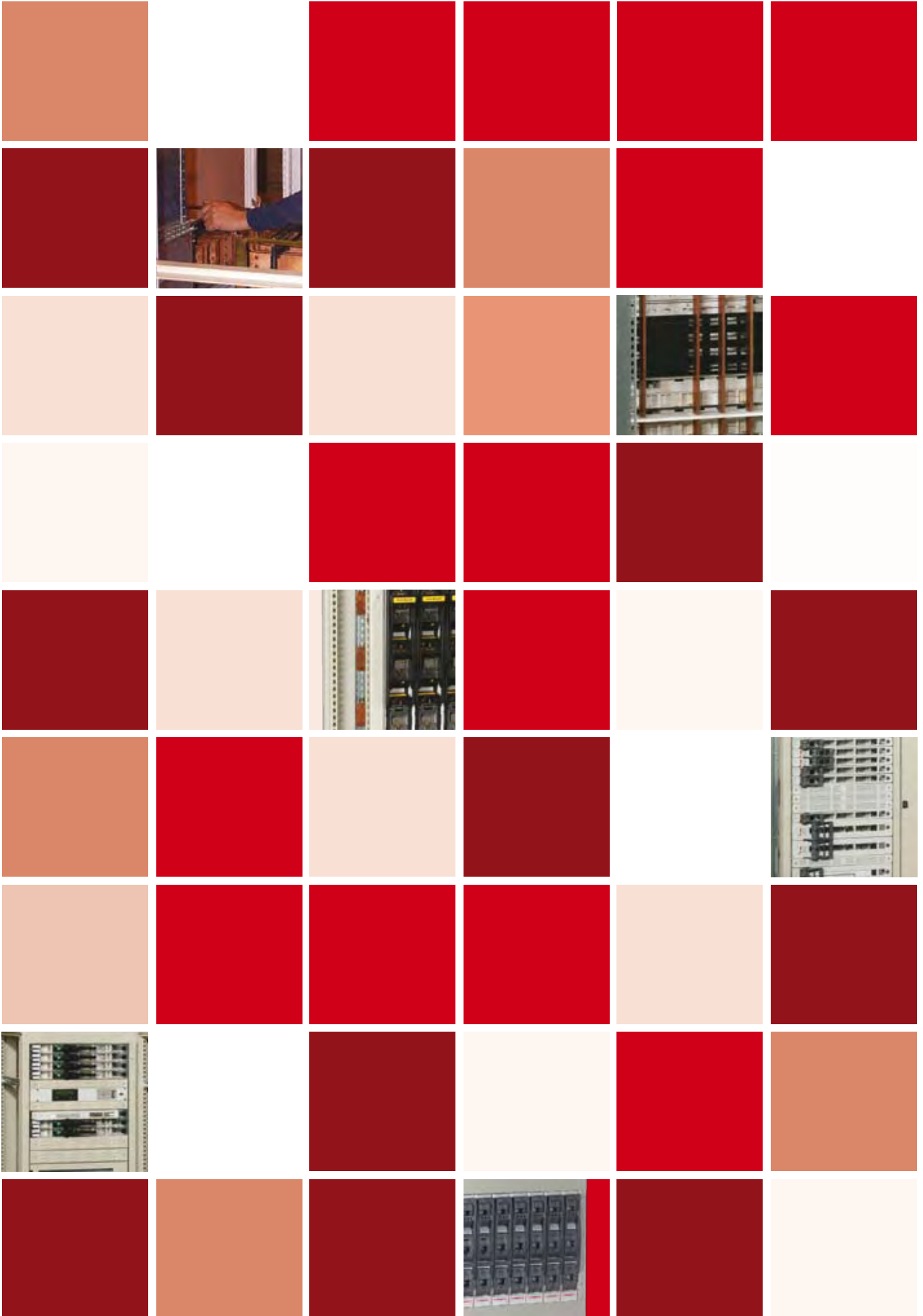


Power and distribution



Power and distribution

MAM

MULTI-MOUNT®

SPECIFICATIONS

IP55/NEMA 12
Wallmounting enclosure
Single door
H: 800-1200
W: 600
D: 210



MULTI-FLEX®

SPECIFICATIONS

Low voltage switchgear enclosure
H: 1800-2200 U
W: 400-1200 U
D: 600 U

MCSL



MKSL

MULTI-FLEX®

SPECIFICATIONS

Motor Control Center/Switchgear enclosure
H: 200
W: 600 - 1200
D: 400





MULTI-FLEX®

MCF

SPECIFICATIONS

IP55/NEMA12,13 IK10
Flange Mount disconnect
combination enclosure

H: 1800 - 2000
W: 800 - 1000
D: 400 - 600



MCBA/MCBJ

SPECIFICATIONS

IP30/NEMA1
Enclosure for ABB and
Jean Mueller cassettes

H: 2000
W: 1000 - 1200
D: 600



MCBA/V

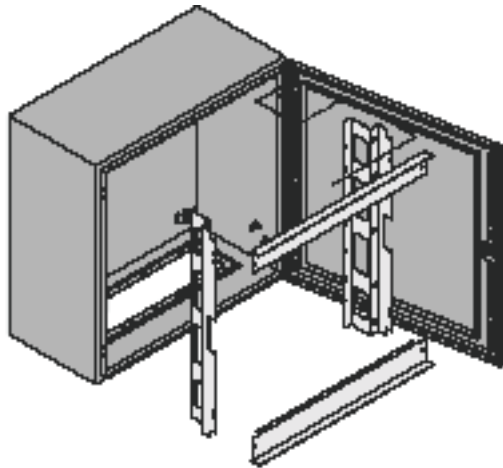
SPECIFICATIONS

IP30/NEMA1
Enclosure for vertical ABB
and Jean Mueller cassettes

H: 2000
W: 800-1000
D: 600

MultiMount accessories

ACM, Modular vertical support



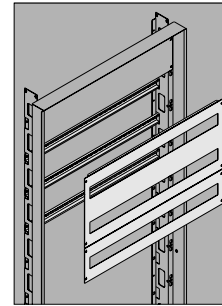
Description: Support kit for the mounting of the modular panels and components by steps of 150 mm. A space for equipment of 46 mm high is provided. Independent of the depth of the enclosure, the system could be used in combination with glazed door and a mounting plate is still usable. 50 mm of space is provided for the equipment between the door and the panels. In order to allow an easy installation of the equipment and the wiring, the system can be assembled, fully equipped and pre-wired outside the enclosure, and then fitted into the enclosure. Cut-outs are provided on the sides of the vertical profiles for cable routing. The kit contains two vertical profiles, top and bottom blanking plates and fixing material.

Material: 1.5 mm steel plate. structure powder paint, RAL 7035.

Pack. quantity: 1 kit with fitting material.

H	W	Steps of 50mm	N° of modules	Part No.
600	600	9	24	ACM06060R5
	800	9	35	ACM06080R5
800	600	15	24	ACM08060R5
	800	15	35	ACM08080R5
1000	600	18	24	ACM10060R5
	800	18	35	ACM10080R5
1200	600	21	24	ACM12060R5
	800	21	35	ACM12080R5

MCP, Modular slotted panel



Description: Front panel for modules. Provided with one DIN rail (PP 1535) per row for MCB (Mini Circuit Bracker).

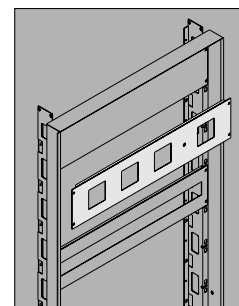
Material: 1mm steel plate.

Finish: Structure powder paint, RAL 7035.

Pack. quantity: 1 piece with mounting material.

H	W	N° of modules	N° of rows	Part No.
150	600	24/1	1	MCP1506R5
	800	35/1	1	MCP1508R5
200	600	24/1	1	MCP2006R5
	800	35/1	1	MCP2008R5
300	600	48/2	2	MCP3006R5
	800	70/2	2	MCP3008R5
450	600	72/3	3	MCP4506R5
	800	105/3	3	MCP4508R5
600	600	96/4	4	MCP6006R5
	800	140/4	4	MCP6008R5

MIP, Modular instrumentation panel



Description: Front panel with cut outs for control meters and network analyser. To be mounted in a CMV profile for MF or in an ACM for a MM enclosure.

Material: 1 mm steel plate.

Finish: Structure powder paint, RAL 7035.

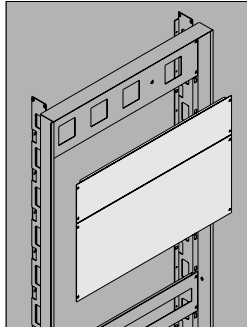
Pack. quantity: 1 piece with mounting material.

W	h	N° of cut outs	Dim	Part No.
600	150	1	72 x 72	MIP1506-1PR5
		2	72 x 72	MIP1506-2PR5
		4	72 x 72	MIP1506-4PR5
		2	92 x 92	MIP1506-2GR5
800	150	1	72 x 72	MIP1508-1PR5
		2	72 x 72	MIP1508-2PR5
		4	72 x 72	MIP1508-4PR5
		2	92 x 92	MIP1508-2GR5
600	200	1	144 x 144	MIP2006-1SR5
		1	144 x 144	MIP2008-1SR5



MultiMount accessories

MBP, Modular blank panel



Description: Front blank panel to cover unused space or to mount special equipment. Panels are with flanged top and bottom to provide extra stiffness.

Material: 1.5 mm steel plate.

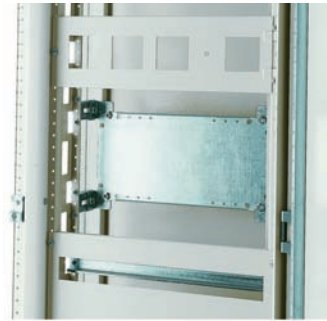
Finish: Structure powder paint, RAL 7035.

Pack. quantity: 1 piece with mounting material.

W	H	MCCB	Steps of 50mm	Part No.
600	50		1	MBP0506R5
800	50		1	MBP0508R5
600	100		2	MBP1006R5
800	100		2	MBP1008R5
600	150		3	MBP1506R5
800	150		3	MBP1508R5
600	200	250A (H)	4	MBP2006R5
800	200	250A (H)	4	MBP2008R5
600	300	250A (V)	6	MBP3006R5
800	300	250A (V)	6	MBP3008R5
600	450	400A (V)	9	MBP4506R5
800	450	400A (V)	9	MBP4508R5
600	600	800A (V)	12	MBP6006R5
800	600	800A (V)	12	MBP6008R5
600	900	1600A (V)	18	MBP9006R5
800	900	2500A (V)	18	MBP9008R5

H: MCCB in horizontal assembly, V: MCCB in vertical assembly.

AMM, Modular system mounting plate



Description: Allowing fixing of MCCB up to 400 A of any manufacturer. Requires MD depth adjust kit (sold separately).

Material: 2 mm galvanised steel plate.

Pack. quantity: 1 piece with fitting material.

W	h	MCCB	Steps of 50mm	Part No.
600	194	125/160/250A (H)	4	AMM604
	244	125/160/250A (V)	6	AMM606
	294	400A (V)	9	AMM609
800	194	125/160/250A (H)	4	AMM804
	244	125/160/250A (V)	6	AMM806
	294	400A (V)	9	AMM809

H: MCCB in horizontal assembly, V: MCCB in vertical assembly.

MD, Modular system depth adjust Kit



Description: Mounted on to the back of the ACM or CMV modular system frames, allowing the fixing of the AMM mounting plate. The mounting plate is adjustable in depth between 60 and 150 mm from the front covers.

Material: 2.0 mm galvanised steel.

Pack. quantity: 4 pieces with fitting material.

Part No.
MD4



Eldon Power System information

ELDON POWER SYSTEM

Eldon's new modular low voltage system is based on the existing Multi-Flex mild steel floor standing enclosure, and therefore allows the user to design and build a complete solution from essentially a standard range of enclosures and accessories.

There is no limit to the size of project this system can handle (small, medium and large assemblies), and it can be used for a variety of different applications:

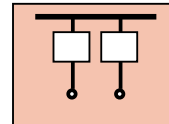
- Control applications.
- Electrical distribution panels.
- Power systems.

To further enhance the flexibility of the system, the designer or end user can specify any brand of electrical components to be used, as there are no restrictions to make, type or size.

The frame is a fully welded construction which helps guarantee the highest rigidity, and the possibility of coping with the very highest Icc (short-circuit current) requirements.

With the Eldon Power System different levels of segregation can be made according to EN 60439-1

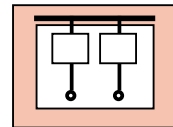
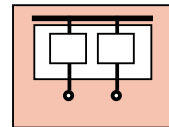
Form 1, There are not any internal separation.



Form 2, Separation of busbars from the functional units.

Form 2a: Terminals for external conductors not separated from busbars

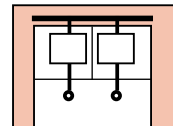
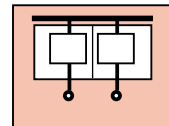
Form 2b: Terminals for external conductors separated from busbars



Form 3, The Form 2 separations, additional separation of all functional units from one another and separation of terminals for external conductors from the functional units.

Form 3a: Terminals for external conductors not separated from busbars

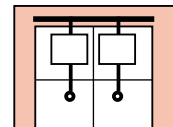
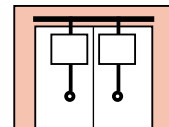
Form 3b: Terminals for external conductors separated from busbars



Form 4, The Form 2 separations, additional separation of terminals for external conductors from those of any other functional unit and the busbar.

Form 4a: Terminals for external conductors in the same compartment as the associated functional unit

Form 4b: Terminals for external conductors not in the same compartment as the associated functional unit, but in individual spaces or compartments



One or more of the following conditions can be attained by dividing assemblies by means of partitions or barriers into separate compartments or enclosed protected spaces:

Protection against contact with hazardous parts belonging to the adjacent functional units. The degree of protection shall be at least IPXXB.

Protection against the passage of solid foreign bodies from one unit of an assembly to an adjacent unit. The degree of protection shall be at least IP2X.

The Eldon Power System has been tested by ETL-Semko and ASTA according to IEC/EN 60439-1. The TTA tests were performed on fully equipped assemblies containing different IP ratings and various forms of internal segregation, and other system features such as a combination of different busbar systems.

One of the main advantages of the Eldon system is that you are able to manufacture a fully type-tested low-voltage switchgear and controlgear assembly (TTA) according to EN 60439-1. However, every system should meet the following conditions:

- The switching devices and components incorporated in the assembly shall comply with the relevant IEC standards, and should be suitable for the particular application with respect to the external design, rated voltages, rated currents, rated frequency, short-circuit protection, etc.
- The electrical connections inside the assembly must comply with EN 60439-1 7.8.

By following these standards and the relevant mounting instructions, the user only has to carry out the usual routine testing once the system is fully assembled, instead of any additional type testing (Wiring and electrical operation, dielectric properties and protective measures according to EN 60439-1 8).



Short-circuit test

Type test carried out

1. Temperature-rise limit
2. Dielectric properties
3. Short-circuit withstand strength
4. Effectiveness of the protective circuit
5. Clearances and creepage distances
6. Mechanical operation
7. Degree of protection
8. EMC test



Thermal test



Eldon Power System information

Eldon Power System electrical features

Rated operational voltage: Up to 690 V
Rated insulation voltage: Up to 690 V
Rated impulse withstand voltage: Up to 4000 V
Rated current: Up to 5000 A

Rated short-time short-circuit current: 85 kA
Rated peak short-circuit current: 187 kA
Rated frequency: 40 – 60 Hz

Protection degree:

From IP20 with ventilation roof up to IP55.

Various types of compartments for:



Shelf mounted Air circuit breakers.



Plug-in units.

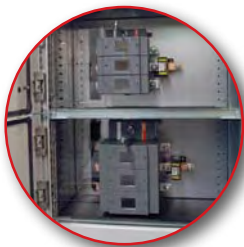


Fixed connected units to “next to” or “behind” busbars.



Modular components mounted on DIN-rail.
Components mounted on a mounting plate.

Internal segregation:



From Form 1 to Form 4 according to EN60439-1, using standard accessories.

External access:



Full height plain or transparent door.
Partial panel. (busbar section).
Partial door.
(All with different locking combinations, to maximise security).

Different types of busbars:



Horizontal main busbar behind compartments up to 3600 A.



Horizontal main busbar on top or bottom up to 5000 A.



Vertical busbar behind compartments up to 1900 A.



Vertical busbar next to compartments up to 1700 A.

MCSL/MKSL P&D



Based on the well-proven Multi-Flex design, Eldon has developed a dedicated version for Power&Distribution assemblies. This version is a standard Multi-Flex enclosure without door and bottom plates, which let us to divide it in different sections, and cover them with the required panels/doors configuration.

A Multi-Flex single frame can be divided in vertical sections with the standard accessories and depending on the requirements:

- a.) Vertical external division and frame hole-pattern, with CDV and VBK.
- b.) Vertical frame hole pattern, with VB and VBK.
- c.) Depth frame hole-pattern, with VBD and VBK.

According to the specifications we would need different width of sections, and the criteria to choose the width will be the type of mounting and the front cover solution according to below tables:

Cover possibilities

Section Width	200	400	600	800
Busbar panel	X			
Partial doors/panels		X	X	X
Cable door		X	X	
Full height doors			X	X

MCSL

Technical data

Description: Variation of a standard Multi-Flex MCS enclosure. For technical and dimensional information see Floor standing section.

Finish: Structured powder paint RAL7035

Delivery: Frame with rear and roof panel.

H	W	D	Steps of 50mm	Ref.
1800	400	600	32	MCSL18046R5
	600	400	32	MCSL18064R5
	600	600	32	MCSL18066R5
	800	400	32	MCSL18084R5
	800	600	32	MCSL18086R5
	1000	400	32	MCSL18104R5
	1000	600	32	MCSL18106R5
	1200	400	32	MCSL18124R5
	1200	600	32	MCSL18126R5
2000	400	600	36	MCSL20046R5
	600	400	36	MCSL20064R5
	600	600	36	MCSL20066R5
	800	400	36	MCSL20084R5
	800	600	36	MCSL20086R5
	1000	400	36	MCSL20104R5
	1000	600	36	MCSL20106R5
	1200	400	36	MCSL20124R5
	1200	600	36	MCSL20126R5
2200	400	600	36	MCSL22046R5
	600	600	36	MCSL22066R5
	800	600	36	MCSL22086R5
	1000	600	36	MCSL22106R5
	1200	600	36	MCSL22126R5

Mounting possibilities

Section Width	200	400	600	800
MultiFlex profiles/m. plates		X	X	X
EPS incoming section			X	X
EPS fixed system			X	
EPS plug-in system			X	
EPS modular system			X	
Busbar section	X			

MKSL

Technical data

Description: Variation of a standard MultiFlex MKS enclosure. For technical and dimensional information see Floor standing section.

Finish: Structure powder paint RAL7035

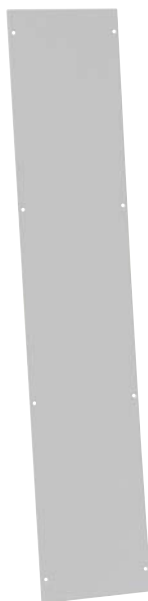
Delivery: Body with rear panel and roof panel.

H	W	D	Steps of 50mm	Part No.
2000	600	400	36	MKSL20064R5
	800	400	36	MKSL20084R5
	1000	400	36	MKSL20104R5
	1200	400	36	MKSL20124R5



Multi-Flex accessories

SPM , Side panels



Description: Easy one man assembly. Sealed by an extruded, one piece polyurethane gasket and mounted with 8 screws. Can be replaced by the side door DS.

Material: 1.35 mm steel plate.

Finish: Structure powder paint, RAL 7035

Protection: IP 56/NEMA 4, 12, 13.

Pack quantity: 2 panels with mounting material.

H	D	Part No.
1800	400	SPM1804R5
	600	SPM1806R5
2000	400	SPM2004R5
	600	SPM2006R5
2200	600	SPM2206R5

CNN, Clip-on cage nuts



Description: M6 Clip-on cage nut for fixing side panels.

Pack quantity: 50 pieces

Thread	Part No.
M6	CNN615N

CCE, External baying brackets



Description: Brackets mounted on the outside hole pattern of the frame ensuring a strong and 3 dimensional alignment of the bayed enclosures with "auto spacer" function. This method of baying enclosures also has the advantage of realising a direct earthing connection between the enclosure frames.

Material: 3 mm zinc plated steel.

Pack quantity: 6 brackets with mounting accessories.

Part No.
CCE06

CCEH , Short external baying brackets



Description: Short brackets mounted on the outside hole pattern of the frame of the bayed enclosures with "auto spacer" function. Specially designed for small doors/panels configuration. This method of baying enclosures has also the advantage of realising a direct earthing connection between the enclosure frames.

Material 3mm zinc plated steel.

Pack quantity: 6 brackets with mounthing material.

Part No.
CCEH06

CNK, Countersunk screws



Description: Torx countersunk screws M6 x 16.

Pack quantity: 250 pieces

Thread	Part No.
M6	CNK06

Multi-Flex

MCU, Top cabling frame



Description: For cable entry and routing or for installation of a power distribution system. Fixed to the top of the enclosure by four M12 screws. The enclosure roof plate (CCR) can be used to close the top. For lifting a 200 mm high MCU together with an enclosure a separate lifting kit (MCUK) is needed.

Material: Frame in 1.75 mm steel plate, panels in 1.5 mm steel plate.

Finish: Structure powder paint RAL 7035.

Protection: IP 41

Delivery: 1 piece with front and back panels including mounting material (without roof plate).

H	W	D	Part No.
200	400	600	MCU2046R5
	600	500	MCU2065R5
	600	600	MCU2066R5
200	800	500	MCU2085R5
	800	600	MCU2086R5
	1000	500	MCU2105R5
200		600	MCU2106R5
	1200	500	MCU2125R5
	1200	600	MCU2126R5
300	400	600	MCU3046R5
	600	600	MCU3066R5
	800	600	MCU3086R5
	1000	500	MCU3106R5
	1200	600	MCU3126R5

MCUP, Side panels



Description: For covering the sides of the top cabling frame. Fixed by 4 screws.

Material: 1.35 mm steel plate.

Finish: Structure powder paint RAL 7035

Pack quantity: 2 panels with mounting material.

H	D	Part No.
200	600	MCUP206R5
300	600	MCUP306R5

PCUP, Side panels



Description: For covering the sides of the cable wiring plinth PCU. Fixed by screws.

Material: 1.35 mm steel plate.

Finish: Structure powder paint RAL 7035

Pack quantity: 2 panels with mounting material.

H	D	Part No.
200	600	PCUP206R5
300	600	PCUP306R5

PCU, Cable wiring & Busbar plinth



Description: For fixing and routing of cables or mounting of busbar holders e.g. Erico, Ter-Mate. Identical hole pattern to the enclosure frame makes all relevant accessories (e.g. CLPF, CLPK, etc) possible to mount. Fixed to the base of the enclosure by M12 screws (provided).

Material: Frame in 1.75 mm steel plate, panels in 1.35 mm steel plate.

Finish: Structure powder paint RAL 7035

Protection: IP41/NEMA 1

Delivery: 1 piece with front and back cover plates with mounting material. PCUP side panels need to be ordered separately.

H	W	D	Part No.
200	400	600	PCU2046R5
	600	600	PCU2066R5
	800	600	PCU2086R5
	1000	600	PCU2106R5
300	1200	600	PCU2126R5
	400	600	PCU3046R5
	600	600	PCU3066R5
	800	600	PCU3086R5
	1000	600	PCU3106R5
	1200	600	PCU3126R5

For closing the sides add side panels PCUP.

SHC, Ventilated shelf



Description: Mounted directly to enclosure frame. The load carrying capacity is 50 Kg (110 lbs).

Material: 2 mm zinc plated steel.

Pack quantity: 1 shelf with mounting material.

W	D	w	d	Part No.
400	600	309	555	SHC0406
600	600	509	555	SHC0606
800	600	709	555	SHC0806



Multi-Flex accessories

PF , Plinths, front/rear



Description: Front and rear plinth sections. For cabling without any restrictions and in accordance with the VDE 0113 standard. The plinth consists of four corner pieces with removable front covers. The side panels PS are to be ordered separately. Produced in 100 mm and 200 mm heights. 200 mm high plinths are delivered with a rear cover for cabling that consists of two removable panels 100 mm high. The front cover is a one piece panel of 200 mm high. All panels have double returns on each panel for added strength.

Material: Corner pieces in 2 mm and panels in 1.5 mm mild steel plate.

Finish: Structure powder paint, RAL7022.

Pack quantity: 1 set of 4 corner pieces including covers. 1 front and 1 rear panel (2 rear panels for 200 mm, high plinths) with mounting material. Mounting material for side panels and transversal profiles is also included in this package.

H	W	Part No.
100	400	PF1040
	600	PF1060
	800	PF1080
	1000	PF1100
	1200	PF1120
200	400	PF2040
	600	PF2060
	800	PF2080
	1000	PF2100
	1200	PF2120

Add the side panels PS for a complete plinth.

PS , Plinth side panels



Description: Side panels to cover the openings in the depth of the PF plinth. Double folded panels for maximum strength.

Material: 1.5 mm steel plate.

Finish: Structure powder paint, RAL7022.

Pack quantity: 2 panels. Mounting material included with PF.

H	D	Part No.
100	400	PS1040
	600	PS1060
200	400	PS2040
	600	PS2060

LE , Lifting eye bolts



Description: M12 thread. Mounts directly to the frame corner pieces of the enclosure. Complies with DIN 580 lifting requirements.

Maximum load: 3400N per lifting eye with max angle of 45°. Please follow Eldon lifting instructions.

Pack quantity: 2 pieces

Description	Part No.
Zinc plated lifting eyes	LE9301

LC, Lifting device



Description: For optimal weight distribution when lifting bayed enclosures. To be used in combination with baying bracket.

Material: 5 mm zinc plated steel.

Pack quantity: 4 pieces with mounting accessories.

Part No.
LC12

MCUK, Lifting kit



Description: For lifting the enclosure together with the top cable frame of 200 mm high. Mounted directly into the enclosure frame and therefore releasing the MCU from any strain. 300 mm high MCU's must be lifted separately.

Pack quantity: 4 spindles with lifting eyes according to DIN 580 lifting instructions.

Part No.
MCUK04

Multi-Flex

CVR , Ventilation roof



Description: Raised roof with 2.5 mm ventilation slots and filter material, IP 31 and NEMA 1.

Material: 1.35 mm steel plate. Filter material: EU 4 according to DIN 24185.

Finish: Structure powder paint, RAL 7035.

Note: Increases the enclosure height by 40 mm.

Temperature resistance: 100°C

Pack quantity: 1 piece with mounting brackets and ventilation filter.

W	D	Part No.
600	400	CVR0604R5
	600	CVR0606R5
800	400	CVR0804R5
	600	CVR0806R5
1000	400	CVR1004R5
	600	CVR1006R5
1200	400	CVR1204R5
	600	CVR1206R5

CVK, Spacer kit



Description: Provides ventilation by raising the roof panel 15 mm.

Material: Zinc plated steel.

Pack quantity: 4 pieces with mounting accessories.

Part No.
CVK15

ECFE , Earthing strap



Description: For earthing and potential compensation between panels, parts and enclosure frame. Length: 300 mm.

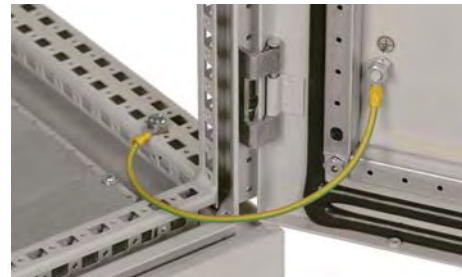
Material: 300 mm, long tinned electrolytic copper wires with soldered connection points.

Pack quantity: 10 pieces

Cross sectional area	Holes diam.	Current	Part No.
16 mm ²	8,5	120A	ECFE1630
25 mm ²	10,5	150A	ECFE2530

Add connection set ECF for fixing strap to painted frame.

ECFA, Earthing cable



Description: For earthing and potential compensation between parts and units.

Material: 6 mm² copper wire (yellow-green).

Pack quantity: 10 pieces

Length	Size	Part No.
220	M6	ECFA220
300	M8	ECFA300

ECP, Earthing connection for panels



Description: Earthing connection for fixing the earthing straps & cables to panels, mounting plates or profiles.

Pack quantity: 10 sets

Size	Part No.
M6	ECP06
M8	ECP08



Multi-Flex accessories

CNS, Screws for clip-on cage nuts



Description: Socket head screws M6x12 for clip-on cage nuts.
Pack quantity: 250 pieces

Thread	Part No.
M6	CNS612

CNM, Cage nuts



Description: Cage nuts designed for universal use on the enclosure frame profiles and the profiles system.
Pack quantity: 50 pieces

Thread	Description	Part No.
M6	1,6 mm	CNM615
M8	1,6 mm	CNM815

CNT, Extrudetite screws



Description: Torx extrudetite screws for fitting accessories, click in profiles, earthing etc.
Pack quantity: 250 pieces

Thread	Part No.
M5	CNT05
M6	CNT06

DMK, Door mounting kit



Description: Required when fitting a door. Only needed when there was no door mounted previously.
Pack quantity: 1 complete kit with hinges, rod catches and mounting accessories.

Description	Part No.
for single door enclosures	DMK01
for double door enclosures	DMK02

D, Plain doors/ DGC, Glazed doors



Description: Standard door equipped with DIN 3 mm lock system and door frame. Door accessory kit DMK (hinges, rod catches) to be ordered separately. Allows all the options of the locking programme and 180° hinges.

Maximum load: 800N

Material: 2 mm steel plate.

Finish: Structure powder paint RAL 7035.

Pack quantity: 1 piece

H	W	Part No.
1800	600	D1806R5
	800	D1808R5
		D1810R5
2000	600	D2006R5
	800	D2008R5
		D2010R5
2200	600	D2206R5
	800	D2208R5

If no door was fitted previously use hinge kit DMK01.

DGC , Glazed door

Description: Standard door with fitted clear safety glass to view the inside of the enclosure. Equipped with DIN 3 mm lock system and door frame. Allows all options of the locking programme. Use hinge kit DMK if not for replacement of standard door.

Material: Frame: 2 mm steel plate. Viewing area: 4 mm clear safety glass.

Finish: Structure powder paint. RAL 7035.

Protection: IP55/NEMA12, IK10

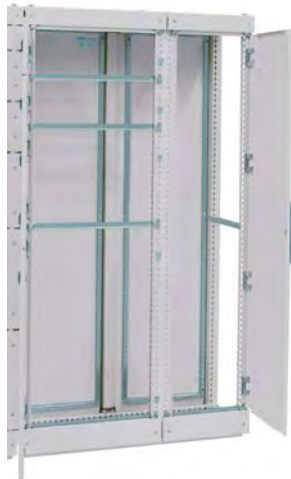
Pack quantity: 1 piece

H	W	h	w	Part No.
1800	600	1576	415	DGC1806R5
	800	1576	615	DGC1808R5
2000	600	1776	415	DGC2006R5
	800	1776	615	DGC2008R5
2200	600	1976	415	DGC2206R5
	800	1976	615	DGC2208R5

If no door was fitted previously use hinge kit DMK01.

Multi-Flex

CDV, Vertical divider



Description: The profile is identical to the enclosure frame and provides vertical separation of the enclosure when partial doors or cable way covers are fitted. Can be mounted in 200 mm steps.

Material: 2 mm mild steel.

Finish: RAL7035 structure powder coating.

Pack quantity: 1 set of profiles with mounting accessories.

H	Part No.
1800	CDV1800R5
2000	CDV2000R5
2200	CDV2200R5

VBD, Depth dividing bar



Description: Fitted in the top and bottom of a 1200 mm or 1600 mm enclosure, to provide standard mounting facilities of 600 or 800 mm wide. This enables separate fitting of accessories such as CAB(P), CBU, CLPK, CLPF etc., in either side of the enclosure. Accessories are adjustable in depth within the 25 mm hole pattern.

Material: 2.0 mm zinc plated steel.

Pack quantity: 1 pair without mounting accessories.

Mounting requirement: Add VBK for mounting. Add VB for a complete separation.

D	Part No.
400	VBD400
500	VBD500
600	VBD600
800	VBD800

VB, Vertical dividing bar



Description: Fitted in the centre of 1200 or 1600 mm wide enclosures to give standard mounting facilities in two vertical sections of 600 or 800 mm. This enables separate fitting of equipment such as swing frames, system profiles, in either section of the enclosure.

Material: 2.0 mm zinc plated steel.

Pack quantity: 1 pair without mounting accessories.

Mounting requirement: Add VBK for mounting. For complete separation add VBD.

H	Part No.
1600	VB1600
1800	VB1800
2000	VB2000
2200	VB2200

VBK, Fixing brackets



Description: Mounting brackets for the VB or VBD in 1200 or 1600 mm wide enclosure. It does not interfere with bottom plates.

Material: 3.0 mm zinc plated steel.

Pack quantity: 4 pieces with mounting accessories.

W	Part No.
<1200	VBK04
1200	VBK1200



Multi-Flex accessories

CDH, Horizontal divider



Description: Used when the enclosure requires separation by partial doors or panels. Can be mounted on the outside hole pattern of the MC frames.

Material: 2 mm zinc plated steel.

Pack quantity: 2 profiles with mounting accessories.

Mounting requirement: CDH Pieces= number of doors/ panels +1

W	Part No.
400	CDH400
600	CDH600
800	CDH800

CDHK, Horizontal divider



Description: Used when the enclosure requires horizontal divisions. Can be mounted on the hole pattern of MK frames.

Material: 2 mm zinc plated steel.

Pack quantity: 2 profiles with mounting accessories.

W	Part No.
400	CDHK400
600	CDHK600
800	CDHK800

DPB, Vertical front panel



Description: In order to cover vertical busbar space. Used in combination with CDV.

Material: 2 mm steel plate.

Finish: RAL7035 structured powder coating.

Protection: Complies with IP44. IP21 delivered without gasket.

Pack quantity: 1 panel with mounting accessories.

H	W	Part No.
1800	200	DPB18002R5
2000	200	DPB20002R5
2200	200	DPB22002R5

Multi-Flex

DPC, Top and bottom panels



Description: Required to cover the remaining space at the top and bottom. Used in combination with the partial doors/panels DP/DPP, dividers CDH and Cable space door DPA.

Material: 1.75 mm steel plate.

Finish: RAL7035 structured powder coating.

Protection: Complies with IP44. For IP21 delivered without gasket.

Pack quantity: 2 panels with mounting accessories.

Mounting requirement: DPC covers 200 mm in height of the enclosure. So for a 2000 mm high enclosure when DPC is used, there is 1800 mm space left for partial doors/panels.

H	W	Part No.
100+70	400	DPC0714R5
	600	DPC0716R5
	800	DPC0718R5

DPCV, Ventilated top and bottom panels



Description: Required to cover the remaining space at the top and bottom. With ventilation slots for added heat dissipation in switchgear enclosures. Used in combination with the partial doors/panels DP/DPP, dividers CDH, CDHK and Cable space door DPA.

Material: 1.35 mm steel plate.

Finish: RAL7035 structured powder coating.

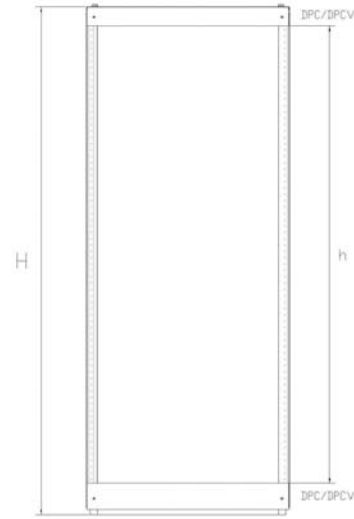
Protection: Complies with IP 20. Delivered without gasket.

Pack quantity: 2 panels with mounting accessories.

Height top	Height bottom	W	Part No.
70	100	400	DPCV0714R5
	100	600	DPCV0716R5
		800	DPCV0718R5

Note: The DPCV covers 200mm in height of the enclosure. So for a 2000mm high enclosure when DPC is used, there is 1800mm space left for partial doors/panels.

DPC/DPCV, Useful height



H: Enclosure height; h= H-200mm: Useful height to be covered with: DP (Partial door), DPP (Partial Panel), DPA (Cable door)

DPA, Cable space door



Description: To close a vertical cable section. Used in combination with CDV. In order to close the front, top and bottom panels DPC/DPCV are required.

Material: 1.75 mm steel plate.

Finish: RAL7035 structured powder coating.

Protection: Complies with IP44. For IP21 delivered without gasket.

Pack quantity: 1 door with hinges and 3 DIN 3 mm, locks.

Mounting requirement: Add CDH for MC frames and use CDHK for MK frames.

H	W	Part No.
1400	400	DPA1404R5
1600	400	DPA1604R5
1800	400	DPA1804R5
	600	DPA1806R5
2000	400	DPA2004R5
	600	DPA2006R5



DP, Partial doors



Description: To divide the enclosure front into sections when used in conjunction with the horizontal divider CDH/CHDK. Equipped with DIN 3 mm lock (1 lock up to 400 mm, over 400 mm height 2 locks).

Material: 1.75 mm steel plate.

Finish: RAL7035 structured powder coating.

Protection: Complies with IP44

Pack quantity: 1 door with hinges, locks and mounting accessories.

Mounting requirement: Add CDH for MC frames and use CDHK for MK frames.

DPP, Partial panel



Description: To divide the enclosure front into sections when used in conjunction with the horizontal divider CDH/CDHK when no door is required.

Material: 1.75 mm steel plate.

Finish: RAL7035 structured powder coating.

Protection: Complies with IP44

Pack quantity: 1 panel with mounting accessories.

Mounting requirement: Add CDH for MC frames and use CDHK for MK frames. Use DPC for top and bottom panels.



H	W	Part No.
150	400	DP01504R5
	600	DP01506R5
200	400	DP02004R5
	600	DP02006R5
250	400	DP02504R5
	600	DP02506R5
300	400	DP03004R5
	600	DP03006R5
	800	DP03008R5
400	400	DP04004R5
	600	DP04006R5
	800	DP04008R5
500	400	DP05004R5
	600	DP05006R5
600	400	DP06004R5
	600	DP06006R5
	800	DP06008R5
	800	DP08006R5
800	600	DP08006R5
	800	DP08008R5
1000	600	DP10006R5

H	W	Part No.
100	400	DPP01004R5
	400	DPP01504R5
150	600	DPP01506R5
	400	DPP02004R5
200	600	DPP02006R5
	400	DPP02504R5
250	600	DPP02506R5
	400	DPP03004R5
300	600	DPP03006R5
	400	DPP03006R5
	600	DPP04004R5
400	600	DPP04006R5
	800	DPP04008R5
	800	DPP04008R5

Multi-Flex

MP, Mounting plates



Description: Standard mounting plate. Fixing bracket kit MPA 06 to be ordered separately. Can also be mounted in the side of an enclosure by using bracket kit MPS or slid in from the side by using the sliding profile MTS. For heavy loads in vibrating environments use mounting plate reinforcement profile MPR and MPE or MPEF brackets.

Maximum load: 6000N

Material: 3 mm galvanized steel.

Pack quantity: 1 piece

H	W	h	w	Part No.
1600	600	1494	494	MP1606
	800	1494	694	MP1608
	1000	1494	894	MP1610
1800	1200	1494	1094	MP1612
	500	1694	394	MP1805
	600	1694	494	MP1806
2000	800	1694	694	MP1808
	1000	1694	894	MP1810
	1200	1694	1094	MP1812
	500	1894	394	MP2005
	600	1894	494	MP2006
2200	800	1894	694	MP2008
	1000	1894	894	MP2010
	1200	1894	1094	MP2012
	600	2094	494	MP2206
2200	800	2094	694	MP2208
	1000	2094	894	MP2210
	1200	2094	1094	MP2212

Use MPA (MF), UMB (KSS, CSS) for mounting the MP inside the enclosure.

MPD, Mounting plate adjustment brackets



Description: With these brackets the mounting plate can be adjusted in depth by steps of 25 mm in the enclosure frame.

Material: 3 mm zinc plated steel.

Pack quantity: 2 brackets with mounting accessories.

Part No.

MPD02

MPP, Partial height mounting plate



Description: Mounted directly on the enclosure frame or onto the click-in profiles (CLPK). Special design of the bracket allows one man mounting. Can be mounted in any height or depth position within the 25 mm hole pattern. Appropriate sizes can also be used on the sides of the enclosure.

Material: 2.7 mm galvanized steel.

Pack quantity: 1 plate with mounting accessories.

Mounting requirement: Add CLPK for depth adjustment.

Note: MPP can be mounted in both directions.

H/W	W/H	h/w	w/h	Part No.
400	400	294	294	MPP0404
	500	294	394	MPP0405
600	400	494	294	MPP0604
	500	494	394	MPP0605
	800	494	694	MPP0608
800	1000	494	894	MPP0610
	400	694	294	MPP0804
	800	694	694	MPP0808
1000	400	894	294	MPP1004
	800	894	694	MPP1008
1200	400	1094	294	MPP1204
	600	1094	494	MPP1206

MPA, Mounting plate brackets



Description: To fix mounting plates to the furthest position in the rear of the enclosure, including adjustment brackets for depth adjustment in steps of 25mm. Brackets are needed when an extra mounting plate is required or when the enclosure is ordered without mounting plate (PE).

Material: 3mm zinc plated steel.

Pack quantity: 2 top brackets, 2 bottom sliding brackets and 2 adjustment brackets with mounting accessories.

Part No.

MPA06



Multi-Flex accessories

CLPK, Click-in profile



Description: Universal profile for both depth and width fitting on the 25 mm DIN hole pattern of the enclosure frame or in combination with the VB profiles. The 75 mm wide profile is equipped with three rows of holes of which one is turned 90°. This makes it possible to mount the CLPF profiles in both directions. The CLPK can be secured by the use of self tapping screws.

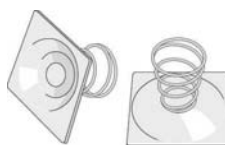
Material: 1.5 mm zinc plated steel.

Pack quantity: 4 profiles

Mounting requirement: Add CLPF profiles with the same height of the enclosure in the rear to fit CLPK profiles in depth.

For enclosure		Part No.
W/D		
400		CLPK400
500		CLPK500
600		CLPK600
800		CLPK800
1000		CLPK1000
1200		CLPK1200

GLM, Sliding nuts for mounting rails



Material: Zinc plated steel.

Pack quantity: 50

Thread	Part No.
M6	GLM20-6P
M8	GLM20-8P
M6	GLM40-6P
M8	GLM40-8P

Profile application



CLPF, Mounting profile



Description: The CLPF profile system is a 40 mm wide and 25 mm high profile, which can be mounted in all directions in the enclosure frame. It can also be used in combination with the CLPK and the VB profiles. By turning the profile it can be used as a standard CP20/40 profile in combination with GLM 40/6 sliding nut, to mount installation material which needs adjusting in depth. The profiles, when mounted onto the enclosure frame are flush with the enclosure profiles. Two rows of hole patterns for cage nut fixing and self tapping screws are provided. For 90 mm wide profiles two profiles can be mounted next to each other.

Material: Zinc plated steel.

Pack quantity: 4 profiles including fixing material.

For enclosure			Part No.
W/D	H/W		
400	400		CLPF400
500	500		CLPF500
600	600		CLPF600
800	800		CLPF800
1000	1000		CLPF1000
1200	1200		CLPF1200
	1600		CLPF1600
	1800		CLPF1800
	2000		CLPF2000
	2200		CLPF2200

MPV, Depth adjustment kit



Description: Fitted in the vertical profiles of the enclosures MCS and MKS, allows the fixing of universal MCCB larger than 400 A of any manufacturer.

Material: 2.5 galvanised steel.

Pack quantity: 4 pieces in depth and 2 in width.

W	D	For amp.	Part No.
600	400	600 - 2500	MPV604
	500	600 - 2500	MPV605
	600	600 - 2500	MPV606
800	400	600 - 2500	MPV804
	500	600 - 2500	MPV805
	600	600 - 2500	MPV806



BUSBAR DESIGN

According to EN 60439-1:1999 ("European standard for Low-voltage switchgear and controlgear assemblies", Busbar is a low-impedance conductor to which several electric circuits can be separately connected. In the assemblies it's usual that we have a main busbar (to which one or several distribution busbars and/or incoming and outgoing units can be connected) and several distribution busbars (which is connected to a main busbar and from which outgoing units are supplied).

In the design of the busbars we need to take in consideration the following values.

1. Thermal current:

a. The main busbar must be designed for its rated current, and each distribution busbar must be designed for the sum of the rated current of the outgoing circuits multiplied by the rated diversity factor (table1).

Values of rated diversity factor (according to EN60439-1 4.7)	
Number of main circuits	Rated diversity factor
2 and 3	0,9
4 and 5	0,8
6 to 9 inclusive	0,7
10 (and above)	0,6

Table 1

b. To find out the cross-section and number of bars per phase we can use table 2, and we need to take into consideration:

- i. Ambient temperature inside the enclosure.
- ii. Busbar material, these values are for Copper bars Cu-ETP (Cu/a1).
- iii. The way the busbars are positioned, these values are for rectangular bars standing on their edge.

Busbar Section (mm)	Admissible current (A)					
	50 K			30 K		
	1 bar per phase	2 bar per phase	3 bar per phase	1 bar per phase	2 bar per phase	3 bar per phase
25 x 5	433	776		327	586	
30 x 5	502	890		379	672	
40 x 5	639	1108		482	836	
50 x 5	772	1317		583	994	
60 x 5	912	1524		688	1150	
63 x 5	951	1586		718	1197	
80 x 5	1173	1921		885	1450	
30 x 10	756	1300	1701	573	986	1289
40 x 10	944	1624	2124	715	1230	1609
50 x 10	1129	2001	2703	852	1510	2040
63 x 10	1305	2279	3048	985	1720	2300
80 x 10	1643	2796	3697	1240	2110	2790
100 x 10	1974	3286	4320	1490	2480	3260
120 x 10	2306	3790	4956	1740	2860	3740

Table 2

2. Short circuit currents.

Following the specific data table for each busbar support, and according to the following values, we will define the type of busbar support and the space between them.

- i. Rated conditional short-circuit current, I_{cc}.
- ii. Rated peak withstand current, I_{pk} (calculated according to EN 60439-1 7.5.3).
- iii. Busbar section.

3. Clearance and creepage distances.

According to EN 60439-1 7.1.2 for busbars the creepage distances and the clearances or impulse withstand voltages shall at least comply with those specified for the apparatus with which they are directly associated.

- a. Clearances from live parts to those parts intended to be earthed and between poles shall withstand the rated impulse withstand voltage.
- b. Creepage distances shall correspond to a pollution degree and to the corresponding material group, which in this case are, pollution degree 3 and Material group II.



ECBS, Erico busbar supports CBS.

		Admissible current (A)											
	Busbar Section	Vent roof				Vent panels				Closed (IP55)			
		30 K	50 K	70 K	90 K	30 K	50 K	70 K	90 K	30 K	50 K	70 K	90 K
1 bar per phase	25x5mm	280	370	510	720	260	340	470	660	230	310	430	600
	30x5mm	330	430	600	850	300	400	550	780	270	360	500	710
	40x5mm	410	550	760	1060	380	500	690	980	340	460	630	890
	50x5mm	490	640	910	1270	450	600	830	1160	410	540	760	1060
	60x5mm	560	750	1050	1470	520	690	970	1350	470	620	880	1230
	80x5mm	710	940	1320	1850	660	860	1210	1690	600	780	1100	1540
2 bars per phase	25x5mm	500	660	860	1110	460	600	790	1020	420	550	710	920
	30x5mm	590	770	1010	1300	540	710	920	1200	490	640	840	1090
	40x5mm	870	1140	1480	1930	790	1050	1370	1770	720	950	1240	1610
	50x5mm	1040	1380	1790	2320	950	1260	1640	2140	860	1150	1490	1940
	60x5mm	1160	1540	2000	2600	1060	1410	1830	2380	970	1280	1670	2160
1 bar per phase	25x10mm	400	530	730	1030	370	490	670	940	330	440	610	860
	30x10mm	470	620	860	1210	430	570	790	1110	390	520	720	1010
	40x10mm	590	780	1080	1520	540	720	990	1400	490	650	900	1270
	50x10mm	700	920	1300	1810	640	850	1190	1660	580	770	1080	1510
	60x10mm	800	1070	1500	2100	740	980	1380	1930	670	890	1250	1750
	80x10mm	1020	1340	1880	2640	940	1230	1730	2420	850	1120	1570	2200

EUBS, Erico busbar supports UBS.

		Admissible current (A)											
	Busbar Section	Vent roof				Vent panels				Closed (IP55)			
		30 K	50 K	70 K	90 K	30 K	50 K	70 K	90 K	30 K	50 K	70 K	90 K
1 bar per phase	30x10mm	470	620	860	1210	430	570	790	1110	390	520	720	1010
	40x10mm	590	780	1080	1520	540	720	990	1400	490	650	900	1270
	50x10mm	700	920	1300	1810	640	850	1190	1660	580	770	1080	1510
	60x10mm	800	1070	1500	2100	740	980	1380	1930	670	890	1250	1750
	80x10mm	1020	1340	1880	2640	940	1230	1730	2420	850	1120	1570	2200
	100x10mm	1170	1570	2060	2680	1100	1450	1890	2460	1000	1320	1720	2240
	120x10mm	1310	1740	2270	2950	1200	1600	2080	2700	1090	1450	1890	2460
2 bars per phase	30x10mm	840	1110	1440	1860	770	1010	1320	1710	700	920	1200	1550
	40x10mm	1240	1630	2120	2760	1130	1500	1950	2530	1030	1360	1770	2300
	50x10mm	1480	1970	2560	3320	1350	1800	2340	3050	1230	1640	2130	2770
	60x10mm	1660	2200	2860	3710	1520	2010	2620	3400	1380	1830	2380	3090
	80x10mm	1990	2640	3430	4460	1830	2420	3150	4090	1660	2200	2860	3720
	100x10mm	2300	3050	3970	5160	2110	2790	3640	4730	1920	2540	3310	4300
3 bars per phase	120x10mm	2520	3350	4370	5680	2310	3070	4000	5200	2100	2790	3640	4730
	30x10mm	1090	1440	1800	2260	1000	1320	1650	2070	910	1200	1500	1880
	40x10mm	1370	1800	2260	2820	1250	1650	2070	2590	1140	1500	1880	2350
	50x10mm	1730	2290	2870	3590	1580	2100	2630	3290	1440	1910	2390	2990
	60x10mm	1960	2590	3230	4040	1790	2380	2960	3710	1630	2160	2690	3370
	80x10mm	2360	3130	3920	4910	2170	2870	3600	4500	1970	2610	3270	4090
	100x10mm	2770	3670	4580	5720	2540	3370	4200	5250	2310	3060	3820	4770
120x10mm	3190	4230	5290	6610	3020	4010	5020	6250	2650	3500	4380	5480	

2. Short circuit currents.

Following the specific data table for each busbar support, and according to the following values, we will define the type of busbar support and the space between them.

- i. Rated conditional short-circuit current, I_{cc}.
- ii. Rated peak withstand current, I_{pk} (calculated according to EN 60439-1 7.5.3).
- iii. Busbar section.

3. Crearence and creepage distances.

According to EN 60439-1 7.1.2 for busbars the creepage distances and the clearances or impulse withstand voltages shall at least comply with those specified for the apparatus with which they are directly associated.

- a. Clearances from live parts to those parts intended to be earthed and between poles shall withstand the rated impulse withstand voltage.
- b. Creepage distances shall correspond to a pollution degree and to the corresponding material group, which in this case are, pollution degree 3 and Material group II.

Busbar

ECBS, Compact Busbar support



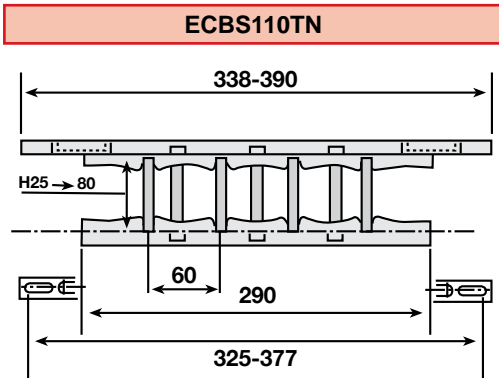
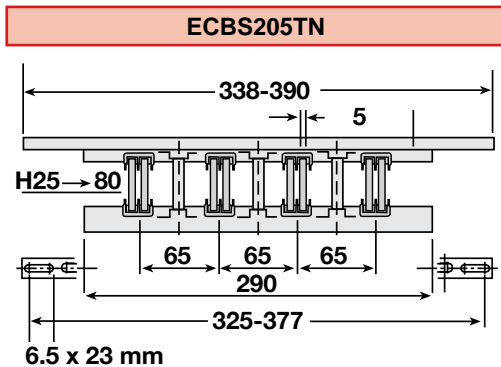
Description: Busbar support up to 1600A to be mounted horizontally or vertically. Mounts directly to the enclosure frame or with help of CLPF profiles. Available in single and double bar per phase for bar thickness 5mm and only single bar per phase for bar thickness 10mm, and width from 25 to 80mm. The ECBS 1/10 can be used for ABB or JM cassettes as it has a 60mm pitch.

Working temperature: -40°C up to 130°C

Material: Reinforced polyamide and steel. Halogen free.

Delivery: Busbar support with mounting material.

Part No.
ECBS205TN
ECBS110TN



ECBS205TN

Maximun distance between supports (mm)

	Ipk (kA)	11	24	48	63	82	114	145	152	165
		Icc (kA)	6,5	12	23	30	39	52	66	69
1 bar per phase	25 x 5	1000	527	261	200	154	110	-	-	-
	30 x 5	1000	578	286	219	169	120	-	-	-
	40 x 5	1000	667	331	253	195	139	108	-	-
	50 x 5	1000	746	370	284	218	156	108	-	-
	63 x 5	1000	837	416	318	245	175	108	-	-
	80 x 5	1000	944	468	359	276	175	108	-	-
2 bars per phase	25 x 5	1000	746	370	284	218	156	-	-	-
	30 x 5	1000	817	406	311	239	171	108	-	-
	40 x 5	1000	944	468	359	276	175	108	-	-
	50 x 5	1000	1000	524	401	309	175	108	-	-
	63 x 5	1000	1000	588	451	342	175	108	-	-
	80 x 5	1000	1000	663	508	342	175	108	-	-

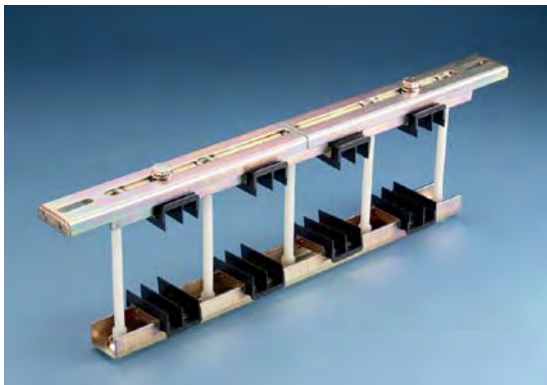
ECBS110TN

Maximun distance between supports (mm)

	Ipk (kA)	11	24	48	63	82	114	145	152	165
		Icc (kA)	6,5	12	23	30	39	52	66	69
1 bar per phase	25 x 10	1000	1000	503	386	296	161	100	-	-
	30 x 10	1000	1000	551	422	315	161	100	-	-
	40 x 10	1000	1000	637	488	315	161	100	-	-
	50 x 10	1000	1000	712	534	315	161	100	-	-
	60 x 10	1000	1000	780	534	315	161	100	-	-
	80 x 10	1000	1000	901	534	315	161	100	-	-



EUBS, Compact Busbar support



Description: Busbar support up to 4500A to be mounted horizontally or vertically. Mounts directly to the enclosure frame or with help of CLPF profiles. Available in one/two/three bars per phase for bar thickness 10mm, and width from 30 to 120mm.

Working temperature: -40°C up to 130°C

Material: Reinforced polyamide and steel. Halogen free.

Delivery: Busbar support with mounting material.

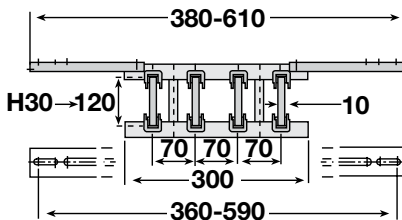
Part No.

EUBS110TN

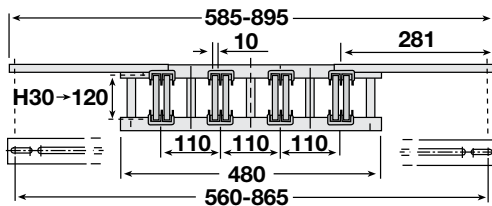
EUBS210TN

EUBS310TN

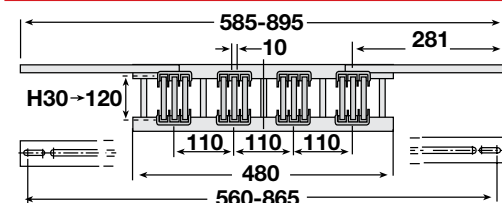
EUBS110TN



EUBS210TN



EUBS310TN



EUBS110TN

		Maximun distance between supports (mm)											
		24	48	63	82	114	145	152	165	187	209		
		l _{pk} (kA)	l _{cc} (kA)	12	23	30	39	52	66	69	75	85	95
1 bar per phase	30 x 10	1000	596	456	351	251	197	189	161	125	100		
	40 x 10	1000	688	527	405	290	208	190	161	125	100		
	50 x 10	1000	769	590	453	324	208	190	161	125	100		
	60 x 10	1000	843	646	497	336	208	190	161	125	100		
	80 x 10	1000	973	746	574	336	208	190	161	125	100		
	100 x 10	1000	1000	834	641	336	208	190	161	125	100		
	120 x 10	1000	1000	914	656	336	208	190	161	125	100		

EUBS210TN

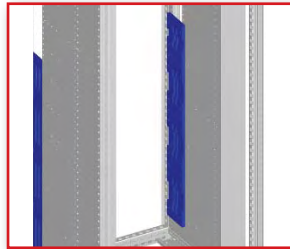
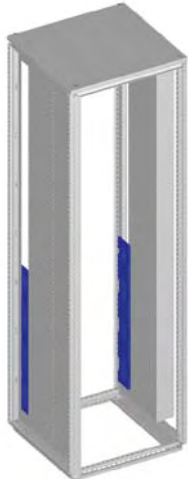
		Maximun distance between supports (mm)												
		24	48	63	82	114	145	152	165	187	209	231		
		l _{pk} (kA)	l _{cc} (kA)	12	23	30	39	52	66	69	75	85	95	105
1 bar per phase	30 x 10	1000	747	572	440	315	248	237	218	192	172	155		
	40 x 10	1000	863	661	508	364	286	274	252	222	197	161		
	50 x 10	1000	965	739	568	407	320	306	282	247	197	161		
	60 x 10	1000	1000	810	623	446	351	336	309	247	197	161		
	80 x 10	1000	1000	935	719	515	405	375	317	247	197	161		
	100 x 10	1000	1000	1000	804	576	410	375	317	247	197	161		
2 bars per phase	30 x 10	1000	1000	810	623	446	351	336	309	272	243	220		
	40 x 10	1000	1000	935	719	515	405	388	357	314	281	237		
	50 x 10	1000	1000	1000	804	576	453	433	399	352	290	237		
	60 x 10	1000	1000	1000	881	631	497	475	437	362	290	237		
	80 x 10	1000	1000	1000	1000	728	574	549	466	362	290	237		
	100 x 10	1000	1000	1000	1000	814	601	550	466	362	290	237		
	120 x 10	1000	1000	1000	1000	892	601	550	466	362	290	237		

EUBS310TN

		Maximun distance between supports (mm)												
		24	48	63	82	114	145	152	165	187	209	231		
		l _{pk} (kA)	l _{cc} (kA)	12	23	30	39	52	66	69	75	85	95	105
1 bar per phase	30 x 10	1000	747	572	440	315	248	237	218	192	172	155		
	40 x 10	1000	863	661	508	364	286	274	252	222	199	172		
	50 x 10	1000	965	739	568	407	320	306	282	248	210	172		
	60 x 10	1000	1000	810	623	446	351	336	309	263	210	172		
	80 x 10	1000	1000	935	719	515	405	388	338	263	210	172		
	100 x 10	1000	1000	1000	804	576	437	400	338	263	210	172		
2 bars per phase	30 x 10	1000	1000	810	623	446	351	336	309	272	243	205		
	40 x 10	1000	1000	935	719	515	405	388	357	313	250	205		
	50 x 10	1000	1000	1000	804	576	453	433	399	313	250	205		
	60 x 10	1000	1000	1000	881	631	497	475	402	313	250	205		
	80 x 10	1000	1000	1000	1000	728	519	475	402	313	250	205		
	100 x 10	1000	1000	1000	1000	814	519	475	402	313	250	205		
3 bars per phase	30 x 10	1000	1000	992	763	546	430	411	378	313	250	205		
	40 x 10	1000	1000	1000	881	631	497	475	402	313	250	205		
	50 x 10	1000	1000	1000	985	705	519	475	402	313	250	205		
	60 x 10	1000	1000	1000	1000	772	519	475	402	313	250	205		
	80 x 10	1000	1000	1000	1000	837	519	475	402	313	250	205		
	100 x 10	1000	1000	1000	1000	837	519	475	402	313	250	205		
	120 x 10	1000	1000	1000	1000	837	519	475	402	313	250	205		

Busbar

MSHS, Main busbar support



Description: Busbar supports up to 3600A to be mounted horizontally behind the compartments. Mounts to the internal side panles MSPS, and in the height position which we need. Supports for single or double bar per phase for bar thickness 10mm, and width from 30 to 120mm. Distance between bars of 20mm.

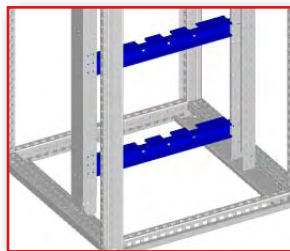
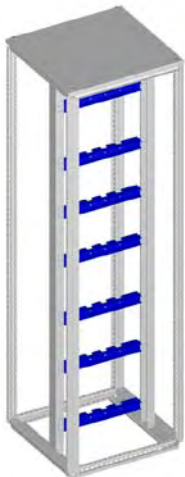
Material: Polycarbonate reinforced with 10% of glass material.

Delivery includes: Busbar support for 3 phases and neutral, and mounting material.

Short-circuit withstand current (kA)						
Distance between supports						
600 mm			800 mm			Part No.
Peak	RMS 1s	RMS 3s	Peak	RMS 1s	RMS 3s	
97	44	28	73	33	28	MSHS403010
105	48	30	79	36	30	MSHS404010
123	56	35	92	42	35	MSHS405010
132	56	35	92	42	35	MSHS406010
132	60	40	106	48	40	MSHS408010
132	60	45	119	54	45	MSHS410010
132	60	50	132	60	50	MSHS412010

H	W	Bars per phase	Part No.
420mm	95mm	2x(30x10)	MSHS403010
460mm	95mm	2x(40x10)	MSHS404010
500mm	95mm	2x(50x10)	MSHS405010
540mm	95mm	2x(60x10)	MSHS406010
620mm	95mm	2x(80x10)	MSHS408010
700mm	95mm	2x(100x10)	MSHS410010
780mm	95mm	2x(120x10)	MSHS412010

MSFH, Vertical rear busbar support.



Description: Busbar supports up to 1600A to be mounted vertically behind the fixed compartments. Mounts to the vertical profiles MSFP. Rated short-time withstand current up to 35 kA with rear supports and up to 50 kA with rear and front supports.

Material: Polycarbonate reinforced with 10% of glass material.

Delivery includes: 5 busbar supports for 3 phases and neutral, and mounting material.

Short-circuit withstand current (kA)									
Distance between supports									
300 mm			400 mm			600 mm			Part No.
Peak	RMS 1s	RMS 3s	Peak	RMS 1s	RMS 3s	Peak	RMS 1s	RMS 3s	
53	35	25	63	30	30	53	25	25	Front support
74	50	35	90	43	30	74	35	25	Front and rear supports

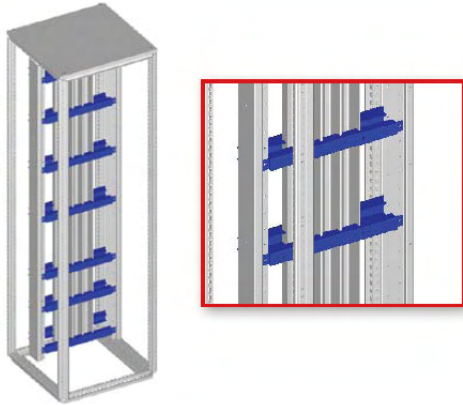
W	N° of supports	In (A)	Icw (kA)	Part No.
400	5	Up to 1600 A	Up to 50 kA	MSFH04
600	5	Up to 1600 A	Up to 50 kA	MSFH06

* In: Rated current.

* Icw: Rated short-time withstand current.



MSVH, Vertical Plug-in busbar support

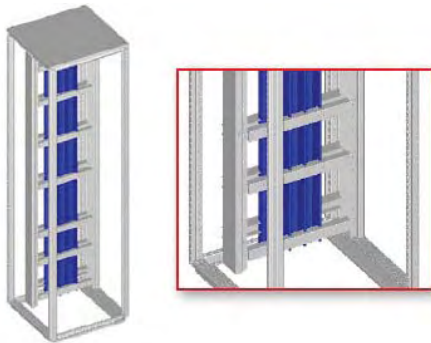


Description: Busbar supports up to 1600A to be mounted vertically behind the plug-in compartments. Rated short-time withstand current up to 35 kA with rear supports and up to 50 kA with rear and front supports. Mounts to the vertical profiles included in the rear cover plate for plug-in sections MSSB. Supports for a Y-shaped bars MSBS.
Material: Polycarbonate reinforced with 10% of glass material.
Delivery: Busbar supports for 3 phases and neutral, and mounting material.

	Part No.
	MSVH1800
	MSVH2000
	MSVH2200
	MSVH1800F
	MSVH2000F
	MSVH2200F

*In: Rated current.
 *Ick: Rated short-time withstand current.

MSBS, Plug-in busbar



Description: Y-shaped busbar to build up the plug-in system. The MSBS bars are fixed in the MSVH supports with standard bolts, washers and nuts. The rated current can be increased up to 2x1400 A if the incoming connection is in the middle.
Material: Tin plated aluminium
Delivery: 4 pcs of busbars

H	h	In (A)	Icw(kA)	Part No.
1800	1572	Up to 1400 A	Up to 50 kA	MSBS41418
2000	1772	Up to 1400 A	Up to 50 kA	MSBS41420
2200	1972	Up to 1400 A	Up to 50 kA	MSBS41422

*In: Rated current.

MSBF, Rear busbar support fixation

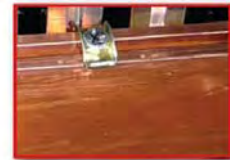


Description: Saddle to fix the bars to the rear busbar support, with its special design helps us to fix properly the bars to the support. The bolts, washers and nuts must be ordered separately.

Material: 2mm zinc plated steel
Delivery: 20 pieces

H	W	Part No.
40	34	MSBF20

MSBC, Saddle for busbar connection



Description: Saddle to make the bars connection, with its special design helps us to make the bars connection properly, making it easier. The bolts, washers and nuts must be operated separately.

Material: 2 mm zinc plated steel.
Delivery: 20 pieces.

H	W	Part No.
35 mm	21 mm	MSBC20

MSBH, Holder for busbar connection



Description: Cooper holder for busbar connection, which guarantee a perfect connection between main busbar and secondary busbar.

Material: 2 mm cooper.
Delivery: 20 pieces.

H	W	Part No.
25 mm	35 mm	MSBH20

Sections

MSPS , Internal side panels



Description: Internal side panels to build up sections as from the enclosure frame. Frame hole pattern is needed in front, rear, top and bottom.
Material: 1.5 mm galvanised steel.
Delivery: 1 piece with mounting material.

Internal side panel for compartments section

For enclosure				
H	D	h	w	Part No.
1800	600	1600	507	MSPS1806
2000	600	1800	507	MSPS2006
2200	600	2000	507	MSPS2206

Internal side panel for cables section

For enclosure				
H	D	h	w	Part No.
1800	300	1600	337	MSPS1803
2000	300	1800	337	MSPS2003
2200	300	2000	337	MSPS2203

Internal side panel for compartments section with front opening

For enclosure				
H	D	h	w	Part No.
1800	600	1707	507	MSPS1806F
2000	600	1907	507	MSPS2006F
2200	600	2107	507	MSPS2206F

CVB , Ventilated bottom plates



Description: Three piece bottom plates. Can be used in combination with a ventilated plinth PV.
Material: 1.5 mm perforated zinc plated steel. 33% ventilation.
Pack quantity: 3 pieces with mounting material.

W	D	Part No.
600	600	CVB0606
	800	CVB0608

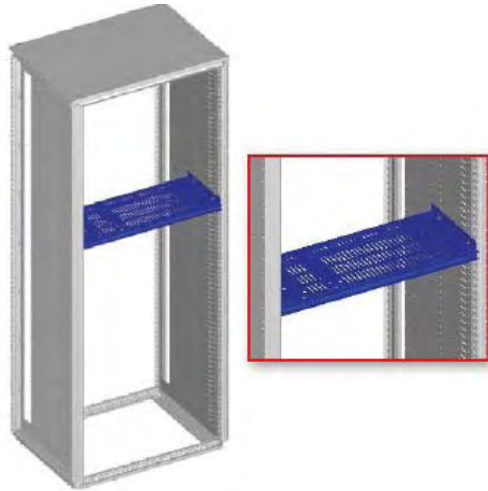
Use in combination with ventilated plinths PV.

CBP , Plain bottom plates



Description: Three piece bottom plates.
Material: 1.5 mm zinc plated steel.
Pack quantity: 3 pieces with mounting material.

W	D	Part No.
400	600	CBP046
600	600	CBP066
800	600	CBP086
1000	600	CBP106
1200	600	CBP126

**MSCC , Shelf for air circuit-breakers (ACB)**

Description: Shelf to mount air circuit-breakers, fixed or withdrawable version and MCCB' s version in cassette. The shelf has ventilation slots to allow air circulation in the section. It can be mounted only if we have internal side panels MSPSxx06 in both sides. Adjustable height position in steps of 25mm. It can not be used with the front covers system, if it is necessary to increase the internal segregation or limit the access, we recommend to use top and bottom shelf and 3 partial doors to separate the incoming, ACB and outgoing subsections.

Material: 2 mm galvanised steel.

Delivery: 1 piece with mounting material.

W	D	w	d	Part No.
600	600	504	283	MSCC0606
800	600	704	283	MSCC0806

Incoming Unit

When an incoming unit in which an air circuit-breaker, fixed or withdrawable must be mounted, we can mount it easily with the shelf MSCC. We are going to have free space behind it to make the incoming and the connection to the main busbar.

We can build up different subsections using different doors for each subsection with the partial doors in the front.

Segregation

If we need to get up to Form 2 segregation according to IEC 60439-1, we must segregate the front of the section from the rear busbar covering the free space around the air circuit-breaker in the front, side panels MSPS if we have a side busbar or shelf MSCH if we have top/bottom busbar.

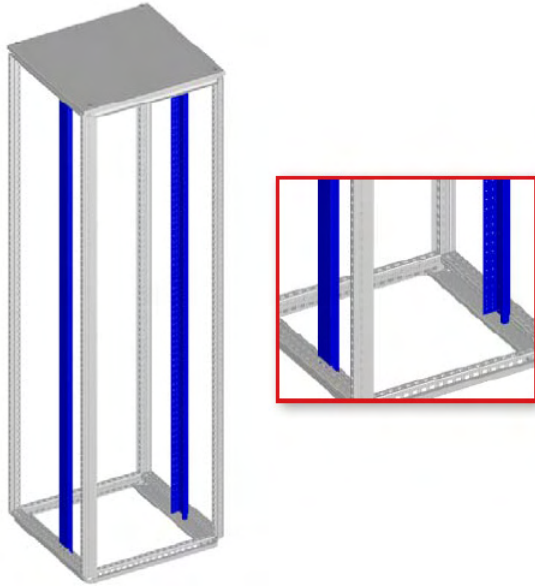
Segregation

If we need to get up to Form 2 segregation according to IEC 60439-1, we must segregate the front of the section from the rear busbar covering the free space around the air circuit-breaker in the front, side panels MSPS if we have a side busbar or shelf MSCH if we have top/bottom busbar.



Modular system

MSFMP , Fix modular system vertical profiles



Description: Vertical profiles to build up fixed modular systems. It can be mounted with or without sidepanels MSPS. These profiles let us mount MCBs and modular components in the rear part of the profile, and front panels MSMCP/MSMBP in front part of the profile.

Material: 1.25 mm galvanised steel.

Delivery: 1 piece with mounting material.

Modular system

Simple system to build up distribution panels, the profiles MSFMP are fixed directly to the enclosure frame in any depth (steps of 25 mm).

The profiles have two fixed mounting levels to make easier the work when modular components are going to be mounted:

a) Rear level: To fix MCBs and MCCBs on DIN rail.

b) Front level: To cover components with a plain or slotted covers

(MSMBP/MSMCP)

The system is not only for modular components and other solutions are available:

a) Adjustable mounting plate fixed to the rear level of the profiles MSFMP, using the depth adjustment kit MD and the mounting plates AMM.

b) Adjustable mounting plate fixed to the enclosure frame, using the depth profiles CLPK and the mounting plate MPP.

Segregation

The modular system lets us to get up to Form 2 segregation according to IEC 60439-1 using different accessories:

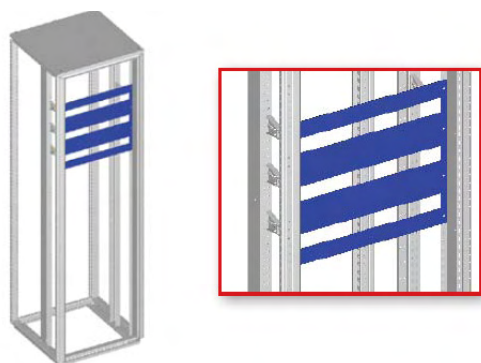
Form 2: Depending on the busbar position, we can segregate it from the functional units with the back separation plate MSPM, sidepanels MSPS and top/bottom shelf MSCH.

When form 2b is required the cable section must be segregated from the busbar as well, and it can be done with the accessory MSPM.

Plates	Front	Partial	For enclosure		Part No.
			H	W	
1700	1700	1600	1800	600	MSFMP1800
1900	1900	1900	2000	600	MSFMP2000
2100	2100	2100	2200	600	MSFMP2200



MSMCP , Slotted front panel



Description: Slotted front panel for modular assemblies. Provided with one DIN rail per row for modular components. It has a top and bottom bending to provide extra rigidity.
Material: 1.25mm steel.
Finish: Structure powder paint, RAL 7035.
Delivery: 1 piece with mounting material.

TB1310, Blanking plate for DIN slots

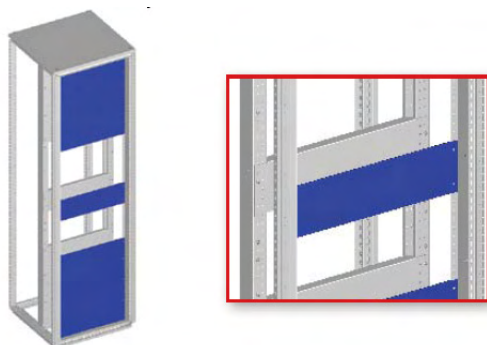


Description: Blanking plate to cover the unused space in the DIN slots. Can be divided per half a module.
Material: Plastic
Finish: RAL9010, light grey
Pack quantity: 10 pieces of blanking plate 13 mod. grey RAL9010. Overall length 234mm

N° of modules	Part No.
13	TB1310V

Enclosure dimension	N° of	DIN	Part No.	
H	W	rows	modules	
150	600	1	25	MSMCP1506R5
200	600	1	25	MSMCP2006R5
300	600	1	25	MSMCP3006-1R5
		2	50	MSMCP3006-2R5
450	600	3	75	MSMCP4506R5
600	600	4	100	MSMCP6006R5

MSMBP , Plain front panel



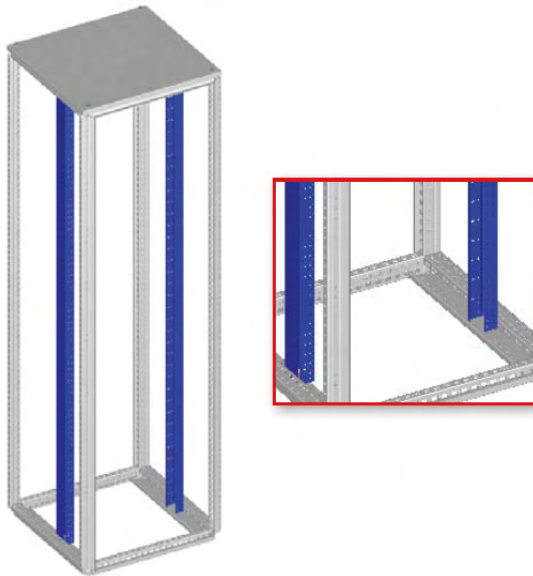
Description: Plain front panel for modular assemblies. It has a top and bottom bending to provide extra rigidity.
Material: 1.25 mm steel
Finish: Structure powder paint, RAL7035.
Delivery: 1 piece with mounting material.

H	W	h	w	Part No.
50	600	49	503	MSMBP0506R5
100	600	99	503	MSMBP1006R5
150	600	149	503	MSMBP1506R5
200	600	199	503	MSMBP2006R5
250	600	249	503	MSMBP2506R5
300	600	299	503	MSMBP3006R5
400	600	399	503	MSMBP4006R5
450	600	449	503	MSMBP4506R5
500	600	499	503	MSMBP5006R5
600	600	599	503	MSMBP6006R5



Fix system

MSFP , Fix system vertical profiles



Description: Vertical profiles to build up fixed systems. It can be mounted with or without sidepanels MSPS. These profiles lets us to mount MCCBs in mounting plates MSMP, or DIN profiles for MCBs and modular components with the accessory MSADP. The busbar supports in the rear of the compartments, MSFH, mount directly to the profile.

Material: 1.55 mm galvanised steel.

Delivery: 2 pieces with mounting material.

Plates /	Front	Partial	For enclosure		Part No.
			H	W	
1700	1700	1600	1800	600	MSFP1800
1900	1900	1900	2000	600	MSFP2000
2100	2100	2100	2200	600	MSFP2200

Fixed System

This system is a totally open solution based on the vertical profiles

MSFP fixed directly to the enclosure frame, these profiles let us mount the components in the mounting plates MSMP or in DIN profiles.

The busbar can be mounted behind the components, fixed to the vertical profiles MSFP with the busbar supports MSFH, or in a dedicated vertical section with the busbar supports ECBS/ EUBS.

When front protection is required, any cover configuration is possible with the front cover profiles MSFCP and the plain and slotted covers MSMBP/MSMCP. When this solution is used and we have modular components mounted in DIN rails, the accessory MSADP makes easier our work because it will give us the proper depth to the DIN rails.

Segregation:

The fixed system lets us to get up to Form 4 segregation according to IEC 60439-1 using different accessories:

Form 2: Depending on the busbar position, we can segregate it from the functional units with the mounting plates MSMP, sidepanels MSPS or top/bottom shelf MSCH.

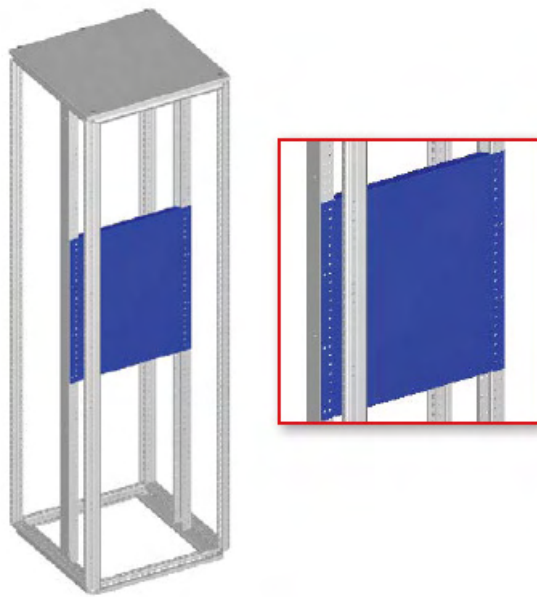
When Form 2b is required the cable section must be segregated from the busbar as well, and it can be done with the accessory MSPM.

Form 3: Using the separation plates between functional units, MSIS/MSES.

Form 4: Using the cable boxes MSCE.

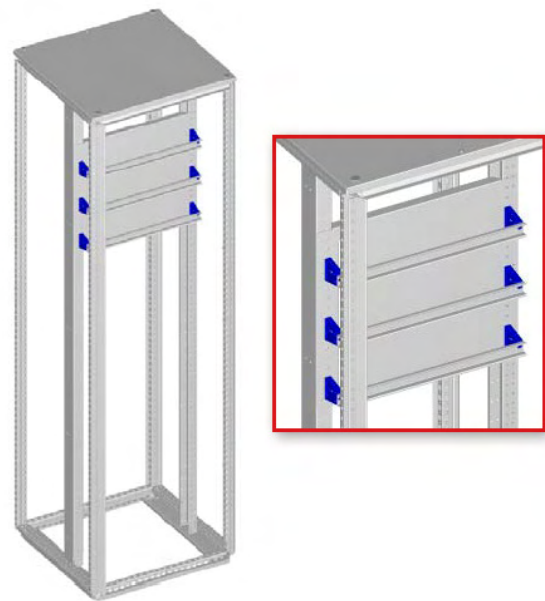


MSMP, Fix system mounting plate



Description: Mounting plate to be mounted in the fix system vertical profiles MSFP.
Material: 1.5 mm galvanised steel.
Pack quantity: 1 piece with mounting material.

MSADP, Holder for DIN rail



Description: Accessory to fix the DIN rail to the fix system mounting profiles at the proper depth to have the standard distance between the DIN rail and the front covers.
Material: Reinforced polyester.
Delivery: 10 pcs with mounting material.

Plain mounting plate

H	W	h	w	Part No.
50	600	46	503	MSMP0506
100	600	96	503	MSMP1006
150	600	146	503	MSMP1506
200	600	196	503	MSMP2006
250	600	246	503	MSMP2506
300	600	296	503	MSMP3006
400	600	396	503	MSMP4006
450	600	446	503	MSMP4506
500	600	496	503	MSMP5006
600	600	596	503	MSMP6006

Horizontal opening (vertical switch)

H	W	h	w	Part No.
100	600	96	503	MSMP1006H

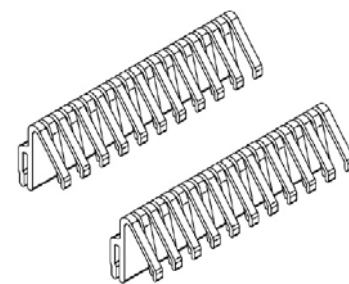
Vertical opening (horizontal switch)

H	W	h	w	Part No.
150	600	146	503	MSMP1506V
200	600	196	503	MSMP2006V
250	600	246	503	MSMP2506V
300	600	296	503	MSMP3006V
400	600	396	503	MSMP4006V
450	600	446	503	MSMP4506V
600	600	596	503	MSMP5006V
500	600	496	503	MSMP6006V

plate MSMPxxxx.

h	Part No.
56 mm	MSADP10

MSFG, Fingerguard

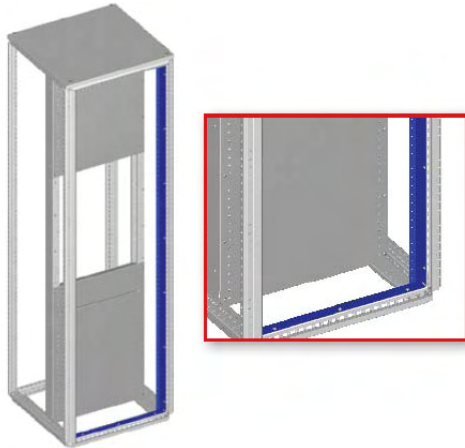


Description: Accessory to avoid the access to the live parts through the cable openings in the internal side panels and mounting plates.
Material: ABS.
Delivery: 2 pcs.

Length	Part No.
93 mm	MSFG2000

Fix system

MSFCP, Front cover profiles



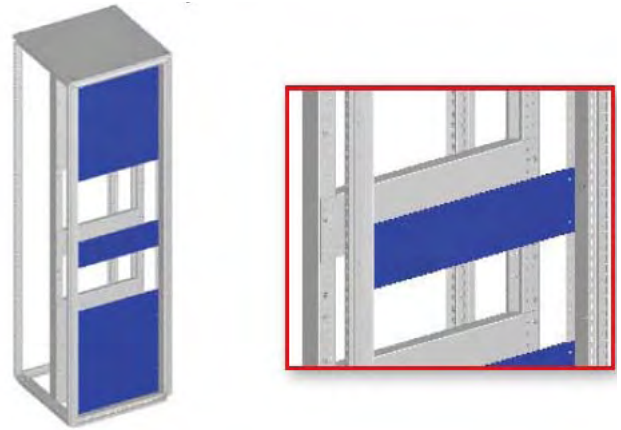
Description: Front frame built up by two vertical and two horizontal profiles. To be covered by front MSMBP, MSMCP and MSMIP.

Material: 1.5 mm galvanized steel.

Finish: Structure powder paint, RAL 7035.

Delivery: 2 vertical profiles, top and bottom profiles, and mounting material.

MSMBP, Plain front panel



Description: Plain front panel for modular assemblies. It has a top and bottom bending to provide extra rigidity.

Material: 1.25 mm steel

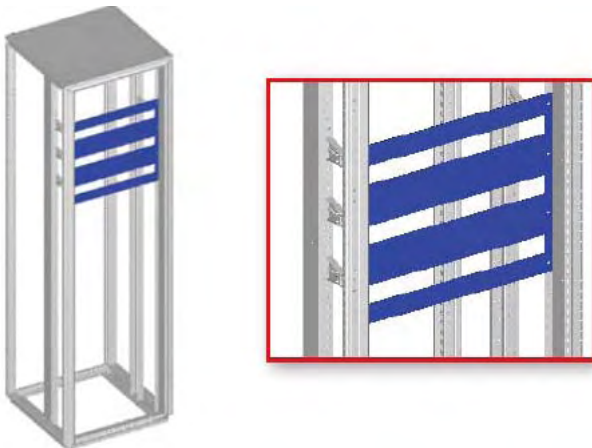
Finish: Structure powder paint, RAL7035.

Delivery: 1 piece with mounting material.

Enclosure H	Useful height	Part No.
1800	1700	MSFCP1806R5
2000	1900	MSFCP2006R5
2200	2100	MSFCP2206R5

H	W	h	w	Part No.
50	600	49	503	MSMBP0506R5
100	600	99	503	MSMBP1006R5
150	600	149	503	MSMBP1506R5
200	600	199	503	MSMBP2006R5
250	600	249	503	MSMBP2506R5
300	600	299	503	MSMBP3006R5
400	600	399	503	MSMBP4006R5
450	600	449	503	MSMBP4506R5
500	600	499	503	MSMBP5006R5
600	600	599	503	MSMBP6006R5

MSMCP, Slotted front panel



Description: Slotted front panel for modular assemblies. Provided with one DIN rail per row for modular components. It has a top and bottom bending to provide extra rigidity.

Material: 1.25mm steel.

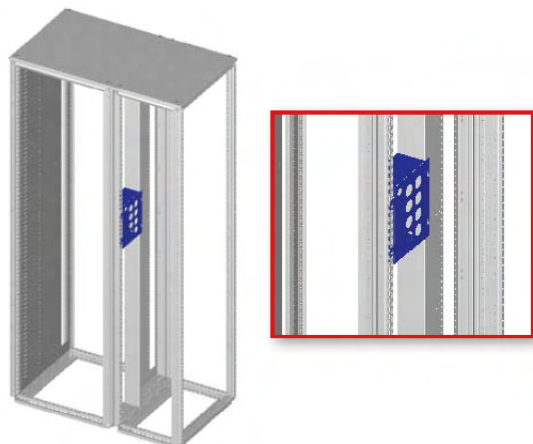
Finish: Structure powder paint, RAL 7035.

Delivery: 1 piece with mounting material.

Enclosure dimension	N° of	DIN	Part No.
H	W	rows modules	
150	600	1 25	MSMCP1506R5
200	600	1 25	MSMCP2006R5
300	600	1 25	MSMCP3006-1R5
		2 50	MSMCP3006-2R5
450	600	3 75	MSMCP4506R5
600	600	4 100	MSMCP6006R5



MSCE, Cable entrance box



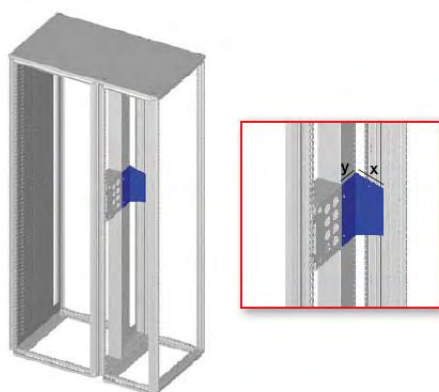
Description: Steel cable entrance box which lets us to build up a system with the terminations to functional units separated from each other, meeting the Form 4. With the MSCE each functional unit (compartment) has its own integral glanding facility.

Material: 1.25 mm galvanised steel.

Delivery: One piece, grommets for the cables holes, and mounting material.

For enclosure				
H	Ø 22,5 mm	Ø 29 mm	Ø 37 mm	Part No.
150	2	8	0	MSCE150
200	2	8	0	MSCE200
250	2	0	8	MSCE250
300	2	0	8	MSCE300

MSCEP, Bracket measuring trafo



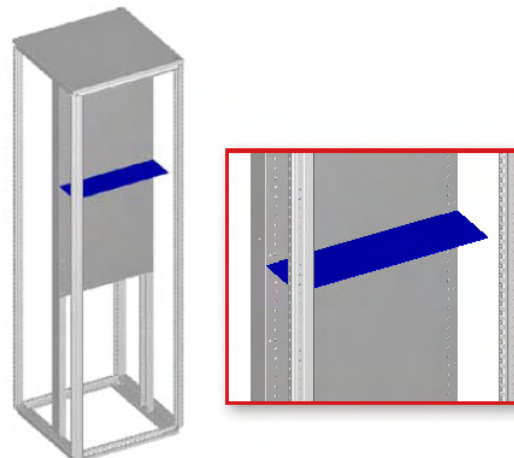
Description: Bracket to be fixed into the cable entrance box to mount the measuring equipment of the outgoing compartment.

Material: 2.0 mm galvanised steel.

Pack quantity: One piece with mounting material.

H	h	x	y	Part No.
150	120	105	20	MSCEP150
200	160	105	37	MSCEP200
250	235	105	95	MSCEP250

MSIS, Internal segregation horizontal plate



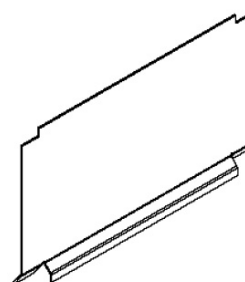
Description: Pre-sized horizontal separation plates between the mounting level and the front covers. Slides easily into place and let us to get Form 4 compartments for MCB' s and MCCB' s. No screws need.

Material: 3mm reinforced polycarbonate.

Delivery: 1 piece.

W	Part No.
600	MSIS600

MSES, External segregation horizontal plate



Description: Pre-sized horizontal separation plates between the mounting level and the front door. Slides easily into place and let us to get Form 4 compartments for MCB' s and MCCB' s. No screws need.

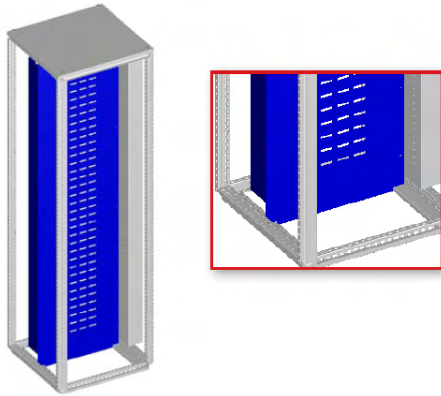
Material: 3mm reinforced polycarbonate.

Delivery: 1 piece.

W	Part No.
600	MSES600

Plug-in system

MSSB , Rear cover plate for plug-in sections



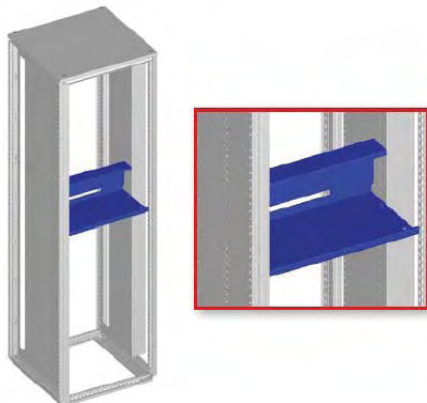
Description: Rear cover plate to separate the plug-in sections from the plug-in busbars. It includes the profiles in which the rear plate is fixed, and in which the busbar holders must be fixed too.

Material: 3mm reinforced polycarbonate, and 2 mm galvanised steel.

Delivery: One rear panel, two vertical profiles to fix the back plate and busbar supports, and mounting material.

H	W	h	w	Part No.
1800	600	1797	506	MSSB1806
2000	600	1997	506	MSSB2006
2200	600	2197	506	MSSB2206

MSCP , Compartments for plug-in connection



Description: Compartment for plug-in connection to the MSBS vertical busbar placed behind the compartments.

Material: 2 mm galvanised steel.

Delivery: Bottom shelf to fix the plug-in compartment, plug-in compartment with the incoming connectors, and mounting material. The mounting plate must be ordered separately

Part No.
MSCP01506
MSCP02006
MSCP02506
MSCP03006

Plug-in system

The plug-in system is based on the vertical profiles MSSB, in which are fixed the plug-in busbar supports MSVH. The vertical busbar is going to be behind the plug-in compartments MSCP, and the compartments are segregated from the busbar by a separation plate which guarantee Form 2 in the section. The compartments are available up to 800 A of connection capacity.

Segregation

The plug-in system lets us to get up to Form 4 segregation according to IEC 60439-1 using different accessories:

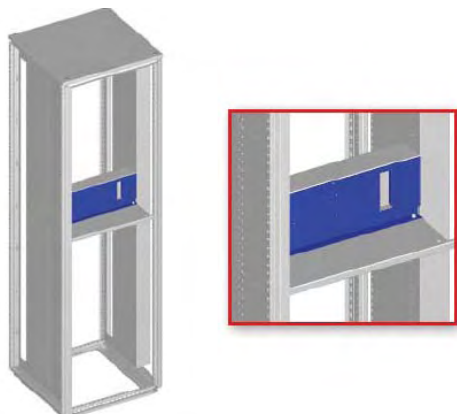
Form 3: Depending on the main busbar position, we can segregate it from the functional units with the sidepanels MSPS or top/bottom shelf MSCH. When Form 2b is required the cable section must be segregated from the busbar as well, and it can be done with the accessory MSPM.

Form 4: Using the cable boxes MSCE.



Plug-in system

MSCM, Plug-in compartment mounting plate



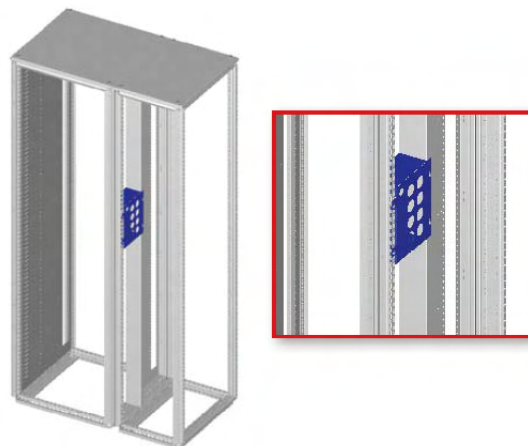
Description: Mounting plate to be mounted in the plug-in compartment MSCP. The mounting plate has 2 vertical cable openings for the incoming, one in each side (free space between the openings: 367 mm)

Material: 2 mm galvanised steel.

Delivery: 1 piece, the fixing screws are included in the MSCP kit.

H	W	h	w	Part No.
150	600	117	507	MSCM01506
200	600	167	507	MSCM02006
250	600	217	507	MSCM02506
300	600	267	507	MSCM03006

MSCE, Cable entrance box



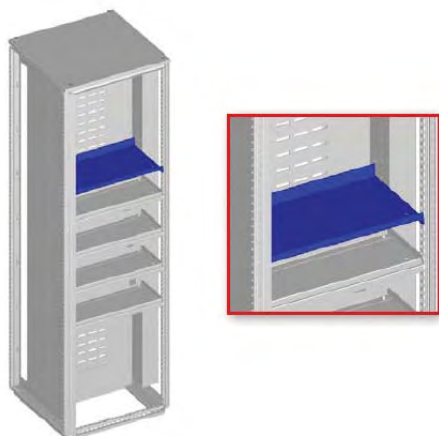
Description: Steel cable entrance box which lets us to build up a system with the terminations to functional units separated from each other, meeting the Form 4. With the MSCE each functional unit (compartment) has its own integral glanding facility.

Material: 1.25 mm galvanised steel.

Delivery: One piece, grommets for the cables holes, and mounting material.

For enclosure				
H	Ø 22,5 mm	Ø 29 mm	Ø 37 mm	Part No.
150	2	8	0	MSCE150
200	2	8	0	MSCE200
250	2	0	8	MSCE250
300	2	0	8	MSCE300

MSCH , Top cover for plug-in compartment



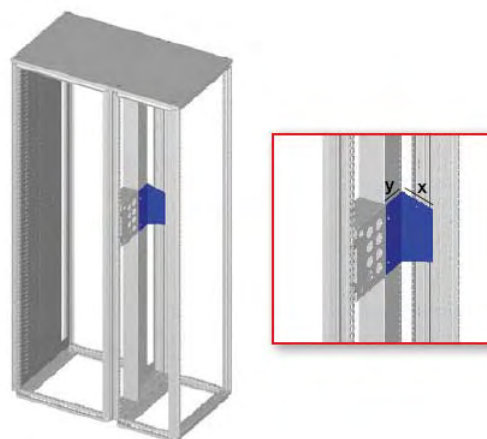
Description: Plate to cover the upper compartment, all the other compartments are covered by the bottom plate of the compartment above.

Material: 2 mm galvanised steel.

Delivery: 1 piece with mounting material.

W	D	w	d	Part No.
600	300	510	283	MSCH0604

MSCEP , Bracket measuring trafo



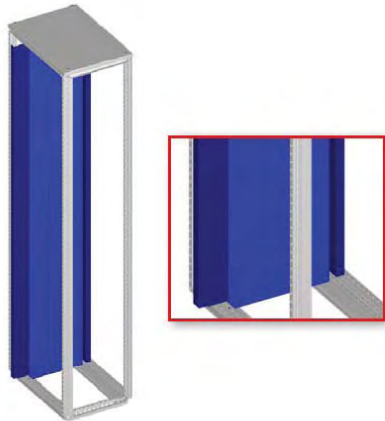
Description: Bracket to be fixed into the cable entrance box to mount the measuring equipment of the outgoing compartment.

Material: 2.0 mm galvanised steel.

Pack quantity: One piece with mounting material.

Plug-in system

MSPM , Separation plate for cable section



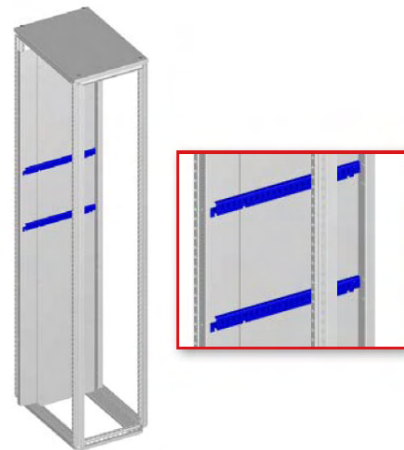
Description: Separation plate to segregate the front space in the cable section from the busbar space. It includes the profiles in which the separation plate is fixed, and in which the fixation cables profiles MSCFR/MSCFS must be fixed too.

Material: 3 mm reinforced polycarbonate, and 1.55 mm galvanised steel.

Delivery: One separation plate, two vertical profiles to fix the separation plate, and mounting material.

H	W	Part No.
1800	400	MSPM1804
	600	MSPM1806
2000	400	MSPM2004
	600	MSPM2006
2200	400	MSPM2204
	600	MSPM2206

MSCFR , Rear cable fixation profiles



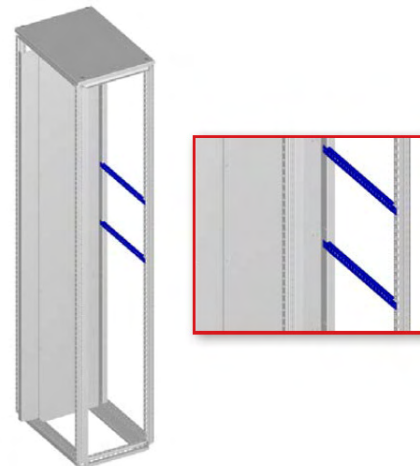
Description: Profiles to fix the cables easily in the rear part of the cable section, the profiles must be fixed in the MSPM.

Material: 2.0 mm galvanised steel.

Delivery: Five pieces with mounting material.

W	Part No.
400	MSCFR400
600	MSCFR600

MSCFS , Side cable fixation profiles



Description: Profiles to fix the cables easily in the side part of the cable section, the profiles must be fixed in the MSPM.

Material: 2.0 mm galvanised steel.

Delivery: Five pieces with mounting material.

D	Part No.
600	MSCFS600



Temperature-rise inside the assembly

The temperature-rise test has been carried out in the Eldon Power System according to the standar EN60439-1 8.2.1 (Verification of temperature-rise limits), and derived from this test you can find below the thermal dissipation values for the sections and subsections according to the size and situation.

The dissipation heat values are according to admissible temperature-rise inside the section or subsections, type of assembly (ventilated roof, ventilated panels, or closed), and the size.

These dissipation heat values must be higher than the sum of the total heat dissipated by the components installed inside the section or subsection.

The subsections must be studied separately only if the assembly is segregated according to Form 3 or Form 4, if it is Form 2 it can be considered as a section. The temperature rise from the low and top space of the section must to be taken in consideration.

Heat dissipation capacity.

Subsections (Form 3 or Form 4), heat dissipation in watts.

Subsection size		Ventilated Roof			Ventilated Panels			Closed			Additional dissipation for each free side		
H (mm)	W (mm)	20°K	30°K	40°K	20°K	30°K	40°K	20°K	30°K	40°K	20°K	30°K	40°K
100	400	17	23	30	14	19	25	11	15	20	15	23	30
150	400	23	35	45	19	29	38	15	23	30	23	33	45
200	400	30	45	59	25	38	49	20	30	40	30	45	60
250	400	39	57	75	33	48	63	26	38	50	38	56	75
300	400	45	68	90	38	56	75	30	45	60	45	68	90
400	400	59	90	120	49	75	100	39	60	80	60	89	120
100	600	23	35	45	19	29	38	15	23	30	15	23	30
150	600	35	50	68	29	41	56	23	33	45	23	33	45
200	600	45	68	90	38	56	75	30	45	60	30	45	60
250	600	57	84	113	48	70	94	38	56	75	38	56	75
300	600	68	102	134	56	85	111	45	68	90	45	68	90
400	600	90	134	179	75	111	149	60	89	120	60	89	120
500	600	113	167	224	94	139	186	75	111	150	75	111	150
600	600	134	201	269	111	168	224	90	134	180	90	134	180
100	800	30	45	59	25	38	49	20	30	40	15	23	30
150	800	45	68	90	38	56	75	30	45	60	23	33	45
200	800	59	90	120	49	75	100	40	60	80	30	45	60
250	800	75	113	149	63	94	124	50	75	100	38	56	75
300	800	90	134	179	75	111	149	60	89	120	45	68	90
400	800	120	179	239	100	149	199	80	119	160	60	89	120
500	800	149	224	297	124	186	248	100	149	200	75	111	150
600	800	179	269	356	149	224	296	120	179	237	90	134	180
800	800	239	356	476	200	296	396	160	237	317	120	178	240

Sections, heat dissipation in watts.

Subsection size		Ventilated Roof			Ventilated Panels			Closed			Additional dissipation for each free side		
H (mm)	W (mm)	20°K	30°K	40°K	20°K	30°K	40°K	20°K	30°K	40°K	20°K	30°K	40°K
1800	400	240	361	477	200	300	400	160	240	318	180	270	360
1800	600	361	537	718	300	449	600	240	359	479	180	270	360
1800	800	477	718	957	398	600	800	318	479	638	180	270	360
1800	1000	596	899	1196	498	749	998	398	599	798	180	270	360
1800	1200	715	1079	1435	598	899	1198	478	719	958	180	270	360
2000	400	265	398	531	221	333	443	177	266	354	200	300	400
2000	600	398	598	796	333	498	664	266	398	531	200	300	400
2000	800	531	796	1061	443	664	885	354	531	708	200	300	400
2000	1000	664	996	1328	554	830	1106	443	664	885	200	300	400
2000	1200	797	1195	1594	665	996	1327	532	797	1062	200	300	400
2200	400	294	438	586	244	364	488	195	291	390	220	330	435
2200	600	438	658	875	364	548	730	291	438	584	220	330	435
2200	800	586	875	1169	488	730	974	390	584	779	220	330	435
2200	1000	731	1095	1461	610	913	1218	488	730	974	220	330	435
2200	1200	877	1314	1753	732	1096	1462	586	876	1169	220	330	435

Heat generated inside the sections or subsections.

The heat generated in each section or subsection must be calculated according to the components which we are going to install inside of them, and this value is which must be taken in consideration to study the temperature-rise.

The watt loss of the components must be found in the technical information of each manufacturer.