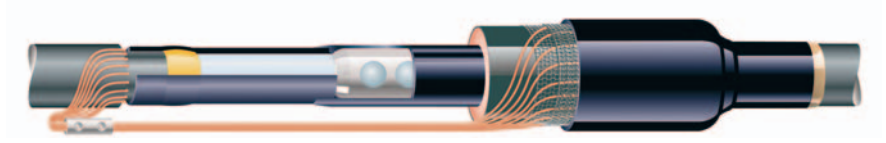
Typical application in a switching system.

Cable fittings from Tyco Electronics Raychem GmbH

Medium-voltage power cables

Heat shrinkable joints MXSU

Heat shrinkable joints MXSU for polymeric insulated cables up to 36kV, cross section: 25mm² - 500mm² incl. mechanical connectors



Heat shrinkable joints SXSU

Heat shrinkable joints SXSU for polymeric insulated cables up to 36kV, cross section: 25mm² - 1200mm² for compression joints



Low-voltage power cables

Heat shrinkable joints UAGA

Heat shrinkable joints UAGA for polymeric insulated cables up to 1kV, cross section: 1.5mm² - 300mm²



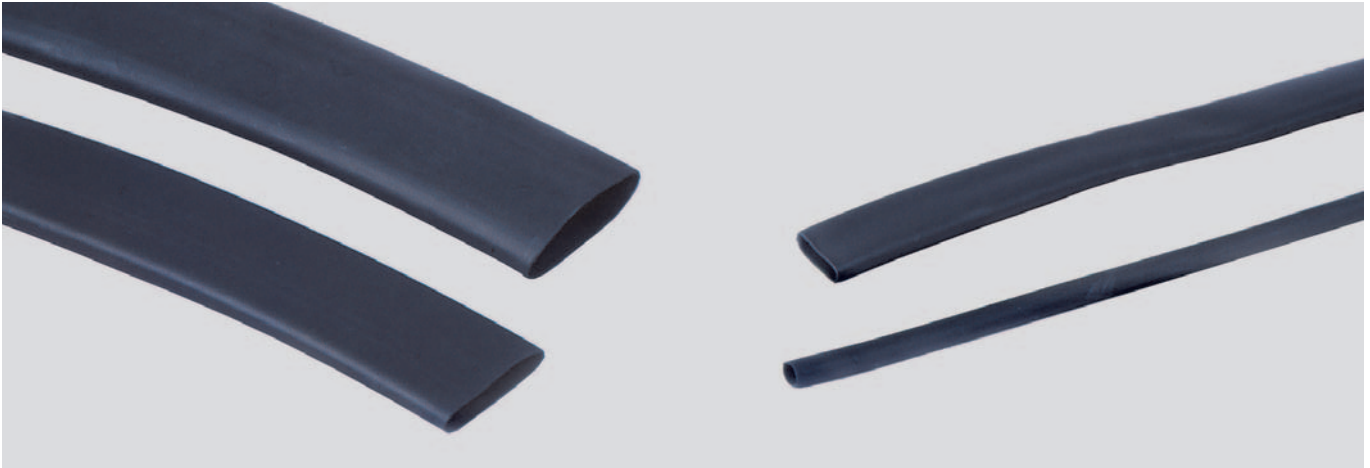
Heat shrinkable joints VMDU

Heat shrinkable joints VMDU for control cables, cross section: 4 - 75 x 1.5mm² - 2,5mm²



Shrink-on tube SK-D

Shrink-on tube SK-D heavy walled with inner adhesive



Material

Crosslinked Polyolefine with internal adhesive
Colour: black

Technical Data

Temperature range: -55°C up to +90°C
Shrinking temperature: +120°C
Shrinking rate: 3 : 1
Dielectric Strength: 20kV/mm
Adhesive softening point: +80°C up to +90°C

Properties

- halogen-free

Application

For protection of cable joints and terminations for usage at low voltage (600V).

Shrink-on tube SK-D heavy walled with inner adhesive

Interior diameter before shrinking in mm	Interior diameter after shrinking in mm	Wall thickness after shrinking in mm	Rods to in mm
8,9	3,0	1,8	1,22
13,0	4,1	2,4	1,22
19,1	6,1	2,4	1,22
27,9	8,9	3,0	1,22
38,1	11,9	4,1	1,22
50,8	16,0	4,1	1,22
68,1	22,1	4,1	1,22
89,9	30,0	4,1	1,22
119,9	39,9	4,2	1,22

Dimensions and specifications may be changed without prior notice.



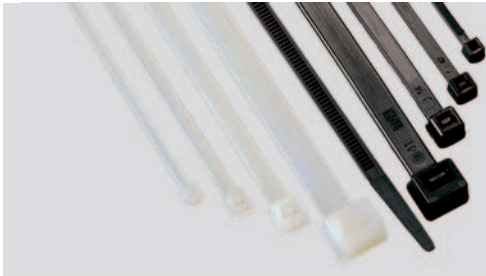
You can find detailed information in our new HELUTOP® brochure

- **Product range of cable glands**
 - incl. lock nuts and adapters
 - incl. expansions and reductions
- **clear display**
 - Plastic, stainless steel, brass and EMC application
- **detailed description**
 - incl. applications and assembly information

You can find detailed information in our accessories catalogue. This catalogue will give you a comprehensive overview of the products.

Additional accessories

Cable ties



Cable ties T

Cable ties with plastic lugs for bundling and mounting cables and wires.

Material

polyamide 6.6
halogen-free, silicone-free

Technical Data

Temperature range: -40°C up to +80°C flammability according to UL94 V2



Cable ties E

Cable ties made of stainless steel with ball locking system for use under extreme stresses such as high temperatures, caustic environment, high tensile load.

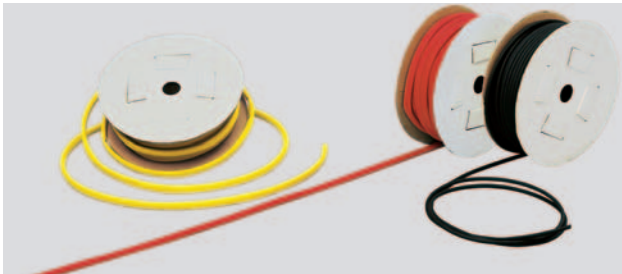
Material

Stainless steel

Technical Data

Temperature range: -80°C up to +538°C. Approvals: GL, DNV, Lloyd's, UL

Shrink tubing



Shrinking tubing SPSP coils

Polyolefine shrink tubing for restoring insulation, for sealing electrical components.

Material

PO (Polyolefine) self-clearing

Technical Data

Temperature range: -55°C up to +135°C
Shrinking temperature: +100°C, shrinkage rate: 2:1

Cable conduit



Helucond PA6-UL-F/B

Cable protecting hose, heavy, for high mechanical loads, high load capacity.

Material

Mod. polyamide PA 6. halogen-free, cadmium-free.
black: UV-resistant. Flammability according to UL 94: V0

Technical Data

Temperature range: -40°C up to +120°C (briefly: up to +160°C)
Load/100mm for NW 16/17: approx. 750 N



Quick plug coupling

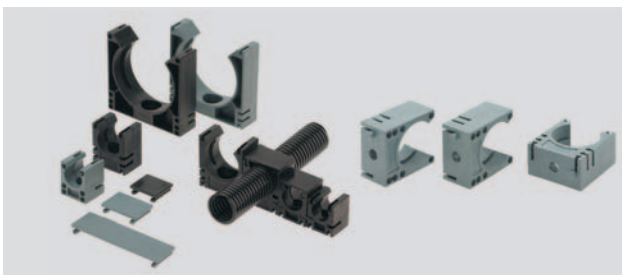
For secure and fast connection, fitting for parallel coiled flexible tubes, type HELUcond.

Material

PA

Technical Data

Protection class: from IP 65



SH system mount

System mount for flexible tube HELUcond.

Universal system mount with optional brackets for external loads.

Material

Polyamid PA 6. Halogen-free.
Flammability according to UL 94: HB

Technical Data

Temperature range: -40°C up to +110°C

Tools

Cable cutter KST 1

Cable cutter KST 1 with telescope grip for cutting range up to 26 mm.

Part no. 99087



WK-API 18

Technical Data

- max. lift: 42 mm
- Operating pressure: 700 bar (70 MPa)
- Dimensions: W 95 mm x L 430 mm x H 310 mm
- Weight: 8.3 kg
- Battery (rechargeable): Lithium-ion technology 14.4 V 3.0 Ah
- Charger: 220-240 V; 50-60 Hz; 7.2-18 V
- Charging time: approx. 50 minutes
- ALU PowerLine (fine wires) up to 400 mm²
- ALU KL 2 up to 500 mm²

Part no. 906647



WK Electro-hydraulic battery pump

This battery pump is suitable for the operation of hydraulic cutting and pressing tools up to max. 700 bar operating pressure.

Technical Data

- Operating pressure: 700 bar (70MPa)
- Dimensions: 290 mm x 190 mm x 205 mm
- Weight: 4.6 kg (incl. battery)
- Output: 200 W
- Battery (rechargeable): Lithium-ion technology 18V DC 3.0 Ah
- Operating temp.: -20°C to +55°C
- C8 pressing

Part no. 906207



WK Electro-hydraulic radial piston pump

Technical Data

- Flow: 0.64 l/min.
 - Operating pressure: 700 bar
 - Motor voltage: 230 V, 50 Hz
 - Rated power: 0.75 kW
- Complete with transport cart, electrical controls, oil sight glass, motor safety switch, foot switch with 3-point safety control, safety valve, solenoid valve and 3 m high-pressure hose
Without pressing head.
Optionally available as 400 V variant.

Part no. 906721



CCC-Certification for China

The HELUKABEL® GmbH had obtain for their products the CCC-Certification for the following products:

中国国家强制性产品认证证书

证书编号: 2003010105076366

委托人名称、地址
德国和龙电缆有限公司
德国柏林 (Hennigsdorf) 建造街8/12号

生产者(制造商)名称、地址
德国和龙电缆有限公司
德国柏林 (Hennigsdorf) 建造街8/12号

生产企业名称、地址
德国和龙电缆有限公司
德国莱茵兰巴特 (Wichthaus) 瑞希特街24号

产品名称和系列、规格、型号
聚氯乙烯绝缘聚氯乙烯护套全铜芯电缆
60227 IEC 7410(VV) 300/500V 0.5-2.5(2-60芯), 60227 IEC 7410(VV) 300/500V 0.5-2.5(2-60芯); (颜色: 灰色)

产品标准和技术要求
GB/T 5023.7-2008/IEC 60227-7:2003

上述产品符合强制性产品认证实施规则
CNCA-01C-002:2007的要求, 特此认证。

发证日期: 2010年04月26日 有效期至: 2015年04月26日
证书有效期内本证书的有效性依据发证机构的定期监督获得保持。
本证书为发证证书, 证书首次颁发日期: 2003年08月13日
本证书的相关信息可通过国家认证监督管理委员会www.cca.gov.cn查询

主任: 
中国质量认证中心
中国·北京·朝阳区北辰西路108号9层 100070
http://www.cqc.com.cn

CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

No.: 2003010105076366

NAME AND ADDRESS OF THE APPLICANT
HELLU KABEL GmbH
Dieselstrasse 8-12, D-71282 Hennigsdorf / Stuttgart, Germany

NAME AND ADDRESS OF THE MANUFACTURER
HELLU KABEL GmbH
Dieselstrasse 8-12, D-71282 Hennigsdorf / Stuttgart, Germany

NAME AND ADDRESS OF THE FACTORY
HELLUKABEL GmbH
Richtsweg24, D-91578 Windhuch, Germany

NAME, MODEL AND SPECIFICATION
PVC insulated and PVC sheathed oil-resistant flexible cables
60227 IEC 7410(VV) 300/500V 0.5-2.5(2-60 cores); 60227 IEC 7410(VV) 300/500V 0.5-2.5(2-60 cores); (color: grey)

THE STANDARDS AND TECHNICAL REQUIREMENTS FOR THE PRODUCTS
GB/T 5023.7-2008/IEC 60227-7:2003

This is to certify that the above mentioned products have met the requirements of implementation rules for compulsory certification (COP No. CNCA-01C-002:2007).

Date of issue: Apr. 26, 2010 Date of expiry: Apr. 26, 2015
Validity of this certificate is subject to positive result of the regular follow up inspection by issuing certification body until the expiry date.
Date of original certification: Aug. 13, 2003
This certificate can be verified through CCA's website: www.cca.gov.cn

President: 
Wang Kejian
CHINA QUALITY CERTIFICATION CENTRE
Section 9, No. 108, Nanshuan Xilu, Beijing 100070 P.R.China
http://www.cqc.com.cn

PVC insulated and PVC sheathed oil-resistant flexible cables according to GB 5023.7-1997 227 IEC 74 (RVVYP) 300/500V 0,5-2,5 mm² (2-60 cores) 227 IEC 75 (RVVY) 300/500V 0,5-2,5 mm² (2-60 cores) Colour: grey
H05 VV5-F
H05 VVC4V5-K

中国国家强制性产品认证证书

证书编号: 2003010105076365

委托人名称、地址
德国和龙电缆有限公司
德国柏林 (Hennigsdorf) 建造街8/12号

生产者(制造商)名称、地址
德国和龙电缆有限公司
德国柏林 (Hennigsdorf) 建造街8/12号

生产企业名称、地址
德国和龙电缆有限公司
德国莱茵兰巴特 (Wichthaus) 瑞希特街24号

产品名称和系列、规格、型号
聚氯乙烯绝缘聚氯乙烯护套铜芯电缆
60227 IEC 62187 450/750V 1.5-240; 60227 IEC 60187 300/500V 0.5-1;

产品标准和技术要求
GB/T 5023.3-2008/IEC 60227-3:1997

上述产品符合强制性产品认证实施规则
CNCA-01C-002:2007的要求, 特此认证。

发证日期: 2010年04月26日 有效期至: 2015年04月26日
证书有效期内本证书的有效性依据发证机构的定期监督获得保持。
本证书为发证证书, 证书首次颁发日期: 2003年08月13日
本证书的相关信息可通过国家认证监督管理委员会www.cca.gov.cn查询

主任: 
中国质量认证中心
中国·北京·朝阳区北辰西路108号9层 100070
http://www.cqc.com.cn

CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

No.: 2003010105076365

NAME AND ADDRESS OF THE APPLICANT
HELLU KABEL GmbH
Dieselstrasse 8-12, D-71282 Hennigsdorf / Stuttgart, Germany

NAME AND ADDRESS OF THE MANUFACTURER
HELLU KABEL GmbH
Dieselstrasse 8-12, D-71282 Hennigsdorf / Stuttgart, Germany


NAME AND ADDRESS OF THE FACTORY
HELLUKABEL GmbH
Richtsweg24, D-91578 Windhuch, Germany

NAME, MODEL AND SPECIFICATION
PVC insulated non-sheathed cables and wires
60227 IEC 62187 450/750V 1.5-240; 60227 IEC 60187 300/500V 0.5-1;

THE STANDARDS AND TECHNICAL REQUIREMENTS FOR THE PRODUCTS
GB/T 5023.3-2008/IEC 60227-3:1997

This is to certify that the above mentioned products have met the requirements of implementation rules for compulsory certification (COP No. CNCA-01C-002:2007).

Date of issue: Apr. 26, 2010 Date of expiry: Apr. 26, 2015
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Date of original certification: Aug. 13, 2003
This certificate can be verified through CCA's website: www.cca.gov.cn

President: 
Wang Kejian
CHINA QUALITY CERTIFICATION CENTRE
Section 9, No. 108, Nanshuan Xilu, Beijing 100070 P.R.China
http://www.cqc.com.cn

PVC insulated non-sheathed cables and wires according to GB 5023.3-1997 227 IEC 02 (RV) 450/750 1,5-240 mm² 227 IEC 06 (RV) 300/500 0,5-1 mm²
H05 V-K
H07 V-K

中国国家强制性产品认证证书

证书编号: 2004010105106701

委托人名称、地址
德国和龙电缆有限公司
德国柏林 (Hennigsdorf) 建造街8/12号

生产者(制造商)名称、地址
德国和龙电缆有限公司
德国柏林 (Hennigsdorf) 建造街8/12号

生产企业名称、地址
德国和龙电缆有限公司
德国莱茵兰巴特 (Wichthaus) 瑞希特街24号

产品名称和系列、规格、型号
聚氯乙烯绝缘铜芯电缆
60227 IEC 5318(V) 300/500V 0.75-2.5(2-32; 24; 18; 12; 6); 60227 IEC 5318(V) 300/500V 0.75-2.5(18; 12; 6); (颜色: 灰色)

产品标准和技术要求
GB/T 5023.5-2008/IEC 60227-5:2003及聚氯乙烯绝缘铜芯电缆补充要求 (CNCA-01C-002:2007 附件6)

上述产品符合强制性产品认证实施规则
CNCA-01C-002:2007的要求, 特此认证。

发证日期: 2010年04月26日 有效期至: 2015年04月26日
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本证书为发证证书, 证书首次颁发日期: 2004年02月10日
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主任: 
中国质量认证中心
中国·北京·朝阳区北辰西路108号9层 100070
http://www.cqc.com.cn

CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

No.: 2004010105106701

NAME AND ADDRESS OF THE APPLICANT
HELLU KABEL GmbH
Dieselstrasse 8-12, D-71282 Hennigsdorf / Stuttgart, Germany

NAME AND ADDRESS OF THE MANUFACTURER
HELLU KABEL GmbH
Dieselstrasse 8-12, D-71282 Hennigsdorf / Stuttgart, Germany

NAME AND ADDRESS OF THE FACTORY
HELLUKABEL GmbH
Richtsweg24, D-91578 Windhuch, Germany

NAME, MODEL AND SPECIFICATION
PVC insulated flexible cables and wires
60227 IEC 5318(V) 300/500V 0.75-2.5(2-32; 24; 18; 12; 6); 60227 IEC 5318(V) 300/500V 0.75-2.5(18; 12; 6); (color: grey)

THE STANDARDS AND TECHNICAL REQUIREMENTS FOR THE PRODUCTS
GB/T 5023.5-2008/IEC 60227-5:2003 and supplementary requirements for PVC insulated copper conductors (CNCA-01C-002:2007 Annex 6)

This is to certify that the above mentioned products have met the requirements of implementation rules for compulsory certification (COP No. CNCA-01C-002:2007).

Date of issue: Apr. 26, 2010 Date of expiry: Apr. 26, 2015
Validity of this certificate is subject to positive result of the regular follow up inspection by issuing certification body until the expiry date.
Date of original certification: Feb. 10, 2004
This certificate can be verified through CCA's website: www.cca.gov.cn

President: 
Wang Kejian
CHINA QUALITY CERTIFICATION CENTRE
Section 9, No. 108, Nanshuan Xilu, Beijing 100070 P.R.China
http://www.cqc.com.cn

PVC insulated flexible cables and wires according to GB 5023.5-1997 227 IEC 06 (RV) 300/500 0,75-2,5 mm² (2-41 cores)
JZ-500, OZ-500, JB-500, OB-500, Y-CY-JZ, Y-CY-OZ, Y-CY-JB, Y-CY-OB, SY-JZ, SY-OZ, SY-JB, SY-OB, JZ-HF, OZ-HF, JZ-HF-CY, OZ-HF-CY, F-CY-JZ, F-CY-OZ, OZ-BL, OZ-BL-CY

Achieving success through quality and innovation

Product certificates document the tested quality level of our products

ISO 9000ff is used as the basis for quality management processes carried out at HELUKABEL®. Product certificates issued by accredited institutions also make it easier for you to evaluate your suppliers.



Our continuous quality improvement process enables us not only to maintain a consistently high quality standard, it also ensures continued development and new product development.

Our commitment to protecting the environment can be seen in our-rate environment management systems.

Glossary of Therms

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Glossary of Therms

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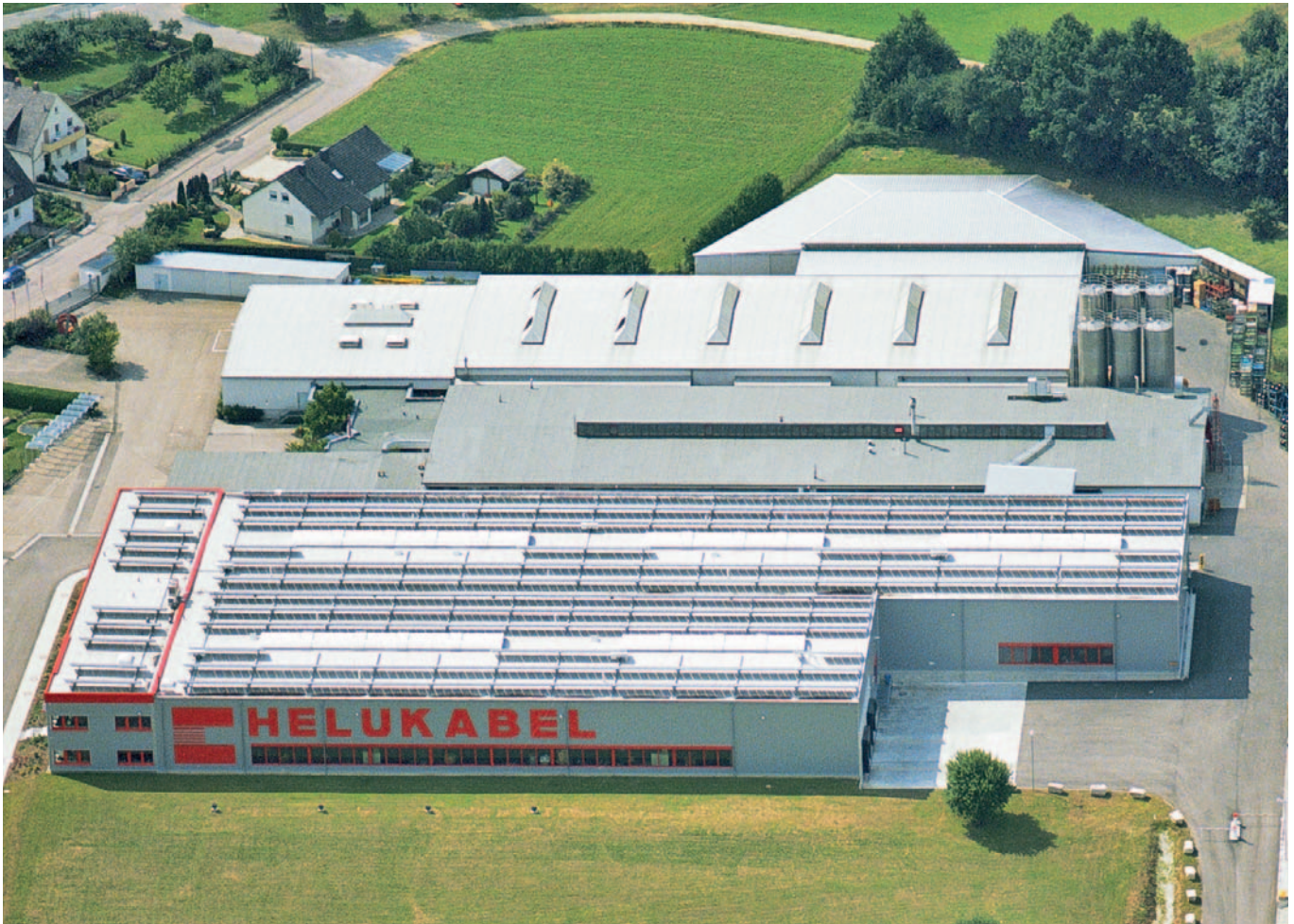


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