



Modular enclosure system

Applications

- Industry
- Public utilities
- Multi motor panels
- Electronic instrumentation
- Low voltage panelboards

Standards

IEC 60439-1	EN 60439-1
IEC 60529	EN 60529
IEC 62208	EN 62208
DIN VDE 0660 - Teil 500	
BS 5486 Part 1	

Approvals



- Single boxes: types 2, 3, 3R, 3S, 5, 12 and 12K



- Modular system: types 2, 3, 3R, 3S, 5, 12 and 12K

- Modular system using 853063: types 2 and 3R

- Boxes with internal hinged cover: types 2, 5, 12 and 12K

- Boxes with external hinges: type 2



- Overview of the range ● Page C.2
- Dimensional drawings ● Page I.24
- Specifications for tender documents ● Page I.55
- Power dissipation values ● Page I.76

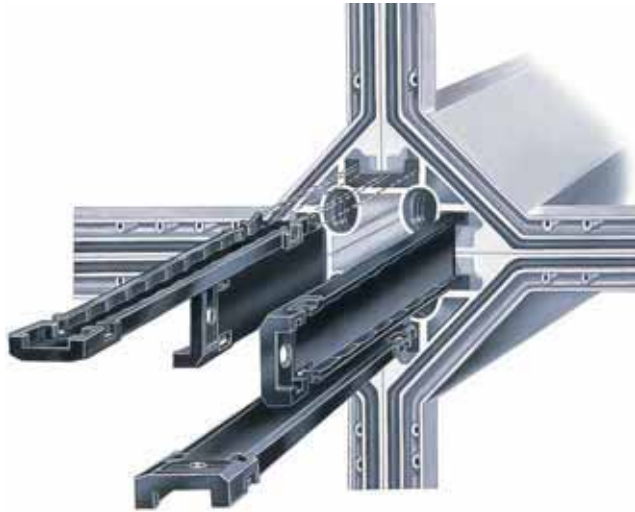
Features

- The range consists of five boxes based on a 100 mm module.
- The innovative coupling concept allows easy, rapid assembly of any combination of units without the need for tools.
- The open bases offer excellent accessibility and wiring space for installation, mounting and cable connection, even after coupling.
- The side panel openings can be closed by either blind or combi end plates. Once mounted, end plates fit perfectly flush with the side panels of the base.
- Each large box is a multiple of a smaller one. Its fixing points in increments of 25 mm in bottom plate and top end are also a multiple of those of a small box.
- The base and end plates are made of light grey (RAL 7035) glassfiber reinforced polycarbonate. The cover is made of either transparent or opaque light grey (RAL 7035) polycarbonate.
- A multiple of accessories like mounting plates, cover plates, depth extension frame, ... makes the VMS a complete system for electrical distribution and control applications.
- VMS boxes are halogen-free, corrosion resistant and require no maintenance.
- VMS boxes provide optimum security to both operations and equipment because they feature total insulation and protection degree IP65 according to IEC 60529 and EN 60529.
- This protection covers the total volume of the enclosure according to EN 62208 and IEC 62208.



Coupling system

The enclosures are coupled by means of vertical dowels, inserted into the corner shafts. These dowels are universal to all sizes.



End-plates installation

End-plates, combi or blind, are snapped on from the outside and fixed by means of vertically inserted dowels.



Modular insulated enclosures system



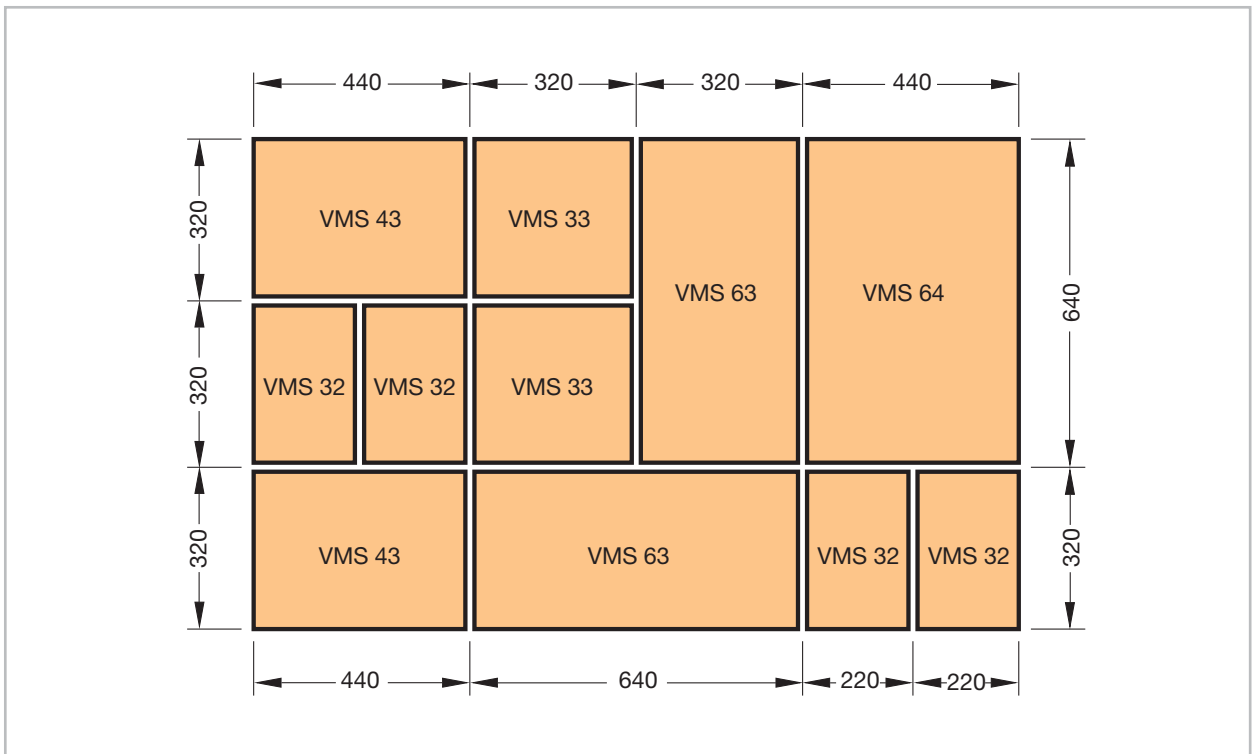
- | | | |
|------------------------------|---------------------------|--------------------------------|
| ① Base | ⑩ Combi end-plate | ⑲ Coupling clamp |
| ② Transparent cover | ⑪ Cable end-plate | ⑳ Universal support |
| ③ Opaque cover | ⑫ Cable stress release | ㉑ Stress relieving cable clamp |
| ④ Hinged cover | ⑬ Bridge | ㉒ Fixing bracket |
| ⑤ Depth extension frame | ⑭ Partition plate | ㉓ Air vent |
| ⑥ Mounting plate in metal | ⑮ Busbar support | ㉔ Coupling set 2 x 220 mm |
| ⑦ Mounting plate in pertinax | ⑯ DIN-profile | ㉕ Locking key |
| ⑧ Blind cover plate | ⑰ Mounting rail 12 x 2 mm | |
| ⑨ Blind end-plate | ⑱ Coupling dowels | |



Technical specifications

Protection degree according to IEC 60529	
individual and coupled	IP65
with coupling set 2 x 220	IP44
with extension frame	IP65
with cable entries	IP43
with bridges	IP55
Protection degree against external mechanical impacts according to EN 62262 and IEC 62262	
base + end plates + covers	IK08
hinged cover	IK07
Materials	
bases + end plates	reinforced fibre-glass polycarbonate
covers	polycarbonate
cover screws	polyamide
gaskets	PUR, neoprene
Temperature resistance	
materials	see page I.6
continuous use	-20°C up to +80°C
Colours	
bases + end plates	RAL 7035
covers	RAL 7035 / transp.
Protection	Total isolation <input checked="" type="checkbox"/>
Rated voltage	690VAC / 800VDC
Rated insulation voltage	690VAC
Rated current	max. 1250A
Rated short time withstand current	max. 30kA (0.3 s.)
Rated peak short-circuit current	max. 65kA peak
Standards	
	EN 60439-1 DIN VDE 0660 - T 500 BS 5486 Part 1 IEC 60439-1

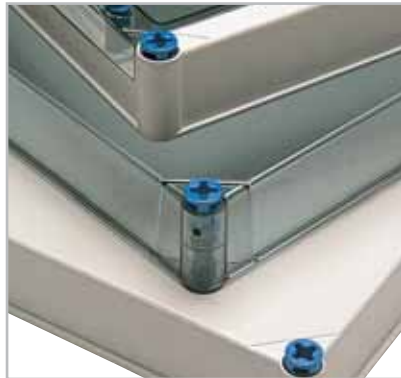
Recommended configuration for optimal modularity



Features and Benefits



Modular dimensions in increments of 100 mm in height and width, available in five sizes:
 320 x 220 mm 320 x 320 mm
 440 x 320 mm 640 x 320 mm
 640 x 440 mm



Assorted covers: transparent, opaque, or hinged, common design and depth.



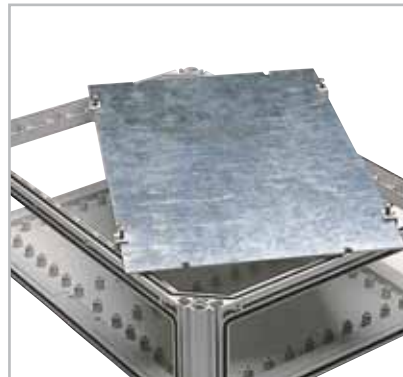
Time saving coupling by means of vertical dowels, inserted into corner slots.



End-plates, combi or blind, are snapped on from the outside and fixed by means of vertically sunk keys.



Once mounted, end-plates fit perfectly flush with the side panels of the base.



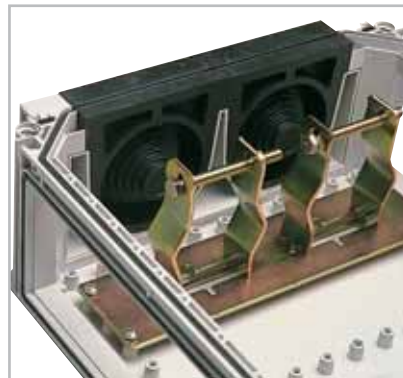
Rectangular mounting plates (2 mm in metal or 5 mm in laminated pertinax) with mounting set. Usable mounting depth is maximised and not dependant on plate thickness.



Universal support for screwless and depth adjustable installation of component rails. The support is simply clicked over the base.



Bridges are inserted after connection of cables (320 and 440 mm sides).



Universal cable entries and stress relieving cable clamps for cables up to Ø 75 mm can be located in any base on side 320 mm (for two cables) or on side 440 mm (for three cables).

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Modular system components

		Type	VMS 32	VMS 33	VMS 43	VMS 63	VMS 64
	Base With four open sides	H x W x D	320 x 220 x 130	320 x 320 x 130	440 x 320 x 130	640 x 320 x 130	640 x 440 x 130
		Ref. No.	853000	853001	853002	853003	853004
		Pack.	4	2	2	1	1
	Transparent cover With slotted screws	H x W x D	320 x 220 x 50	320 x 320 x 50	440 x 320 x 50	640 x 320 x 50	640 x 440 x 50
		Ref. No.	853005	853006	853007	853008	853009
		Pack.	4	2	2	1	1
	Opaque cover With slotted screws	H x W x D	320 x 220 x 50	320 x 320 x 50	440 x 320 x 50	640 x 320 x 50	640 x 440 x 50
		Ref. No.	853010	853011	853012	853013	853014
		Pack.	4	2	2	1	1
	Hinged cover With double closure system 215° opening angle	H x W x D	-	320 x 320 x 50	440 x 320 x 50	-	-
		Ref. No.	-	853015	853016	-	-
		Pack.	-	2	2	-	-
	Depth extension frame With fixing screws	H x W x D	320 x 220 x 75	320 x 320 x 75	440 x 320 x 75	640 x 320 x 75	640 x 440 x 75
		Ref. No.	853030	853031	853032	853033	853034
		Pack.	4	2	2	1	1
	Mounting plate Metal, 2 mm With mounting set Pertinax, 5 mm With mounting set	H x W	260 x 160	260 x 260	380 x 260	580 x 260	580 x 380
		Ref. No.	853068	853069	853070	853071	853072
		H x W	260 x 160	260 x 260	380 x 260	580 x 160	580 x 380
		Ref. No.	853113	853114	853115	853116	853117
		Pack.	1-10	1-10	1-10	1-10	1-10
	Plain cover plate Insulated material, 2 mm With mounting set	H x W	301 x 201	301 x 301	421 x 301	621 x 301	621 x 421
		Ref. No.	853103	853104	853105	853106	853107
		Pack.	1-10	1-10	1-10	1-10	1-10

Accessories

Combi end-plates			
Side (mm)	Characteristics Metric	Ref. No.	Pack.
220	3 x M32/M25 + 3 x M20	855029	1/10
220	1 x M50/M40 + 4 x M25/M20	855030	1/10
320	3 x M50/M40 + 4 x M16	855032	1/10
320	17 x M20	855033	1/10
320	1 x M50/M40 + 2 x M32/M25 + 4 x M25/M20	855034	1/10
320	12 x M25/M20	855035	1/10
320	4 x M40/M32 + 3 x M20	855036	1/10
440	1 x M40/M32 + 16 x M25/M20	855037	1/10
440	1 x M50/M40 + 2 x M40/M32 + 8 x M25/M20	855038	1/10



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Blind end-plates

Side (mm)	Ref. No.	Pack.
220	853017	1/10
320	853020	1/10
440	853027	1/10



Coupling key

Ref. No.	Pack.
853059	20

For base coupling



Cable entries

Side (mm)	Ref. No.	Pack.
320	853082	1/5
440	853083	1/5

Ø max. of cable: 2 x 75 mm

Ø max. of cable: 3 x 75 mm



Locking pin

Ref. No.	Pack.
853055	10

For cable end-plates (spare part)



Cable stress release

Side (mm)	Ref. No.	Pack.
320	853036	1/5
440	853037	1/5

With one clamp

Ø max. of cable: 75 mm

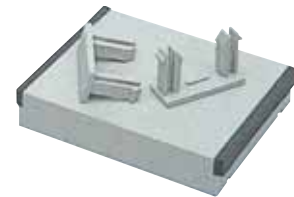


Coupling set 2 x 220

Ref. No.	Pack.
853063	1

To couple 2 sides of 220 mm to one side of 440 mm

With mounting accessories



Cable clamp

Ref. No.	Pack.
853035	1

To mount on cable stress release

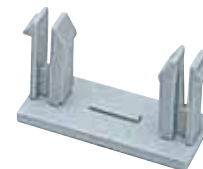
Ø max. of cable: 75 mm



Coupling clamp

Ref. No.	Pack.
853062	10

For coupling in special cases



Bridges

Side (mm)	Ref. No.	Pack.
320	853073	1
440	853074	1

For large cross-section cables










Universal support

Ref. No.	Pack.
853060	10

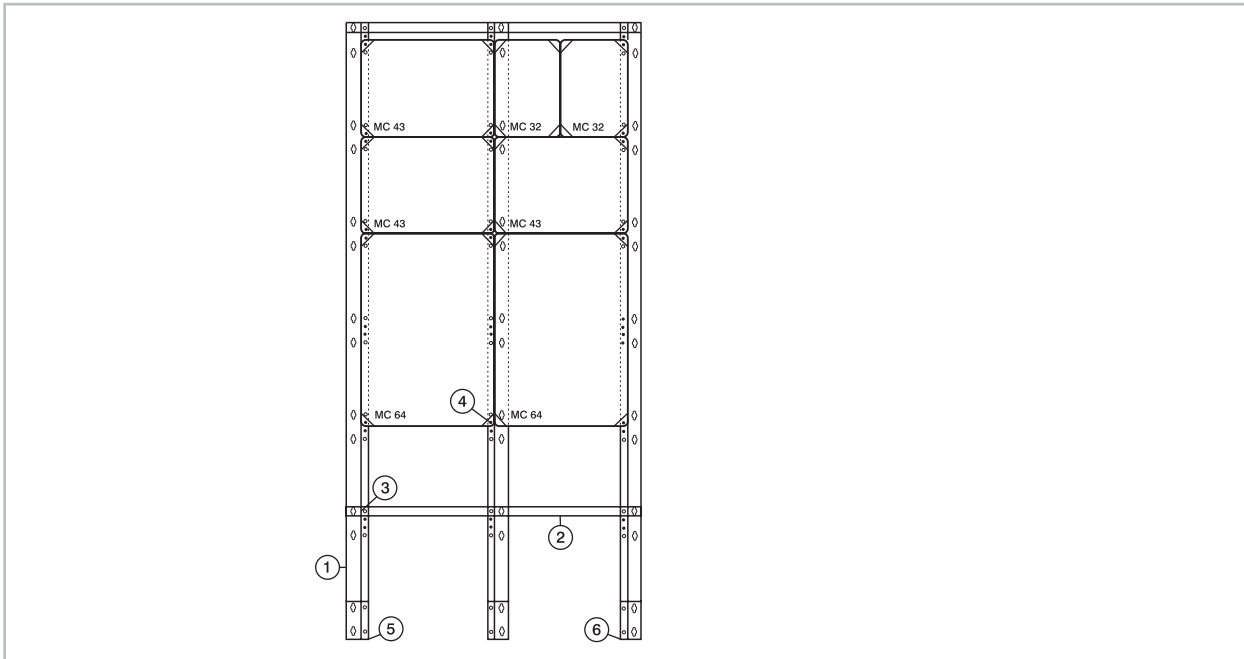
To fit: - mounting plates (metal or synthetic)
- cover plates
- copper rail 15 x 3
- copper rail 9 x 6.5
- mounting rail 12 x 2 mm



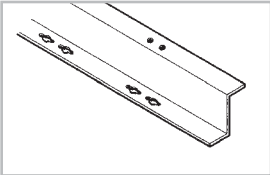

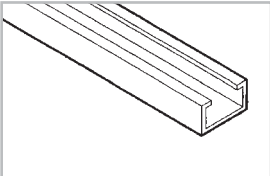
Accessories (continued)

	<p>Universal support</p> <table border="1"> <tr> <td>Side 320 mm</td> <td>855084</td> <td>1</td> </tr> </table> <p>To fit:</p> <ul style="list-style-type: none"> - mounting plates (metal or pertinax) - cover plates - DIN-rails - copper rail 15 x 3 - copper rail 12x5/10 - mounting rail 12 x 2 mm <p>Fixation screws to be used: 853100 (5x13)</p>	Side 320 mm	855084	1	<p>Cover screw</p> <table border="1"> <tr> <td></td> <td>853057</td> <td>1</td> </tr> </table> <p>Set of 4 pieces</p>		853057	1													
Side 320 mm	855084	1																			
	853057	1																			
	<p>Symmetrical DIN-profiles</p> <table border="1"> <tr> <td>Side (mm)</td> <td></td> <td></td> </tr> <tr> <td>220</td> <td>853094</td> <td>1</td> </tr> <tr> <td>320</td> <td>853095</td> <td>1</td> </tr> <tr> <td>440</td> <td>853096</td> <td>1</td> </tr> <tr> <td>640</td> <td>853269</td> <td>1</td> </tr> </table> <p>Always supplied with two universal supports</p>	Side (mm)			220	853094	1	320	853095	1	440	853096	1	640	853269	1	<p>Hinge screw</p> <table border="1"> <tr> <td></td> <td>853061</td> <td>1</td> </tr> </table> <p>Base must be fixed prior to hinge installation</p> <p>Set of 2 pieces.</p>		853061	1	
Side (mm)																					
220	853094	1																			
320	853095	1																			
440	853096	1																			
640	853269	1																			
	853061	1																			
	<p>Mounting rail 12 x 2 mm</p> <table border="1"> <tr> <td>Side (mm)</td> <td></td> <td></td> </tr> <tr> <td>220</td> <td>853097</td> <td>1</td> </tr> <tr> <td>320</td> <td>853098</td> <td>1</td> </tr> <tr> <td>440</td> <td>853099</td> <td>1</td> </tr> </table> <p>To fit connection terminal blocks</p> <p>Always supplied with two universal supports</p> <p>Branch terminals, see p. I.7</p>	Side (mm)			220	853097	1	320	853098	1	440	853099	1	<p>Hinges</p> <table border="1"> <tr> <td></td> <td>853340</td> <td>1</td> </tr> </table> <p>In order to enable hinge mounting, holes must be drilled in the cover and in the base. Templates for drilling are supplied with each set. Each set consists of two hinges, screws, a drilling template, the mounting instructions and spacer shims.</p> <p>Set of 2 pieces.</p>		853340	1				
Side (mm)																					
220	853097	1																			
320	853098	1																			
440	853099	1																			
	853340	1																			
	<p>Partition plates</p> <table border="1"> <tr> <td>Side (mm)</td> <td></td> <td></td> </tr> <tr> <td>220</td> <td>853065</td> <td>1</td> </tr> <tr> <td>320</td> <td>853066</td> <td>1</td> </tr> <tr> <td>440</td> <td>853067</td> <td>1</td> </tr> </table> <p>For full compartmentalisation of coupled bases</p>	Side (mm)			220	853065	1	320	853066	1	440	853067	1	<p>Thumb grip</p> <table border="1"> <tr> <td></td> <td>853058</td> <td>1</td> </tr> </table> <p>For cover screw or hinge screw.</p> <p>Set of 4 pieces.</p>		853058	1				
Side (mm)																					
220	853065	1																			
320	853066	1																			
440	853067	1																			
	853058	1																			
	<p>Wall fixing brackets</p> <table border="1"> <tr> <td></td> <td>853064</td> <td>1</td> </tr> </table> <p>Set of four brackets with screws</p> <ul style="list-style-type: none"> - Stainless steel - For external fixing points - Direct fitting through the corner shafts of the base - To be installed prior to extension frame or hinge installation - Three optional mounting positions (0°, 45°, 90°) 		853064	1	<p>Self-tapping screws</p> <table border="1"> <tr> <td>5 x 13</td> <td>853100</td> <td>50</td> </tr> <tr> <td>5 x 16</td> <td>853101</td> <td>50</td> </tr> <tr> <td>5 x 22</td> <td>853102</td> <td>50</td> </tr> </table> <p>For fixation in the base.</p>	5 x 13	853100	50	5 x 16	853101	50	5 x 22	853102	50							
	853064	1																			
5 x 13	853100	50																			
5 x 16	853101	50																			
5 x 22	853102	50																			
	<p>Blanking plate</p> <table border="1"> <tr> <td></td> <td>828056</td> <td>1m</td> </tr> </table> <p>For 45 mm cut-out</p>		828056	1m	<table border="1"> <tr> <td>6 x 16</td> <td>851384</td> <td>500</td> </tr> <tr> <td>6 x 22</td> <td>851385</td> <td>500</td> </tr> </table> <p>To fasten components to metallic mounting plates.</p>	6 x 16	851384	500	6 x 22	851385	500										
	828056	1m																			
6 x 16	851384	500																			
6 x 22	851385	500																			
	<p>Air vent - IP44</p> <table border="1"> <tr> <td></td> <td>853123</td> <td>1</td> </tr> </table> <p>Install two air vents per enclosure to allow ventilation and prevent condensation. Set of 2 pieces.</p>		853123	1	<p>Marking strip</p> <table border="1"> <tr> <td></td> <td>851321</td> <td>1m</td> </tr> </table> <p>Self-adhesive</p>		851321	1m													
	853123	1																			
	851321	1m																			

Supporting frame



Accessories

	1 Vertical Z-profile - RAL 9001 853866 1 Aluzink - L = 2360 mm, for 6 x 320	3 Fixation bracket 853870 1 For connection of vertical with horizontal profile	
	853867 1 Aluzink - L = 2040 mm, for 5 x 320		
	853868 1 Aluzink - L = 1080 mm, for 3 x 320		
	853869 1 Aluzink - L = 760 mm, for 2 x 320		
	4 Screw 853871 50 M5 x 16 DIN 7500-C - TORX		
	2 Horizontal - C-profile 853865 1 Length = 2500 mm	5 Stand support 853872 1 Left	
	870384 1 Length = 6000 mm	6 Stand support 853873 1 Right	

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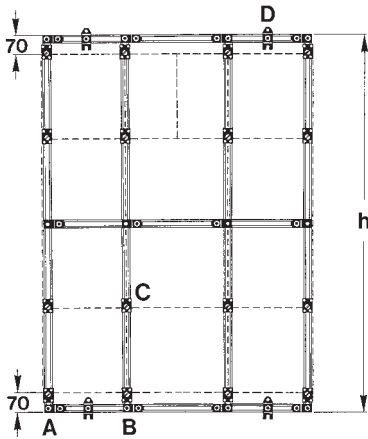
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Supporting frame

- Wall mounting of small units can be made using stainless steel fixing brackets (see chapter J). For mounting and handling of units of more than five enclosures, a supporting frame is compulsory.
- The supporting frame consists of at least two horizontal C-profiles (= the length of the assembly width) and a number of two vertical C-profiles (equal to the number of vertical sections +1).
- If the unit height is greater than 1000 mm, three horizontal C-profiles will be used.
- The vertical C-profiles are 140 mm longer than the height of the assembled panel.
- The frame and the enclosure assembly should be mounted simultaneously.



Horizontal and vertical C-profiles of the first row of enclosures are assembled together by clamping brackets and sliding nuts. The next clamping brackets are mounted on the horizontal profile.



The first row of enclosures is then mounted on the vertical profiles with the clamping plates.

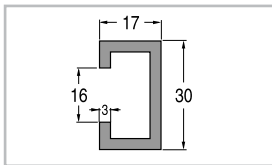


Following rows are then assembled the same way.



Frame and enclosure assemblies are mounted simultaneously.

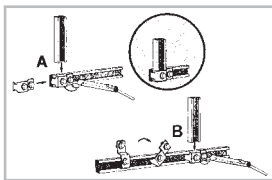
Accessories



Aluminium C-profile

851254 1

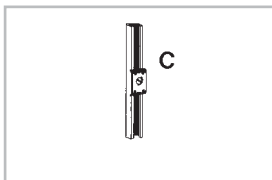
30 x 17 x 3 mm
Length = 3 m



Frame clamping brackets

851253 10

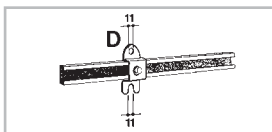
Complete with 2 bolts and 2 M8 sliding nuts. For clamping top and bottom horizontal C-profiles to vertical profiles.



Clamping plate

851415 10

Complete with screw and M8 sliding nut. For fitting the enclosures onto vertical C-profiles of the frame.



Wall mounting bracket

851249 10

Bolt M6 x 12 DIN 84

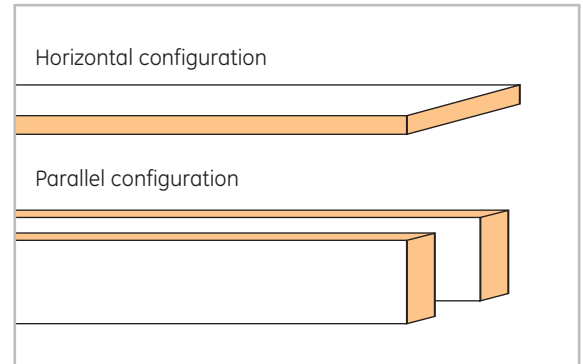
853256 50

To fit clamping plate on the enclosure

Busbar system



Universal busbar system 125A-1250A
KEMA approved according to EN 60439-1



Wall mounting system enclosures

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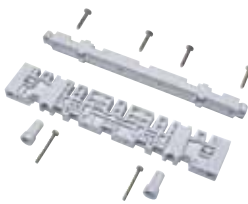
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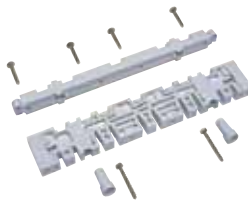
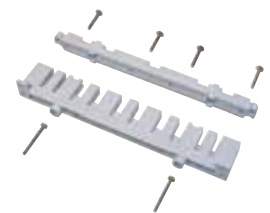
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Accessories



853075 1
Horizontal configuration 125A/250A
Parallel arrangement 250A

853077 1
Parallel arrangement 630A/1250A

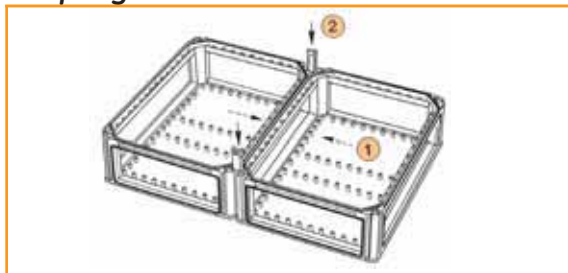


853076 1
Horizontal configuration 125A/250A
Parallel arrangement 400A



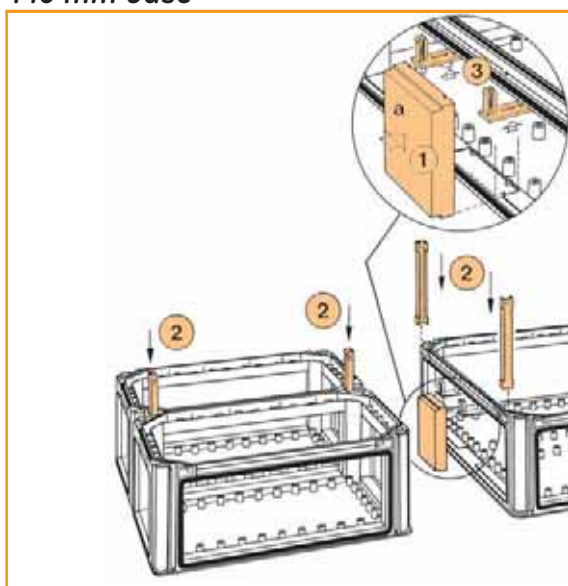
Mounting instructions

Coupling of the bases



- ① Set the two bases against each other
- ② Couple with dowels

Coupling of two 220 mm bases to one 440 mm base



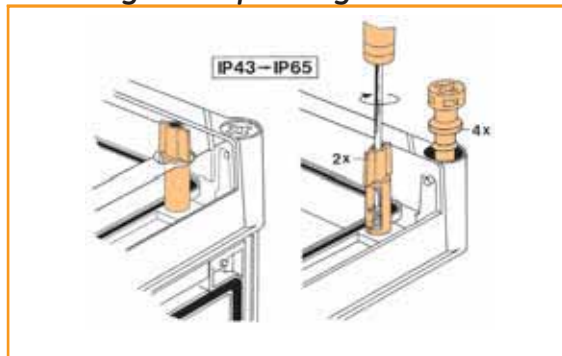
- ① Install the bridge (a) in the 440 mm side. Exact location is defined by the slots
- ② Couple the bases with the four dowels
- ③ Snap coupling clamps in the openings below the upper base lip

Cover installation



- ① Snap the screws in the four cover corners. The screws are then captive.
- ② Fit the cover on the base (one turn on screws, max. 2.5Nm).
- ③ If necessary, stick the total isolation symbol on the cover.

Mounting of the pivoting doors



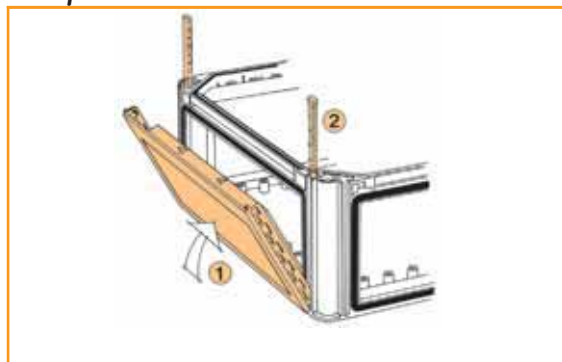
Install the door locking screws on the door frame with self tapping screws.

Protection degree:

IP43: door locking screws open

IP65: door locking screws closed

End plate installation



- ① Position the end plate in the base opening bottom. Snap the plate completely in the opening.
- ② Lock the end plate by means of two locking pins.

Cable gland installation in the combi end plate



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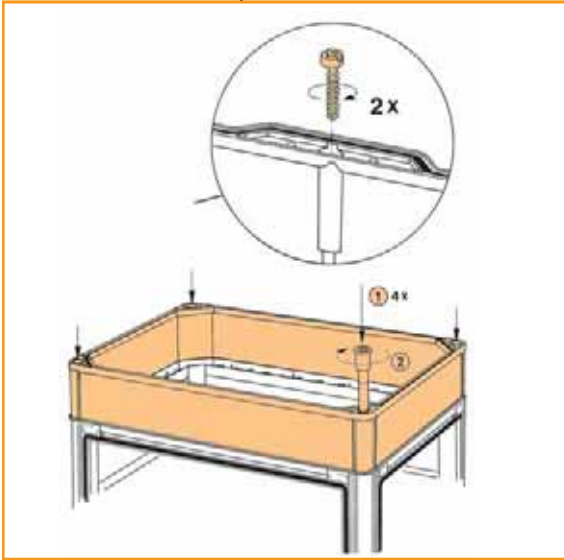
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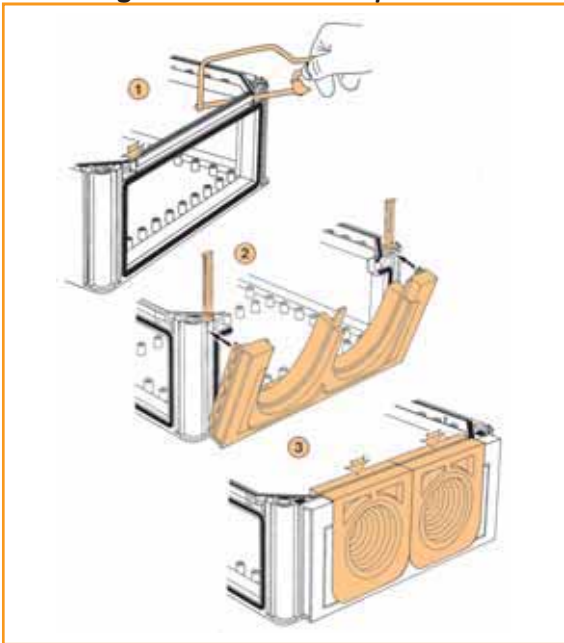
Installation of depth extension frame



- ① Snap the screws frame corners. The screws are then captive
- ② Tighten the frame onto the base with the screws.

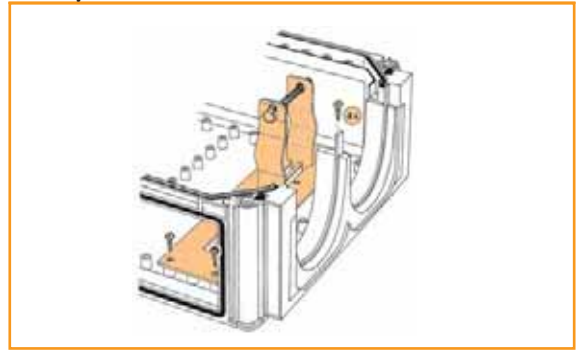
For the extension frames with 640 mm side, additional fixation with two self tapping screws.

Mounting of the cable end plates



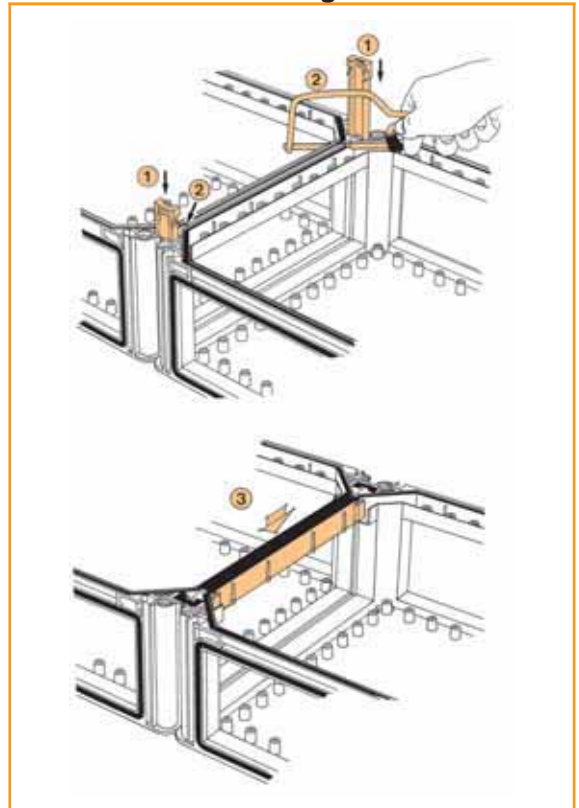
- ① Cut the top base lip following the marks.
Side 320 - opening is 220 mm.
Side 440 - opening is 320 mm.
- ② Install the end plate in the channel of the base bottom, then press against the side wall.
Lock with the locking pins.
- ③ Insert the rubber cable entries in the end plates.

Installation of the stress relieving cable clamp



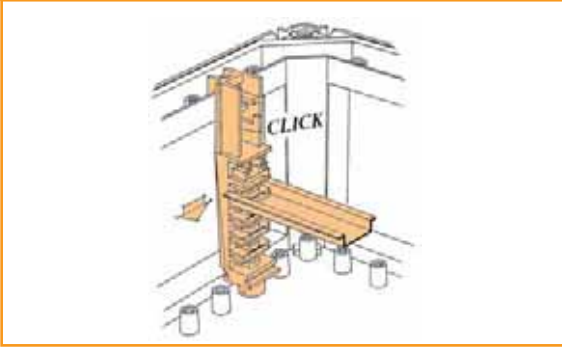
Install the stress release support with the four self tapping screws.
Install the stress release clamps in the sleeve.
Lock with the bolt and nut.

Installation of the bridge



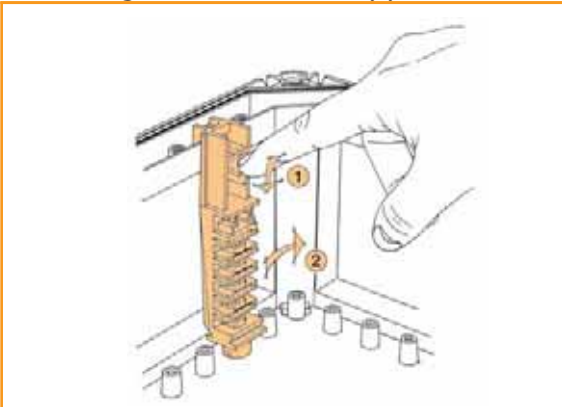
- ① Couple the two bases with dowels.
- ② Cut the top adjacent side lips following the markings.
- ③ Stick the self-adhesive gasket and press it into the bridge gutter. Install the bridge between the two bases.

Installation of the universal support



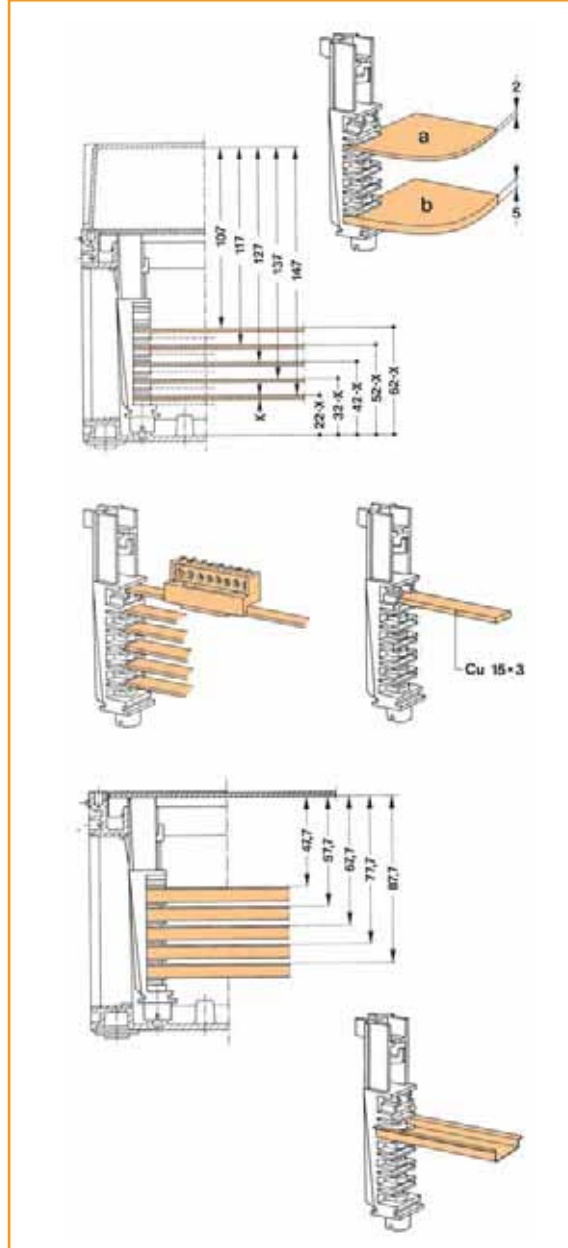
Insert the universal support on the base insert. Simultaneously fit the support on the inner lip. Press completely.

Unlocking the universal support



Press the locking latch towards the bottom. Lift the support.

Capabilities of the universal support



- Metal mounting plates (a) or pertinax plates (b)
- Copper rails 15 x 3
- Flat bar 12 x 2 mm
- Symmetrical DIN-profile

A

B

C

D

E

F

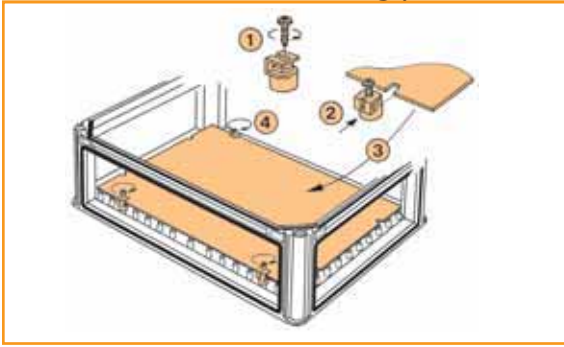
G

H

I

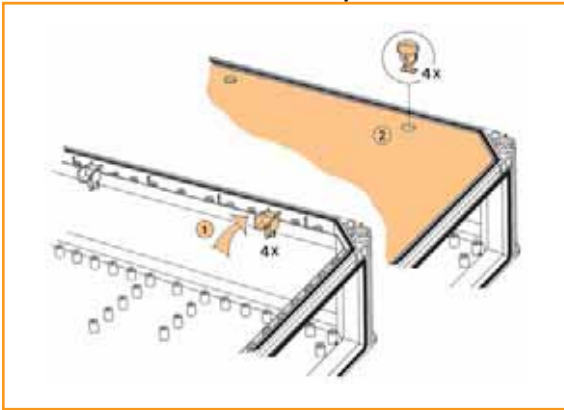
X

Installation of the mounting plates



- ① Rotate the screws one turn in each support.
- ② Insert the four supports in the mounting plate slots.
- ③ Install the plate with the supports in the bottom of the base.
- ④ Tighten the screws.

Installation of the cover plates



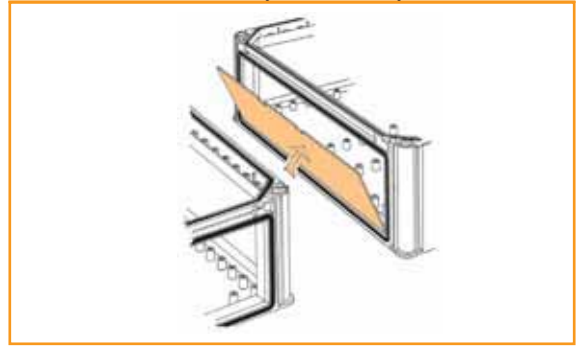
- ① Snap the four supports on the base inner lip.
- ② Install the four quarter-turn fasteners on the cover plate. Fit the cover plate on the supports by turning the fasteners.

Installation of the air vents



Drill a $\varnothing 19$ mm hole, install the air vent and screw the nut.

Installation of the partition plates



Install the partition plate between the two bases to be coupled.
The plate must be mounted with the slots on the top.

Installation of the hinges



Before the hinge installation, install the mounting brackets on the base, or install the enclosure on the wall or on the supporting frame.
Introduce the hinges in the screw holes of the cover. Insert in the base corners. Turn the screw until locked (360°).

Installation of the mounting brackets



Fit the brackets in the proper orientation (0°, 45°, 90°).
Screw through the base corner holes.