

Industrial Enclosures ED. 03

For indoor and outdoor
industrial applications

Sheltering as a second nature



GE imagination at work

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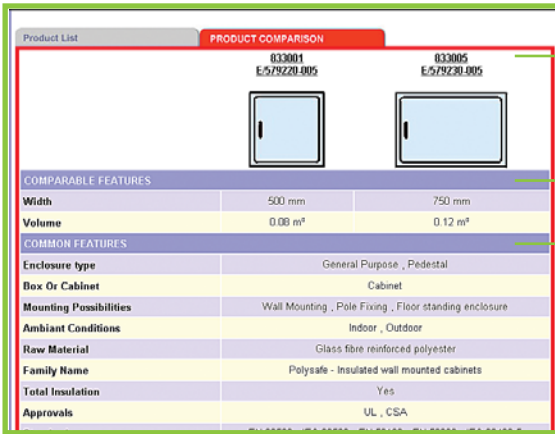


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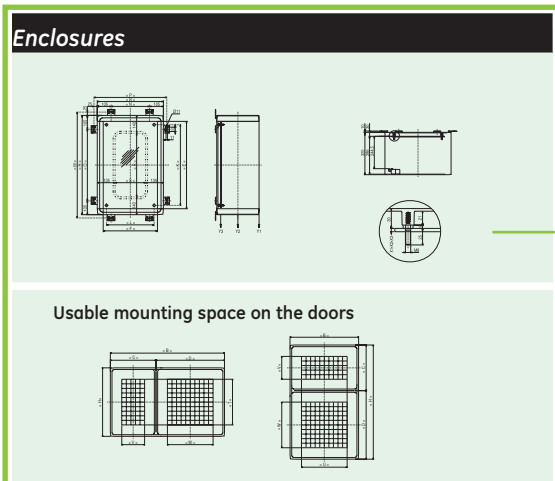
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Housings for all kind of *applications*



Industry

Shipyards, mining, automotive, paper & pulp, food and beverage, petro-chemicals, heavy industry, transformers, system monitoring,...



Commercial

Leisure (market places, camping sites, harbours for pleasure craft, amusement parks,...), fuel stations, car washes, laundrettes and laundries, service enclosures for construction yards



Utilities

Energy distribution (electricity, gas, water), cable TV, telecommunication,...



Public services

Public transport, public lighting, railways, water treatment plants, waste management,...

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MultiBox



Small multipurpose boxes

Wide range of small to medium size multipurpose boxes for in- and outdoor applications.

- Automation and control applications in industry, machinery, toolshop and OEM.
- Electronic applications in data and telecom industry.
- As commercial and industrial power distribution boxes.

All boxes are made from polystyrene or glass-fibre reinforced polycarbonate, offering a high protection degree of IP66 with mechanical impact strength of IK07 for polystyrene and IK08 for polycarbonate.

MultiBox enclosures can be easily modified and/or customized (coloured, printed, with cut-outs...)

- Overview of the range ● Page A.3
- Product information ● Page A.4
- Dimensional drawings ● Page J.10
- Specifications for tender documents ● Page J.60

VJ-BOX



Polyester NEMA sized boxes

Seven NEMA sized boxes according to the Joint Industrial Council (JIC) for in- and outdoor applications.

- Automation and control applications in oil and steel industry, petrochemical plants, breweries.
- Applications in utilities such as public lighting, traffic control, signalisation.
- For installation in aggressive environments such as ship-yards, offshore oil production platforms, mining sites.

All boxes are made of hot moulded, glass-fibre reinforced polyester, offering a high protection degree of IP67/IP66 with a mechanical impact strength of IK10.

VJ-Boxes can be readily worked with conventional tools such as drills, cutting mills, saws, punches, etc.

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- Product information ● Page A.9
- Dimensional drawings ● Page J.13
- Specifications for tender documents ● Page J.61
- Power dissipation values ● Page J.80

APO



Modular polyester boxes

Range of nine medium sized, modular, multipurpose boxes for in- and outdoor applications.

- Automation and control applications in oil and steel industry, petrochemical plants, breweries.
- Applications in utilities such as public lighting, traffic control, signalisation.
- For installation in aggressive environments such as shipyards, offshore oil production platforms, mining sites.

All boxes are made of hot moulded, glass-fibre reinforced polyester, offering a high protection degree of IP67 with a mechanical impact strength of IK10.

APO-boxes can be readily worked with conventional tools such as drills, cutting mills, saws, punches, etc.

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Product information ● Page A.13

Dimensional drawings ● Page J.14

Specifications for tender documents ● Page J.62

Power dissipation values ● Page J.82

ARIA



Universal polyester cabinets

Range of seven universal multipurpose cabinets for in- and outdoor applications. Ideal for high performance applications in

- Heavy industry (pulp & paper mills, mining sites, wood & lumber production, steel mills,...).
- Petroleum refineries, chemical and petrochemical plants.
- Temporary connection (for construction yards, camping sites, harbours for pleasure crafts, market places, fairs, ...).
- Alimentation industry and breweries.
- Waste water treatment, public lighting, traffic control, signalisation.
- For installation in aggressive environments such as shipyards, offshore oil production platforms, mining sites.

All cabinets are made of hot moulded, glass-fibre reinforced polyester, offering a high protection degree of IP66 with a mechanical impact strength of IK10 (IK07 for cabinets with glazed door).

Overview of the range ● Page B.2

Product information ● Page B.3

Dimensional drawings ● Page J.18

Specifications for tender documents ● Page J.63

Power dissipation values ● Page J.84

PolySafe



Multipurpose polyester cabinets

Range of fourteen multipurpose, factory assembled cabinets in one depth 320mm, for in- and outdoor stationary use. Applications in

- Commercial : leisure (market places, camping sites, harbours for pleasure crafts, amusement parks), fuel stations, car washes, laundrettes and laundries, service enclosures for construction yards, ...
- Industrial : shipyards, mining, automotive, paper & pulp, food and beverage, petrochemicals, transformers, system monitoring, ...
- Utilities : waste water treatment, waste management, telecommunications, traffic signalisation, traffic control, public transport, energy distribution (electricity, gas, water), cable television (CATV), public lighting, railways, ...

All cabinets are made of self-extinguishing, hot moulded, glass-fibre reinforced polyester, offering a high protection degree of IP65 with a mechanical impact strength of IK10 (IP55-IK07 for cabinets with glazed door).

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- Product information ● Page B.8
- Dimensional drawings ● Page J.20
- Specifications for tender documents ● Page J.64
- Power dissipation values ● Page J.86

SUPERPOLYREL 400



Multipurpose polyester cabinets in kit-form

Range of nine multipurpose cabinets in KIT-form, available in one depth 400mm, for in- and outdoor applications.

- Power distribution
- System monitoring
- Waste water treatment
- Variable speed drives for motor control
- Cable television (CATV)
- Gas distribution
- Traffic signalisation
- Public lighting
- Service enclosures for construction sites
- Telecommunication and electronics
- Camping sites and market places
- ...

All cabinets are made of self-extinguishing, hot moulded, glass-fibre reinforced polyester, offering a protection degree of IP44 (IP55 for cabinets with additional gasket) and a mechanical impact strength of IK10 (IK07 for cabinets with glazed door).

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- Product information ● Page B.22
- Dimensional drawings ● Page J.22
- Specifications for tender documents ● Page J.65
- Power dissipation values ● Page J.88

VMS



Modular enclosures system

Range of five modular boxes based on a 100mm module. Rapid assembly of any configuration of units without the need for tools. For indoor application.

- Industry
- Public utilities
- Motor control centers
- Electronic instrumentation
- Low voltage distribution boards

The boxes are made of glass-fibre reinforced polycarbonate. Covers are made of either transparent or opaque polycarbonate. VMS boxes provide a high protection degree of IP65 and a mechanical impact strength of IK08 for the bases and end-plates and IK10 for the covers.

Overview of the range ● Page C.2

Product information ● Page C.3

Dimensional drawings ● Page J.24

Specifications for tender documents ● Page J.66

Power dissipation values ● Page J.90

Fix-o-Rail Senior



Type tested distribution enclosure according to EN 60439-1

Type tested energy distribution enclosure conforms to EN 60439-1

KEMA and CEBEC approved

The application of the range is ideal for the installation of electrical energy distribution in domestic and commercial markets

A range of 5 standard enclosures equipped with a removable DIN rail frame and polyester cover plates offers maximum protection thanks to the total insulation.

Easy wiring, due to the flexible cable entry plates on top and bottom

Cabinets are available as standard with protection degree IP41 and have high mechanical impact of IK08

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Product information ● Page C.24

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Modula 630K



Type tested distribution boards according to EN 60439-1

Type tested energy distribution enclosure conforms to EN 60439-1

LOVAG approved

Manufactured in sheet steel and delivered in flat pack format.

Designed for 630A – 690V 40/60 Hz – 30 kA eff.

The application of the range makes it ideal for installation in electrical distribution systems in industrial and commercial markets

A range of 12 enclosures equipped with a various range of functional units based on a module of 50 mm x 500 mm offering maximum possibilities to the panelboard builder.

Easy wiring, due to the direct mounting of the functional units on the rear panel, used as mounting plate.

Cabinets are available as standard with protection degree IP41 and a high mechanical impact of IK08

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- Product information ● Page C.26
- Dimensional drawings ● Page J.29
- Specifications for tender documents ● Page J.68
- Power dissipation values ● Page J.92

OPTIMAL WM



Sheet steel wall mounting enclosures

Wide range of sheet steel terminal boxes and wall mounting enclosures

Wall mounting enclosures available from 200 x 200 x 155 mm up to 1400 x 1000 x 300 mm

The application of the range is typical for industrial use, incorporating a wide range of accessories offering the end user a total solution required for panel building in automation and control for the industrial and OEM market.

Enclosures in stainless steel AISI 304 give a solution to the specific demands of markets such as food processing, petro-chemicals, pharmaceutical and water treatment.

Wall mounting enclosures are available in protection degree IP66/55 with a high mechanical impact of IK10

- Product information ● Page D.3
- Dimensional drawings ● Page J.30
- Specifications for tender documents ● Page J.70
- Power dissipation values ● Page J.94

OPTIMAL FS



Sheet steel floor standing enclosures

Wide range of sheet steel floor standing enclosures available from 1600 x 600 x 400 mm up to 2200 x 1200 x 600 mm

The Modular coupling enclosures as well as the Mono individual enclosures have been designed to meet the requirements of the industrial customer.

The application of the range is ideal for:

- Automation and control applications in industry, machinery, factories and OEM
- Electronic applications for 19" in data and telecom industry
- Industrial energy distribution applications.

Floor standing enclosures are available in protection degree IP66/55 with a high mechanical impact of IK10

Product information ● Page E.3

Dimensional drawings ● Page J.34

Specifications for tender documents ● Page J.71

Power dissipation values ● Page J.106

EH1, EH2, EH3, EH4, EH6



Non-metallic pedestals

Wide range of DIN-size and non DIN-size pedestals for outdoor application like

- power distribution
- traffic signalling and public lighting
- telecommunication, electronics or cable TV
- waste water treatment
- camping sites and market places

Pedestals are delivered with integrated bases (for non DIN-sizes) or to be mounted on a standard DIN base.

All enclosures are made from hot moulded, glass fibre reinforced polyester and offer protection degree from IP20 up to IP54 and are ideally suited for outdoor installation.

Overview of the range ● Page F.2

Product information ● Page F.4

Dimensional drawings ● Page J.40

Specifications for tender documents ● Page J.72

Power dissipation values ● Page J.118

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RVS



Stainless steel pedestals

A wide range of stainless steel RVS pedestals for outdoor use complies with the standard EN 60439-5 and the IEC 60439-5

The RVS stainless steel pedestals make it possible to offer professional above ground solutions for cable networks, telecommunications, recreation grounds and other general applications.

In stainless steel AISI 304, painted in a polyester coating RAL 7034

A range from DIN 00 up to DIN 4 in the width and deliverable in 5 different heights and one depth of 355 mm.

The cabinets have partially sunken bases in stainless steel or in concrete.

The pedestals offers maximum protection to the user and equipment thanks to the protection degree IP41 – IK10 according the IEC 60529, EN 60529 and EN 50102

Overview of the range ● Page F.3

Product information ● Page F.22

Dimensional drawings ● Page J.52

Specifications for tender documents ● Page J.77

Power dissipation values ● Page J.1120

UTS



Subterranean enclosures

Stainless steel enclosures used in underground applications and suitable for installing all kinds of equipment for permanent or temporary connectivity.

In stainless steel AISI 304, painted in a polyester coating.

They can remain underground both in active and passive condition.

They avoid obstacles at street level and are vandalism approved.

The enclosure offers maximum protection to the user and equipment due to the high protection degree of the diving bell principle and the very strong structure and cover according the IEC 60529, EN 124 and EN 1.4452

Used on markets, fairs and other events, but they are also suitable for permanent connections, low voltage energy distribution, glass fiber connections for IT related applications or for installing equipment for mobile telephony.

Product information ● Page G.2

Dimensional drawings ● Page J.54

Specifications for tender documents ● Page J.77

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A.9 VJ-BOX
A.13 APO

Application guide / e-catalogue

Insulated boxes

Insulated wall mounting cabinets

Wall mounting system enclosures

Steel wall mounting enclosures

Steel floor standing enclosures

Pedestals

Subterranean enclosures

Climate control

General accessories

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Insulated boxes

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






















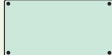
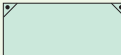

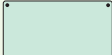


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J/X



Overview Insulated boxes

MultiBox IP66	VJ-BOX IP67/IP66	APO IP67
 50 x 52 x 35	 186 x 186 x 126	 185 x 150 x 130
 65 x 50 x 35	 236 x 186 x 126	 300 x 185 x 175
 65 x 65 x 57/81	 287 x 236 x 138/176	 300 x 300 x 175
 94 x 65 x 57/81	 338 x 287 x 142/180	 370 x 300 x 175
 94 x 94 x 57/81	 389 x 338 x 170/208	 485 x 300 x 175
 110 x 110 x 66/90	 440 x 389 x 170/208	 555 x 300 x 175
 130 x 94 x 57/81	 491 x 440 x 243	 600 x 300 x 175
 130 x 130 x 75/99		 600 x 370 x 175
 180 x 94 x 57/81		 600 x 600 x 175
 180 x 110 x 90/111/165		
 182 x 180 x 90/111/165		
 254 x 180 x 90/111/165		
 361 x 254 x 111/165		

H x W x D in mm

Insulated boxes

A

B

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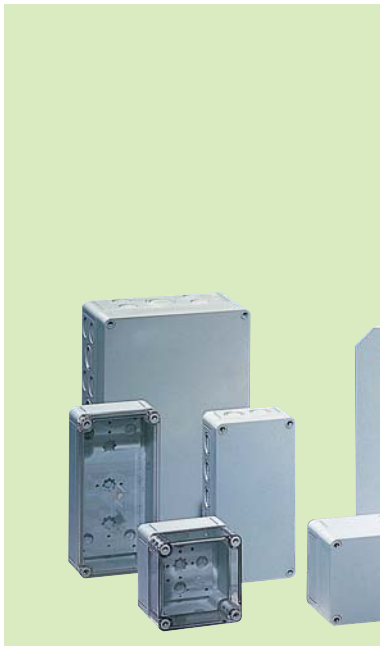
H

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Small multipurpose boxes



Applications

- Ideal for automation and control applications in industry, machinery, tool-shop and OEM.
- Electronic applications in data and telecom industry.
- Also suitable for use as commercial and industrial distribution boxes.

Standards

IEC 60529	EN 60529
IEC 62208	EN 62208
IEC 62262	EN 62262
DIN VDE 0606	Teil 1/11.84

Approvals



Only for polycarbonate boxes

Features and benefits

- 13 different basic enclosures (from 50 x 52 mm up to 361 x 254 mm) with up to 4 different cover depths.
- Material: made of polystyrene or glass-fibre reinforced polycarbonate.
- Colour: Grey RAL 7035
- High protection degree, IP66-IP67 for polystyrene, and IP66-IP68 for polycarbonate, by means of injected polyurethane seal.
- Polycarbonate boxes are available with smooth side walls (only one entry) or with several metric knock-outs.
- Polystyrene boxes are available with smooth side walls or with several metric knock-outs.
- Opaque grey or transparent covers.
- Designed for surface mounting.
- Combinations of heights and widths.
- Polystyrene boxes (650° glow wire test) are suitable for use in temperatures up to +70°C, polycarbonate boxes (960° glow wire test) are suitable for use in temperatures up to +120°C.
- Total insulation
- High resistance to chemical and aggressive influences.
- Non-corrosive and maintenance-free.
- Halogen-free.
- Self-extinguishing (UL94-V2).
- Rated insulation voltage $U_i = 1000V$

Overview of the range ● Page A.3

Dimensional drawings ● Page J.10

Specifications for tender documents ● Page J.60

Why MultiBox

Do you prefer something standard or can it be tailor-made?

GE Power Controls offers you: Customer-specific developments for all your applications and requirements, exclusively to meet your needs!

- All colours (environmental aspects, customised, differentiated)
- Painted or screened
- With cut-outs (circular, rectangular, square)
- Coupling facilities in vertical and horizontal direction
- EMC shielded



Or do you prefer the "ready to install and use" - answer? (Equipped and wired)



A

B

C

D

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G

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Small multipurpose boxes

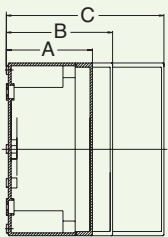


							(for terminals)	(for terminals and components)
		Polystyrene		Polycarbonate (*)		Mounting plate (Insulated)	DIN profile 15x5x1	DIN profile 35x7,5x1
Base	Depth	Grey Cover RAL 7035		Grey Cover RAL 7035		Ref. No.	Ref. No.	Ref. No.
		Ref. No.	Ref. No.	Ref. No.	Ref. No.			
		MB 00 H x W = 50 x 52 mm						
With metric knock-outs	A = 35	861775	861779	861783	861787	861791	-	-
Smooth	A = 35	861776	861780	861784	861788	861792	-	-
		MB 10 H x W = 65 x 50 mm						
With metric knock-outs	A = 35	861777	861781	861785	861789	861793	-	-
Smooth	A = 35	861778	861782	861786	861790	861794	-	-
		MB 11 H x W = 65 x 65 mm				45 x 45 mm	L=49,5 long/short side	
With metric knock-outs	A = 57 B = 81	861612 861614	861613 861615	861500 861502	861501 861503	861730	861741	-
Smooth	A = 57 B = 81	861668 861670	861669 861671	861556 861558	861557 861559			
		MB 21 H x W = 94 x 65 mm				74 x 45 mm	L=49,5 short side	
With metric knock-outs	A = 57 B = 81	861616 861618	861617 861619	861504 861506	861505 861507	861731	861741	-
Smooth	A = 57 B = 81	861672 861674	861673 861675	861560 861562	861561 861563		L=80 long side 861742	-
		MB 22 H x W = 94 x 94 mm				74 x 74 mm	L=80 long/short side	
With metric knock-outs	A = 57 B = 81	861620 861622	861621 861623	861508 861510	861509 861511	861732	861742	-
Smooth	A = 57 B = 81	861676 861678	861677 861679	861564 861566	861565 861567			
		MB 33 H x W = 110 x 110 mm				90 x 90 mm	L=92 long/short side	L=81 long/short side
With metric knock-outs	A = 66 B = 90	861624 861626	861625 861627	861512 861514	861513 861515	861733	861743	861746
Smooth	A = 66 B = 90	861680 861682	861681 861683	861568 861570	861569 861571			
		MB 42 H x W = 130 x 94 mm				110 x 74 mm	L=111 long side	L=106 long side
With metric knock-outs	A = 57 B = 81	861628 861630	861629 861631	861516 861518	861517 861519	861734	861744	861747
Smooth	A = 57 B = 81	861684 861686	861685 861687	861572 861574	861573 861575			
		MB 44 H x W = 130 x 130 mm				110 x 110 mm	L=111 long/short side	L=106 long/short side
With metric knock-outs	A = 75 B = 99	861632 861634	861633 861635	861520 861522	861521 861523	861735	861744	861747
Smooth	A = 75 B = 99	861688 861690	861689 861691	861576 861578	861577 861579			
		MB 52 H x W = 180 x 94 mm				160 x 74 mm	L=154 long side	L=144 long side
With metric knock-outs	A = 57 B = 81	861636 861638	861637 861639	861524 861526	861525 861527	861736	861744	861748
Smooth	A = 57 B = 81	861692 861694	861693 861695	861580 861582	861581 861583			

(*) Smooth = one metric knock-out on short side for power supply cord ! (See dimensional drawings on J.10)

Pack.=1



Small multipurpose boxes

		 Polystyrene		 Polycarbonate (*)		 (for terminals and components)	
Base	Depth	Grey Cover RAL 7035	Transparent Cover	Grey Cover RAL 7035	Transparent Cover	Mounting plate (Insulated)	DIN profile 35x7,5x1
		Ref. No.	Ref. No.	Ref. No.	Ref. No.		
		MB 53 H x W = 180 x 110 mm				150 x 90 mm	L=144 long side
With metric knock-outs	A = 90	861640	861641	861528	861529	861737	861748
	B = 111	861642	861643	861530	861531		
	C = 165	861644	861645	861532	861533		
Smooth	A = 90	861696	861697	861584	861585		
	B = 111	861698	861699	861586	861587		
	C = 165	861700	861701	861588	861589		
		MB 65 H x W = 182 x 180 mm				150 x 150 mm	L=144 long side
With metric knock-outs	A = 90	861646	861647	861534	861535	861738	861748
	B = 111	861648	861649	861536	861537		
	C = 165	861650	861651	861538	861539		
Smooth	A = 90	861702	861703	861590	861591		
	B = 111	861704	861705	861592	861593		
	C = 165	861706	861707	861594	861595		
		MB 75 H x W = 254 x 180 mm				220 x 150 mm	L=216 long side
With metric knock-outs	A = 90	861654	861655	861542	861543	861739	861749
	B = 111	861656	861657	861544	861545		
	C = 165	861658	861659	861546	861547		
Smooth	A = 90	861710	861711	861598	861599		
	B = 111	861712	861713	861600	861601		
	C = 165	861714	861715	861602	861603		
		MB 87 H x W = 361 x 254 mm				331 x 220 mm	L=336 long side
With metric knock-outs	A = 111	861662	861663	861550	861551	861740	861750
	B = 165	861664	861665	861552	861553		
Smooth	A = 111	861718	861719	861606	861607		
	B = 165	861720	861721	861608	861609		

(*) Smooth = one metric knock-out on short side for power supply cord ! (See dimensional drawings on J.10)

Pack.=1

MultiBox Matrix

MB (MultiBox)	Height	Width
00	50	52
10	65	50
11	65	65
21	94	65
22	94	94
33	110	110
42	130	94
44	130	130
52	180	94
53	180	110
65	182	180
75	254	180
87	361	254

Small multipurpose boxes

A

B

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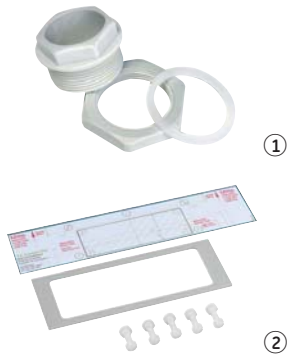







H

I

J/X



Accessories

	<p>Partition plates For full compartmentalisation in one box</p> <table border="1"> <tr> <td></td> <td>861751</td> <td>3</td> </tr> <tr> <td colspan="3">88x49 mm</td> </tr> <tr> <td colspan="3">MB 42: inside depth 45 mm</td> </tr> <tr> <td colspan="3">MB 52: inside depth 45 mm</td> </tr> <tr> <td></td> <td>861752</td> <td>3</td> </tr> <tr> <td colspan="3">88x73 mm</td> </tr> <tr> <td colspan="3">MB 42: inside depth 69 mm</td> </tr> <tr> <td colspan="3">MB 52: inside depth 69 mm</td> </tr> </table>		861751	3	88x49 mm			MB 42: inside depth 45 mm			MB 52: inside depth 45 mm				861752	3	88x73 mm			MB 42: inside depth 69 mm			MB 52: inside depth 69 mm			<p>Drilling template</p> <table border="1"> <tr> <td></td> <td>861760</td> <td>5</td> </tr> </table> <p>Aids drilling, setting the required min. spacing, maximum number of holes and box positioning.</p>		861760	5										
	861751	3																																					
88x49 mm																																							
MB 42: inside depth 45 mm																																							
MB 52: inside depth 45 mm																																							
	861752	3																																					
88x73 mm																																							
MB 42: inside depth 69 mm																																							
MB 52: inside depth 69 mm																																							
	861760	5																																					
	<p>Combi set For joining several boxes horizontal and/or vertical</p> <table border="1"> <tr> <td>①</td> <td>861753</td> <td>5</td> </tr> <tr> <td colspan="3">small M20</td> </tr> <tr> <td>①</td> <td>861754</td> <td>5</td> </tr> <tr> <td colspan="3">small M25</td> </tr> <tr> <td>①</td> <td>861755</td> <td>5</td> </tr> <tr> <td colspan="3">small M32</td> </tr> <tr> <td>②</td> <td>861756</td> <td>1</td> </tr> <tr> <td colspan="3">large from MB 53 on</td> </tr> </table>	①	861753	5	small M20			①	861754	5	small M25			①	861755	5	small M32			②	861756	1	large from MB 53 on			<p>Thumb grip</p> <table border="1"> <tr> <td></td> <td>861763</td> <td>1</td> </tr> </table> <p>For fixing on to cover screws. Available for all MultiBoxes - 1 set = 4 pcs</p>		861763	1										
①	861753	5																																					
small M20																																							
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small M32																																							
②	861756	1																																					
large from MB 53 on																																							
	861763	1																																					
	<p>Hinges Converts removable covers into hinged covers. (incl. drilling template)</p> <table border="1"> <tr> <td></td> <td>861757</td> <td>1</td> </tr> <tr> <td colspan="3">small up to MB 52</td> </tr> <tr> <td></td> <td>861758</td> <td>1</td> </tr> <tr> <td colspan="3">large from MB 53 on</td> </tr> </table>		861757	1	small up to MB 52				861758	1	large from MB 53 on			<p>Double membrane nipple IP66 Special plastic material (elastic and temperature-resistant) Secure fitting without locknut, two integrated sealing membranes. Cable glands, see p. I.2</p> <table border="1"> <tr> <td></td> <td>861724</td> <td>50</td> </tr> <tr> <td colspan="3">M16</td> </tr> <tr> <td></td> <td>861725</td> <td>50</td> </tr> <tr> <td colspan="3">M20</td> </tr> <tr> <td></td> <td>861726</td> <td>50</td> </tr> <tr> <td colspan="3">M25</td> </tr> <tr> <td></td> <td>861727</td> <td>25</td> </tr> <tr> <td colspan="3">M32</td> </tr> </table>		861724	50	M16				861725	50	M20				861726	50	M25				861727	25	M32			
	861757	1																																					
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	861727	25																																					
M32																																							
	<p>Wall mounting brackets</p> <table border="1"> <tr> <td></td> <td>861759</td> <td>1</td> </tr> </table> <p>For external mounting of all MultiBoxes 1 set = 4 pieces</p>		861759	1	<p>Air vent (IPx4) To allow ventilation and prevent condensation. Air vents are preferably mounted in the upper and lower part of the box - M20</p> <table border="1"> <tr> <td></td> <td>861728</td> <td>25</td> </tr> </table>		861728	25																															
	861759	1																																					
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	<p>Padlock</p> <table border="1"> <tr> <td></td> <td>861761</td> <td>1</td> </tr> </table> <p>For protection against unauthorised access. Available from MB 65 on</p>		861761	1	<p>Coverscrews</p> <table border="1"> <tr> <td></td> <td>861769</td> <td>20</td> </tr> <tr> <td colspan="3">Short for thin grey covers</td> </tr> <tr> <td></td> <td>861770</td> <td>20</td> </tr> <tr> <td colspan="3">Long for high grey covers</td> </tr> <tr> <td></td> <td>861795</td> <td>20</td> </tr> <tr> <td colspan="3">Short for thin transparent covers</td> </tr> <tr> <td></td> <td>861796</td> <td>20</td> </tr> <tr> <td colspan="3">Long for high transparent covers</td> </tr> </table>		861769	20	Short for thin grey covers				861770	20	Long for high grey covers				861795	20	Short for thin transparent covers				861796	20	Long for high transparent covers												
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	<p>Spacers</p> <table border="1"> <tr> <td></td> <td>861762</td> <td>1</td> </tr> </table> <p>In plastic (6 + 8 mm), determines the distance between PC-boards or mounting plates and the base of the box 1 set = 8 pieces (incl. fixing screws) Available for all MultiBoxes.</p>		861762	1																																			
	861762	1																																					

Polyester NEMA sized boxes



Applications

- Industry
- Steel works
- Oil refineries
- Petrochemical plants
- Breweries
- Shipyards
- Public utilities

Standards

IEC 60439-1	EN 60439-1
IEC 60529	EN 60529
IEC 62208	EN 62208

Approvals



UL types 3, 3R, 3S, 4, 4X, 6, 12 and 13



CSA types 3, 3R, 3S, 4, 4X, 6, 12 and 13



AS 3132-1991 (Australian Standards)

Features

- VJ-boxes are designed in accordance with the Joint Industrial Council (JIC) - USA.
- The VJ-range consists of seven box sizes in three versions:
 - with screw cover
 - with stainless steel hinges
 - with plastic hinges
- The bases and covers are made of grey (RAL 7036), hot moulded, glass fibre reinforced polyester, dyed in mass. They come complete with 4 threaded inserts (Dodge) for fixing a mounting plate.
- Gaskets that guarantee an optimal tightness degree, are made of polyurethane foam.
- All fixing hardware is made of stainless steel.
- The box can be readily worked with conventional tools, such as drills, cutting mills, saws, punches, etc.
- Versatile service conditions: polyester enclosures can withstand continuous temperatures up to 70°C (158°F) (peak temperatures up to 150°C or 302°F)
- VJ-boxes provide optimum security to both operators and equipment because they feature total insulation and protection degree IP67/IP66 according to IEC 60529 (IP68 on demand) Protection degree IK10 against external mechanical impacts according to EN 62262 and IEC 62262. This protection degree covers the total volume of the enclosure according to EN 62208 and IEC 62208.
- VJ polyester boxes are maintenance-free and corrosion resistant.
- Rated insulation voltage $U_i = 1000V$
- VJ-boxes are UL listed, as per UL Standard 508 and CSA approved as per C22.2 nr. 94 types 3, 3R, 3S, 4, 4X, 6, 12 and 13.

Special versions











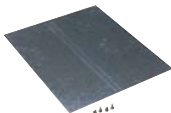
With air vents



With inset polycarbonate window (226 x 175)

- Overview of the range ● Page A.3
- Dimensional drawings ● Page J.13
- Specifications for tender documents ● Page J.61
- Power dissipation values ● Page J.80

Polyester NEMA sized boxes

		Type	VJ 66	VJ 86	VJ 108	VJ 1210		
	Box with polyester cover  IP67 ⁽¹⁾ (acc. to EN60529 1 m deep - 1/2h.) With fixing screws	H x W x D Ref. No. Weight (kg)	186 x 186 x 126 866075 1.280	236 x 186 x 126 866076 1.500	287 x 236 x 138 866153 2.100	338 x 287 x 142 866078 2.820		
		Box with hinged cover  IP67 With stainless steel hinges	H x W x D Ref. No. Weight (kg)	186 x 186 x 126 866086 1.280	236 x 186 x 126 866087 1.500	287 x 236 x 138 866088 2.100	338 x 287 x 142 866089 2.820	
			Box with hinged cover  IP67 With plastic hinges	H x W x D Ref. No. Weight (kg)	186 x 186 x 126 866097 1.359	236 x 186 x 126 866098 1.579	287 x 236 x 138 866099 2.179	338 x 287 x 142 866100 2.899
			Box with raised polyester cover  IP67 ⁽¹⁾ (acc. to EN60529 1 m deep - 1/2h.) With fixing screws	H x W x D Ref. No. Weight (kg)	- - -	- - -	287 x 236 x 176 866082 2.220	338 x 287 x 180 866083 2.940
	Box with hinged raised cover  IP67 With stainless steel hinges	H x W x D Ref. No. Weight (kg)	- - -	- - -	287 x 236 x 176 866093 2.220	338 x 287 x 180 866094 2.940		
		Box with hinged raised cover  IP67 With plastic hinges	H x W x D Ref. No. Weight (kg)	- - -	- - -	287 x 236 x 176 866104 2.299	338 x 287 x 180 866105 3.019	
	Mounting plate Sendzimir zinc coated sheet steel 2 mm	H x W	124 x 124	172 x 124	222 x 175	273 x 226		
		Ref. No.	866010	866016	866021	866026		

(1) IP68 on request



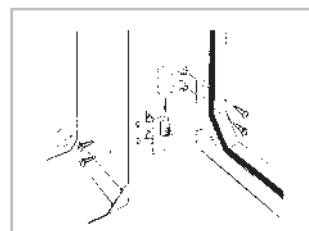
Accessories

Hinges

The VJ-Box plastic hinges allow the cover to open at an angle exceeding 180°.

The cover can be lifted off and reinstalled without the use of a tool, which substantially reduces the operations within the cover.

By simply adjusting one of the pivot parts, the cover becomes unremovable.



866000 1

Set of 2 pieces

Surface mounted windows

866001 1

Screwed IP67

H x W = 262 x 211



866002 1

Screwed IP67 with indication strip

H x W = 240 x 139



866003 1

Screwed IP67 without indication strip

H x W = 217 x 139



Dimensions on I.10

Air vents IP44

Two air vents must be mounted per enclosure to ensure sufficient air circulation and prevent condensation water.

Complete with template and screws.

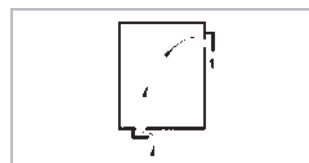
The air vents are preferably mounted in the upper and lower part of the box.

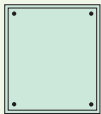
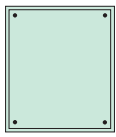
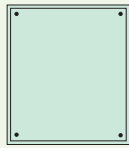


852001 1

Set of two pieces in polyamide.

RAL 7036



		
VJ 1412	VJ 1614	VJ 1816
389 x 338 x 170 866079 3.860	440 x 389 x 170 866080 4.720	491 x 440 x 243 866081 6.240
389 x 338 x 170 866090 3.860	440 x 389 x 170 866091 4.720	491 x 440 x 243 866092 6.240
389 x 338 x 170 866101 3.939	440 x 389 x 170 866102 4.799	491 x 440 x 243 866103 6.319
389 x 338 x 208 866084 3.980	440 x 389 x 208 866085 4.900	491 x 440 x 281 866336 6.740
389 x 338 x 208 866095 3.980	440 x 389 x 208 866096 4.900	491 x 440 x 281 866337 6.740
389 x 338 x 208 866106 4.059	440 x 389 x 208 866107 4.979	491 x 440 x 281 866338 6.820
324 x 276 866032	375 x 327 866037	425 x 378 866043

Notes

Insulated boxes

A

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H

I

J/X




Modular polyester boxes




Standards

IEC 60439-1	EN 60439-1
IEC 60529	EN 60529
IEC 62208	EN 62208

Approvals

-  Boxes with polyester cover: types 3, 3R, 4, 4X, 6, 6P, 12 and 13
- Boxes with polycarbonate cover: types 3, 3R, 4, 4X, 12 and 13
- Boxes with hinged cover: types 3, 3R, 4, 4X, 6, 12 and 13

-  Boxes with polyester cover: types 3, 3R, 4, 4X, 6, 6P, 12 and 13
- Boxes with polycarbonate cover: types 3, 3R, 4, 4X, 12 and 13
- Boxes with hinged cover: types 3, 3R, 4, 4X, 6, 12 and 13

-  AS Australian Standards 3131 - 1991

-  Lloyd's Register of Shipping

-  BASEEFA

EEx e II. BASEEFA

Features

- The range consists of nine boxes based on the 300 and 185 mm modules.
- The bases are made of grey (RAL 7036), hot moulded glass fibre reinforced polyester, dyed in mass. These come complete with M4 threaded inserts (Dodge) for fixing a mounting plate or mounting frame.
- The cover is made of either transparent polycarbonate or opaque grey (RAL 7036) hot moulded glass fibre reinforced polyester, dyed in mass.
- APO-boxes provide optimum security to both operators and equipment because they feature total insulation and protection degree IP67 according to IEC 60529 and EN 60529
- Protection degree IK10 against external mechanical impacts according to EN 62262 and IEC 62262
- This protection covers the total volume of the enclosure according to EN 62208 and IEC 62208.
- Each large box is a multiple of a smaller one. Its fixing points are also a multiple of those of a small box. These fixing points are blind holes for M4 threaded inserts.
- Four to six blind holes for M6 threaded inserts are also provided in each base.
- APO polyester boxes are designed for both wall end pole mounting.
- The box can be readily worked with conventional tools such as drills, cutting mills, saws punches, etc.
- Versatile service conditions: polyester enclosures can withstand continuous temperatures up to 70°C (peak temperatures up to 150°C) and the transparent polycarbonate covers resist service temperature up to 120°C
- APO polyester boxes are maintenance-free and corrosion resistant.
- Rated insulation voltage $U_i = 1000V$.
- APO boxes are UL listed, as per UL Standard 508, types 3, 3R, 4, 4X, 6, 6P, 12 and 13
- They are also CSA approved.

Applications

- Industry
- Shipyards
- Breweries
- Public utilities
- Oil refineries
- Steel works
- Petro-chemical plants

- Overview of the range ● Page A.3
- Dimensional drawings ● Page J.14
- Specifications for tender documents ● Page J.62
- Power dissipation values ● Page J.82



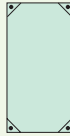

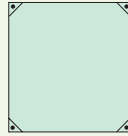
Modular polyester boxes

Insulated boxes

		Type	 APO 1	 APO 31	 APO 41	 APO 71
	Box with polyester cover ☐ IP67	H x W x D Ref. No.	185 x 150 x 130 852043	300 x 185 x 175 852062	300 x 300 x 175 852083	370 x 300 x 175 852140
	Box with polyester cover EEx e II. ☐ IP55 Opaque grey cover with fixing screws	Ref. No.	854122	854123	854124	854125
	Box with polycarbonate cover ☐ IP66 Transparent cover with fixing screws	H x W x D Ref. No.	185 x 150 x 130 852197	300 x 185 x 175 852201	300 x 300 x 175 852207	370 x 300 x 175 852217
	Box with hinged cover ☐ IP67 Transparent cover with thumb screws for the door	H x W x D Ref. No.	-	300 x 185 x 175 852063	300 x 300 x 175 852084	370 x 300 x 175 852141
	Box with hinged cover ☐ IP55 Opaque grey cover	H x W x D Ref. No.	185 x 150 x 130 852243	300 x 185 x 175 852244	300 x 300 x 175 852245	370 x 300 x 175 852248
	Box with hinged cover and lock (ventilated) ☐ IP44 Opaque grey cover	H x W x D Ref. No.	-	300 x 185 x 175 852254	300 x 300 x 175 852255	370 x 300 x 175 852258

Pack: 1



				
APO 51	APO 81	APO 61	APO 11	APO 12
485 x 300 x 175 852101	555 x 300 x 175 852155	600 x 300 x 175 852121	600 x 370 x 175 852169	600 x 600 x 175 852183
854126	854127	854128	854129	854130
485 x 300 x 210 852211	555 x 300 x 210 852222	600 x 300 x 210 852214	600 x 370 x 210 852225	600 x 600 x 210 852228
485 x 300 x 175 852102	-	600 x 300 x 175 852122	-	-
485 x 300 x 175 852246	555 x 300 x 175 852249	600 x 300 x 175 852247	600 x 370 x 175 852250	600 x 600 x 175 852251
485 x 300 x 175 852256	555 x 300 x 175 852259	600 x 300 x 175 852257	600 x 370 x 175 852260	-

Modular boxes

- A
- B
- C
- D
- E
- F
- G
- H
- I
- J/X



Modular polyester boxes

		Type	 APO 1	 APO 31	 APO 41	 APO 71
	Base with plain sides	H x W x D	185 x 150 x 85	300 x 185 x 130	300 x 300 x 130	370 x 300 x 130
		Ref. No.	852042	852061	852082	852139
		Pack	4	4	4	4
	Base with 2 open sides <small>Sizes in box refer to location of open side panel</small>	H x W x D	-	300 x 185 x 130	300 x 300 x 130	370 x 300 x 130
		Ref. No.	-	852059	852080	852137
		Pack	-	4	4	2
	Base with 4 open sides	H x W x D	-	300 x 185 x 130	300 x 300 x 130	370 x 300 x 130
		Ref. No.	-	852060	852081	852138
		Pack	-	4	4	2
	Polyester cover <small>Opaque grey cover with fixing screws</small>	H x W x D	185 x 150 x 45	300 x 185 x 45	300 x 300 x 45	370 x 300 x 45
		Ref. No.	852039	852050	852072	852128
		Pack	4	4	4	4
	Polycarbonate cover <small>Transparent cover with fixing screws</small>	H x W x D	185 x 150 x 45	300 x 185 x 45	300 x 300 x 45	370 x 300 x 45
		Ref. No.	851196	851173	851277	851176
		H x W x D	-	-	-	-
		Pack	4	4	4	4
	Hinged cover <small>Transparent cover with thumb screws for the door</small>	H x W x D	-	300 x 185 x 45	300 x 300 x 45	370 x 300 x 45
		Ref. No.	-	852049	852071	852127
		Pack	-	4	4	4
	Depth extension frame <small>Glass fibre reinforced polyamide PA6</small>	H x W x D	185 x 150 x 35	300 x 185 x 35	300 x 300 x 35	370 x 300 x 35
		Ref. No.	852038	852048	852070	852126
		Pack	4	4	4	4
	Mounting plate <small>Pertinax 5 mm Sendzimir zinc coated sheet steel 2 mm Perforated 1.5 mm (For sliding nuts, see I.13)</small>	H x W	140 x 105	228 x 139	254 x 228	298 x 254
		Ref. No.	851190	851187	851278	851181
		H x W	134 x 99	249 x 134	249 x 249	319 x 249
		Ref. No.	851191	851188	851279	851185
		H x W	134 x 99	249 x 134	249 x 249	319 x 249
		Ref. No.	852874	852875	852876	852877
	Blind cover plate <small>Covidur 1.5 mm</small>	H x W	150 x 115	265 x 150	265 x 265	335 x 265
		Ref. No.	851189	851186	851281	851180
		Pack	1	1	1	1

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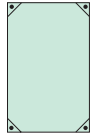
APO 51



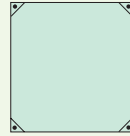
APO 81



APO 61



APO 11



APO 12

485 x 300 x 130
852100
2

555 x 300 x 130
852154
2

600 x 300 x 130
852120
2

600 x 370 x 130
852168
2

600 x 600 x 130
852182
2

485 x 500 x 130
852098
2

555 x 500 x 130
852152
2

600 x 300 x 130
852118
2

600 x 570 x 130
852166
2

600 x 600 x 130
852180
2

485 x 300 x 130
852099
2

555 x 300 x 130
852153
2

600 x 300 x 130
852119
2

600 x 370 x 130
852167
2

600 x 600 x 130
852181
2

485 x 300 x 45
852093
2

555 x 300 x 45
852148
2

600 x 300 x 45
852108
2

600 x 370 x 45
852160
2

600 x 600 x 45
852175
2

485 x 300 x 80
852092
2

555 x 300 x 80
851193
2

600 x 300 x 80
851282
2

600 x 370 x 80
851290
2

600 x 600 x 80
852280
2

485 x 300 x 45
852089
2

-
-

600 x 300 x 45
852107
2

600 x 370 x 115
852159 (1)
2

-
-

-
-

555 x 300 x 60
852147
2

600 x 300 x 60
852106
2

600 x 370 x 60
852158
2

600 x 600 x 60
852173
2

413 x 254
852091
435 x 249
852095
435 x 249
852878
1

484 x 254
851170
505 x 249
851171
505 x 249
852879
1

528 x 254
851286
550 x 249
851287
550 x 249
852880
1

528 x 324
851289
550 x 319
851292
550 x 319
852881
1

555 x 555
852174
550 x 555
852178
550 x 555
852882
1

450 x 265
852090
1

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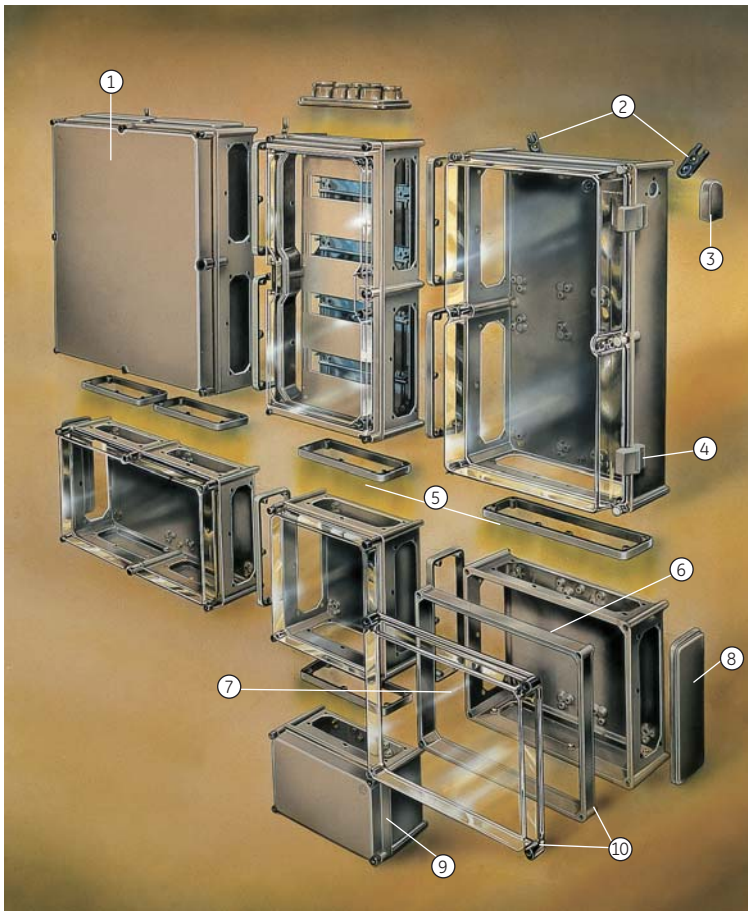
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(1) 852159 1
Hinged cover with side flange



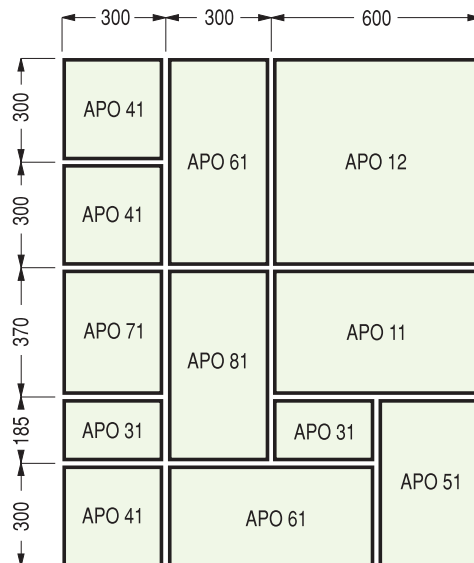
Modular panel building



- ① Polyester cover
- ② Wall mounting feet, stainless steel or non-metallic
- ③ Ventilator
- ④ Non-metallic hinge
- ⑤ Coupling collar
- ⑥ Depth extension frame
- ⑦ Clear polycarbonate cover
- ⑧ Coupling cover plate
- ⑨ Twist lock latch
- ⑩ Foamed polyurethane gaskets with tongue and groove labyrinths at all seal points

Optimal use of the modular design

The unique modular concept of APO boxes enables mounting of different standard functions in coupled boxes.



Accessories

Combi end-plates in polystyrene				
	Characteristics Metric/PG	Width		
New	4 x M20/16 + 1 x M32/25	185	854087	1
Old	4 x PG16 + 1 x PG21/29		852231	
New	2 x M32/25 + 3 x M25/M20 + 4 x M20/16	300	854088	1
Old	4 x PG16 + 3 x PG16/21 + 3 x PG21/29		852233	
New	9 x M25/20	300	854089	1
Old	10 x PG21		852236	
New	2 x M50/40 + 2 x M25/20	300	854090	1
Old	3 x PG29/36 + 2 x PG16		852237	
New	13 x M20/16	300	854091	1
Old	15 x PG13.5		852238	
New	3 x M40/32 + 2 x M20/16	300	854092	1
Old	5 x PG29		852239	
New		300	-	
Old	13 x PG16		852241	
New	1 x M40/32 + 10 x M25/20	370	854094	1
Old	6 x PG16 + 5PG16/21 + 2 x PG21/29		852235	
New	13 x M25/20	370	854097	1
Old	17 x PG 16		852242	



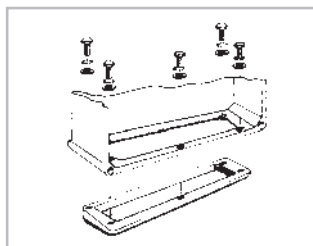
Cable glands, see p. I.2

Bushing end-plates in polyester				
	Characteristics PG	Width		
	9 x PG16 + 2 x PG21 + 2 x PG29	300	852194	1
	21 x PG13.5	300	852195	1
	13 x PG16	300	852196	1



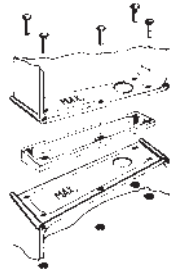

Cable glands, see p. I.2

Blind end-plates in polyester				
		Width		
		185	852012	1
		300	852014	1
		370	852018	1



For dimensions of maximum opening, see page J.16

Coupling frames		
Coupling frames are made of polyamide (rubber).		
- Complete with template.		
- The smallest side of the coupling frame fits the front side of the box.		
- The maximum passage between two coupled boxes can be marked off with the aid of the template. Within this mark, any desired opening can be made.		
Width		
185	852011	1
300	852013	1
370	852017	1




For dimensions of maximum opening, see page J.16

Cable-end boxes					
In polyester (funnel-shaped in polystyrene)	For side	Type	Max Ø cable (mm)	Nr. of clamps provided	
852186	1	300	APO31	1 x 75	1
852188	1	300	APO31	2 x 75	2
852192	1	300	APO41	1 x 75	1
852193	1	370	APO71	3 x 75	1

Dimensions, see page J.17

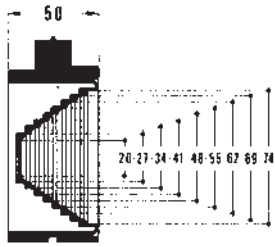


Cable clamps ⁽¹⁾	
851105	1
For direct mounting to cable end box. Max. Ø cable: 75 mm Used in APO 31 and APO 71	
851110	1
Universal stress relieving cable clamp. Max. Ø cable: 75 mm Used in APO 41	
851111	1
For mounting to universal stress relieving attachment Max. Ø cable: 75 mm Spare part	

(1) See drawing on page J.17

Accessories



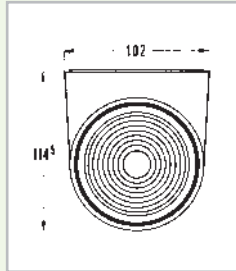
Rubber cable sleeves

- For direct mounting
- Complete with template

851106 1

For use as a sealing gland on cable end boxes.

Max. Ø cable: 75 mm



Air vents IP44

Two air vents must be mounted per enclosure to ensure sufficient air circulation and prevent water condensation.

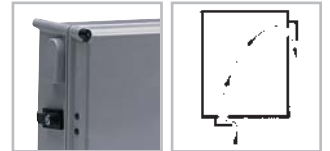
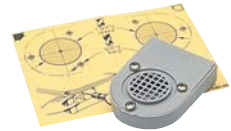
Complete with template and screws.

The air vents are preferably mounted in the upper and lower part of the base.

852001 1

Set of 2 pieces in polyamide.

RAL 7036



Bridges

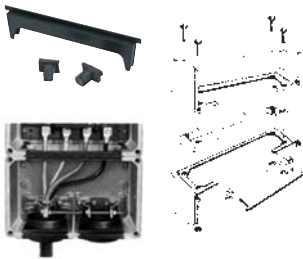
Make heavy connections easier whilst guaranteeing that the original degree of protection is maintained.

851103 1

Fits the 300 mm side.

851112 1

Fits the 370 mm side.



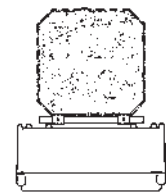
Pole mounting

- At the rear of enclosure, C-profiles are installed.

- Around the pole, a fixation (holding) band is installed. On the C-profile, clamps are placed to catch the holding band securely.

890510 1

Set of 2 C-profiles for side 300 and 370 mm.

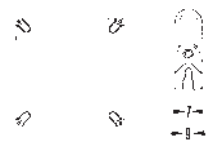


Mounting brackets

851266 1

Set of 4 pieces in glass fibre reinforced polyamide

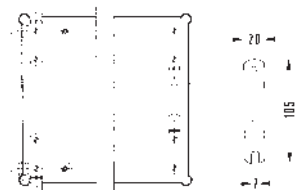
- For external fixing points.
- Direct fixing through the four corner holes of the enclosure.
- If extension frames are to be used, the mounting brackets shall be mounted before the frames.
- Maximum permissible component weight: 150 kg.



852025 1

Set of 4 pieces in stainless steel (type 304)

- For extremely severe working conditions.
- For band iron fixation to round poles.
- The four brackets are mounted directly at the rear of the box in reinforcements provided for that purpose.
- Fixing by M4 threaded bushes (supplied).
- Maximum permissible component weight: 150 kg.



Safety locks with handle

Complete with drilling template, keys and mounting hardware.

852020 1

2 keys V 2432E

Safety locks without handle

852021 1

Square key 8 mm

852022 1

Triangular key 8 mm

852024 1

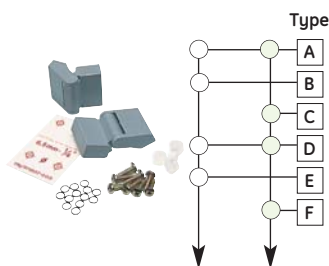
Triangular key 11 mm

852023 1

Double-bit yale key 3 mm



Accessories



Selection	Base	
	APO 1	31-41-71-51
	81-61-11-12	
Polyester cover	A	A
Polyester cover + depth extension	B	C
Polycarbonate cover	D	D
Polycarbon. cover + depth extension	E	F

Type	Hinges		
A	852000	1	
B	852009	1	
C	852008	1	
D	852005	1	
E	852007	1	
F	852006	1	

- In order to enable hinge mounting, holes must be drilled in the cover and in either the base or the extension frame. Templates for drilling these holes are supplied with each set. The type of hinge depends on the required combination. Hence six sets of hinges are available. Each set consists of two hinges, screws, a drilling template, the mounting instructions and, if necessary, spacer shims.

Hinge screw		
	851256	1

Set of 2 pieces
Remark: the box must be mounted prior to fitting the hinge screw.



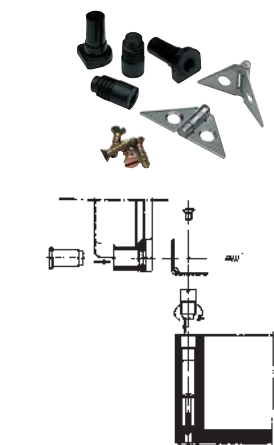
Triangular TTR sealing screw		
	851262	1

For screwed cover.
Set of 2 pieces.



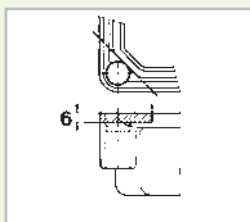
	852016	1
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For hinged cover.
Set of 2 pieces.



Cover hinges		
	851268	1

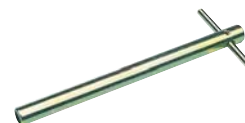
Set of 2 pieces in stainless steel (complete with fixing hardware)



Cover must be milled along the dotted line to a depth of 6 mm prior to hinge mounting.

Spanner		
	851016	1

For triangular TTR sealing screw.



Sealing plate		
	851260	1

Set of 2 pieces.



Cover fixing screws		
	851255	50

Slotted screw

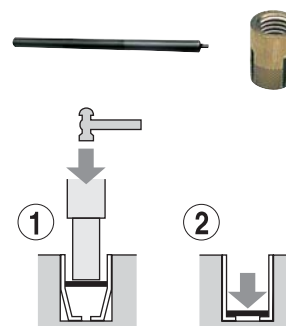
Padlocking set		
	852004	1

Max. diameter of padlock: 8 mm.


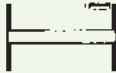


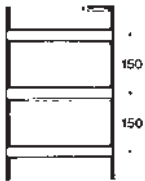
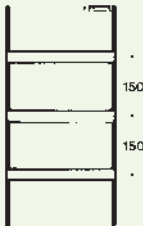
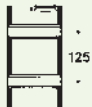
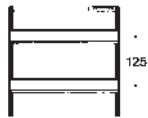
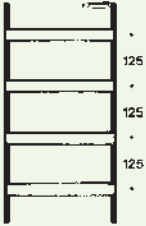


Thumb grip		
For cover screws or hinge screws.	851259	1
Set of 50 pieces		
	851258	1
Set of 2 pieces		



Threaded inserts		
	851026	100
M4 Dodge type inserts		
	851371	100
M6 Dodge type inserts x 12, 50 mm		
	851027	1
M4 special tool for securing		
	852003	1
M6 special tool for securing		




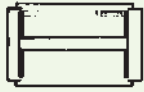

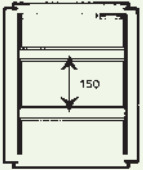
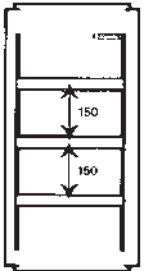

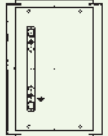
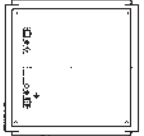
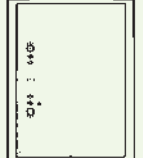
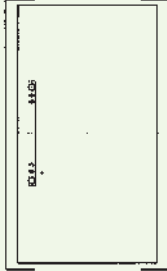
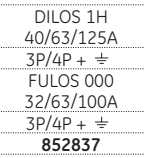
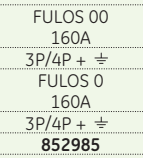
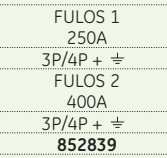
Universal fuseboard frames

Type	F3	F4	F7	F5	F6
 <p>Universal fuseboard frames</p> <p>Includes:</p> <ul style="list-style-type: none"> - Empty frames fitted with an earth terminal and cover plate. - The packaging includes fixing screws and height extension studs. 					
	300 x 185 14 modules 851326	300 x 300 14 modules 851336	370 x 300 28 modules 851353	485 x 300 42 modules 852283	600 x 300 42 modules 851345
					
	300 x 185 14 modules 851330	300 x 300 28 modules 851338			600 x 300 56 modules 851347

Accessories

	<p>Blank plate for screening off rectangular openings</p> <p>828056 1m</p> <p>For cutout of 45 mm</p>	
	<p>Marking strip self adhesive</p> <p>851321 1m</p>	

Equipped individual units

Type	APO 31	APO 41	APO 71	APO 61	APO 11
 <p>Enclosures for DIN-rail equipment</p> <p>Includes:</p> <ul style="list-style-type: none"> - base with two open sides - with combi end plates top: 13 x M20/16 bottom: 2 x M32/25 + 3 x M25/20 + 4 x M20/16 - base frame with earth connector and coverplate - transparent pivoting cover 	 <p>185 x 300 x 175 14 modules 852282</p>	 <p>300 x 300 x 175 28 modules 852288</p>	 <p>370 x 300 x 175 42 modules 852287</p>	 <p>600 x 300 x 175 42 modules 852287</p>	
 <p>Enclosures for disconnecter loadbreak switches (Dilos) and fused disconnecter loadbreak switches (Fulos)</p> <p>Includes:</p> <ul style="list-style-type: none"> - base with two open sides - combi end plates: APO31 on top and bottom: side 185: 4 x M20/16 + 1 x M32/25 APO 41 on top and bottom: side 300: 2 x M50/40 + 2 x M25/20 APO 71 and APO 11 are with 2 open sides, cable entry plates are to be ordered separately, see p. A.19 - mounting plate with threaded holes and earthing connector - transparent cover with handle cut-out and with screws - extension shaft and operating handle <p>Disconnecter loadbreak switches and fused disconnecter loadbreak switches are to be ordered separately</p>	 <p>300 x 185 x 175 DILOS 1 40/63/80/100/125A 3P/4P + ⊕ 852841</p>	 <p>300 x 300 x 175 DILOS 2 160/200A 3P/4P + ⊕ 852838</p>	 <p>370 x 300 x 175 DILOS 3 160/200/250/315A 3P/4P + ⊕ 852840</p>	 <p>600 x 370 x 270 DILOS 4 400/500/630A 3P/4P + ⊕</p>	
		 <p>DILOS 1H 40/63/125A 3P/4P + ⊕ FULOS 000 32/63/100A 3P/4P + ⊕ 852837</p>	 <p>FULOS 00 160A 3P/4P + ⊕ FULOS 0 160A 3P/4P + ⊕ 852985</p>	 <p>FULOS 1 250A 3P/4P + ⊕ FULOS 2 400A 3P/4P + ⊕ 852839</p>	

Modular boxes

A

B

C

D

E

F

G


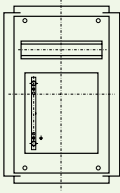

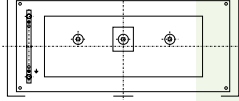
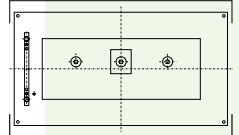
H

I

J/X



































Equipped individual units

Type	APO 31	APO 41	APO 71	APO 61	APO 11
					
Enclosures for loadbreak switches (Dilos) and fuse bases	300 x 185 x 175 DILOS 1 40/63/80A 3P/4P + \perp 852836				
Includes: - base with two open sides - with combi end plates top and bottom: 4 x M20/16 + 1 x M32/25 - one DIN-rail and mounting plate with earthing - transparent cover with handle cut-out and with screws - extension shaft and operating handle					
<div style="border: 1px solid black; padding: 5px;"> Disconnecter loadbreak switches, fuse bases and fuses are to be ordered separately </div>					
					
Enclosures for changeover switches (Dilos/Fulos)					
Includes: - base with two open sides - cable entry plates are optional, see p. A.19 - mounting plate with changeover system (I-O-II) and earth bar - transparent cover with handle cut-out and with screws - extension shaft and operating handle				600 x 300 x 175 DILOS 1H 125A 3P/4P + \perp FULOS 000 32/63/100A 3P/4P + \perp	600 x 370 x 175 DILOS 3 160/200/250/315A 3P/4P + \perp FULOS 00 160A 3P/4P + \perp FULOS 0 160A 3P/4P + \perp
<div style="border: 1px solid black; padding: 5px;"> Changeover switches are to be ordered separately </div>				852835	852986

	Application guide / e-catalogue	
B.3	ARIA	
B.8	PolySafe	Insulated boxes
B.22	Superpolyrel 400	Insulated wall mounting cabinets
	Wall mounting system enclosures	C
	Steel wall mounting enclosures	D
	Steel floor standing enclosures	E
	Pedestals	F
	Subterranean enclosures	G
	Climate control	H
	General accessories	I
	General characteristics / Index	J/X



Overview Insulated wall mounting cabinets

	ARIA IP66	PolySafe IP65	SUPERPOLYREL 400 IP44/IP55
	 300 x 200 x 170	 500 x 500 x 320	
	 400 x 300 x 170	 500 x 750 x 320	 500 x 750 x 400
	 500 x 400 x 230	 750 x 500 x 320	 750 x 500 x 400
	 500 x 400 x 230	 750 x 750 x 320	 750 x 750 x 400
	 600 x 400 x 230	 750 x 1000 x 320	 750 x 1000 x 400
	 700 x 500 x 270	 750 x 1250 x 320	
	 800 x 600 x 300	 1000 x 500 x 320	
	 800 x 600 x 300	 1000 x 750 x 320	 1000 x 750 x 400
	 1000 x 800 x 300	 1000 x 1000 x 320	 1000 x 1000 x 400
		 1000 x 1000 x 320	
		 1000 x 1250 x 320	 1000 x 1250 x 400
		 1250 x 750 x 320	 1250 x 750 x 400
		 1250 x 1000 x 320	
		 1250 x 1000 x 320	 1250 x 1000 x 400

H x W x D in mm

A

B

C

D

E

F

G

H

I

J/X



Universal polyester cabinets



- Ergonomic closing mechanism
- A two point locking mechanism and operated by swing-handle (for profile half cylinder locks)
- Reducing closing force by 25%
- Patented doorlifter ensuring the door taking it's center position during closing (as from ARIA 75)
- Self-adhesive rainhood as a standard accessory with each cabinet

Standards

IEC 60439-1	EN 60439-1
IEC 60529	EN 60529
IEC 62208	EN 62208

Approvals



UL types 3, 3R, 3S, 4, 4X, 12 and 13



CSA types 3, 3R, 3S, 4, 4X, 12 and 13



AS 3132-1991
Australian Standards

Features

- The range is available in seven sizes, ranging from 300 x 200 to 1000 x 800 mm.
- The cabinets are made of light-grey (RAL 7035) hot moulded, glass fibre reinforced polyester, dyed in mass. The enclosure is furnished with four threaded studs and bolts for mounting plate or mounting frame installation.
- The enclosure provides total insulation and a protection degree of **IP66** following IEC 60529 and EN 60529.
- Protection degree IK10 against external mechanical impacts according to EN 62262 and IEC 62262 (IK07 for cabinets with glazed door).
- This protection covers the total volume of the enclosure according to EN 62208 and IEC 62208.
- Resists temperatures up to 70°C in continuous use (peak temperatures up to 150°C).
- Self extinguishing and halogen-free.
- Cabinets are maintenance free and corrosion resistant.
- Rated insulation voltage $U_i = 1000V$.

Applications

- Heavy industry
- Steel mills
- Petrochemical plants
- Temporary connection (for construction sites)
- Brewery
- Public services
- Street signalisation



- Overview of the range ● Page B.2
- Dimensional drawings ● Page J.18
- Specifications for tender documents ● Page J.63
- Power dissipation values ● Page J.84

Universal polyester cabinets

		Type	 ARIA 32	 ARIA 43	 ARIA 54	 ARIA 64
	Cabinet  IP66 - IP10	H x W x D	300 x 200 x 170	400 x 300 x 170	500 x 400 x 230	600 x 400 x 230
	With double bit lock 3 mm	Ref. No.	831025	831035	831809	831810
	With double bit lock 3 mm	Ref. No.	one point closing system	one point closing system	two point closing system	two point closing system
	With handle	Ref. No.	-	831036	831052	831065
		Ref. No.	-	three point closing system	three point closing system	three point closing system
		Ref. No.	-	831034	831051	831064
			three point closing system	three point closing system	three point closing system	three point closing system
	Glazed door cabinet	H x W x D	-	400 x 300 x 170	500 x 400 x 230	600 x 400 x 230
	 IP66 - IP07	Ref. No.	-	831128	831812	831813
	With double bit lock 3 mm	Ref. No.	-	one point closing system	two point closing system	two point closing system
	With double bit lock 3 mm	Ref. No.	-	831815	831129	831130
			three point closing system	three point closing system	three point closing system	three point closing system
	Mounting plates	H x W	250 x 150	350 x 250	450 x 350	550 x 350
	Pertinax 5 mm	Ref. No.	831027	831038	831054	831067
	Sendzimir zinc coated sheet steel 2 mm	Ref. No.	831026	831037	831053	831066
	Metal perforated 1.5 mm	Ref. No.	831332	831333	831334	831335
	Mounting frame	Ref. No.	831030	831041	831057	831070
	Banks		2	2	3	3
	Modules		12	24	54	54
	Rail for terminal blocks	Ref. No.	831018	831019	831020	831020
	Available spaces for terminal		2	3	4	4
	Full cover plates					
	Plain	Ref. No.	831028	831039	831055	831068
	With cut-outs for DIN-rail equipment	Ref. No.	831029	831040	831056	831069
	With cut-out for individual modular cover plates	Ref. No.	-	831790	831791	831792
Number of ind. mod. cover plates containable		-	2	3	3	
	Individual modular cover plates  IP20 (PVC)	H x W	-	150 x 239	150 x 343	150 x 343
	Plain	Ref. No.	-	831797 (*)	831799	831801 (**)
	With cut-out for DIN-rail equipment	Ref. No.	-	831796 (*)	831798	831800 (**)
	Modules		-	12	17	18

Pack: 1

(*) and (**): see page B.6

Applications

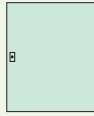
- Industry
- Steel works
- Oil refineries
- Breweries
- Shipyards
- Public utilities



ARIA 75



ARIA 86



ARIA 108

700 x 500 x 270	800 x 600 x 300	1000 x 800 x 300
831811	-	-
two point closing system		
831081	831098	831112
three point closing system	three point closing system	three point closing system
831080	831097	831111
three point closing system	three point closing system	three point closing system
700 x 500 x 270	800 x 600 x 300	1000 x 800 x 300
831814	-	-
two point closing system		
831131	831132	831133
three point closing system	three point closing system	three point closing system
650 x 450	750 x 550	950 x 750
831083	831100	831114
831082	831099	831113
831336	831337	831338
831086	831103	831117
4	4	5
88	112	200
831021	831022	831023
6	7	10
831084	831101	831115
831085	831102	831116
831793	831794	831795
4	8	10
150 x 423	150 x 239	150 x 343
831803	831797 (*)	831801 (**)
831802	831796 (*)	831800 (**)
22	12	18



Universal cabinets

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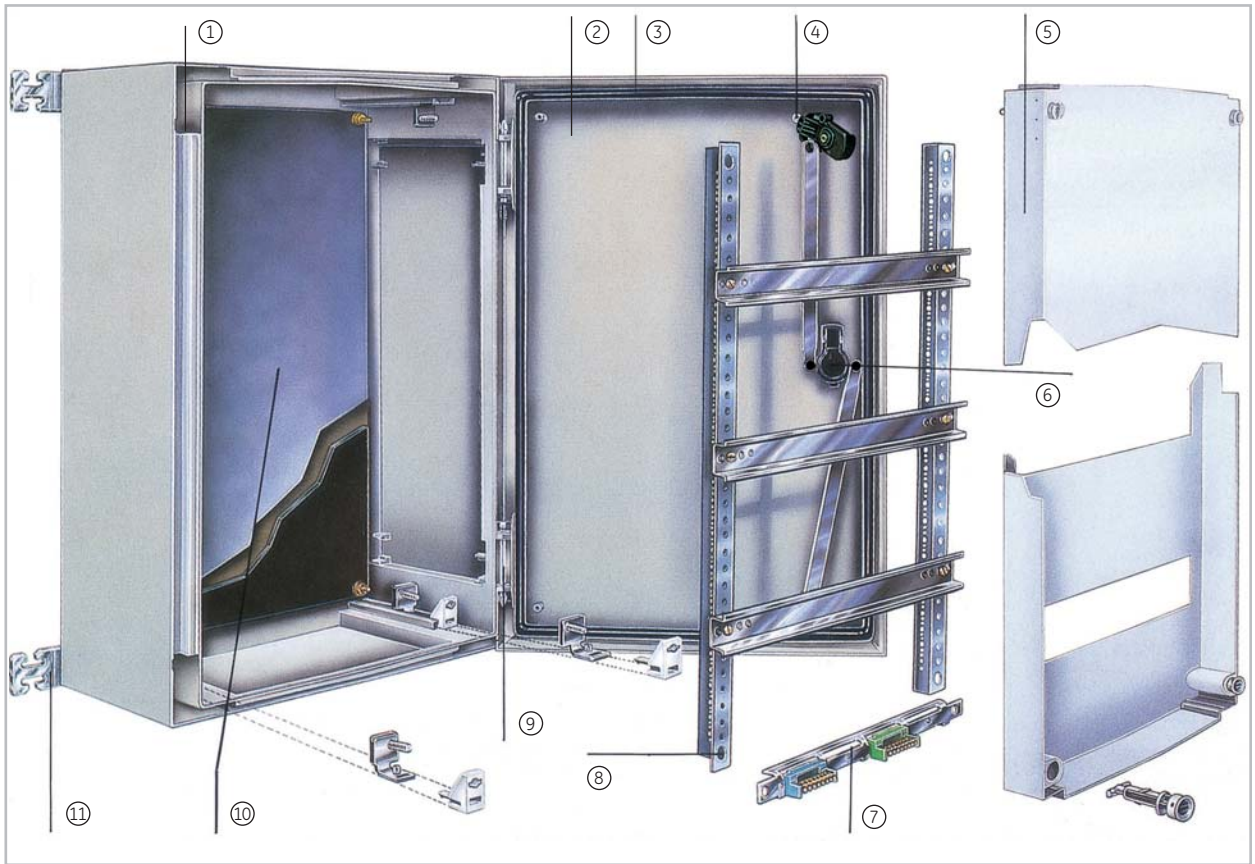
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H

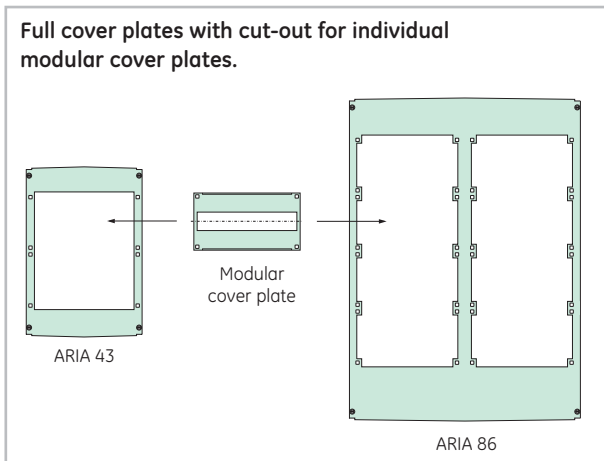
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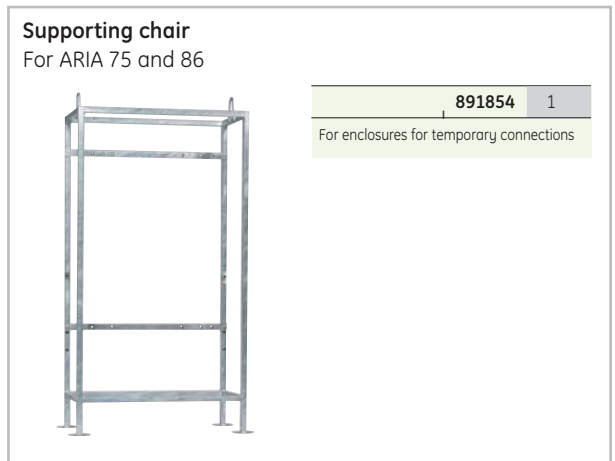




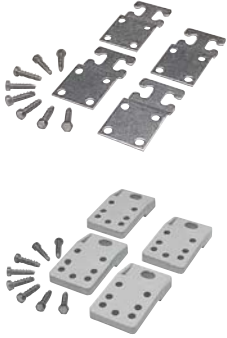
- ① Housing in one piece
- ② Removable door: left- or right-hand hinged
- ③ Slightly curved gasket-slot avoiding stagnant water
- ④ Fixing points at rear of door
- ⑤ Cover plate:
 - polyester RAL 7035
 - hinged
 - independent
 - reversible
 - sealable
 - with snap-on fixing
- ⑥ Three point closing system with one lock. Exchangeable locks.
- ⑦ Independent rail for terminal blocks
- ⑧ Mounting frame
 - removable
 - predrilled
 - reinforced DIN-rails
- ⑨ Integrated hinges. Door opens 180°
- ⑩ Mounting plate
 - metal
 - pertinax
 - perforated
- ⑪ Direct wall fixing points or wall fixing lugs in synthetic material or stainless steel.



The cabinets ARIA 43 and 86 (*) as well as ARIA 64 and 108 (**) contain the same individual modular cover plates (plain and with cut-out). See page B.4



Accessories



Fixing lugs

831000	1
--------	---

Set of 4 fixing lugs.
304 stainless steel.

831001	1
--------	---


Set of 4 fixing lugs in polyamide



Hinge supports

831010	1
--------	---

Set of 2 hinge supports for cover plate



Locks
Interchangeable (one key included)

831008	1
--------	---

3 mm

831005	1
--------	---

8 mm


831006	1
--------	---

8 mm

831007	1
--------	---

11 mm

Other locks on request.



Branch terminals
6 x 10 mm² + 2 x 16 mm²
to clip on 12 x 2 mm bar

610185	4
--------	---

Phase bar - black

610186	4
--------	---

Earth bar - green

610187	4
--------	---

Neutral bar - blue



Blanking plate

610142	4
--------	---

For 4 modules

610484	500
--------	-----

For 4 modules

Marking strip

851321	1m
--------	----

Self adhesive



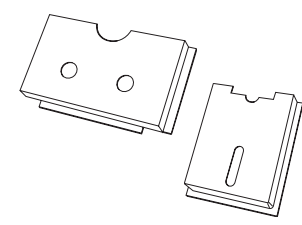
Document pocket

811516	1
--------	---

DIN A4 - W x H = 325 x 180 mm

832000	1
--------	---

DIN A5 - W x H = 155 x 225 mm



Nuts
For perforated mounting plates

831328	50
--------	----

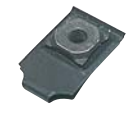
M4

831329	50
--------	----

M5

831330	50
--------	----

M6



Handles

831003	1
--------	---

Neutral handle

831004	1
--------	---

Handle with lock and 2 keys V2432E

831180	1
--------	---

Handle with lock and 2 keys 1242E

831152	1
--------	---

Handle with lock and 2 keys 405E

831153	1
--------	---

Handle with lock and 2 keys 455E

831821	1
--------	---

Handle for profile half cylinder

831822	1
--------	---

Handle for profile half cylinder for padlocking



Ventilation grids (IP44)

831009	1
--------	---

Set of two ventilation grids
Drilling Ø 34,9 mm



Multipurpose polyester cabinets



- Ergonomic closing mechanism
- Reducing closing force by 25%
- Patented doorlifter ensuring the door taking it's center position during closing (for bigger dimensions)

Standards

IEC 60529	EN 60529
IEC 62208	EN 62208
IEC 62262	EN 62262

Approvals



- Cabinets with one door:
type 3, 3R, 3S, 4, 4X, 12, 12K and 13
- Cabinets with two doors:
type 3, 3R, 3S, 4, 4X, 12, 12K and 13
- Coupled cabinets:
type 3, 3R, 3S, 12, 12K and 13

Ambient conditions

- Indoor and outdoor stationary use, excluding:
 - arctic conditions below -50°C,
 - excessive heat above +150°C (peak) and excessive height above 2000 m
- Subterranean installation
- Suitable for aggressive and marine or corrosive environments

Features

- 14 standard dimensions (from 500 x 500 up to 1250 x 1000) in one depth 320 mm
- Cabinets are standard factory assembled (empty or equipped)
- High protection degree **IP65-IK10** (20J) according to IEC 60529 and EN 62262 and IEC 62262 (IP55 - IK07 for cabinets with glazed door)
This protection covers the total volume of the enclosure according to EN 62208 and IEC 62208.
- Material: self-extinguishing, hot moulded, halogen-free, fiberglass reinforced polyester (environment friendly)
- Colour: grey RAL7035, dyed in mass
- Designed for wall mounting, floor standing and pole fixing
- Coupling possibilities in height, width and depth
- Total insulation
- Door with 5-point latching mechanism
- Execution as pedestal possible
- Rated insulation voltage $U_i = 1000V$
- Corrosion and maintenance free
- Easy recyclable: no moulded-in metal parts



- Overview of the range ● Page B.2
- Dimensional drawings ● Page J.20
- Specifications for tender documents ● Page J.64
- Power dissipation values ● Page J.86





Multipurpose cabinets

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Applications

- Commercial**
 Leisure (market places, camping sites, harbours for pleasure crafts, amusement parks), fuel stations, car washes, laundrettes and laundries, service enclosures for construction yards, ...
- Industrial**
 Shipyards, mining, automotive, paper and pulp, food and beverage, petro-chemicals, heavy industry, transformers, system monitoring, ...
- Utilities**
 Water treatment plants, waste management, telecommunications, traffic signaling systems, traffic management, public transport, energy distribution (electricity, gas, water), cable television (CATV), public lighting, railways, ...



Rainhood for outdoor use

- Up to IP65, not necessary
- Possibility of ventilation through cut-outs in top panel and air vents on side panels (to prevent internal condensation)
- Protection degree: IP44/IP54 in case of ventilation
- Moulded-in markings on the inside top panel shows the cut-out and fixation points



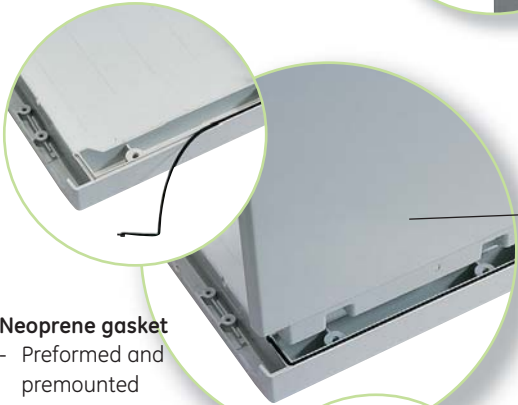
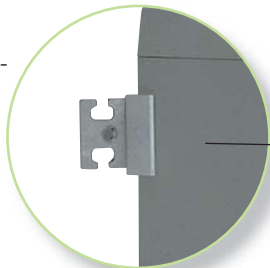
Backpanel

- Enclosed in main structure
- Has a seamless top panel as a result
- No inserts
- PUR sealing directly injected and responsible for high protection degree IP65



Wall mounting brackets

- No mounting screws necessary
- Can be mounted vertical or horizontal



Neoprene gasket

- Preformed and premounted

Side panels

- Integrated into top and bottom
- Provide a very solid and stable construction



Floor mounting frame

- Base in polyester (height 65 mm)
- For anchoring the cabinet with the floor
 - Moulded-in markings on the inside bottom panel shows the cut-out and fixation points for anchoring



Mounting plates

- Metal 2 mm
- Pertinax 5 mm
- Metal perforated 2 mm
- Fixed (by means of HiLo) as well as adjustable in depth for all sizes



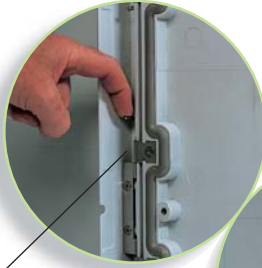
Mounting frame

- In Alu with standard horizontal Alu C-profiles for all four widths
- Regulation in depth possible for all sizes
- Offering a complete solution (no more sawing necessary)



Self tapping HiLo screws

- (no inserts)
- For assembling main structure and fixation of the back panel
 - Makes the cabinet easily dismantled for recycling



Hinges

- Mounted directly on the side panels, each step of 250 mm
- Direct access outside the functional part of the cabinet

Standard ergonomic operating handle

- Premounted on the door
- Suitable for all types of profile half cylinder locks (standard depth 40 mm/ alt. depth 45 mm)
- Possibility of padlocking (no access to unauthorised persons)



Doorlifter

- For bigger dimensions
- Ensuring the door takes its center position during closing



Door

- Flush mounted
- Plain or glazed
- No inserts (HiLo screws)
- Inclosed in main structure
- Has a seamless top panel as a result PUR sealing directly injected results in high protection degree IP65
- Opening angle 100°



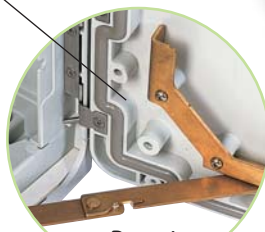
Standard 5 point latching mechanism

- Operated by one handle
- Provides secure closing (IP65)
- 3 point mechanism for widths 500 mm



Doorstop

Prevents stressing the door hinges caused by wind in outside use



Door conducting

For exact door positioning in the main structure



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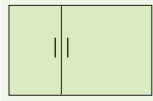
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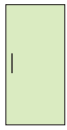
Multipurpose polyester cabinets

	Depth = 320 mm	PS 220	PS 230	PS 320	PS 330	PS 340
	<p>Factory-assembled cabinet IP65 Complete with handle and wall mounting brackets of AISI 304 stainless steel (without cylinder lock)</p> <p>Dimensions (H x W)</p> <p>Cabinet with plain door</p> <p>Cabinet with glazed door (polycarbonate window) (IP55)</p> <p>Weight (kg)</p>	500 x 500	500 x 750	750 x 500	750 x 750	750 x 1000
		833000	833004	833008	833012	833016
		833001	833005	833009	833013	833017
		16	19	20	25	30
	<p>Mounting plate Dimensions (H - 110 mm x W - 110 mm)</p> <p>Sendzimir zinc coated sheet steel 2 mm</p> <p>Perforated 2 mm</p> <p>Pertinax 5 mm</p> <p>Pertinax 10 mm</p>	833500	833501	833501	833502	833504
		833516	833517	833518	833519	833520
		833508	833509	833509	833510	833512
		-	-	-	-	-
	<p>Mounting frame in Alu Consisting out of: four attachment brackets, two vertical C-profiles. Horizontal profiles to be ordered separately, see B.19</p> <p>Continuously adjustable</p> <p>Adjustable in steps of 12,5 mm</p> <p>Length of horizontal profile (mm)</p>	833533	833533	833534	833534	833534
		833529	833529	833530	833530	833530
		468	718	468	718	968
	<p>Depth extension kit IP65 To increase the standard depth 320 mm of the cabinet up to 640 mm. The kit consists out of two side panels, one top and bottom panel and two open backpanels.</p>	833584	833585	833586	833587	833588
	<p>Rainhood For an efficient ventilation (IP44) in outdoor use by drilling holes in the top panel.</p> <p>As the standard enclosure is IP65, a rainhood is not necessary.</p> <p>In case of extra width or depth, please contact us.</p>	833566	833568	833566	833568	833570
	<p>Plinth or floor mounting frame. Cabinet and plinth are anchored together in the flooring - H = 65 mm</p>	833574	833575	833574	833575	833576
	<p>Adaptor frame for DIN-base mounting Cabinet and adaptor frame are anchored on the DIN base (polyester or concrete)</p> <p>DIN-base For more information, see page F.11</p>	-	833582	-	833582	833583
		-	842100	-	842100	842101





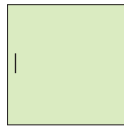
PS 352



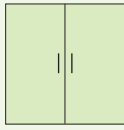
PS 420



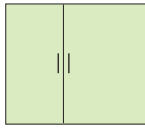
PS 430



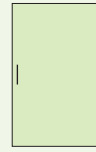
PS 440



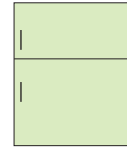
PS 442



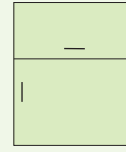
PS 452



PS 530⁽¹⁾



PS 542⁽¹⁾



PS 546⁽¹⁾

750 x 1250

1000 x 500

1000 x 750

1000 x 1000

1000 x 1000

1000 x 1250

1250 x 750

1250 x 1000

1250 x 1000

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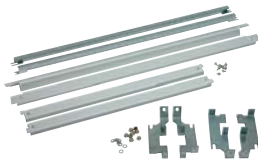
842101

842101

(1) IEC 60439-5 for cabinets height 1250 mm on demand



Modular framework for DIN-rail equipment - IP20



Delivered in kit-form

Content of the kit:

- 2 x support for left vertical profile
- 2 x support for right vertical profile
- 2 x vertical mounting profile
- 2 x insulated vertical cover for IP20
- 2 x insulated horizontal cover for IP20
- all screws and nuts for assembly



2 rows		4 rows	
Description	Ref. No.	Description	Ref. No.
40 mod. - HxW = 500x500	833264	80 mod. - HxW = 750x500	833266
68 mod. - HxW = 500x750	833265	136 mod. - HxW = 750x750	833267
6 rows		7 rows	
Description	Ref. No.	Description	Ref. No.
120 mod. - HxW = 1000x500	833268	238 mod. - HxW = 1250x750	833270
204 mod. - HxW = 1000x750	833269		

Modular functions and accessoires, see B.15



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Modular functions for DIN-rail equipment (to be mounted on the modular framework)



- Consists of:
- DIN-rail
 - coverplate with rectangular cut-out
 - accessories for assembly

Centre distance 150 mm			
Height	Width	500 mm	750 mm
150 mm			
		Modules (1 mod. = 18 mm) Ref. No.	20 833272
			34 833278

Modular functions for terminals or other equipment (to be mounted on the modular framework)



- Consists of:
- DIN-rails
 - plain coverplate
 - accessories for assembly

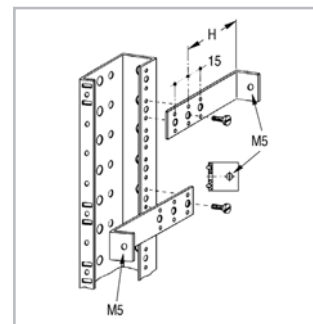
Centre distance 150 mm			
Height	Width	500 mm	750 mm
150 mm			
		Ref. No.	833271
			833277
300 mm			
		Ref. No.	833274
			833280

Accessories (to be mounted on the modular framework)



Metal mounting plates	
833275	1
H x W = 150 x 500 mm	
833281	1
H x W = 150 x 750 mm	
833276	1
H x W = 300 x 500 mm	
833282	1
H x W = 300 x 750 mm	

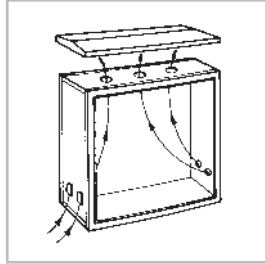
Depth extension studs for metal mounting plates with 2 screws M5 x 10 (1 set = 2 pieces)	
828059	1 set
Length (mm): 20-35-50	
828060	1 set
Length (mm): 25-40-55	
828061	1 set
Length (mm): 30-45-60	
828062	1 set
Length (mm): 65-80-95	
828063	1 set
Length (mm): 70-85-100	
828064	1 set
Length (mm): 75-90-105	
828031	1 set
Length (mm): 110-125-140	



Mounting applications

Rainhoods

Four fixing points for securing rainhood are marked off in top panel. By drilling holes in the top panel and by fitting air vents (Ref. No. 833677) on the side panels, the cabinet with rainhood will be efficiently ventilated. (IP44)
For extra depth or extra width, please contact us.



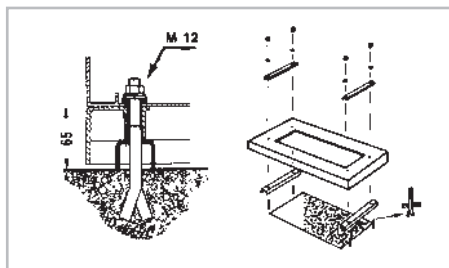
Customisation



Cabinet also available in kit-form on demand: ease of transportation, space saving storage.

Plinth

Easily mounted in accordance with the enclosed instructions



Cabinet can be provided with door on the front and at the rear: easy access, two different individual compartments.

Enclosures for MCCB's

When using a Record Plus breaker⁽¹⁾ in a polyester cabinet for outdoor use, we always recommend the breaker in a VMS box.
Breaker, terminal covers and mounting plate for the external housing have to be ordered separately. Short-circuit resistance 20kA, 440V



Enclosures for MCCB's Record Plus

In (A) (2)	Breaker type	Internal housing VMS		External housing PolySafe	
		Size	Ref. No.	Size	Ref. No.
125	FD125 w/out RCD	440 x 320 x 254	855085	750 x 500 x 320	833008
160	FE160 w/out RCD	640 x 320 x 254	855087 / 855088	750 x 500 x 320	833008
250	FE250 w/out RCD	640 x 320 x 254	855087 / 855088	750 x 500 x 320	833008

(1) The use of short or long terminal covers for the breaker is mandatory
(2) Ambient temperature max. 30°C



Cabinet can be supplied painted in other colours or with personal identification: environmental influence adaptation, ease of recognition, anti-graffiti.

Customisation



Cabinet can be ordered with preformed cut-outs to suit your application: ease and speed of mounting.



Lay-out in compartments and internal separations as a flexible solution for the end customer (e.g. separation of distribution and instrumentation sections).



Coupling in depth by means of a depth extension kit (unlimited).



Cabinet also available with inset polycarbonate window: visibility of operating components, internal signalisation.



Coupling in height and width by means of a coupling kit (see accessories): ease of extension.



Cabinet can be factory equipped and wired according to the customers requirements: ready to install and operate.

A

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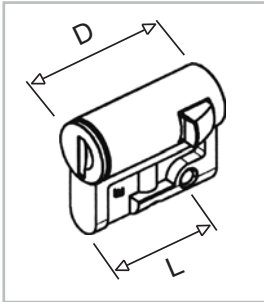
G

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J/X

Accessories



Profile half cylinder locks		
Standard: D = 40 mm - L = 30,5 mm		
On demand: D = 45 mm - L = 35,5 mm		
	832030	1
With 2 keys V2432-E		
	832031	1
With 2 keys 1242-E		
	832465	1
With 2 keys 455-E		
	832466	1
With 2 keys 405-E		
	843435	1
With 1 square key, 6 mm		
	832032	1
With 1 square key, 8 mm		
	832033	1
With 1 triangular key, 8 mm		
	832034	1
With 1 triangular key, 11 mm		
	832029	1
With 1 double-bit key, 3 mm		



Handle		
	833629	1
For profile half cylinder locks (as replacement)		



Handle		
	783148	1
For two profile half cylinder locks		



Padlocking handle		
	833630	1
For padlocking (max. Ø 10 mm)		

Door stop / Canopy stop		
100° opening angle of the door or the canopy		
	833649	1
Left turning		
	833650	1
Right turning		



Depth adjustment kit		
	833528	1
Set of four brackets for depth adjustment of mounting plate (step 12,5 mm).		



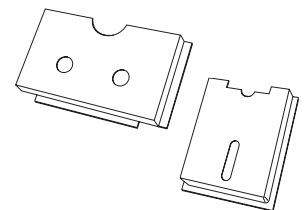
Wall mounting brackets for standard cabinets		
	833651	1
(as replacement)		
Kit of four brackets for clip fixation at the rear of the cabinet.		
Made of stainless steel type 304		



Wall mounting brackets for cabinets with rainhood		
	833624	1
Kit of four special brackets for clip fixation at the rear of the cabinet.		



Document pocket		
	811516	1
DIN A4 - W x H = 325 x 180 mm		
	832000	1
DIN A5 - W x H = 155 x 225 mm		



Accessories (continued)



Pole mounting

833625	1
---------------	----------

500 mm width

833626	1
---------------	----------

750 mm width

At the rear of the enclosure, C-profiles are mounted on the wall mounting brackets.

Around the pole, a steel holding band is installed.

On the C-profiles, clamps are placed to fix the holding band securely.



Coverplate

Mounted in front of mounting plate or mounting frame

PVC sheet - RAL 7035 - 3 mm

For cabinet (HxW)

500 x 500 mm	833549	1
--------------	---------------	----------

750 x 500 mm	833550	1
--------------	---------------	----------

750 x 750 mm	833551	1
--------------	---------------	----------

1000 x 500 mm	833648	1
---------------	---------------	----------

1000 x 750 mm	833552	1
---------------	---------------	----------

1000x1000 mm	833553	1
--------------	---------------	----------

1250 x 750 mm	833554	1
---------------	---------------	----------

1250x1000 mm	833555	1
--------------	---------------	----------

Transparent sheet - 3 mm

For cabinet (HxW)

500 x 500 mm	833640	1
--------------	---------------	----------

750 x 500 mm	833641	1
--------------	---------------	----------

750 x 750 mm	833642	1
--------------	---------------	----------

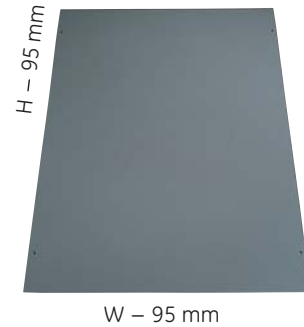
1000 x 500 mm	833643	1
---------------	---------------	----------

1000 x 750 mm	833644	1
---------------	---------------	----------

1000x1000 mm	833645	1
--------------	---------------	----------

1250 x 750 mm	833646	1
---------------	---------------	----------

1250x1000 mm	833647	1
--------------	---------------	----------

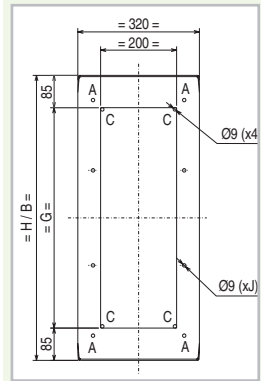


Coupling kit IP65

H/B	G	J	Depth 320 mm		
500	330	6		833608	1
750	580	8		833610	1
1000	830	12		833612	1
1250	1080	14		833614	1



Vertical and/or lateral coupling. Package includes the neoprene gasket, coupling bolts and nuts, and the protection profiles.



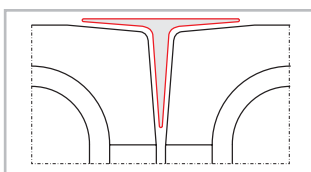
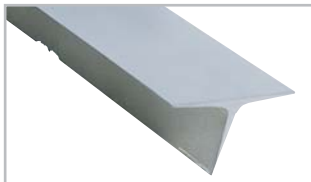
Corner profile

833653	1
---------------	----------

To fill up the corner between two coupled enclosures

Length = 308 mm

Use 2 profiles when coupling 4 enclosures



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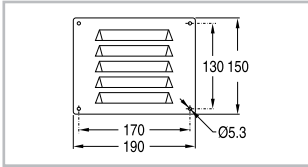
G

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J/X

Accessories (continued)



Louvre plate

832019	1
--------	---

Fits on ventilation opening.
Package includes 2 grids and 4 nylon nails.



Air vents IP44

833677	1
--------	---

Two air vents must be mounted per enclosure to ensure sufficient air circulation and prevent condensation water.
Complete with template and screws.
Air vents are preferably mounted in the upper and lower part of the enclosure.

Set of 2 pieces in polyamide.
RAL 7035



Filter fans and exhaust filters IP54

Exhaust filter with standard filter mat Viledon P15/500S (94% efficiency).
Use of LV filter fans and/or GV exhaust filters. IP54 protection is achieved by combining a horizontal air flow with a gasket.
For ref. nrs. see chapter H



Innerdoor IP20

H x W		
500 x 500 mm	833556	1
500 x 750 mm	833557	1
750 x 500 mm	833558	1
750 x 750 mm	833559	1
1000 x 500 mm	833561	1
1000 x 750 mm	833562	1

Frame and door with 2 double-bit locks.
For controls and automation applications.

19"/ETSI swing frame

833680	1
--------	---

For direct fixing of 19" or ETSI modular chassis to the standard drillings.

For cabinets H x W = 500 x 750
6 units 19" - 12 units ETSI

833681	1
--------	---

For cabinets H x W = 750 x 750
12 units 19" - 22 units ETSI

833682	1
--------	---

For cabinets H x W = 1000 x 750
18 units 19" - 32 units ETSI

833683	1
--------	---

For cabinets H x W = 1250 x 750
23 units 19" - 42 units ETSI

Metal frame: epoxycoating RAL 7035
19"/ETSI-profiles: galvanised bichromated metal



Blind coverplates for 19"/ETSI swing frames

To fill up the remaining free space

833684	1
--------	---

For cabinets H x W = 500 x 750
Height of the coverplate = 32 mm

833685	1
--------	---

For cabinets H x W = 750 x 750
Height of the coverplate = 15 mm

833686	1
--------	---

For cabinets H x W = 1250 x 750
Height of the coverplate = 28 mm

Metal: epoxycoating RAL 7035
Remark: not necessary for cabinet
H x W = 1000 x 750

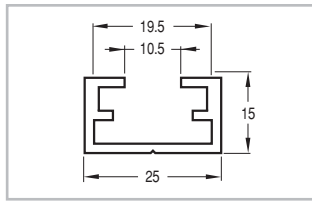
Supporting chair

891854	1
--------	---

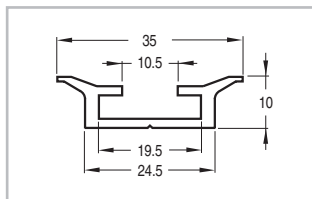
For PS220 and PS320
For enclosures for temporary connections



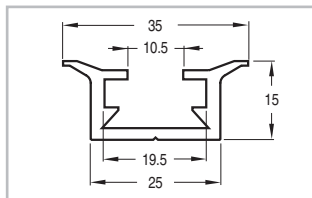
Accessories for Alu mounting frame



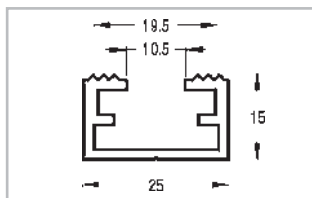
Aluminium profiles (mm)	
833537	1
Enclosure width 500 - Profile length 468	
833538	1
Enclosure width 750 - Profile length 718	
833539	1
Enclosure width 1000 - Profile length 968	
833540	1
Enclosure width 1250 - Profile length 1218	
811421	1
Profile length 3000	



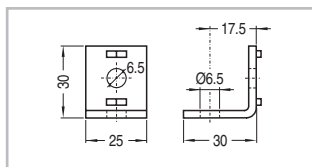
833545	1
Enclosure width 500 - Profile length 468	
833546	1
Enclosure width 750 - Profile length 718	
833547	1
Enclosure width 1000 - Profile length 968	
833548	1
Enclosure width 1250 - Profile length 1218	
811502	1
Profile length 3000	



833541	1
Enclosure width 500 - Profile length 468	
833542	1
Enclosure width 750 - Profile length 718	
833543	1
Enclosure width 1000 - Profile length 968	
833544	1
Enclosure width 1250 - Profile length 1218	
811501	1
Profile length 3000	

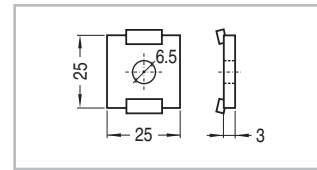


811417	1
Profile length 3000	

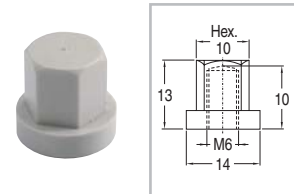


Fixing brackets	
811463	100

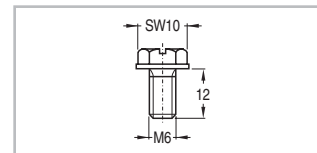
Support for studs	
811462	100



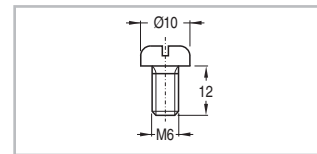
Insulated nut	
601225	100
RAL 7035	



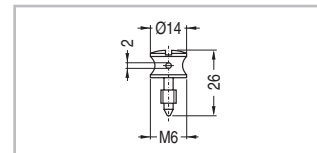
Screws	
811483	100
Screw M6 with flange	



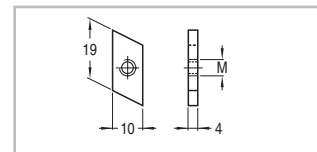
833655	100
Screw M6 x 12	



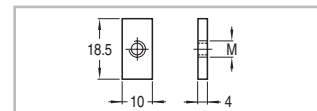
811451	100
Screw M6 in PVC for coverplate (sealable)	



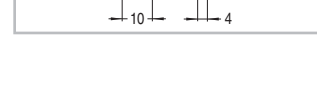
Nuts in metal	
811435	100
M6	



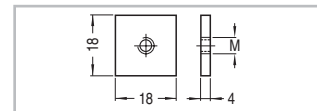
811438	100
M4	



811442	100
M6	

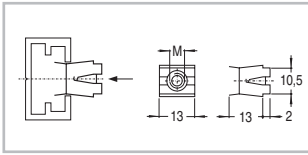


811446	100
M6	

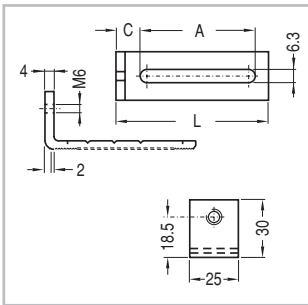


811447	100
M8	

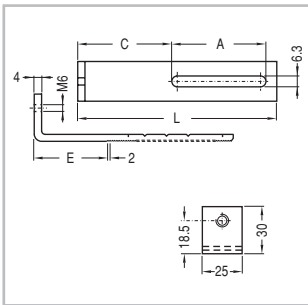
Accessories for Alu mounting frame (continued)



Nuts in PVC	
	811443 100
M6	

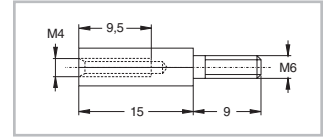
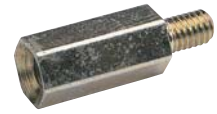


Brackets	
	811477 100
$L = 25 - A = 10 - C = 9,5$	
	811478 100
$L = 40 - A = 24 - C = 9,5$	
	811479 100
$L = 80 - A = 64 - C = 9,5$	

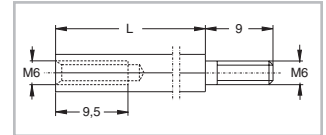
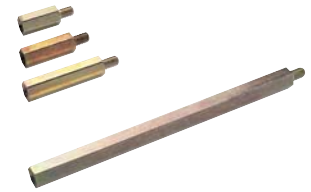


	811480 100
$L = 120 - A = 64 - C = 49,5 - E = 41,5$	

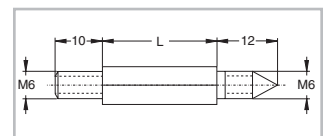
Studs	
Type 1 - M4-M6	
	811336 100
L = 15	



Type 2 - M6-M6	
	811337 100
L = 15	
	811338 100
L = 20	
	811454 100
L = 25	
	811339 100
L = 30	
	811455 100
L = 35	
	811456 100
L = 45	
	811457 100
L = 55	
	811458 100
L = 65	
	811340 100
L = 70	
	811460 100
L = 80	
	811461 100
L = 100	
	811341 100
L = 120	

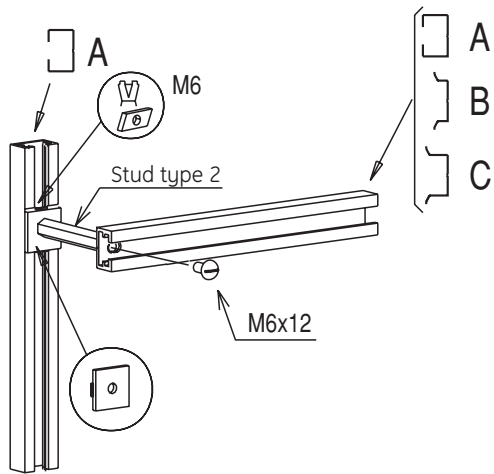
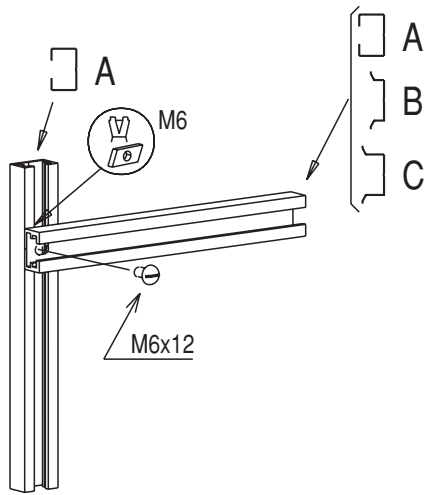


Type 3 - M6-M6	
	811342 100
L = 60	
	811343 100
L = 30	

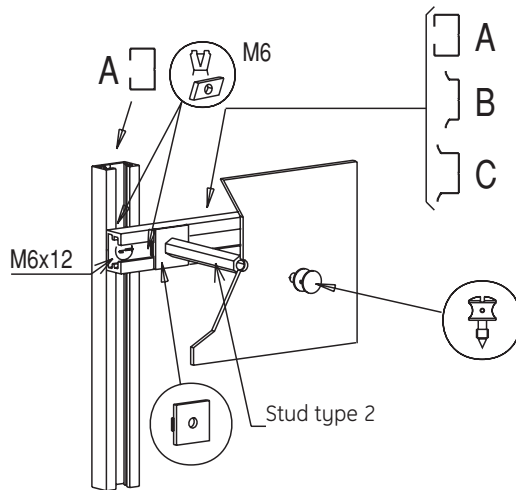
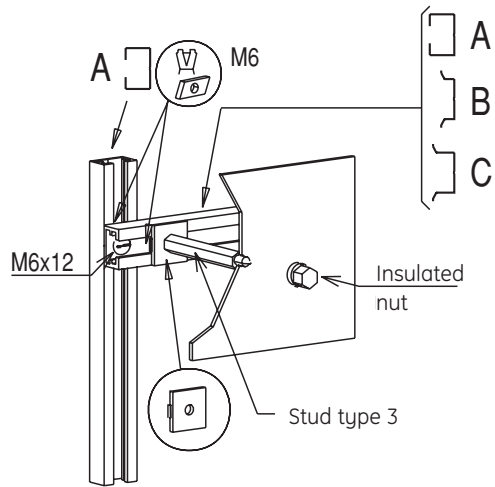


Mounting applications for Alu mounting frame

Continuously adjustable Alu mounting frame

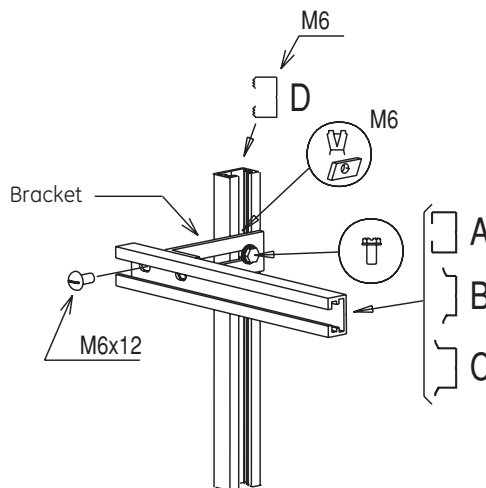


Use of coverplate



Note:
Same way of mounting for coverplate
as mounting plate

Adjustable Alu mounting frame in steps of 12.5 mm



Universal polyester cabinets in kit-form



Standards

IEC 60439-1	EN 60439-1
IEC 60529	EN 60529
IEC 62208	EN 62208

Approvals



Cabinets with single door:
types 3, 3R, 3S, 4, 4X and 12
Cabinets with double door:
types 3, 3R, 3S and 12



Cabinets with single door:
types 3, 3R, 3S, 4, 4X and 12
Cabinets with double door:
types 3, 3R, 3S and 12



Lloyd's Register of Shipping
Cert. 600763/17/10/79

Features

- The range consists of 9 cabinets, ranging from 500 x 750 up to 1250 x 1000 mm, available in one depth: 400 mm.
- Cabinet in self-extinguishing, hot moulded, halogen-free, glassfibre reinforced polyester.
- Colour grey, dyed in mass (RAL 7036).
- Designed for wall mounting, free standing and pole fixing.
- Available in kit-form.
- Can be coupled in height, width and depth.
- Wide operational temperature range: -50°C up to +70°C in continuous use (peak temperatures up to 150°C).
- Door with 5-point latching mechanism.
- Total insulation \square degree of protection IP44 according to IEC 60529 (IP55 with gasket).
- Protection degree IK10 against external mechanical impacts according to EN 62262 and IEC 62262 (IK07 for cabinets with glazed door).
- This protection covers the total volume of the enclosure according to EN 62208 and IEC 62208.
- Maintenance-free and corrosion resistant.
- For indoor and outdoor applications.
- Available in pedestal version.
- Rated insulation voltage $U_i = 1000V$.

Applications

- Power distribution
- System monitoring (measuring and control equipment)
- Water treatment plants
- Automation and control systems
- Cable television
- Gas distribution
- Traffic signalisation and public lighting
- Service enclosures for construction sites
- Telecommunication and electronic components
- Camping sites and market places
- Transformers

- Overview of the range ● Page B.2
- Dimensional drawings ● Page J.22
- Specifications for tender documents ● Page J.65
- Power dissipation values ● Page J.88

Options - Customisation



With rainhood



Front and rear door



Kit-form - UL / CSA recognised



Coupled in depth



Vertically coupled



With polycarbonate window inset

Universal polyester cabinets in kit-form

	Depth = 400 mm	Type	 SP 230	 SP 320	 SP 330
	Cabinet in kit-form  IP44	H x W	500 x 750	750 x 500	750 x 750
	Plain door	Ref. No.	832469	832470	832471
	Glazed door	Ref. No.	832478	832479	832480
	Complete with handle and mounting brackets of stainless steel, type 304				
	Gasket kit  IP55	Ref. No.	832487	832487	832488
	By positioning a gasket inside the groove labyrinths along the panels, the protection degree of the cabinet in kit-form increases from IP44 to IP55				
	Mounting plate	H x W	400 x 650	650 x 400	650 x 650
	Sendzimir zinc coated sheet steel 2 mm	Ref. No.	833501	833501	833502
	Metal perforated 2 mm	Ref. No.	833517	833518	833519
	Pertinax 5 mm	Ref. No.	833509	833509	833510
	Pertinax 10 mm	Ref. No.	-	-	-
	Mounting frame	L	680	430	680
	Comprising: - four enclosure attachment brackets - two vertical rails - four depth adjustment brackets	Ref. No.	832493	832494	832494
	Depth extension kit	H x W	500 x 750	750 x 500	750 x 750
	To increase the standard depth of 400 mm, it can be provided with a 400 mm depth extension kit. The kit consists of a number of side panels, two frames coupled together and the necessary cabinet assembling nuts and screws.	Ref. No.	832498	832498	832499
	Rainhoods	W x D	750 x 400	500 x 400	750 x 400
	When specified for outdoor use, the cabinet should be protected by a rainhood. The non-ventilated cabinet with rainhood has a protection degree IP55, provided the joints are properly gasketed.	Ref. No.	832556	832555	832556
	Wall brackets for enclosures with rainhood	W	830	580	830
	Mounting a cabinet with rainhood to a wall requires the use of special brackets.	Ref. No.	832042	832041	832042
	Floor mounting plinth	W x D	750 x 300	500 x 300	750 x 300
	Cabinet and plinth are anchored together to the flooring.	Ref. No.	832014	832013	832014

SP 340	SP 430	SP 440	SP 530	SP 452	SP 546
750 x 1000	1000 x 750	1000 x 1000	1250 x 750	1000 x 1250	1250 x 1000
832472 832481	832473 832482	832474 832483	832475 832484	832476 832485	832477 832486
832489	832489	832490	832491	832492	832492
650 x 900	900 x 650	900 x 900	1150 x 650	900 x 1150	1150 x 900
833504 833520 833512 -	833504 833523 833512 -	833505 833524 833513 833386	833506 833526 833514 833385	833507 833525 833515 833387	833507 833527 833515 833387
930 832494	680 832495	930 832495	680 832496	1180 832495	930 832496
750 x 1000 832500	1000 x 750 832500	1000 x 1000 832501	1250 x 750 832502	1000 x 1250 832503	1250 x 1000 832503
1000 x 400 832557	750 x 400 832556	1000 x 400 832557	750 x 400 832556	1250 x 400 832558	1000 x 400 832557
1080 832043	830 832042	1080 832043	830 832042	1330 832044	1080 832043
1000 x 300 832015	750 x 300 832014	1000 x 300 832015	750 x 300 832014	1250 x 300 832016	1000 x 300 832015

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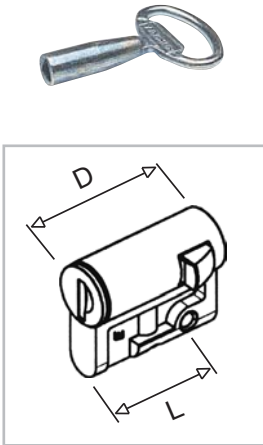
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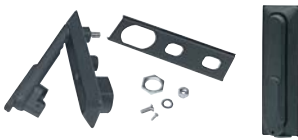


Accessories



Profile half cylinder locks (L = 30.5)	
832032	1
With 1 square key, 8 mm	
832033	1
With 1 triangular key, 8 mm	
832034	1
With 1 triangular key, 11 mm	
832029	1
With 1 double-kit key, 3 mm	
832030	1
With 2 keys, V2432-E	

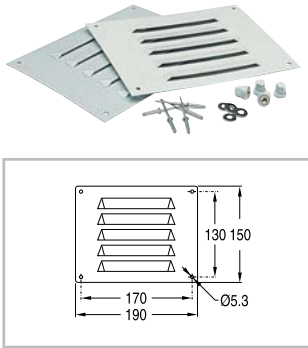
Brackets	
832045	1
Set of two spare depth adjustment brackets.	
The vertical rails can be fixed in 3 positions using the attachment brackets. The depth adjustment brackets are designed for attaching mounting plate or two DIN-rails to vertical rails.	
For each additional DIN (traverse)-rail, another pair of depth adjustment brackets must be ordered separately.	
Remark: The standard mounting plates are not suitable for use on the mounting frame.	



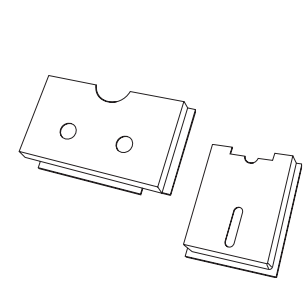
Handle	
832023	1
For padlocking (max. Ø 10 mm)	
832024	1
For profile half cylinder locks (as replacement).	
For profile half cylinder types with L > 30.5 mm, please contact us.	

Coupling kit	
- Horizontal and/or vertical coupling.	
- Package includes a drilling template, the necessary gaskets, coupling bolts and nuts, and the mounting instructions.	

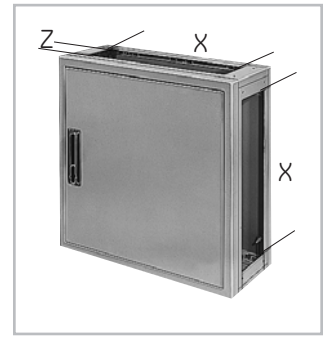
Depth 400 mm			Cabinet	X max.	Z
			width	(mm)	(mm)
	832504	1	500	350	250
	832505	1	750	600	250
	832506	1	1000	850	250
	832507	1	1250	1100	250



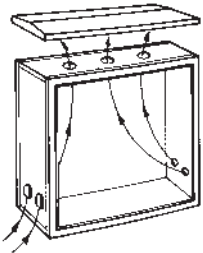
Louvre plates IP44	
Outlet 2000 mm ²	
832019	1
RAL 7035 - Fits one ventilation opening	
Package includes 2 grids and 4 nylon nails	
Total insulation	
For outlets 4500 and 6500 mm ² , see page I.10	



Document pocket	
811516	1
DIN A4 - W x H = 325 x 180 mm	
832000	1
DIN A5 - W x H = 155 x 225 mm	



Mounting applications



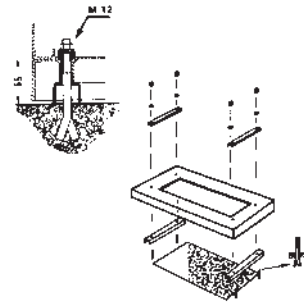
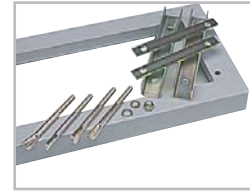
Rainhoods

Four fixing points for securing rainhood are marked off in top panel. By drilling holes in the top panel and by fitting air vents (852001) on the side panels, the cabinet with rainhood will be efficiently ventilated.

(For extra depth or extra width, please contact us.)

Floor mounting plinths

Easily mounted in accordance with the enclosed instructions.



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Notes

Insulated wall mounting cabinets

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- C.3 VMS (modular)
- C.24 Fix-o-Rail Senior
- C.26 Modula 630K

Application guide / e-catalogue

Insulated boxes

Insulated wall mounting cabinets

Wall mounting system enclosures

Steel wall mounting enclosures

Steel floor standing enclosures

Pedestals

Subterranean enclosures

Climate control

General accessories

General characteristics / Index

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
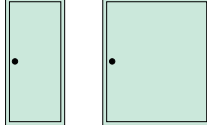


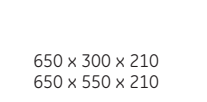


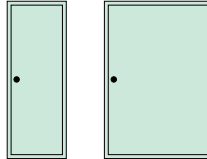





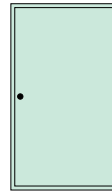






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Overview wall mounting system enclosures

	VMS (Modular) IP65	Fix-o-Rail Senior IP41	Modula 630K IP41
	 320 x 220 x 180		 545 x 600 x 220/250 545 x 900 x 220/250
	 320 x 320 x 180		 695 x 600 x 220/250 695 x 900 x 220/250
	 440 x 320 x 180		 845 x 600 x 220/250 845 x 900 x 220/250
	 640 x 320 x 180		 995 x 600 x 220/250 995 x 900 x 220/250
A	 640 x 440 x 180		 1145 x 600 x 220/250 1145 x 900 x 220/250
B			 1295 x 600 x 220/250 1295 x 900 x 220/250
C		950 x 550 x 210	 1460 x 600 x 220/250 1460 x 900 x 220/250
D			 1610 x 600 x 220/250 1610 x 900 x 220/250
E			 1760 x 600 x 220/250 1760 x 900 x 220/250
F			 1910 x 600 x 220/250 1910 x 900 x 220/250
G			
H			
I			
J/X			

H x W x D in mm



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 J.24
- Specifications for tender documents ● Page J.66
- Power dissipation values ● Page J.90

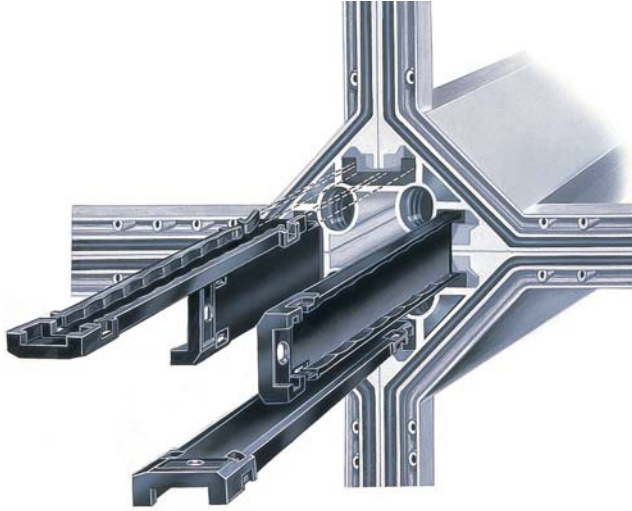
Features

- 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.

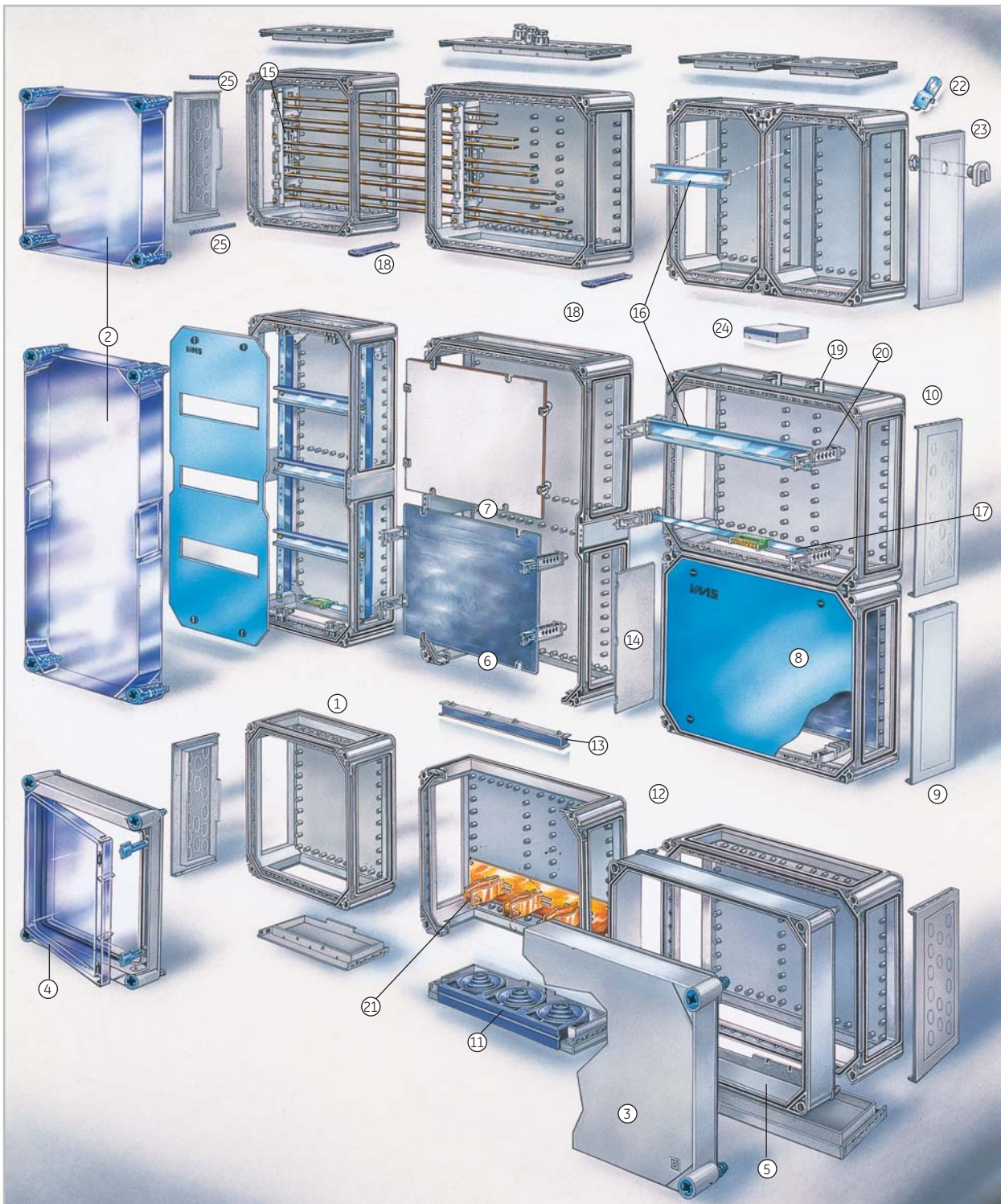


End-plates installation

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 | |

A

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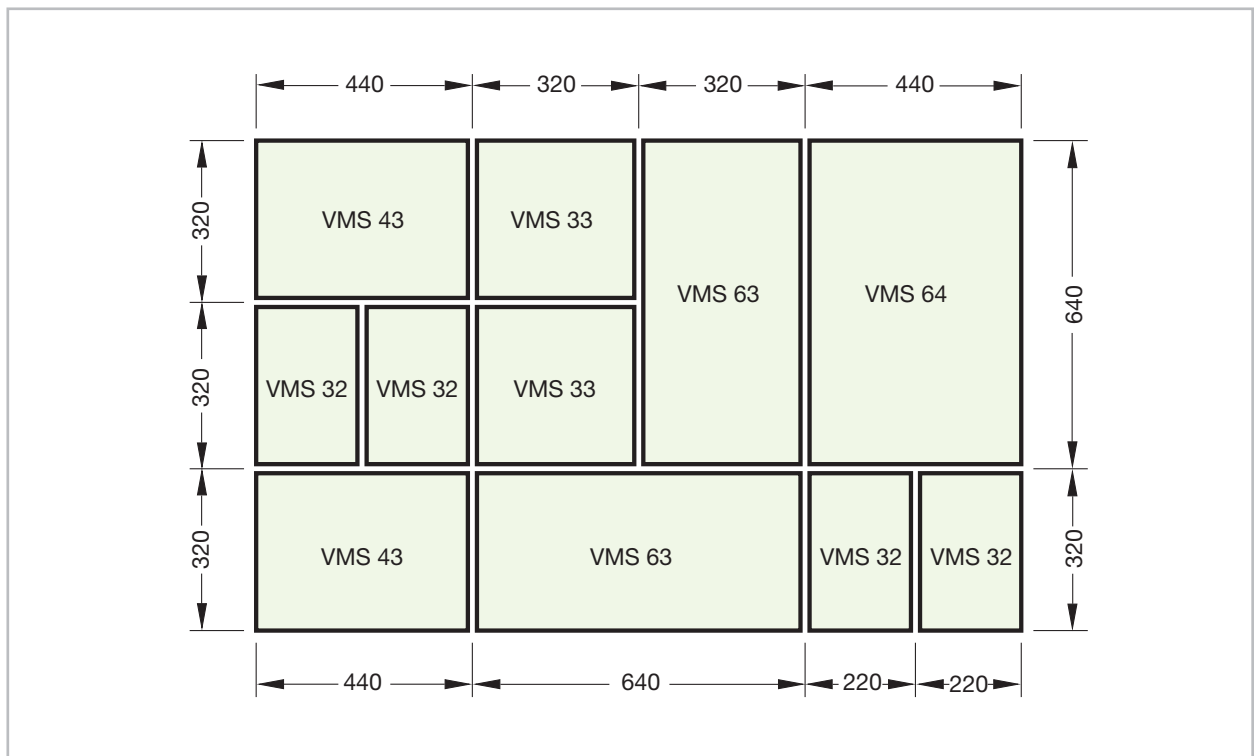
J/X



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 J.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 - Teil 500 BS 5486 Part 1 IEC 60439-1

Recommended configuration for optimal modularity



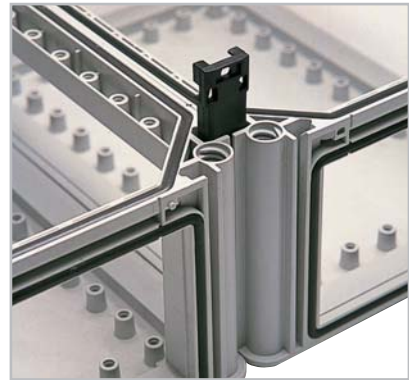
Features and Benefits



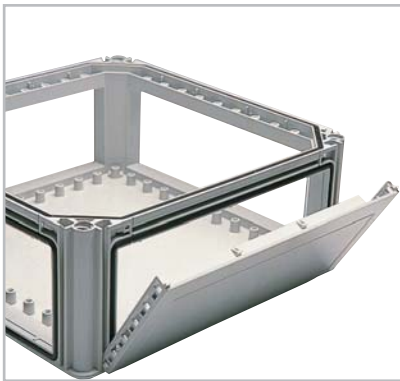
Modular dimensions in increments of 100 mm in height and width, available in five sizes:
 320 x 220 mm 320 x 320 mm
 440 x 320 mm 640 x 320 mm
 640 x 440 mm



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



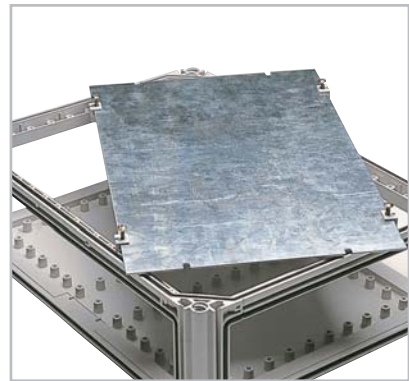
Time saving coupling by means of vertical dowels, inserted into corner slots.



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



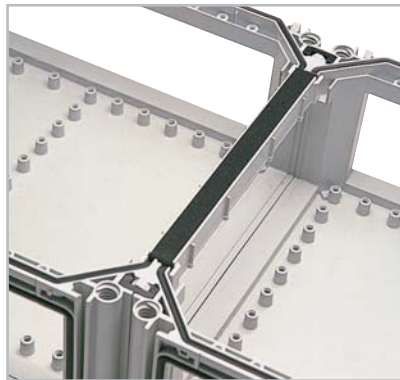
Once mounted, end-plates fit perfectly flush with the side panels of the base.



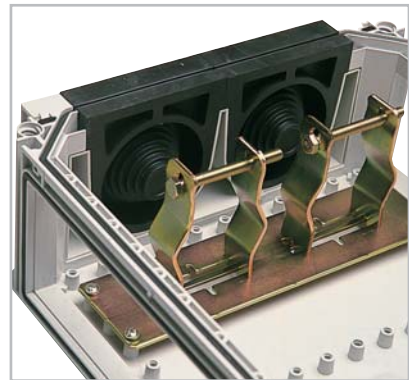
Rectangular mounting plates (2 mm in metal or 5 mm in laminated pertinax) with mounting set. Usable mounting depth is maximised and not dependant on plate thickness.



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).


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	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	
		Pertinax, 5 mm With mounting set	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
Ref. No.	853103			853104	853105	853106	853107	
Pack.	1-10			1-10	1-10	1-10	1-10	



Accessories

Combi end-plates				Combi end-plates			
OLD				NEW			
Characteristics PG	Ref. No.	Pack.	Side (mm)	Characteristics Metric	Ref. No.	Pack.	
3 x PG29	853018	1/10	220	3 x M32/M25 + 3 x M20	855029	1/10	
1 x PG42 + 4 x PG16	853019	1/10	220	1 x M50/M40 + 4 x M25/M20	855030	1/10	
6 x PG29	853021	1/10	320				
3 x PG42 + 4 x PG16	853022	1/10	320	3 x M50/M40 + 4 x M16	855032	1/10	
22 x PG13.5	853023	1/10	320	17 x M20	855033	1/10	
4 x PG29 + 2 x PG21 + 4 x PG16	853024	1/10	320	1 x M50/M40 + 2 x M32/M25 + 4 x M25/M20	855034	1/10	
16 x PG16	853025	1/10	320	12 x M25/M20	855035	1/10	
8 x PG21 + 4 x PG16	853026	1/10	320	4 x M40/M32 + 3 x M20	855036	1/10	
26 x PG 16	853028	1/10	440	1 x M40/M32 + 16 x M25/M20	855037	1/10	
4 x PG29 + 4 x PG21 + 6 x PG16	853029	1/10	440	1 x M50/M40 + 2 x M40/M32 + 8 x M25/M20	855038	1/10	




Blind end-plates

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

Bridges

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

For large cross-section cables




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

Coupling key

Ref. No.	Pack.
853059	20

For base coupling




Cable stress release

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

With one clamp

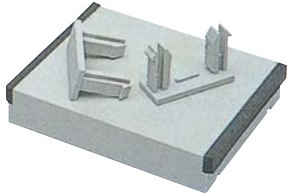
Ø max. of cable: 75 mm

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

To mount on cable stress release


Ref. No.	Pack.
853035	1

Ø max. of cable: 75 mm

Coupling clamp

Ref. No.	Pack.
853062	10

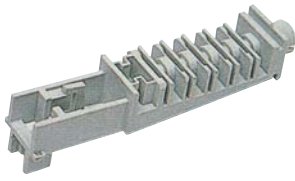
For coupling in special cases



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

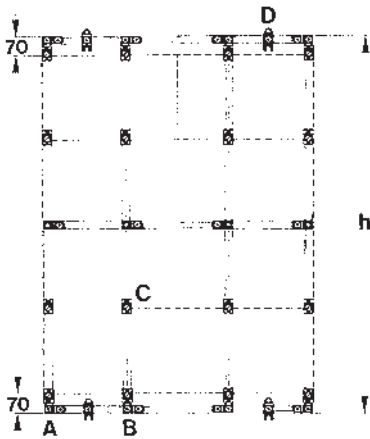


Accessories (continued)

	<p>Symmetrical DIN-profiles</p> <table border="1"> <thead> <tr> <th>Side (mm)</th> <th>Part No.</th> <th>Qty</th> </tr> </thead> <tbody> <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> </tbody> </table> <p>Always supplied with two universal supports</p>	Side (mm)	Part No.	Qty	220	853094	1	320	853095	1	440	853096	1	<p>Cover screw</p> <table border="1"> <thead> <tr> <th>Part No.</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>853057</td> <td>1</td> </tr> </tbody> </table> <p>Set of 4 pieces</p>	Part No.	Qty	853057	1							
Side (mm)	Part No.	Qty																							
220	853094	1																							
320	853095	1																							
440	853096	1																							
Part No.	Qty																								
853057	1																								
	<p>Mounting rail 12 x 2 mm</p> <table border="1"> <thead> <tr> <th>Side (mm)</th> <th>Part No.</th> <th>Qty</th> </tr> </thead> <tbody> <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> </tbody> </table> <p>To fit connection terminal blocks Always supplied with two universal supports</p> <p>Branch terminals, see p. I.7</p>	Side (mm)	Part No.	Qty	220	853097	1	320	853098	1	440	853099	1	<p>Hinge screw</p> <table border="1"> <thead> <tr> <th>Part No.</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>853061</td> <td>1</td> </tr> </tbody> </table> <p>Base must be fixed prior to hinge installation Set of 2 pieces.</p>	Part No.	Qty	853061	1							
Side (mm)	Part No.	Qty																							
220	853097	1																							
320	853098	1																							
440	853099	1																							
Part No.	Qty																								
853061	1																								
	<p>Partition plates</p> <table border="1"> <thead> <tr> <th>Side (mm)</th> <th>Part No.</th> <th>Qty</th> </tr> </thead> <tbody> <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> </tbody> </table> <p>For full compartmentalisation of coupled bases</p>	Side (mm)	Part No.	Qty	220	853065	1	320	853066	1	440	853067	1	<p>Hinges</p> <table border="1"> <thead> <tr> <th>Part No.</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>853340</td> <td>1</td> </tr> </tbody> </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. Set of 2 pieces.</p>	Part No.	Qty	853340	1							
Side (mm)	Part No.	Qty																							
220	853065	1																							
320	853066	1																							
440	853067	1																							
Part No.	Qty																								
853340	1																								
	<p>Fixing brackets</p> <table border="1"> <thead> <tr> <th>Part No.</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>853064</td> <td>1</td> </tr> </tbody> </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°) 	Part No.	Qty	853064	1	<p>Thumb grip</p> <table border="1"> <thead> <tr> <th>Part No.</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>853058</td> <td>1</td> </tr> </tbody> </table> <p>For cover screw or hinge screw. Set of 4 pieces.</p>	Part No.	Qty	853058	1															
Part No.	Qty																								
853064	1																								
Part No.	Qty																								
853058	1																								
	<p>Self-tapping screws</p> <table border="1"> <thead> <tr> <th>Size</th> <th>Part No.</th> <th>Qty</th> </tr> </thead> <tbody> <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> <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> </tbody> </table> <p>To fasten components to metallic mounting plates.</p>	Size	Part No.	Qty	5 x 13	853100	50	5 x 16	853101	50	5 x 22	853102	50	6 x 16	851384	500	6 x 22	851385	500	<p>Blanking plate</p> <table border="1"> <thead> <tr> <th>Part No.</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>828056</td> <td>1m</td> </tr> </tbody> </table> <p>For 45 mm cut-out</p>	Part No.	Qty	828056	1m	 
Size	Part No.	Qty																							
5 x 13	853100	50																							
5 x 16	853101	50																							
5 x 22	853102	50																							
6 x 16	851384	500																							
6 x 22	851385	500																							
Part No.	Qty																								
828056	1m																								
	<p>Air vent</p> <table border="1"> <thead> <tr> <th>Part No.</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>853123</td> <td>1</td> </tr> </tbody> </table> <p>Install two air vents per enclosure to allow ventilation and prevent condensation. Set of 2 pieces.</p>	Part No.	Qty	853123	1	<p>Marking strip</p> <table border="1"> <thead> <tr> <th>Part No.</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>851321</td> <td>1m</td> </tr> </tbody> </table> <p>Self-adhesive</p>	Part No.	Qty	851321	1m															
Part No.	Qty																								
853123	1																								
Part No.	Qty																								
851321	1m																								

Supporting frame

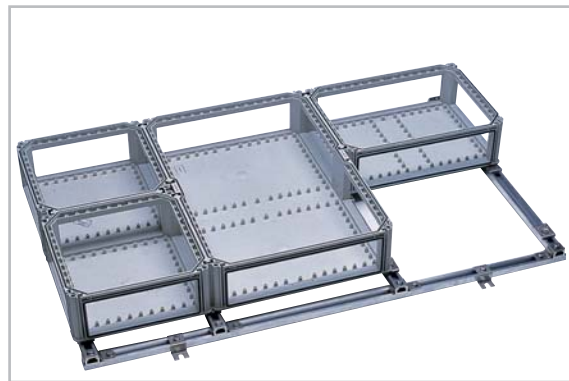
- Wall mounting of small units can be made using stainless steel fixing brackets (see chapter J). For mounting and handling of units of more than five enclosures, a supporting frame is compulsory.
- The supporting frame consists of at least two horizontal C-profiles (= the length of the assembly width) 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.



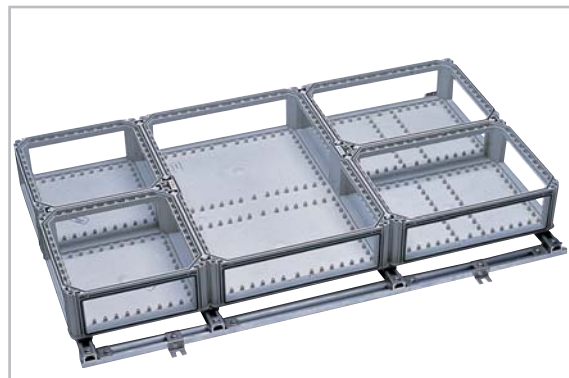
Horizontal and vertical C-profiles of the first row of enclosures are assembled together by clamping brackets and sliding nuts. The next clamping brackets are mounted on the horizontal profile.



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

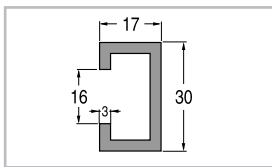


Following rows are then assembled the same way.



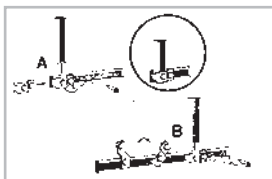
Frame and enclosure assemblies are mounted simultaneously.

Accessories



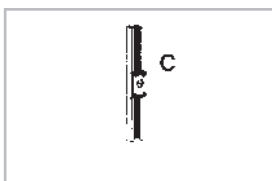
Aluminium C-profile

851254	1
30 x 17 x 3 mm	
Length = 3 m	



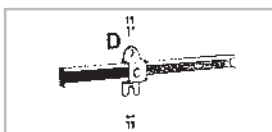
Frame clamping brackets

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
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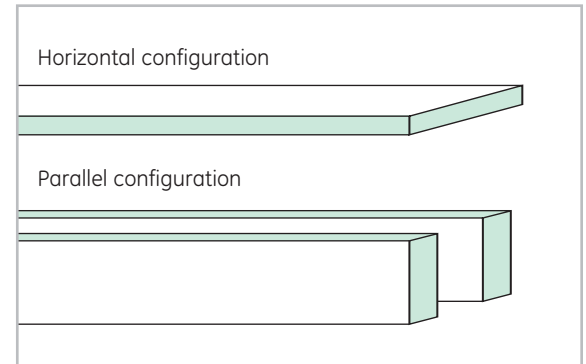
Bolt M6 x 12 DIN 84

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

A

B

C

D

E

F

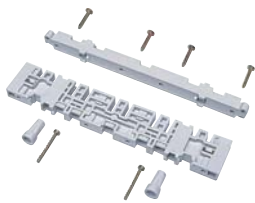
G

H

I

J/X

Accessories

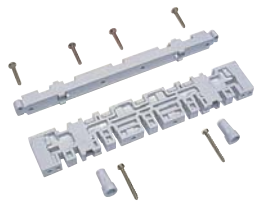
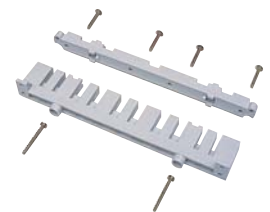


853075 1

Horizontal configuration 125A/250A
Parallel arrangement 250A

853077 1

Parallel arrangement 630A/1250A



853076 1

Horizontal configuration 125A/250A
Parallel arrangement 400A



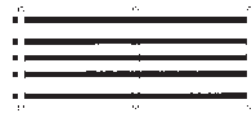
Busbar system 125A-1250A

	Horizontal configuration			Parallel arrangement					
Rated nominal current In	125/160A	250A	250A	250A	400A	630A	630A	1250A	1250A
Busbar supports									
Ref. No.	853075	853075	853075	853075	853076	853077	853077	853077	853077
Pack	1	1	1	1	1	1	1	1	1
Centre distance of phase bars (mm)	40	40	40	50	50	50	50	50	50
Distance between N or \neq - bar and adjacent phase bar (mm)	50	50	50	45	45	45	45	45	45
Busbars									
Ref. No. for phase bar	858034	858035	858034	858034	858036	858037	858036	858039	858038
Ref. No. for bars N - \neq	858034	858034	858034	858034	858034	858036	858036	858038	858038
Pack for length 3 m	1	1	1	1	1	1	1	1	1
Number and dimensions of phase bars (L1 - L2 - L3)	1 x (12 x 5)	1 x (12 x 10)	2 x (12 x 5)	2 x (12 x 5)	2 x (20 x 5)	2 x (20 x 10)	4 x (20 x 5)	2 x (30 x 10)	4 x (30 x 5)
Number and dimensions of bars N - \neq	1 x (12 x 5)	1 x (12 x 5)	1 x (12 x 5)	2 x (12 x 5)	2 x (12 x 5)	2 x (20 x 5)	2 x (20 x 5)	2 x (30 x 5)	2 x (30 x 5)
Total phase section (mm ²)	60	120	120	120	200	400	400	600	600
Total section N - \neq (mm ²)	60	60	60	120	120	200	200	300	300
Characteristics									
Centre distance of busbar supports (mm)	320	320	320	320	320	320/290	320/290	320	320
Dynamic short-circuit resistance (kA peak)	40	40	40	30	42	43/54	40/52.5	53	52.5
Thermal short-circuit resistance (kA eff.)	20	20	20	15	20	20/26	20/25	25	25

Horizontal configuration



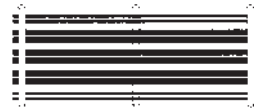
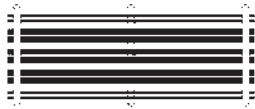
Connection with flat copper					
Branching bar width (mm)	Main bar width (mm)	Total thickness of clamped bars (mm)		Clamp	
		Min.	Max.		
12	12	5	15		851125 10
15-20-30	12	5	25		858025 10



Connection with cable directly on copper 12 x 5 / 12 x 10						
Cable clamp		Main bar	Cable section (mm ²)		Clamp width (mm)	
			Min.	Max.		
858026	20	5	1.5	16	11.5	
858028	10	5	1.5	35	15.5	
858032	10	5	16	70	20.5	
858033	10	5	16	120	23.5	
858027	20	10	1.5	16	11.5	
858029	10	10	1.5	35	15.5	
858030	10	10	16	70	20.5	
858031	10	10	16	120	30.5	



Parallel arrangement



Connection with flat copper or cable-shoe to bars

Connecting block		
For flat copper with widths 25, 30 or 40		
858003	10	
For flat copper with widths 20 or 25		
858004	10	
For flat copper with widths 15 or 20		
858005	10	

Connection for cables - 16-35-70-120 mm² to bars

Wing contactblocks		
858006	10	
858007	10	



Bolts

For 5 mm thick bars

M10 x 60	858008	10
M10 x 80	858010	10

For 10 mm thick bars

M10 x 60	858013	10
M10 x 80	858011	10

b	s	x	L
12	5	40	60
12	10	45	60
20	5	48	60
20	10	53	60
30	5	58	60
30	10	63	80

Bolts

For 5 mm thick bars

M10 x 60	858008	10
M10 x 80	858010	10

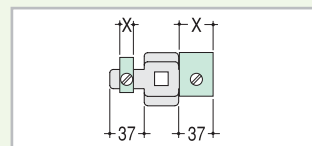
For 10 mm thick bars

M10 x 60	858013	10
M10 x 80	858011	10

b	s	x	L
12	-	42	60
12	5	47	60
12	10	52	60
20	-	50	60
20	5	55	60
20	10	60	60
30	-	60	60
30	5	65	80
30	10	70	80



Cable clamps for mounting on to wing contactblocks	Cable section (mm ²)	Clamp width X (mm)	
		Min.	Max.
858026	20	1.5	16
858028	10	1.5	35
858032	10	16	70
858033	10	16	120



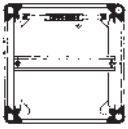
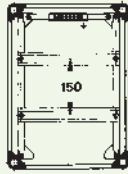
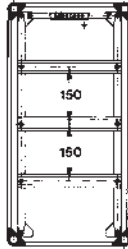


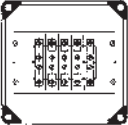
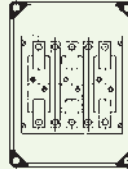

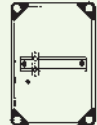
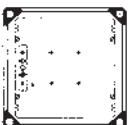
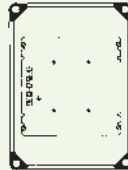
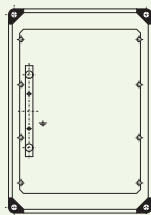


Legend

- b: height of the rectangular bars
- s: height of the horizontal, rectangular bars or of the connection with cables or flat copper
- x: minimal required bolt length
- L: length of the fitting hookbolt




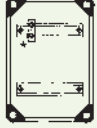
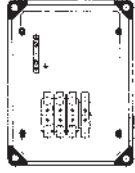

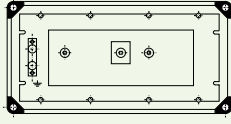
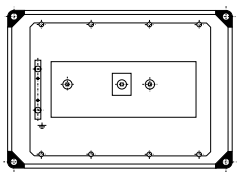
Pre-assembled units for panelboards

Type	VMS 32	VMS 33	VMS 43	VMS 63	VMS 64
 <p>Enclosures for modular equipment</p> <p>Includes:</p> <ul style="list-style-type: none"> - base with four open sides - bare frame with earth bar and coverplate - transparent hinged cover (VMS 33 - VMS 43) - transparent cover with screws (VMS 32 - VMS 63) 	 <p>320 x 220 x 180</p> <p>14 modules 853124</p>	 <p>320 x 320 x 180</p> <p>14 modules 853126</p>	 <p>440 x 320 x 180</p> <p>28 modules 853128</p>	 <p>640 x 320 x 180</p> <p>42 modules 853130</p>	
 <p>Enclosures with H.R.C. fuse plates</p> <p>Includes:</p> <ul style="list-style-type: none"> - base with four open sides - mounting plate with H.R.C. bases - transparent cover with screws <p>Fuses are to be ordered separately</p>	 <p>320 x 220 x 180</p> <p>125A 3 DIN 00 + N + \neq 853132</p>	 <p>320 x 320 x 180</p> <p>125A 3 DIN 00 + N + \neq 853133</p>	 <p>440 x 320 x 180</p> <p>250A 3 DIN 1 + N + \neq 853134⁽¹⁾</p> <p>400A 3 DIN 2 + N + \neq 853135⁽¹⁾</p> <p>630A 3 DIN 3 + N + \neq 853136⁽¹⁾</p>		
 <p>Enclosures for loadbreak switches and fused disconnectors (Dilos/Fulos)</p> <p>Includes:</p> <ul style="list-style-type: none"> - base with four open sides - DIN rail with earthing connector (VMS 32) - mounting plate with threaded holes and earthing connector (VMS 33 - VMS 43) - transparent cover with handle cut out and with screws - extension shaft and operating handle <p>Loadbreak switches and fused disconnectors are to be ordered separately</p>	 <p>320 x 220 x 180</p> <p>DILOS 1 40/63/80/100/125A 3P/4P + \neq 853137</p>	 <p>320 x 320 x 180</p> <p>DILOS 2 160/200A 3P/4P + \neq 853138</p> <p>DILOS 1H 3P/4P + \neq 40/63/125A 853874</p> <p>FULOS 000 32/63/100A 3P/4P + \neq 853874</p>	 <p>440 x 320 x 180</p> <p>DILOS 3 160/200/250/315A 3P/4P + \neq 853139</p> <p>FULOS 00 160A 3P/4P + \neq 853139</p>	 <p>640 x 440 x 180</p> <p>DILOS 4 400/500/630A 3P/4P + \neq 853875</p> <p>FULOS 1 250A 3P/4P + \neq 853875</p> <p>FULOS 2 400A 3P/4P + \neq 853875</p>	

(1) To the functional units DIN 1/2/3 the mounting plate can be rotated 90°, in the way that the enclosure can be coupled with the units DILOS 4 - FULOS 1/2 (side 440).


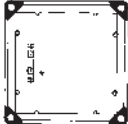
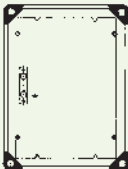
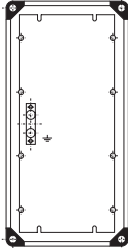
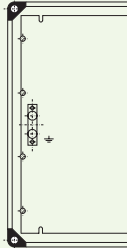

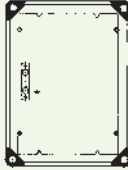
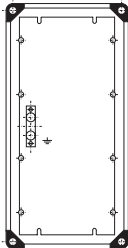


Pre-assembled units for panelboards

Type	VMS 32	VMS 43	VMS 63	VMS 64										
 <p>Enclosures for loadbreak switches (Dilos) and fuse bases</p> <p>Includes:</p> <ul style="list-style-type: none"> - base with four open sides - transparent cover with handle opening and screws - extension shaft and operating handle - for VMS 32: two DIN-rails with earthing (without equipment) - for VMS 43 and VMS 63: mounting plate with threaded holes for loadbreak switches, fuse bases and earthing connectors 	 <p>320 x 220 x 180</p> <p>DILOS 1 40/63/80A 3P/4P + \neq E27 / E33 MCB 853140</p>	 <p>440 x 320 x 180</p> <p>DILOS 1 63/80/100/125A 3P/4P + \neq 3 DIN 00 + N 853141</p> <p>DILOS 2 160A 3P/4P + \neq 3 DIN 00 + N 853170</p>												
					<p>Miniature circuit breakers, loadbreak switches and fuses are to be ordered separately</p>									
					 <p>Enclosures for changeover switches (Dilos/Fulos)</p> <p>Includes:</p> <ul style="list-style-type: none"> - base with four open sides - mounting plate with changeover system (I-O-II) and earth bar - transparent cover with handle opening and screws - extension shaft and operating handle 		 <p>640 x 320 x 180</p> <p>DILOS 1H 125A 3P/4P + \neq 853876</p> <p>FULOS 000 32/63/100A 3P/4P + \neq 853877</p>		 <p>640 x 440 x 180</p> <p>DILOS 3 160/200/250/315A 3P/4P + \neq 853878</p> <p>FULOS 00 160A 3P/4P + \neq 853879</p>					
										<p>Dilos and Fulos switches are to be ordered separately</p>				


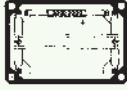
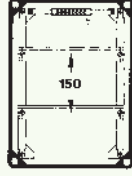
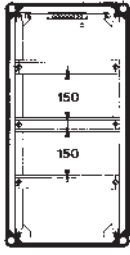

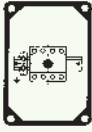
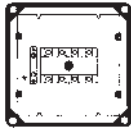

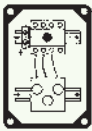
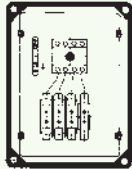
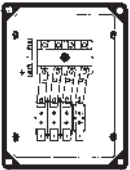


Pre-assembled units for panelboards

Type	VMS 32	VMS 33	VMS 43	VMS 63	VMS 64
 <p>Enclosures for MCCB's type Record</p> <p>Includes:</p> <ul style="list-style-type: none"> - base with four open sides - mounting plate with threaded holes and earth connector - transparent cover with operating handle for moulded case circuit breakers - transparent cover with operating handle and push-buttons for moulded case circuit breakers with earth-leakage device <p>Moulded case circuit breakers are to be ordered separately</p>					
		320 x 320 x 180	440 x 320 x 180	640 x 320 x 180	640 x 440 x 180
		D 125 3P/4P FAV 853148	D 160 3P/4P FAV 853149	D 160M 3P/4P FAV 853151	D 630 3P/4P FAV 853884
		D 125M 3P/4P FAV 853171		D 250 3P/4P FAV 853880	D 630M 3P/4P FAV 853885
				D 250M 3P/4P FAV 853881	
				D 400 3P/4P FAV 853882	
				D 400M 3P/4P FAV 853883	
 <p>Enclosures for MCCB's type Record Plus⁽¹⁾</p> <p>Includes:</p> <ul style="list-style-type: none"> - base with four open sides - mounting plate with threaded holes and earth connector - transparent cover with operating handle for moulded case circuit breakers - transparent cover with operating handle and push-buttons for moulded case circuit breakers with earth-leakage device <p>The use of short or long terminal covers for the breaker is mandatory. Breaker and terminal covers always have to be ordered separately.</p>					
			440 x 320 x 254	640 x 320 x 254	
			FD160 (+RCD) 3P/4P F 855085	FE160 +RCD 3P/4P F 855088	
			FE160 3P/4P F 855087	FE250 + RCD 3P/4P F 855088	
			FE250 3P/4P F 855087		

(1) Short-circuit resistance 20kA eff. at 440V

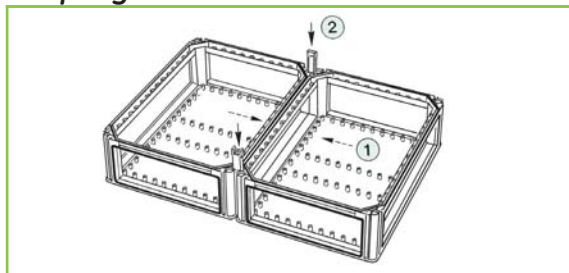
Pre-assembled individual units

Type	VMS 32	VMS 33	VMS 43	VMS 63
 <p>Enclosures for DIN-rail equipment</p> <p>Includes:</p> <ul style="list-style-type: none"> - base with four closed sides - with combi end plates: <ul style="list-style-type: none"> top: 22 x PG13,5 bottom: 4 x PG16 + 2 x PG21 + 4 x PG29 - bare frame with earth connector and cover plate - transparent pivoting cover (VMS 43) - transparent cover with screws (VMS 32 - VMS 63) 	 <p>320 x 220 x 180</p> <p>14 modules 853159</p>		 <p>440 x 320 x 180</p> <p>28 modules 853160</p>	 <p>640 x 320 x 180</p> <p>42 modules 853161</p>
 <p>Enclosures with loadbreak switches (Dilos)</p> <p>Includes:</p> <ul style="list-style-type: none"> - base with four closed sides - with combi end plates: <ul style="list-style-type: none"> top: <ul style="list-style-type: none"> side 220: 4 x PG16 + 1 x PG42 side 320: 4 x PG16 + 2 x PG21 + 4 x PG29 bottom: <ul style="list-style-type: none"> side 220: 3 x PG29 side 320: 4 x PG16 + 3 x PG42 - four pole loadbreak switch 660V - transparent cover and screws - extension shaft and operating handle 	 <p>320 x 220 x 180</p> <p>DILOS 1 63A - 4P + \neq 853162</p> <p>DILOS 1 125A - 4P + \neq 853163</p>	 <p>320 x 320 x 180</p> <p>DILOS 2 160A - 4P + \neq 853164</p>		
 <p>Enclosures with loadbreak switches (Dilos) and fuse bases</p> <p>Includes:</p> <ul style="list-style-type: none"> - base with four closed sides - with combi end plates: <ul style="list-style-type: none"> top: <ul style="list-style-type: none"> side 220: 4 x PG16 + 1 x PG42 side 320: 4 x PG16 + 2 x PG21 + 4 x PG29 bottom: <ul style="list-style-type: none"> side 220: 3 x PG29 side 320: 4 x PG16 + 3 x PG42 - four pole loadbreak switch 660V - partition plates between adjacent bases - transparent cover and screws - extension shaft and operating handle 	 <p>320 x 220 x 180</p> <p>DILOS 1 63A - 4P + \neq 3 fuse screw holders E33 853165</p>		 <p>440 x 320 x 180</p> <p>DILOS 1 63A - 4P + \neq 3 DIN 00 + N 853166</p> <p>DILOS 1 125A - 4P + \neq 3 DIN 00 + N 853167</p> <p>DILOS 2 160A - 4P + \neq 3 DIN 00 + N 853168</p>	



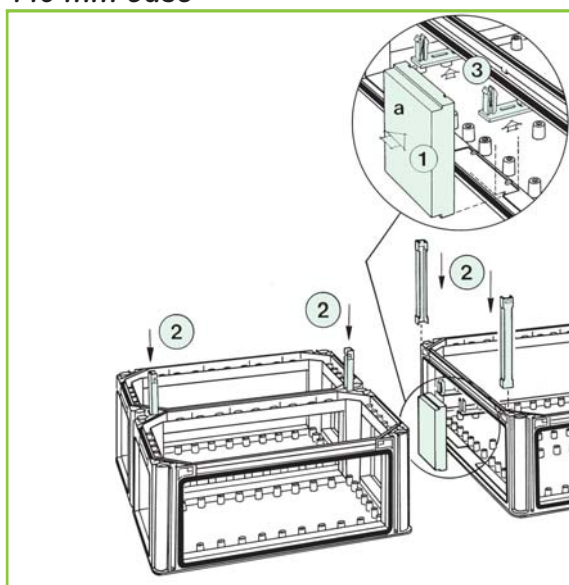
Mounting instructions

Coupling of the bases



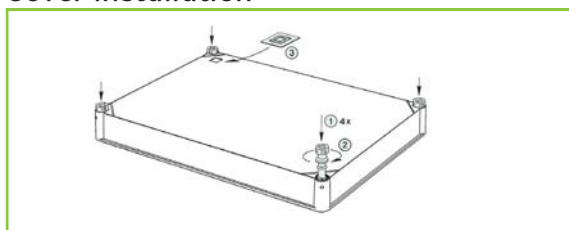
- ① Set the two bases against each other
- ② Couple with dowels

Coupling of two 220 mm bases to one 440 mm base



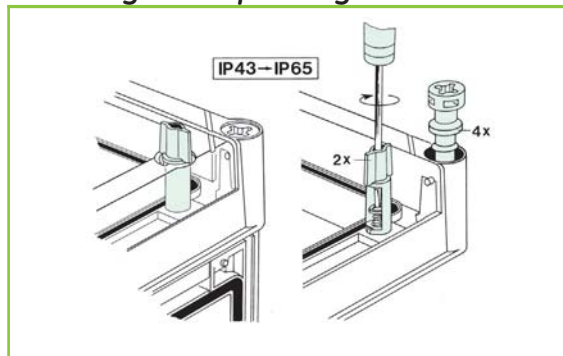
- ① Install the bridge (a) in the 440 mm side. Exact location is defined by the slots
- ② Couple the bases with the four dowels
- ③ Snap coupling clamps in the openings below the upper base lip

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).
- ③ If necessary, stick the total isolation symbol on the cover.

Mounting of the pivoting doors



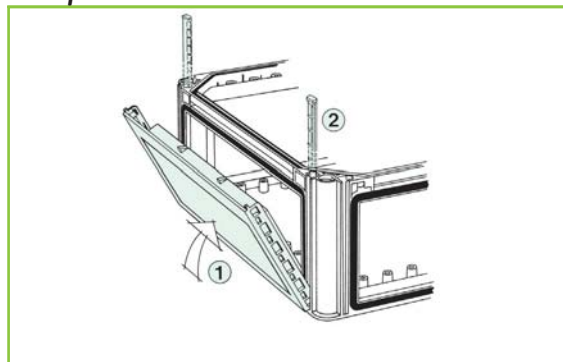
Install the door locking screws on the door frame with self tapping screws.

Protection degree:

IP43: door locking screws open

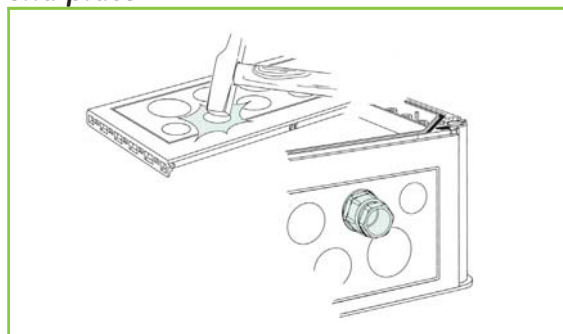
IP65: door locking screws closed

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



A

B

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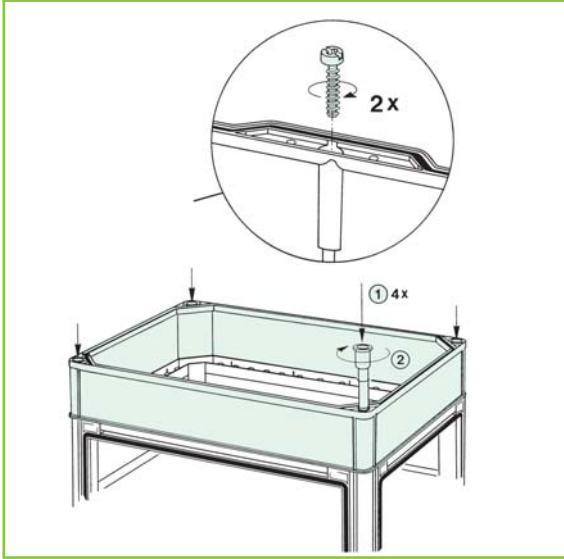
G

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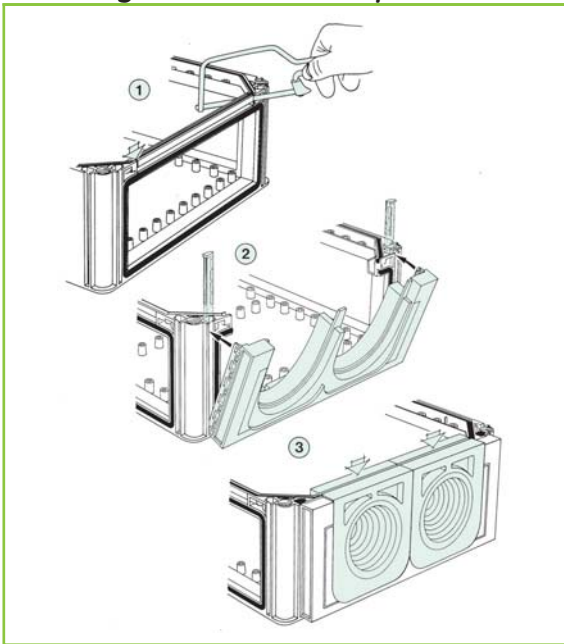
Installation of depth extension frame



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

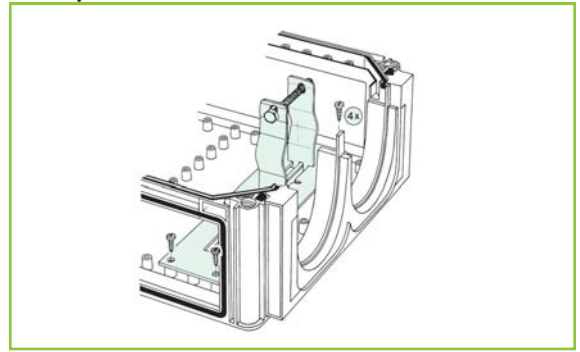
For the extension frames with 640 mm side, additional fixation with two self tapping screws.

Mounting of the cable end plates



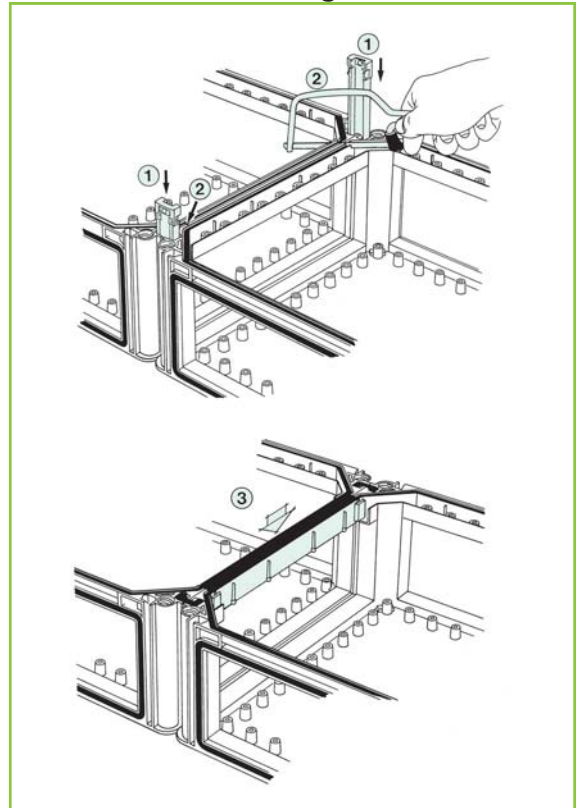
- ① Cut the top base lip following the marks.
Side 320 - opening is 220 mm.
Side 440 - opening is 320 mm.
- ② Install the end plate in the channel of the base bottom, then press against the side wall. Lock with the locking pins.
- ③ Insert the rubber cable entries in the end plates.

Installation of the stress relieving cable clamp



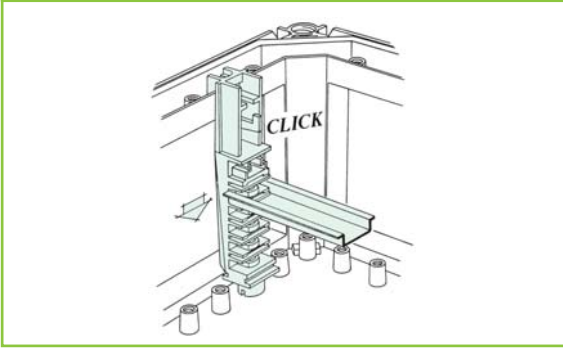
Install the stress release support with the four self tapping screws.
Install the stress release clamps in the sleeve.
Lock with the bolt and nut.

Installation of the bridge



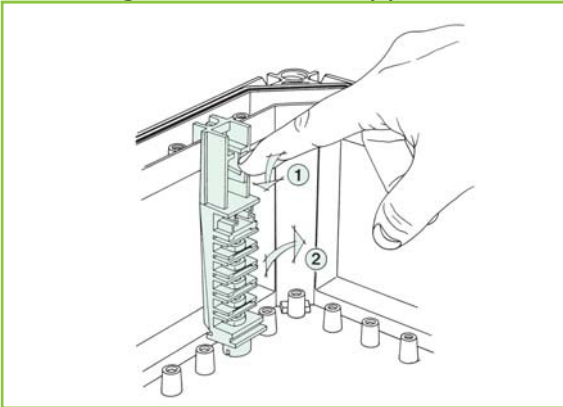
- ① Couple the two bases with dowels.
- ② Cut the top adjacent side lips following the markings.
- ③ Stick the self-adhesive gasket and press it into the bridge gutter. Install the bridge between the two bases.

Installation of the universal support



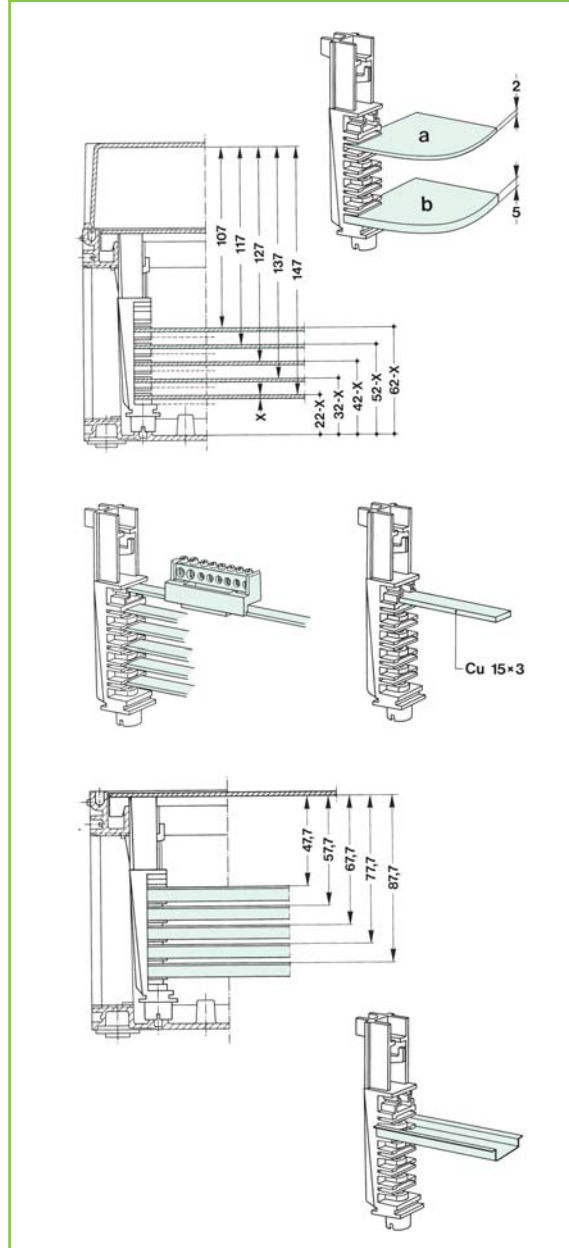
Insert the universal support on the base insert. Simultaneously fit the support on the inner lip. Press completely.

Unlocking the universal support



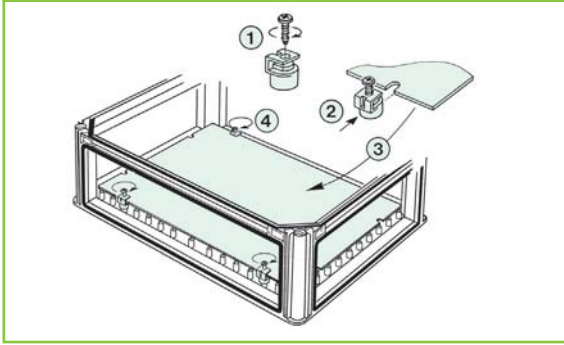
Press the locking latch towards the bottom. Lift the support.

Capabilities of the universal support



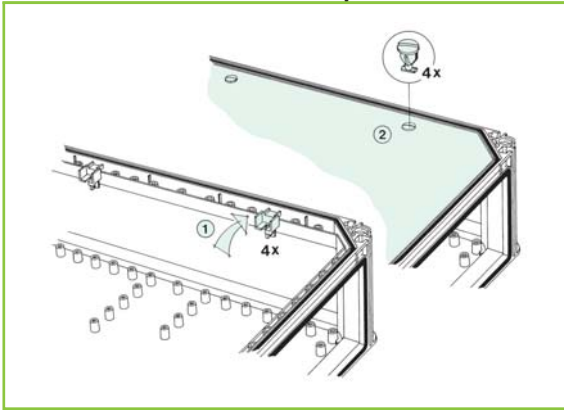
- Metal mounting plates (a) or pertinax plates (b)
- Copper rails 15 x 3
- Flat bar 12 x 2 mm
- Symmetrical DIN-profile

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



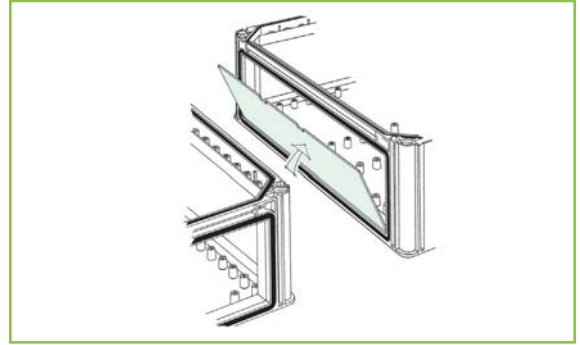
- ① Snap the four supports on the base inner lip.
- ② Install the four quarter-turn fasteners on the cover plate. Fit the cover plate on the supports by turning the fasteners.

Installation of the air vents



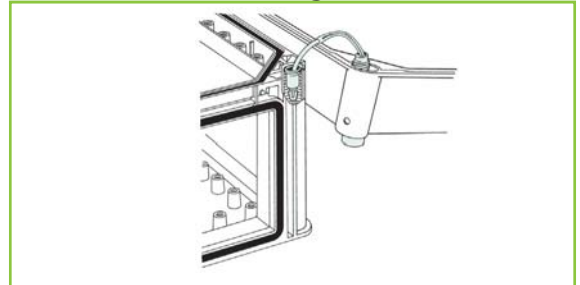
Drill a $\varnothing 19$ mm hole, install the air vent and screw the nut.

Installation of the partition plates



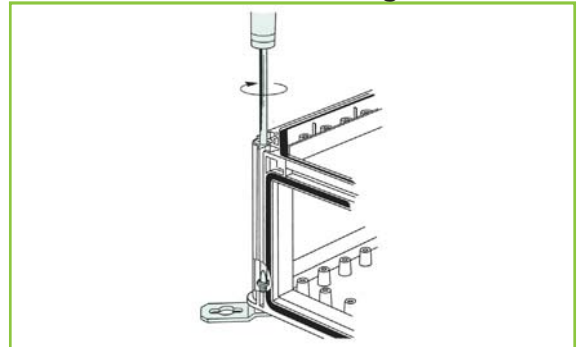
Install the partition plate between the two bases to be coupled.
The plate must be mounted with the slots on the top.

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.

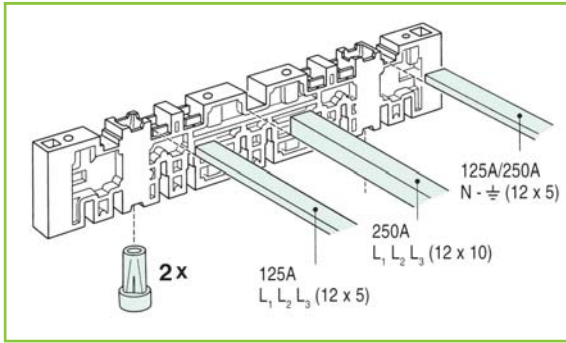
Installation of the busbar support

Define the required rated current.

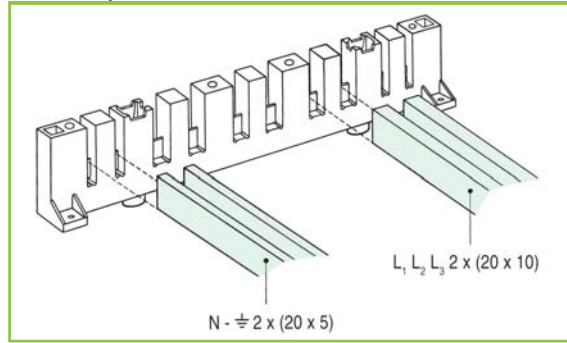
Install the busbar supports on the fixing points located in the base bottom.

Tighten with two screws. Introduce the copper bars in the support and set with the reversible top plate and four screws.

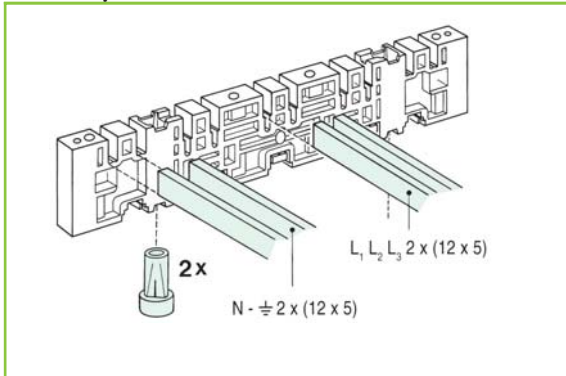
125A / 250A – horizontal



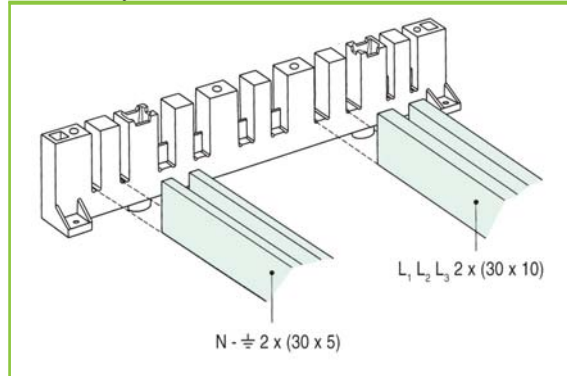
630A – parallel



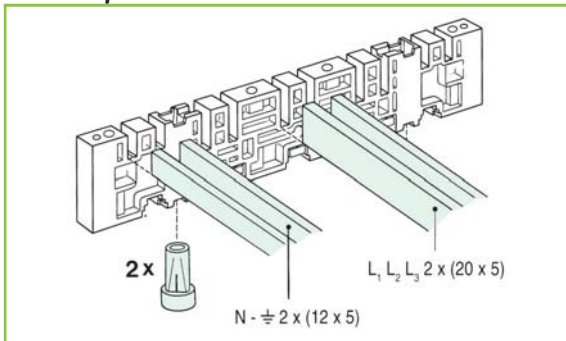
250A – parallel



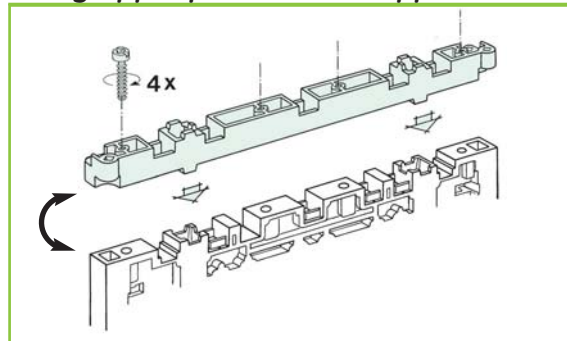
1250A – parallel



400A – parallel



Fixing upper part busbar support



A

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J/X



Type tested distribution cabinet

Features

- Secure: total insulation ☑
- Protection degree: IP41-IP08
- Double wall: a sheet steel outer wall plus an inner insulated extruded wall
- Universal: for DIN-rail equipment up to 92.5 mm
- Installation friendly: ample wiring room and a removable mounting frame
- Flexible cable entries, integrated in the base

Components

The Fix-o-Rail Senior cabinet includes:

- base in RAL 9002
- mounting frame
- labels for circuit indication
- coverplates
- a transparent or grey door
- closed by handle without lock
- sealing option

Approvals/Marking



Applications



As an elegant insulated cabinet in:

- restaurants and hotels
- workshops
- hospitals
- shopping centers
- offices
- commercial buildings
- leisure and sport locations

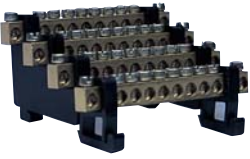
- Overview of the range ● Page C.2
- Dimensional drawings ● Page J.28
- Specifications for tender documents ● Page J.67
- Power dissipation values ● Page J.91



Fix-o-Rail Senior

		H x W x D	Number of modules	Number of rows	Ref. No.	Pack.
	Plain door	650 x 300 x 210	48	4	610239	1
		800 x 300 x 210	60	5	610248	1
		650 x 550 x 210	96	4	610240	1
		800 x 550 x 210	120	5	610249	1
		950 x 550 x 210	144	6	610257	1
	Transparent door	650 x 300 x 210	48	4	610328	1
		800 x 300 x 210	60	5	610330	1
		650 x 550 x 210	96	4	610329	1
		800 x 550 x 210	120	5	610331	1
		950 x 550 x 210	144	6	610332	1

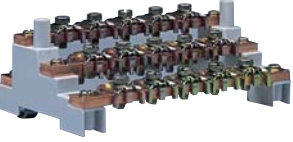
Accessories



4 pole terminals 63A		
	610022	12
Rail section 6.5 x 9		




4 pole terminals 160A		
	617992	1
With cover - for DIN-rail mounting		



4 pole terminals 160A		
	610020	15
Rail section 12 x 5		
Short-circuit capacity 35kA peak 10 ms		



Protective shroud		
	610021	1
For 160A terminal		

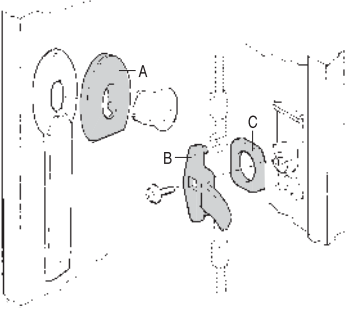


Earth bar		
	828152	1
For enclosure width 300 mm		
	828153	1
For enclosure width 550 mm		



Blank plate		
	828056	1m
For screening off rectangular openings		
For cut out of 45 mm		

Adaptor kit = A + B + C



Plain plate		
	815094	1



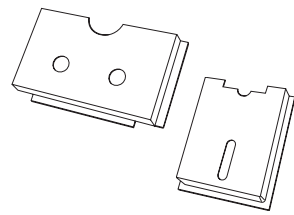
Pre-drilled plates		
①	815093	1
17 x PG13,5		
②	815092	1
1 x PG21 - PG48 / 2 x PG13,5		
2 x PG29 / 4 x PG13,5		



Label for circuit indication		
	610232	10
For enclosure width 300 mm		
	610233	10
For enclosure width 550 mm		

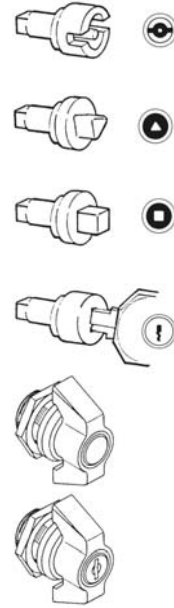


Document pocket		
	811516	1
DIN A4 - W x H = 325 x 180 mm		
	832000	1
DIN A5 - W x H = 155 x 225 mm		



Locking device		
	815105	1
Adaptor kit		
	811327	1
Insert 3 mm double bit		
Key 832028 to be ordered separately		
	811326	1
Insert 8 mm triangle		
Key 832027 to be ordered separately		
	811325	1
Insert 8 mm square		
Key 832026 to be ordered separately		
	811331	1
Cylinder lock with 2 keys V2432-E		
	813146	1
Neutral handle		
	813156	1
Handle with key on V2432-E		

The standard handle can be replaced by adaptor + insert or handle



Notes

Wall mounting system enclosures

A

B

C

D

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J/X





Type tested distribution board

Applications

Type tested distribution board in industrial and commercial markets

Standards

EN 60439-1
IEC 60439-1

Approvals

Lovag

Features

- Delivered in kit form
- Form 1 and Form 2
- Easy wiring, due to the direct mounting of the functional units on the rear panel, used as a mounting plate
- Protection level
 - Without door IP40 - IK07
 - With plain door IP41 - IK08
 - With transparent door IP41 - IK07

Material used

Sheet steel coated with oven-baked epoxy paint

- Doors, side panels and roof: 1 mm thick
- Upper/bottom panels and bases: 2 mm thick

Sendimir zinc plated steel

- Rear panel: 1.5 mm thick
- Coupling kit: 2 mm thick

Colours

- RAL 7035: enclosure, doors and protective covers
- RAL 7024: bases

Electrical characteristics

- Rated voltage: 690V - 40/60Hz
- Rated current: max. 630A
- Rated short current I_{cs}: max. 30kA (1 sec.)
- Rated peak short-circuit current I_{pk}: max. 60kA peak

Dimensions

Height: 545 to 1,910 mm
Width: 600 or 900 mm
Depth: 220 mm (250 with the door)
Usable width: 500 mm

- Overview of the range ● Page C.2
- Dimensional drawings ● Page J.29
- Specifications for tender documents ● Page J.68
- Power dissipation values ● Page J.92

A

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J/X

A

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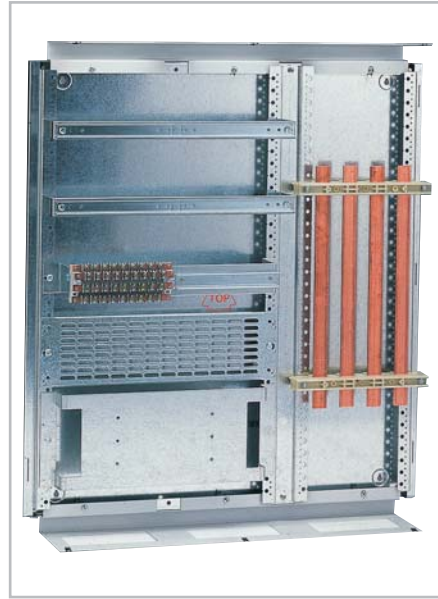
J/X



Modula 630K is a wall-mounted sheet-metal enclosure supplied in kit form which is particularly suited for setting up switch and low-voltage distribution boards in the services and industrial sectors. Due to its modularity and simplicity, Modula 630K offers numerous practical advantages to facilitate mounting and wiring operations, i.e. ultra-quick assembly, optimised functionality, user-friendliness and time-saving connection or handling.



The system is made of sheet steel and is protected by a coating of epoxy paint (colour RAL 7035). The enclosures are available in two widths (600 and 900 mm) and six heights (from 545 to 1295 mm), increasing in increments of 150 mm. Supplied in space-saving kit form, the enclosures can be assembled in a few minutes using a few screws.



The rear panel comprises all the functional construction components. Modula 630K has been designed to allow direct mounting and wiring of the functional units on the back panel and to provide access to the equipment, terminals and busbar system from all sides. Top, side and cover panels can be easily installed later in the workshop or on-site.



The cable or busbar compartment is included in the 900 mm wide enclosure. All components are mounted on the sheet-metal rear panel. The compartment can be positioned on the left or right as wished when the enclosure is being installed. Protective covers and/or doors made of 1 mm thick sheet steel are coated with an attractive, safe epoxy paint (colour RAL 7035).

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The KIT form saves storage and transport space.



The 1.5 mm thick steel rear panel is equipped with 8 mm diameter holes at distances of 25 mm. The sendzimir zinc plated steel, which complies with EMC regulations, ensures improved earthing.



An ingenious system of grooves makes it possible to fix the side panels on the rear panel without screws being needed.



A robust assembly is achieved using only four screws after the side and roof panels have been fitted.



Protective covers with openings for 27 modules (of 18 mm each) are fitted directly onto the side panels.



Opaque or transparent doors which open to the right or the left are equipped with a cylindrical lock (type V2432E) as a standard feature.



Busbar/cable compartments can be easily installed on the right or the left of the enclosure.



The installation of the (up to 630 A) busbar system at the back of the enclosure and/or in the cable compartment ensures that generous wiring space is available.

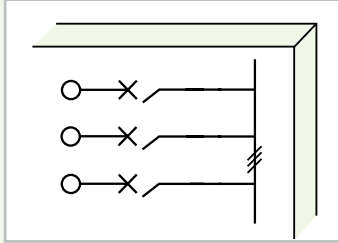


The roof and base are equipped with 3-mm thick rigid PVC wire access-panels (colour RAL 7035). These are easy to remove and handle.

Form 1

According to EN 60439-1 and IEC 60439-1

- No compartment
- No separation between the enclosure, busbar system, functional units and terminals



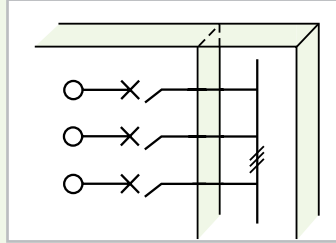
With Modula 630K

- 600 mm wide individual enclosure
- 900 mm wide enclosure with integrated cable/busbar compartment **without partition**

Form 2

According to EN 60439-1 and IEC 60439-1

The busbar system is protected from the functional units

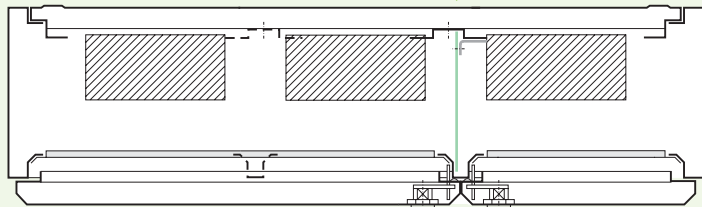


With Modula 630K

- 900 mm wide enclosure with integrated busbar compartment **with separation between busbar compartment and functional units**
- The separation screen is made of 3 mm thick, halogen free polyester.
- The openings are easy to break out, for the passage of cables, Cu, flexible brass, ...
- **With preservation of IP20**
- Easy to place with the help of simple wire-cutters



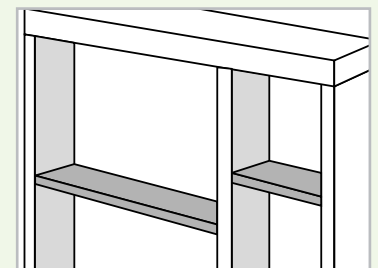
separation



Form 2 horizontal separation screen

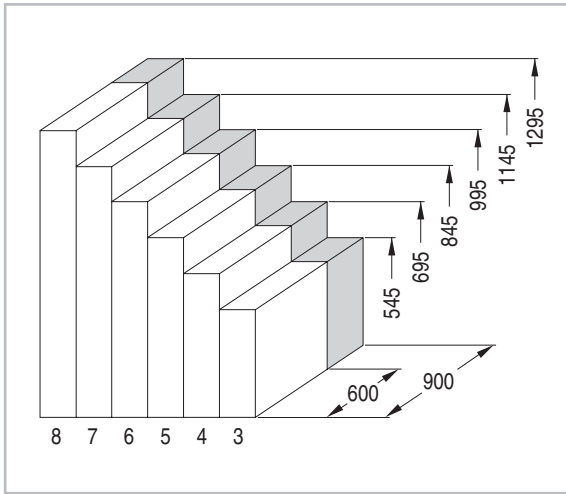
For functional unit and cable/busbar compartment, e.g.

- In cable/busbar compartment:
 - separation between incoming feeder and busbar
- Separation between "Main" switchboard and "Secure" switchboard
- Separation between electrical distribution (High voltage) and data / telecom (Low voltage)

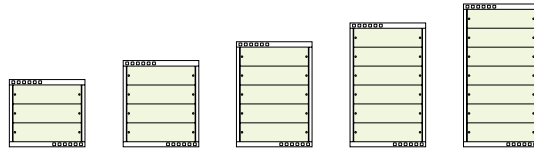


Range

Individual enclosures

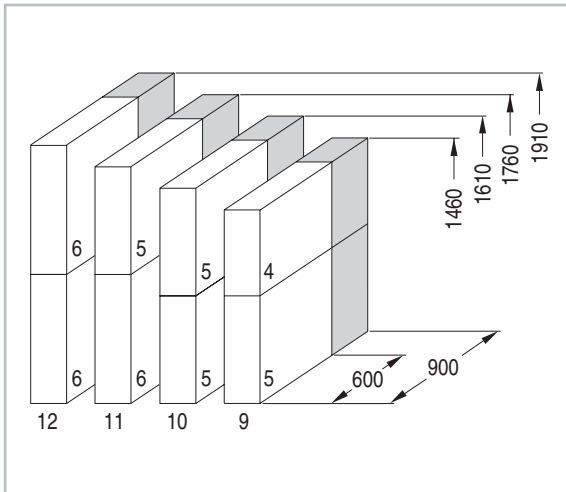


Dimensions



Stacked units	3	4	5	6	7	8
Basic height (mm)	545	695	845	995	1,145	1,295
Usable height (mm)	450	600	750	900	1,050	1,200
Maximum number of 18 mm modules	81	108	135	162	189	216

Stacked enclosures



Type tested distribution board

A

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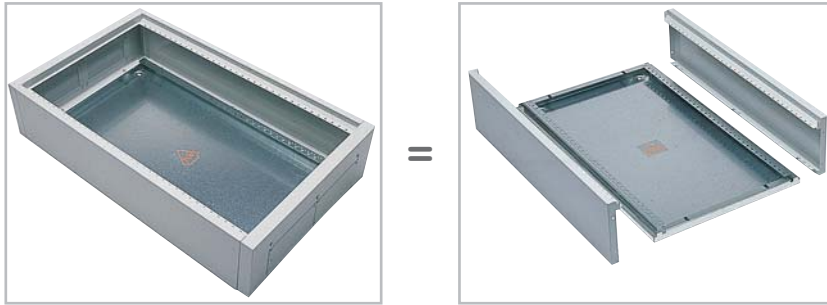
I

J/X

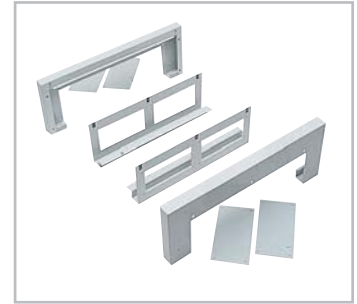


Individual enclosures - 600 mm width

IP40 - IK07



With cable entry plates



+

or

Without cable entry plates



H x W x D* (mm)	Usable height (mm)	No. of stacked units of 27 mod.	1 back panel + 2 sides
545 x 600 x 220	450	3 (81 mod.)	880703
695 x 600 x 220	600	4 (108 mod.)	880704
845 x 600 x 220	750	5 (135 mod.)	880705
995 x 600 x 220	900	6 (162 mod.)	880706
1,145 x 600 x 220	1050	7 (189 mod.)	880707
1,295 x 600 x 220	1200	8 (216 mod.)	880708

+

1 roof + 1 bottom
With cable entry plates 880719
or
Without cable entry plates 880875

* 250 mm deep with door

Doors

The doors are delivered with a cylindrical V2432E type lock



Specifications of the doors

- Delivered with a cylindrical V2432E type lock
- Protection degree
Opaque door: IP41 - IK08
Transparent door: IP41 - IK07

Number of stacked units of 27 modules	Opaque door IP41 - IK08	Transparent door IP41 - IK07
3 (81 mod.)	880723	880735
4 (108 mod.)	880724	880736
5 (135 mod.)	880725	880743
6 (162 mod.)	880726	880749
7 (189 mod.)	880727	880750
8 (216 mod.)	880728	880751

Dimensions ● Page J.29

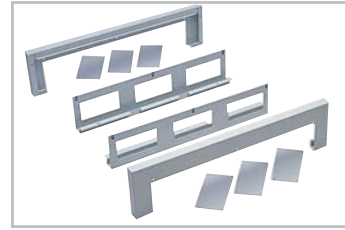


Individual enclosures - 900 mm width

IP40 - IK07

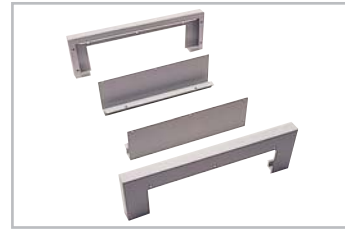


With cable entry plates



or

Without cable entry plates



H x W x D* (mm)	Usable height (mm)	No. of stacked units of 27 mod.	1 back panel + 2 sides
545 x 900 x 220	450	3 (81 mod.)	880709
695 x 900 x 220	600	4 (108 mod.)	880714
845 x 900 x 220	750	5 (135 mod.)	880715
995 x 900 x 220	900	6 (162 mod.)	880716
1,145 x 900 x 220	1050	7 (189 mod.)	880717
1,295 x 900 x 220	1200	8 (216 mod.)	880718

1 roof + 1 bottom
With cable entry plates 880722
or
Without cable entry plates 880882

* 250 mm deep with door

Doors

Two doors
width 600 + 300



600 + 300 600 + 300

Specifications of the doors

- Delivered with a cylindrical V2432E type lock
- Protection degree
Opaque door: IP41 - IK08
Transparent door: IP41 - IK07

Number of stacked units of 27 modules	Opaque door		Transparent + opaque door	
	880723	880897	880735	880897
3 (81 mod. + compartment)	880723	880897	880735	880897
4 (108 mod. + compartment)	880724	880898	880736	880898
5 (135 mod. + compartment)	880725	880899	880743	880899
6 (162 mod. + compartment)	880726	880900	880749	880900
7 (189 mod. + compartment)	880727	880901	880750	880901
8 (216 mod. + compartment)	880728	880902	880751	880902

Type tested distribution board

A

B

C

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J/X



Stacked enclosures - 600 mm width

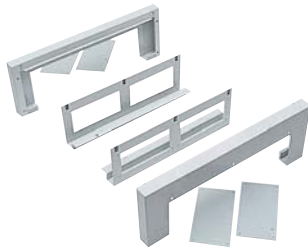
IP40 - IK07



Composition



2 bases and 4 sides



Roof and bottom



Connection kit

Type of stacking		H x W x D*	Total number of stacked units														
Hinges on left	Hinges on right																
5 stacked units	4 stacked units	1460 x 600 x 220 <table border="1"> <tr><td>880704</td><td>1</td></tr> <tr><td>+</td><td></td></tr> <tr><td>880705</td><td>1</td></tr> <tr><td>+</td><td></td></tr> <tr><td>880719</td><td>1</td></tr> <tr><td>+</td><td></td></tr> <tr><td>880785</td><td>1</td></tr> </table>	880704	1	+		880705	1	+		880719	1	+		880785	1	9
880704	1																
+																	
880705	1																
+																	
880719	1																
+																	
880785	1																
4 stacked units	5 stacked units		①														
			②														
			③														
5 stacked units	5 stacked units	1610 x 600 x 220 <table border="1"> <tr><td>880705</td><td>1</td></tr> <tr><td>+</td><td></td></tr> <tr><td>880705</td><td>1</td></tr> <tr><td>+</td><td></td></tr> <tr><td>880719</td><td>1</td></tr> <tr><td>+</td><td></td></tr> <tr><td>880786</td><td>1</td></tr> </table>	880705	1	+		880705	1	+		880719	1	+		880786	1	10
880705	1																
+																	
880705	1																
+																	
880719	1																
+																	
880786	1																
5 stacked units	5 stacked units		①														
			②														
			③														
6 stacked units	5 stacked units	1760 x 600 x 220 <table border="1"> <tr><td>880705</td><td>1</td></tr> <tr><td>+</td><td></td></tr> <tr><td>880706</td><td>1</td></tr> <tr><td>+</td><td></td></tr> <tr><td>880719</td><td>1</td></tr> <tr><td>+</td><td></td></tr> <tr><td>880787</td><td>1</td></tr> </table>	880705	1	+		880706	1	+		880719	1	+		880787	1	11
880705	1																
+																	
880706	1																
+																	
880719	1																
+																	
880787	1																
5 stacked units	6 stacked units		①														
			②														
			③														
6 stacked units	6 stacked units	1910 x 600 x 220 <table border="1"> <tr><td>880706</td><td>1</td></tr> <tr><td>+</td><td></td></tr> <tr><td>880706</td><td>1</td></tr> <tr><td>+</td><td></td></tr> <tr><td>880719</td><td>1</td></tr> <tr><td>+</td><td></td></tr> <tr><td>880788</td><td>1</td></tr> </table>	880706	1	+		880706	1	+		880719	1	+		880788	1	12
880706	1																
+																	
880706	1																
+																	
880719	1																
+																	
880788	1																
6 stacked units	6 stacked units		①														
			②														
			③														

* 250 mm deep with door

A

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H

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J/X



Stacked enclosures - 900 mm width

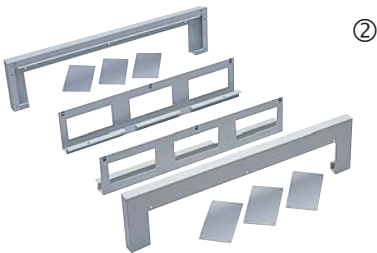
IP40 - IK07



Composition



2 bases and 4 sides



Roof and bottom



Connection kit

Type of stacking		H x W x D*	Total number of stacked units
Hinges on left	Hinges on right		
		1460 x 900 x 220	9
5 stacked units	cable compartment	880714 1	①
		+ 880715 1	
4 stacked units	cable compartment	880722 1	②
		+ 880789 1	
		1610 x 900 x 220	10
5 stacked units	cable compartment	880715 1	①
		+ 880715 1	
		880722 1	②
		+ 880790 1	
5 stacked units	cable compartment	880715 1	①
		+ 880716 1	
		880722 1	②
		+ 880791 1	
		1760 x 900 x 220	11
6 stacked units	cable compartment	880715 1	①
		+ 880716 1	
		880722 1	②
		+ 880791 1	
5 stacked units	cable compartment	880715 1	①
		+ 880716 1	
		880722 1	②
		+ 880792 1	
		1910 x 900 x 220	12
6 stacked units	cable compartment	880716 1	①
		+ 880716 1	
		880722 1	②
		+ 880792 1	

* 250 mm deep with door

Type tested distribution board

A

B

C

D

E

F

G

H

I

J/X



Stacked enclosures

Doors

600 mm width

- Delivered with two cylindrical V2432E type locks
- Protection degree: Opaque IP41 - IK08
Transparent IP41 - IK07



900 mm width - 2 doors (600 + 300 mm)



600 + 300 600 + 300

Type of stacking	Number of stacked units	Opaque door	Transparent door
5 + 4 or 4 + 5	9	880729	880752
5 + 5	10	880732	880753
5 + 6 or 6 + 5	11	880733	880756
6 + 6	12	880734	880758

Opaque door		Transparent + opaque door	
880729	880903	880752	880903
880732	880904	880753	880904
880733	880905	880756	880905
880734	880906	880758	880906

Bases

600 mm width



Height = 100 mm **880793** 1



Height = 200 mm **880795** 1

900 mm width



Height = 100 mm **880794** 1



Height = 200 mm **880796** 1

Configuration alternatives

Individual enclosures

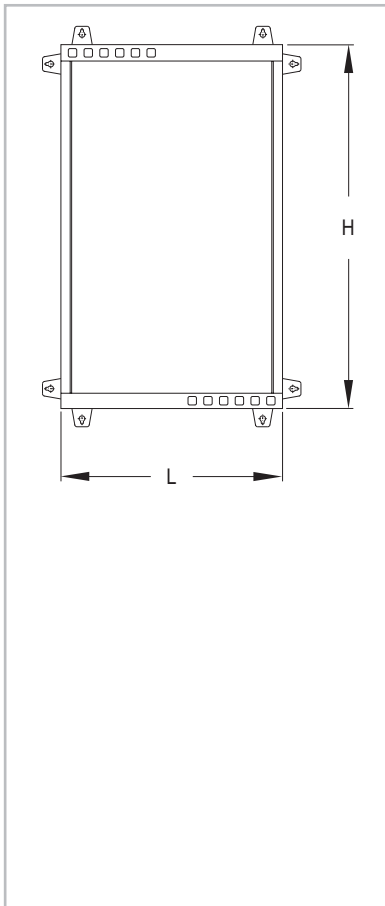
- 600 mm wide individual enclosure with 3 to 8 stacked units comprising 27 modules each.
- 900 mm wide individual enclosure with 3 to 8 stacked units comprising 27 modules each with incorporated cable compartment.
- Wall mounting brackets.
- 100 mm or 200 mm high base for placing the panel on the ground.
- Opaque or transparent door.

Stacked enclosures with two individual doors

- 600 mm wide enclosures.
- 900 mm wide enclosures with incorporated cable compartments.
- Wall mounting brackets (2 sets).
- 100 mm or 200 mm high base for placing panel on the ground.
- Individual doors (1 opaque or transparent door per enclosure).

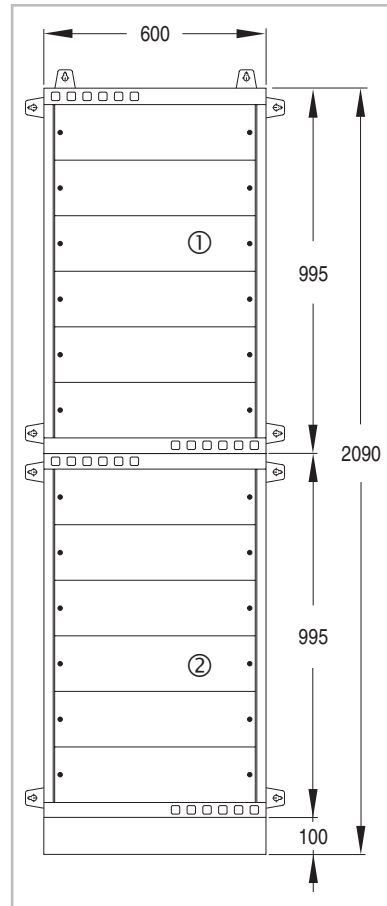
Stacked enclosures with a single door for full height of the unit

- 600 mm wide enclosures with 9 to 12 stacked units comprising 27 modules.
- 900 mm wide enclosures with 9 to 12 stacked units comprising 27 modules and incorporated cable/busbar compartment.
- Connection kit.
- 100 mm or 200 mm high base for placing the system on the ground.
- A single opaque or transparent door.



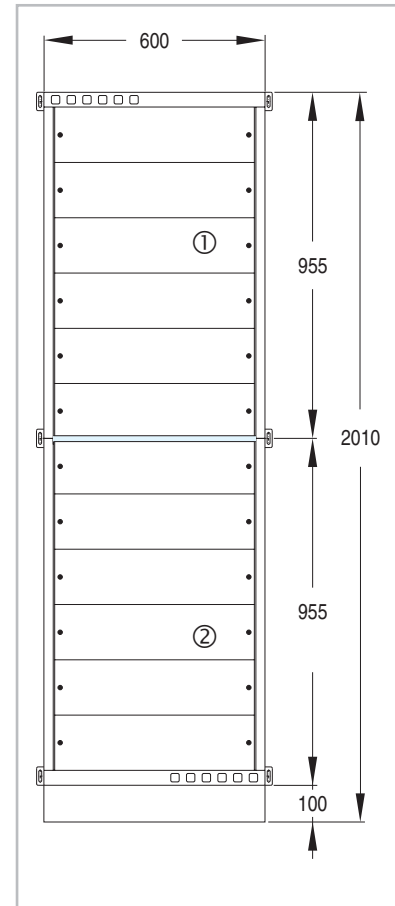
Example

Enclosure	-----	1
Wall mounting brackets	880864	1
Door	-----	1
Base	-----	1



Example

① 600 mm wide 6-stacked unit enclosure		
Enclosure	880706	1
Transparent door	880719	1
Transparent door	880749	1
② 600 mm wide 6-stacked unit enclosure		
Enclosure	880706	1
	880719	1
Opaque door	880726	1
Wall mounting brackets	880864	1
Base	880793	1



Example

① 600 mm wide 6-stacked unit enclosure		
Enclosure	880706	1
② 600 mm wide 6-stacked unit enclosure		
Enclosure	880706	1
	880719	1
Opaque door for 12 stacked units	880734	1
Base	880793	1
12 stacked-unit connection kit	880788	1



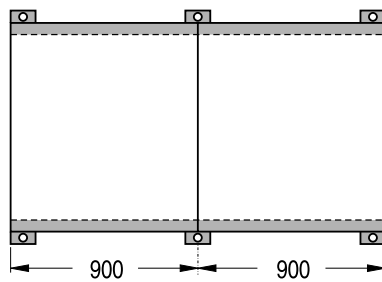
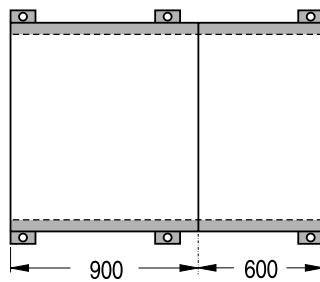
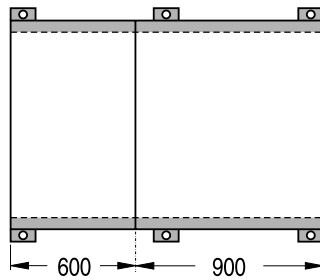
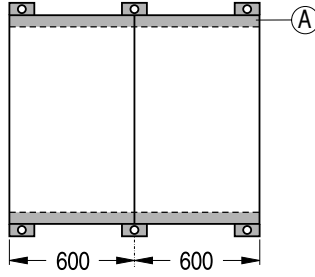
Coupling in width

Coupling set for width
3 up to 8 rows

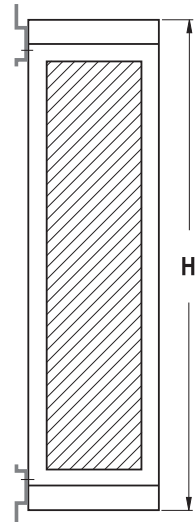


Coupling set for width ⁽¹⁾	Ref. No. ^(A)
600 + 600	880920
600 + 900 / 900 + 600	880921
900 + 900	880922

(1) Depending in height

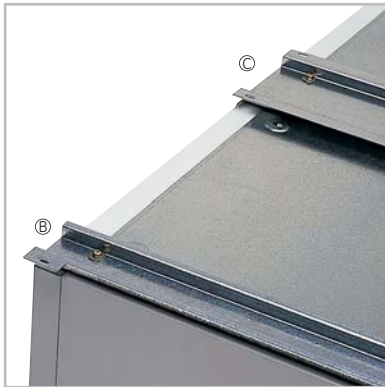


Set of 2 open side walls



Rows	Ref. No.
3	880910
4	880911
5	880912
6	880913
7	880914
8	880915

Coupling set for width 10 and 12 rows



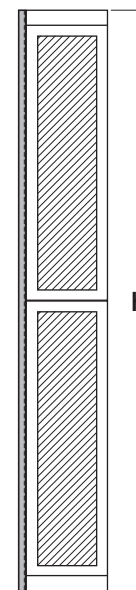
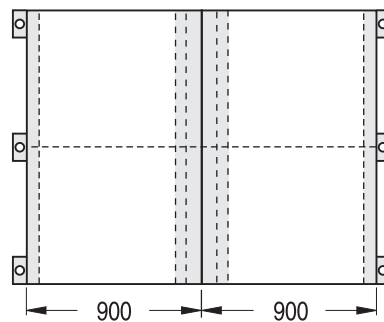
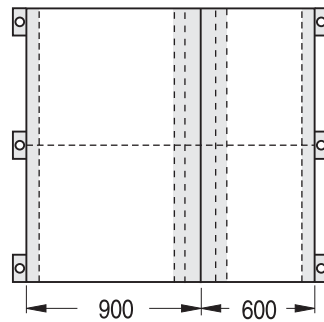
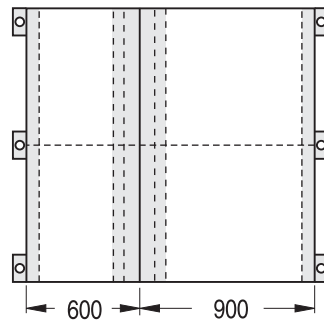
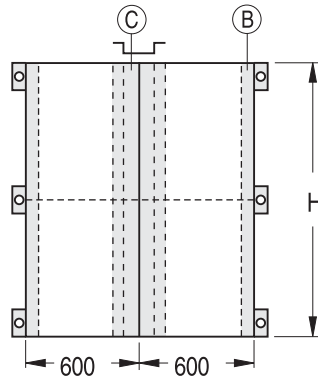
Coupling set for width ⁽¹⁾ 1200 / 1500 / 1800	Ref. No.
H = 1610 (10 rows)	880917
H = 1910 (12 rows)	880919

(1) Depending in width

Select your enclosure on page C.34 and C.35.
Order the additional coupling sets.

H/W	600 + 600	600 + 900 900 + 600	900 + 900
10 rows			
⊕	1 x 880786	1 x 880790	2 x 880790
+	+	+	+
⊙	1 x 880917	1 x 880917	1 x 880917
12 rows			
⊕	1 x 880788	1 x 880792	2 x 880792
+	+	+	+
⊙	1 x 880919	1 x 880919	1 x 880919

Set of 2 open side walls



Rows	Ref. No.
5	880912
6	880913

A

B

C

D

E

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G

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J/X

Functional units

Modular equipment

For 27 modules of 18 mm



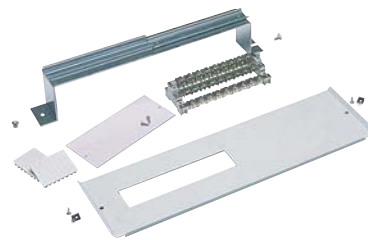
Height = 150 mm (l<63A)	880700	1
Height = 200 mm (l<63A)	880701	1

For use of Moduclic (see page C.42)



Height = 200 mm (Moduclic)	880909	1
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For MD125 and Dilos 40/160A⁽¹⁾



	880686	1
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With a 4 x 160A terminal
L = 200 mm - H = 150 mm

Note: use an additional protective cover (ref. **880655**) for connections if l>63A

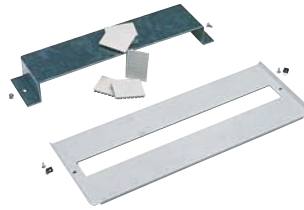
All-purpose mounting plate



Plate = 140 x 490 mm	880737	1
M4 nut	831328	50
M5 nut	831329	50
M6 nut	831330	50

Moulded case circuit breakers

For 3P/4P devices



Vertical mounting

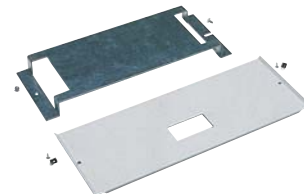
Record type	H (mm)		
D125 (4 devices)	200	880688	1
D160 (3 devices)	300	880853	1
D250 (3 devices)	450	880854	1
D400 (1 device)	600	880855	1
D630 (1 device)	700	880862	1
D160 M (3 devices)	400	880856	1
D250 M (3 devices)	600	880857	1
D400 M (1 device)	700	880858	1
D630 M (1 device)	700	880866	1

Record Plus FD & FE type

FD3/4P 160A (4 dev.) ⁽²⁾ 250	880963	1
FE3/4P 250A (3 dev.)450	880964	1
FE3/4P 250A + RCD (3 devices) ⁽³⁾	880965	1

Record Plus FG type

FG 3P 630A (1 device)600	880969	1
FG 4P 630A (1 device)600	880971	1
FG 3P 630A + RCD (1 dev.)600	880970	1
FG 4P 630A + RCD (1 dev.)600	880972	1



Horizontal mounting

Record type	H (mm)		
D125	150	880689	1
D125 M	150	880690	1
D160 / D250	150	880691	1
D160 M	150	880692	1
D250 M	150	880693	1
D400	200	880694	1
DD630	400	880859	1

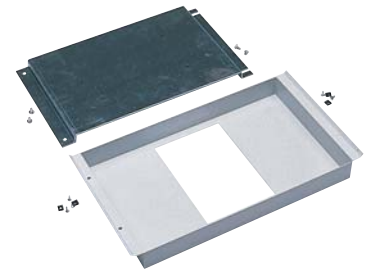
Record Plus FD & FE type

FD3/4P 160A	150	880958	1
FD3/4P 160A + RCD ⁽³⁾ 250	880959	1	
FE3/4P 250A	200	880960	1
FE3/4P 250A + RCD ⁽³⁾ 200	880961	1	
FE3P 250A	150	880962	1

Spectra type

E160	150	880695	1
E160 MIR	150	880697	1
E250	150	880696	1
E250 MIR	150	880698	1
E400/E630	200	880699	1

Loadbreak switches



Horizontal mounting

H (mm)			
Dilos 3 250A/315A	300	880712	1
Dilos 4 400A/630A	450	880713	1

Vertical mounting

H (mm)			
Dilos 3 250/315A	300	880860	1
Dilos 4 400/630A	600	880861	1

Terminals



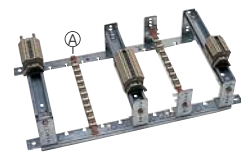
H = 150 mm one horizontal row	880907	1
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H = 300 mm three vertical rows	880923	1
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Earth bar (option)	828299	1
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(1) In case of a functional unit for MCCB's together with a function 880909 (Moduclic) we recommend the use of one or two blind cover plate(s) of 50 mm (880655) as extra connection space.

(2) Without RCD
With RCD: 2 devices 3/4 P

(3) Without adaptor plate.

Functional units for cable compartment

Modular equipment

For 2 rows
12 x 18 mm modules per row

H = 300 mm	880947	1
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Moulded case circuit breakers

For 3P/4P MCCB's



Vertical mounting

Record type	H (mm)		
D100/125A	300	880942	1
D160/250A	450	880943	1
D400A	600	880944	1

Record Plus typeH (mm)

FD 3/4P 160A	300	880966	1
FD 3/4P 250A	450	880967	1

Loadbreak switches

Dilos 1/2	300	880945	1
Dilos 3 250/315A	300	880946	1

For 880946 use a blind coverplate
880950 - H=150 mm as cable incoming
space

Terminals

Terminals in cable compartment, one
vertical row



L = 490 mm	880925	1
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Earth bar

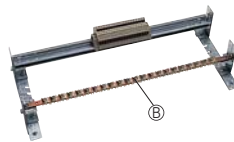


12x5 bar - 24 threaded holes M5

L = 490 mm	811258	1
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Connectors + screws M5 x 13
Max. 2 x 10 mm² per connector

	851123	10
--	--------	----



Visual switch

Combination of Dilos 3 (315A) with
MCCB 160/250A



Record type*	H (mm)		
	600	880949	1

Record Plus type*			
	600	880968	1

*With Cu connexion 160A
Connection 250A on request



Distribution terminal for Record Plus

Especially designed to allow the use of the moulded case circuit breaker Record Plus FE frame as a mains device with cables distributing the load over multiple outgoing circuits (or lines of multiple outgoing circuits).

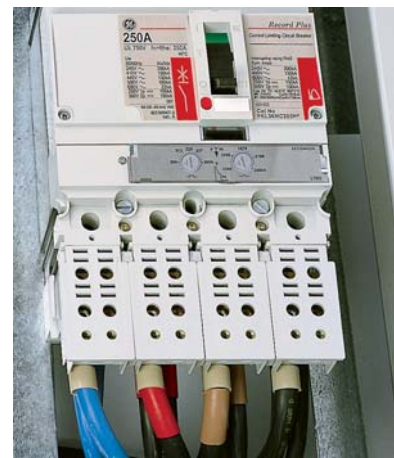
The terminals are available as a three or four pole set allowing the line or load side of the breaker to be equipped. The sets consist of a number of fully insulated single pole units that can be assembled into a multipole distribution block before they are mounted on the breaker.

Frame size	No. of conductors	Size of conductors	Strippable length	Maximum torque on lug bolt
FE160/250	max. 6	4 x 2.5 - 35 mm ²	12 mm	6 Nm
		2 x 2.5 - 16 mm ²	12 mm	3 Nm

External connectors

Connector 6 copper cable cores
2.5 mm² up to 35 mm²
Set for equipping the line or load
side of a breaker

Set 3 pole	880954	1
Set 4 pole	880955	1



Moduclic busbar system

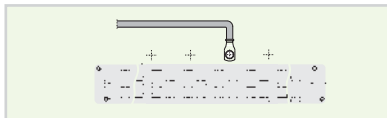
Moduclic is a secondary busbar system of 250A, 660V~ 60kA peak. Moduclic is an incoming busbar for modular devices and this as well for MCB's as for comfort functions. The Moduclic is mounted directly on the DIN-rail and is **independent the type of system enclosure**: Modula or VP-System. The main advantage of the Moduclic is the **safety aspect (IP20)**: **adding or removing** electrical circuits in a panel board **without disconnecting the power**. All outgoing circuits stay in the operational function, due to the fact that all operations are done using the **insulated Click connection**, without touching the parts on tension, even not when using an insulated tool. Standard connections of 6 mm² (up to 40A) are shipped with the Moduclic. The Moduclic busbar system is suitable for integration in **all system enclosures** conform to **IEC 60439-1**

Range

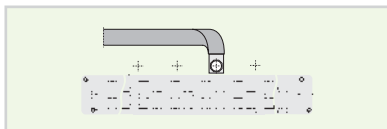
1	880884	3P+2N + cables 3P+N - 18 black cables - 6 blue cables	6 mm ² 6 mm ²
1	880885	3P+2N + cables mono - 12 black cables - 12 blue cables	6 mm ² 6 mm ²
1	880886	3P+2N - no cables	
Cables with furelle			
1	880887	6 black cables	6 mm ² 120 mm
1	880888	6 blue cables	6 mm ² 120 mm
1	880889	6 black cables	10 mm ² 120 mm
1	880890	6 blue cables	10 mm ² 120 mm
Stripped cables			
1	880891	6 black cables	6 mm ² 320 mm
1	880892	6 blue cables	6 mm ² 320 mm
1	880893	6 black cables	10 mm ² 320 mm
1	880894	6 blue cables	10 mm ² 320 mm
Cables for 2 x 4P MCB's - 6 black & 2 blue			
1	880926	8 cables	6 mm ² 120 mm
1	880928	8 cables	10 mm ² 120 mm
1	880930	8 cables	6 mm ² 320 mm
1	880932	8 cables	10 mm ² 320 mm
Cables for 4 x 2P MCB's - 4 black & 4 blue			
1	880927	8 cables	6 mm ² 120 mm
1	880929	8 cables	10 mm ² 120 mm
1	880931	8 cables	6 mm ² 320 mm
1	880933	8 cables	10 mm ² 320 mm
Plugs			
1	880895	10 plugs 1.5-2.5 mm ² blue	
1	880896	10 plugs 4-6 mm ² yellow	

Incoming connections

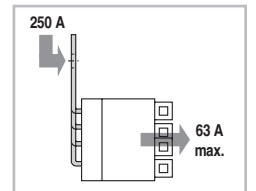
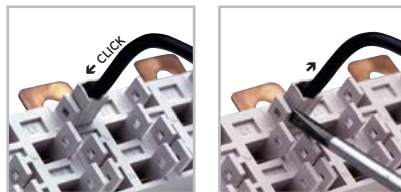
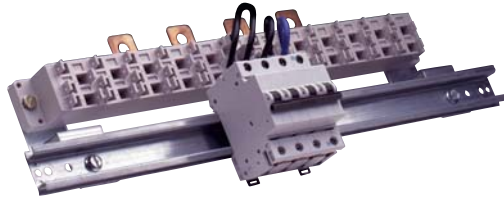
Cable max. 70 mm² - 170A



Flexibar 3 x 20 x 1 - 170A



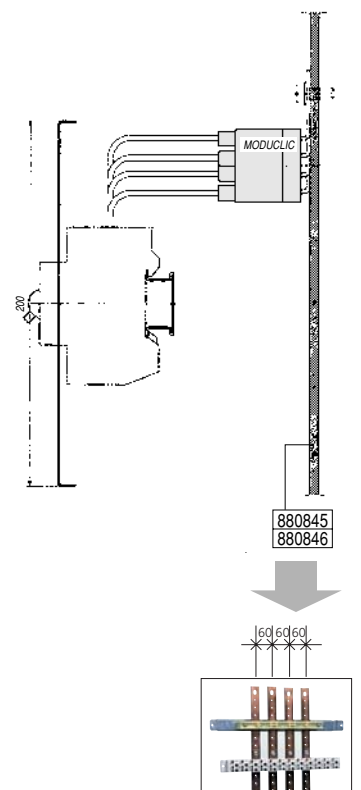
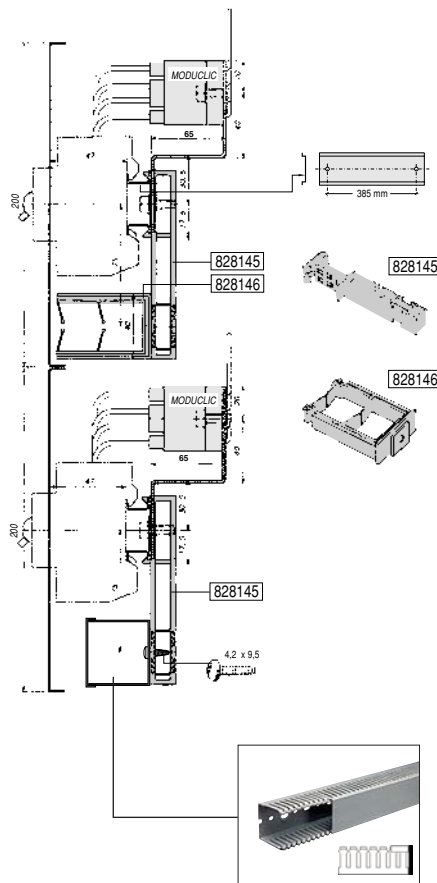
24 modules - 3P + 2N - IP20



Mounting

On DIN-rail (step = 200 mm)

Direct on busbar (step = 200 mm)



Terminals

Earth/neutral bar



12 x 5 bar; L = 1.2 m **610017** 1

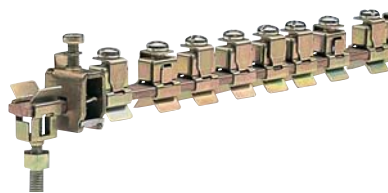
63 threaded holes M5 +
50 connectors and screws

12 x 5 bar; L = 490 mm **811258** 1

24 threaded holes M5

Connectors + screws **851123** 10

M5 x 13 - Max. 2 x 10 mm² per connector (ref. 610017, 811258)



12 x 4 bar; L = 475 mm **880775** 1

1 connector 35 mm²
20 connectors 16 mm²
2 fixation clips M6

Fixation clips M6 **880637** 1

Set of 20 pieces



Connectors 16 mm² **880639** 1

Set of 20 pieces



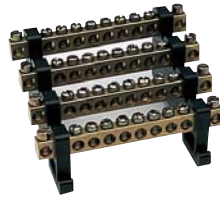
Connectors 35 mm² **880638** 1

Set of 20 pieces



4P terminals (DIN rail mounting)

63A



4 pole terminal 63A **610022** 12

6.5 x 9 mm bars for 63A nominal

80-125A



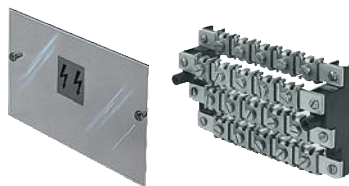
4 pole terminal 80A **880614** 1

80A with protective shroud
21kA peak; Cu 10 x 6; L = 80 mm
Cable input: 16 mm²
Outputs: 8 x 10 mm²
LxHxD = 88 x 85 x 48 mm

4 pole terminal 125A **880742** 1

125A with protective shroud
30kA peak; Cu 10 x 6; L = 120 mm
Cable input: 25/35 mm²
Outputs: 4 x 16 mm² - 7 x 10 mm²
LxHxD = 126 x 85 x 48 mm

160A



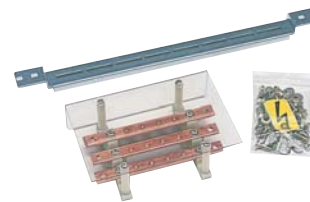
4 pole terminal 160A **610020** 1

160A (20 connectors)
35kA peak; Cu 12 x 5; L = 126 mm
Cable input: 10 mm²
Outputs: 8 x 10 mm²
LxHxD = 126 x 80 x 52 mm

Protective shroud **610021** 1

For 160A terminal

4P terminals (for installation on metal section)



4 pole terminal 160A **880636** 1

160A with protective shroud
35kA peak; Cu 15 x 5; L = 200 mm
Input: 2 x M8
Output: 6 x M6
LxHxD = 230 x 150 x 70 mm

4 pole terminal 250A **880635** 1

250A with protective shroud
35kA peak; Cu 20 x 5; L = 200 mm
Input: 2 x M8
Output: 4 x M6
LxHxD = 230 x 150 x 70 mm

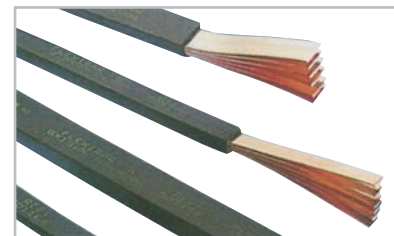


4 pole terminal 400A **880630** 1

400A with protective shroud
44kA peak; Cu 32 x 5; L = 275 mm
Input: 1 x M10
Output: 8 x M6
LxHxD = 300 x 240 x 140 mm

Flexible connectors

Connection with bolt/nut on flat copper



125A 6 x 13 x 0.5 L = 2 m **886530** 1

160A 2 x 20 x 1 L = 2 m **886532** 1

250A 3 x 20 x 1 L = 2 m **828162** 1

400A 4 x 32 x 1 L = 2 m **828163** 1

A

B

C

D

E

F

G

H

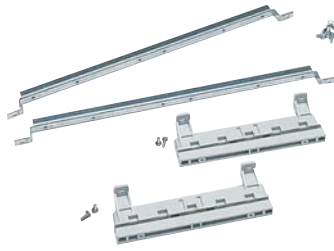
I

J/X

Busbars - connectors Vertical or horizontal mounting⁽¹⁾

250A busbar holders⁽²⁾

250A, 4P for 12 x 5 Cu bars



880738 1

For enclosure

880740 1

For cable/busbar compartment⁽²⁾

400A busbar holders⁽²⁾

250A, 4P for 20 x 5 Cu bars



880739 1

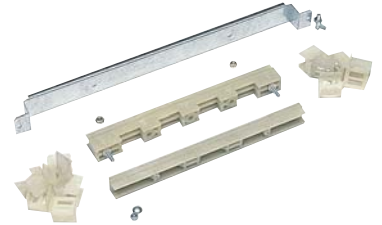
For enclosure

880741 1

For cable/busbar compartment⁽²⁾

630A busbar holders⁽²⁾

up to 630A 250A for 20 x 5 Cu bars
400A for 32 x 5 Cu bars
630A for 30 x 10 Cu bars



880845 1

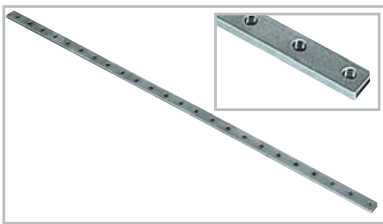
For enclosure

880846 1

For cable compartment⁽³⁾

Remark: only one piece

Copper bars



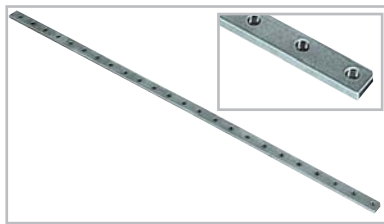
12 x 5 mm Cu 858043 1

250kA (15kA eff. - 0.3 s.)
12 x 5 bar
M5 threaded hole
Length = 958 mm

12 x 5 mm Cu 858034 1

250kA (15kA eff. - 0.3 s.)
12 x 5 bar
Plain
Length = 3 m

Copper bars



20 x 5 mm Cu 828256 1

400A (15kA eff. - 0.3 s.)
Set of 3 edgewise bars and 1 20 x 5 flat bar with M5 threaded holes
Length = 300 mm

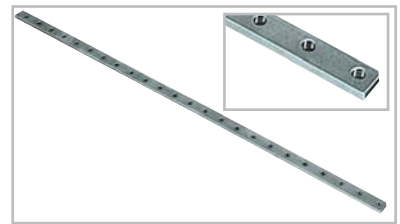
20 x 5 mm Cu 828257 1

400A (15kA eff. - 0.3 s.)
Set of 3 edgewise bars and 1 20 x 5 flat bar with M5 threaded holes
Length = 450 mm

20 x 5 mm Cu 858036 1

400A (20kA eff. - 0.3 s.)
20 x 5 flat bar
Plain
Length = 3 m

Copper bars



20 x 5 mm Cu 880847 1

250kA (30kA eff. - 1 s.)
Set of 4 Cu bars
20 x 5 bars with threaded holes M6

32 x 5 mm Cu 880850 1

400kA (30kA eff. - 1 s.)
Set of 4 Cu bars
32 x 5 bars with threaded holes M6

30 x 10 mm Cu 880851 1

630kA (30kA eff. - 1 s.)
Set of 4 Cu bars
30 x 10 bars with threaded holes M8

Protective shroud

530 x 100 mm 880618 1

530 x 1,000 mm 880619 1

Fastener bolts

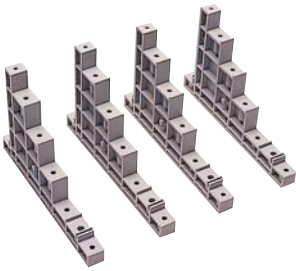
M6 x 16 (40 pieces bag) 883617 1

M8 x 20 (40 pieces bag) 880852 1

- (1) Short-circuit behaviour given a maximum distance of 300 mm between the holders
- (2) Set of two pieces, fixation accessories included
- (3) Can also be used as an individual support with mounting accessories

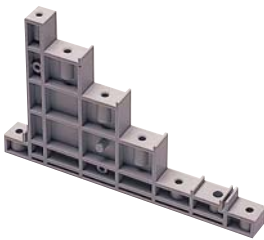


Staircase busbar holders 630A



880934 1

Set of 4 holders



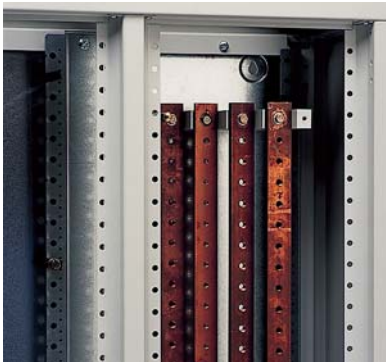
880935 1

1 busbar holder

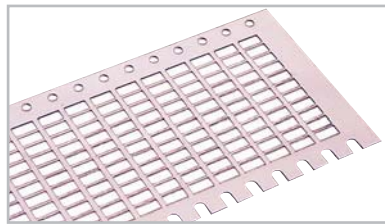
With protection shroud IP20



Without protection shroud

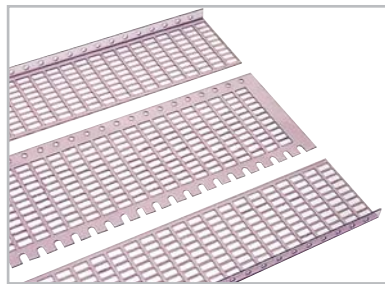


Protection shroud for staircase busbar holder



Front 880936 1

Frontal protection shroud - L = 1 m



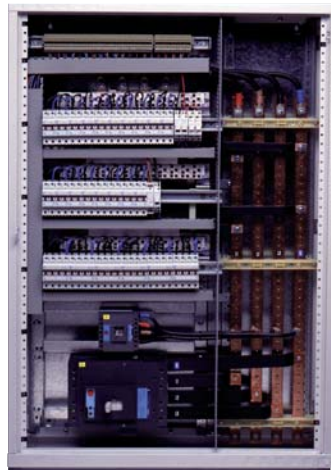
Front + lateral 880937 1

Protection shroud
Front + lateral - L = 1 m



Top + bottom 880938 1

Protection shroud
Top + bottom



With Moduclic functional unit 880909 (p. C.42)

Separation screen Form 2

Vertical

900 mm wide enclosure with integrated busbar compartment **with separation between busbar compartment and functional units**

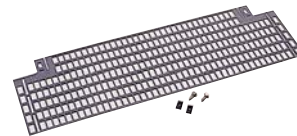


- The separation screen is made of 3 mm thick, halogen free PVC
- RAL 7037
- Easy to place with the help of simple wire-cutters
- IP20

Height

3 rows	880876	1
4 rows	880877	1
5 rows	880878	1
6 rows	880879	1
7 rows	880880	1
8 rows	880881	1

Horizontal



W = 600 mm 880952 1







For functional unit



W = 300 mm 880953 1

For cable compartment

Enclosure accessories

	Plain protective cover	<table border="1"> <thead> <tr> <th>Stacked unit</th> <th>Height (mm)</th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>50</td> <td>880655</td> <td>1</td> <td></td> </tr> <tr> <td>150</td> <td>880656</td> <td>1</td> <td></td> </tr> <tr> <td>200</td> <td>880657</td> <td>1</td> <td></td> </tr> </tbody> </table>	Stacked unit	Height (mm)			50	880655	1		150	880656	1		200	880657	1																						
	Stacked unit	Height (mm)																																					
	50	880655	1																																				
150	880656	1																																					
200	880657	1																																					
With screw and nut Colour = RAL 7035	<table border="1"> <tbody> <tr> <td>150</td> <td>880658</td> <td>1</td> <td></td> </tr> <tr> <td>300</td> <td>880908</td> <td>1</td> <td></td> </tr> </tbody> </table>	150	880658	1		300	880908	1		Depth extension brackets Set of two pieces + screws + clips																													
150	880658	1																																					
300	880908	1																																					
Recessed, for 30 mm extra space equipment behind door	<table border="1"> <tbody> <tr> <td>150</td> <td>880654</td> <td>1</td> <td></td> </tr> </tbody> </table>	150	880654	1		<table border="1"> <tbody> <tr> <td>Fixed</td> <td>880730</td> <td>1</td> <td></td> </tr> </tbody> </table> Height = 87 mm	Fixed	880730	1																														
150	880654	1																																					
Fixed	880730	1																																					
With 45 mm cut-out		<table border="1"> <tbody> <tr> <td>Adjustable</td> <td>880731</td> <td>1</td> <td></td> </tr> </tbody> </table> Adjustable from 15 to 110 mm	Adjustable	880731	1																																		
Adjustable	880731	1																																					
			<table border="1"> <tbody> <tr> <td></td> <td>880766</td> <td>1</td> <td></td> </tr> </tbody> </table> Fixation bracket - obtuse angle support for DIN-rail at 45°; height = 55 mm		880766	1																																	
	880766	1																																					
	Plain protective covers for busbar/cable compartments	<table border="1"> <tbody> <tr> <td>1</td> <td>150</td> <td>880950</td> <td>1</td> </tr> <tr> <td>2</td> <td>300</td> <td>880951</td> <td>1</td> </tr> <tr> <td>3</td> <td>450</td> <td>880797</td> <td>1</td> </tr> <tr> <td>4</td> <td>600</td> <td>880798</td> <td>1</td> </tr> <tr> <td>5</td> <td>750</td> <td>880799</td> <td>1</td> </tr> <tr> <td>6</td> <td>900</td> <td>880842</td> <td>1</td> </tr> <tr> <td>7</td> <td>1050</td> <td>880843</td> <td>1</td> </tr> <tr> <td>8</td> <td>1200</td> <td>880844</td> <td>1</td> </tr> </tbody> </table>	1	150	880950	1	2	300	880951	1	3	450	880797	1	4	600	880798	1	5	750	880799	1	6	900	880842	1	7	1050	880843	1	8	1200	880844	1	Wall mounting brackets <table border="1"> <tbody> <tr> <td></td> <td>880864</td> <td>1</td> <td></td> </tr> </tbody> </table> Set of 4 pieces		880864	1	
	1	150	880950	1																																			
	2	300	880951	1																																			
	3	450	880797	1																																			
	4	600	880798	1																																			
	5	750	880799	1																																			
	6	900	880842	1																																			
	7	1050	880843	1																																			
8	1200	880844	1																																				
	880864	1																																					
																																							
	Lighting unit	<table border="1"> <tbody> <tr> <td>50</td> <td>880924</td> <td>1</td> <td></td> </tr> </tbody> </table>	50	880924	1																																		
	50	880924	1																																				
	Cable-access plates	<table border="1"> <tbody> <tr> <td></td> <td>815094</td> <td>1</td> <td></td> </tr> </tbody> </table>		815094	1																																		
		815094	1																																				
	Plain plate	<table border="1"> <tbody> <tr> <td></td> <td>815093</td> <td>1</td> <td></td> </tr> </tbody> </table>		815093	1																																		
		815093	1																																				
	Predrilled plate - 17 x PG 13.5	<table border="1"> <tbody> <tr> <td></td> <td>815092</td> <td>1</td> <td></td> </tr> </tbody> </table>		815092	1																																		
	815092	1																																					
Predrilled plate 1 x PG 21 - PG 48																																							
2 x PG 13.5 2 x PG 29 4 x PG 13.5																																							

General accessories



Adhesive band for circuit indication

Width (mm)		
300	610232	1
450	610233	1
500	886609*	1

* with protective cover

Support for cable duct

	880757	1
--	---------------	---

Set of 10 pieces for vertical positioning



Strips

	610142	4
--	---------------	---

For 45 mm cut-out sections
Length = 72 mm
Divisible into multiples of 9 mm

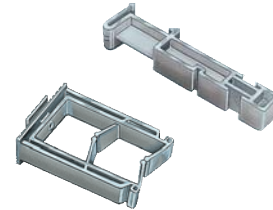
	828056	1
--	---------------	---

Length = 1 m

Wiring supports

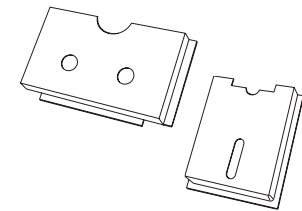
	828145	1
--	---------------	---

Cable-tray support set of 20 pieces



	828146	1
--	---------------	---

Cable-tray set of 10 pieces



Document pocket

	811516	1
--	---------------	---

DIN A4 - W x H = 325 x 180 mm

	832000	1
--	---------------	---

DIN A5 - W x H = 155 x 225 mm

Bags of screws

	880754	1
--	---------------	---

Bag of 30 M6 slotted head screws for the metal support

	880865	1
--	---------------	---

Bag of 50 M6 clips

	880755	1
--	---------------	---

Bag of 10 M5 screws for protective cover with captive lock washers

	880615	1
--	---------------	---

Bag of 50 clips M5



Paint touch-up kit

	880669	1
--	---------------	---

For minor touch-ups
RAL 7035



Security lock

	880665	1
--	---------------	---

455E key-set comprising two keys (without a cam)



Cable support

Set of two pieces + screws + clips

	880863	1
--	---------------	---

For cable compartment

	880768	1
--	---------------	---

For 600 mm wide enclosure

A

B

C

D

E

F

G

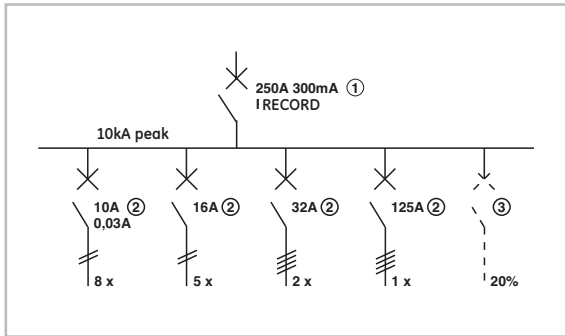
H

I

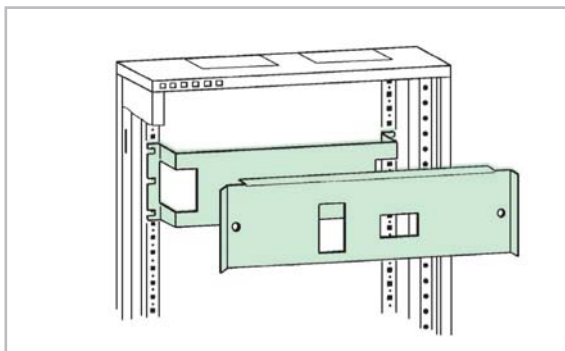
J/X

Composition unit - Example

Guide for calculating the space required for the unit and its components



Step 1: Incoming feeder ①

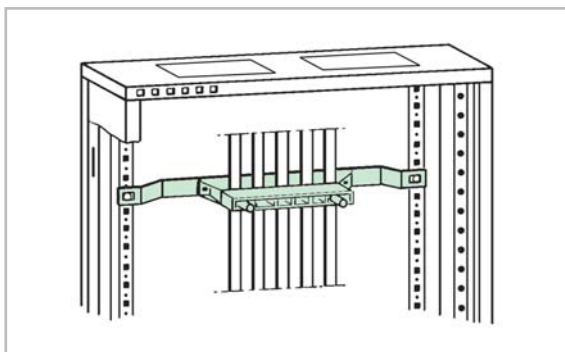


Select the functional units from those shown on page C.40:

- Record MCCB + differential system = D250M
- Height in mm

Height = 150 mm	880693	x1
-----------------	--------	----

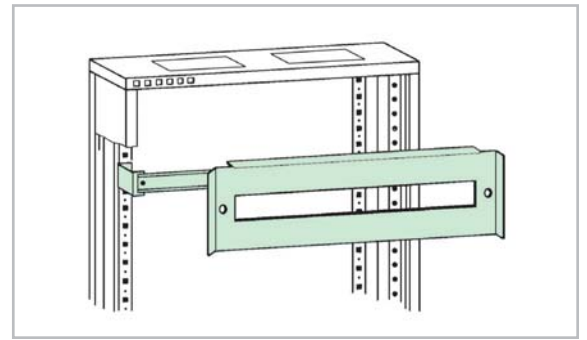
Step 2: Busbars at the back of the enclosure



Calculate the busbar requirements on the basis of the details given on page C.44 as follows:

250A holder = 2 x 4P holders	880738	x1
250A bar = 4 lengths of 12 x 5 mm	858043	x4

Step 3: Outgoing feeder modules ②



Calculate the total number of 18 mm modules necessary:

8 x 2P 10A/0,03A	= 8 x 4 mod.	= 32
5 x 2P 16A	= 5 x 2 mod.	= 10
2 x 4P 32A	= 2 x 4 mod.	= 8
1 x 4P 125A	= 1 x 6 mod.	= 6

Total number of modules = 56

Reserve space calculation

Add the required reserve space (e.g. 20%) ③ to that of the outgoing feeders = $56 \times 0.2 = 11.2 \rightarrow 12$ mod.

Number of stacked units

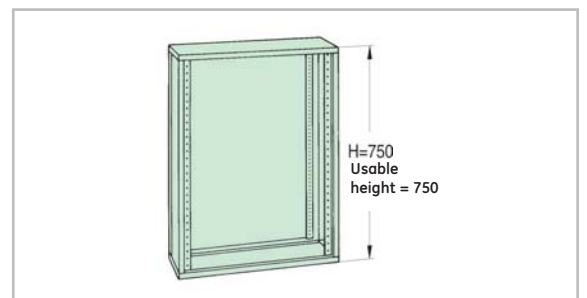
Add the outgoing and reserve space modules and divide by $(56+12)/27 = 68/27 = 2.52 \rightarrow 3$ stacked units. Find the reference for the appropriate enclosure on page C.32.

Select the 150 mm function if you do not use cable trays or 200 mm when using cable trays, current exceeding 63A or when using Moduclic.

This means

1 x 200 mm (height = 200 mm)	880701	x1
2 x 150 mm (height = 300 mm)	880700	x2

Step 4: Enclosure



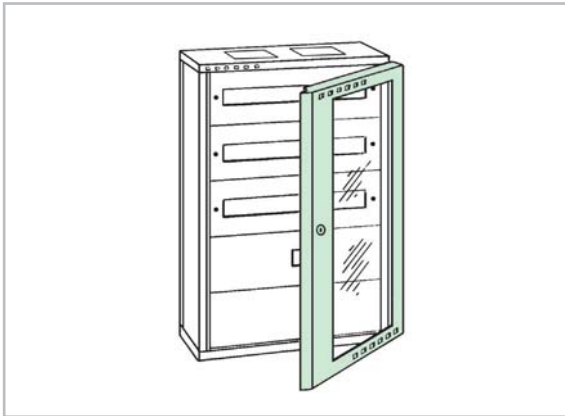
Add the height of the incoming feeder (150 mm) to the height of the outgoing and reserve units (500 mm) = 650 mm and select the enclosures whose usable height is equal to, or exceeds this height 750 mm = H

880705	x1	+	880719	x1
--------	----	---	--------	----

Select the opaque covers for the reserve space: $750 - 650 = 100$ mm = (2 x 50 mm)

880655	x2
--------	----

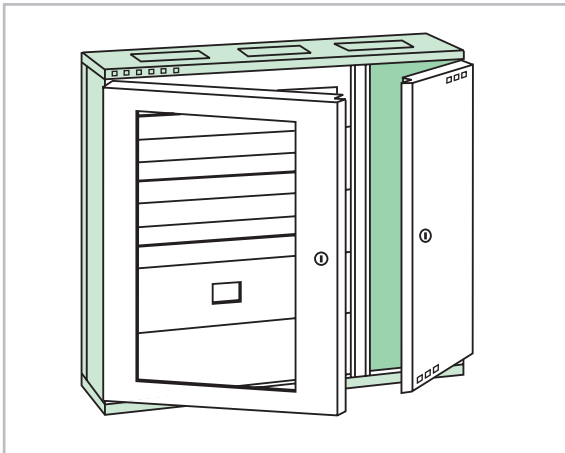
Option 1: Door



If a door is necessary, please decide whether you would like an opaque or transparent door.

880743 x1

Option 2: Enclosure with cable compartment



The cable compartment is incorporated in the basic 900 mm wide enclosure. Where necessary, select an enclosure with a usable height of 750 mm.

880715 x1 + 880722 x1

Add the (transparent) door

880777 x1

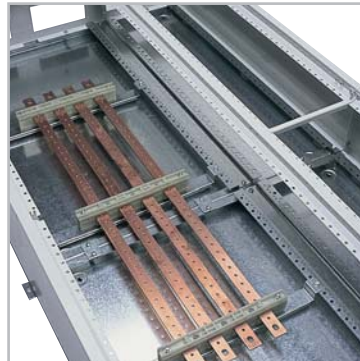
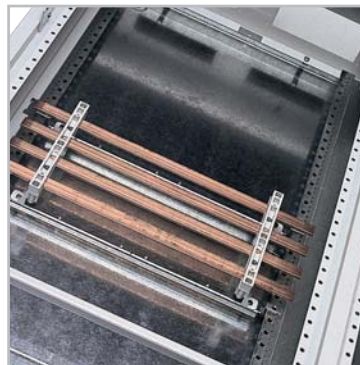
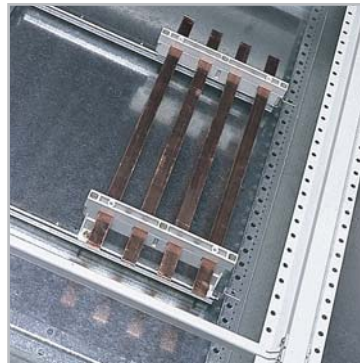
and the protective cover for the cable compartment

880799 x1

Busbars

Horizontal or vertical mounting

Example of mounting



Busbars, see p. C.44

A

B

C

D

E

F

G

H

I

J/X

Notes

Wall mounting system enclosures

A

B

C

D

E

F

G

H

I

J/X



		Application guide / e-catalogue	
		Insulated boxes	A
		Insulated wall mounting cabinets	B
		Wall mounting system enclosures	C
D.2	Optimal WM (sheet steel)		
D.18	Optimal AISI (stainless steel)		
		Steel wall mounting enclosures	D
		Steel floor standing enclosures	E
		Pedestals	F
		Subterranean enclosures	G
		Climate control	H
		General accessories	I
		General characteristics / Index	J/X



Sheet steel wall mounting enclosures with single door



Protection degree

IP66 / NEMA 4, 12 and 13.

Approvals



Standard delivery

- Two door mounting profiles (size 500x500x210 and larger).
- Mounting plate with fitting accessories.
- Gland platel(s) with gasket(s) and fitting accessories.
- Nylon washers to seal the fixing holes.

Construction

Body

Sheet steel 1.2mm/1.5 mm (600x600x210 and above)
 Folded and seam welded. To allow for air circulation around the rear and for wall fixing, 4 off 20.4 mm diameter x 2 mm deep depressions are pressed out with an 8.5 mm diameter hole.

Door

Sheet steel 1.2 mm
 1.5 mm (600x500x210 and above)
 2.0 mm (1000x800x300 and above)
 Surface mounted with 130° opening.
 Concealed removable hinge with captive pin. Hinges can be mounted to allow left or right hand opening. From size 500x500x210 and larger there are two removable mounting profiles in the door. Sealing is ensured by an extruded one piece polyurethane gasket.

Mounting plate

2.5 mm galvanised steel.
 The plate is marked at 10 mm intervals for easy horizontal positioning of equipment on the mounting plate. On the top and bottom are holes to facilitate cable fixing.
 Fixed onto M8 press welded studs to the rear of the enclosure. All sides from 1000 mm and above are strengthened by folded edges. By using the mounting plate guides, the mounting plate position can be adjusted to any depth.

Lock

Customised lock with double grip for easy opening of the door, 3 mm double bit lock with pin and 90° movement. 1000 and 1200 mm high enclosures have espagnolet, three point locking. Other inserts are available.

Gland plate opening

Situated at the far rear of the enclosure to accommodate easy cabling onto the mounting plate.

Finish

Body, door and gland plate: grey RAL 7035 structure polyester powder paint.

Dimensional drawings ● Page J.30

Specifications for tender documents ● Page J.70

Power dissipation values ● Page J.94

Sheet steel wall mounting enclosures, single door, with mounting plate



H x W x D	Enclosures IP66	Mounting plate dim. (H x W x D)	Gland plate			No. of locks	Weight - with mounting plate (kg)
			Size	Type	No. of openings		
Height 200							
200 x 200 x 155	822369	170 x 150 x 137	110x56	0S	1	1	2.7
Height 250							
250 x 200 x 155	822372	220 x 150 x 137	110x56	0S	1	1	3.1
250 x 250 x 155	822373	220 x 200 x 137	110x56	0S	1	1	4.0
Height 300							
300 x 250 x 155	822375	270 x 200 x 137	110x56	0S	1	1	4.6
300 x 250 x 210	822376	270 x 200 x 192	110x56	0S	1	1	5.3
300 x 300 x 155	822377	270 x 250 x 137	210x56	1S	1	1	5.2
300 x 300 x 210	822378	270 x 250 x 192	210x96	1	1	1	5.5
Height 350							
350 x 250 x 155	822380	320 x 200 x 137	110x56	0S	1	1	5.3
Height 400							
400 x 300 x 155	822381	370 x 250 x 137	210x56	1S	1	1	6.5
400 x 300 x 210	822382	370 x 250 x 192	210x96	1	1	1	7.0
400 x 400 x 210	822383	370 x 350 x 192	310x96	2	1	1	8.6
400 x 500 x 210	822384	370 x 450 x 192	410x96	3	1	1	10.5
400 x 600 x 210	822386	370 x 550 x 192	510x96	4	1	1	12.2
Height 500							
500 x 300 x 210	822387	470 x 250 x 192	210x96	1	1	1	8.6
500 x 400 x 155	822389	470 x 350 x 137	310x56	2S	1	1	8.5
500 x 400 x 210	822390	470 x 350 x 192	310x96	2	1	1	10.4
500 x 400 x 260	822391	470 x 350 x 242	310x96	2	1	1	11.2
500 x 400 x 300	822392	470 x 350 x 282	310x96	2	1	1	12.1
500 x 500 x 210	822393	470 x 450 x 192	410x96	3	1	1	12.6
500 x 500 x 300	822394	470 x 450 x 282	410x96	3	1	1	14.5
Height 600							
600 x 400 x 155	822395	570 x 350 x 137	310x56	2S	1	2	11.5
600 x 400 x 210	822396	570 x 350 x 192	310x96	2	1	2	12.2
600 x 400 x 260	822397	570 x 350 x 242	310x96	2	1	2	13.6
600 x 400 x 300	822398	570 x 350 x 282	310x96	2	1	2	14.5
600 x 500 x 155	822399	570 x 450 x 137	410x56	3S	1	2	14.2
600 x 500 x 210	822400	570 x 450 x 192	410x96	3	1	2	15.4
600 x 500 x 260	822401	570 x 450 x 242	410x96	3	1	2	16.6
600 x 500 x 300	822402	570 x 450 x 282	410x96	3	1	2	17.5
600 x 600 x 210	822403	570 x 550 x 192	510x96	4	1	2	21.0
600 x 600 x 300	822404	570 x 550 x 282	510x96	4	1	2	24.0
600 x 600 x 400	822405	570 x 550 x 382	510x96	4	1	2	27.0
600 x 800 x 300	822406	570 x 750 x 282	310x96	2	2	2	31.0
Height 700							
700 x 500 x 210	822407	670 x 450 x 192	410x96	3	1	2	21.0
700 x 500 x 260	822408	670 x 450 x 242	410x96	3	1	2	23.2
Height 800							
800 x 400 x 300	822409	770 x 350 x 282	310x96	2	1	2	24.0
800 x 600 x 210	822410	770 x 550 x 192	510x96	4	1	2	28.0
800 x 600 x 260	822411	770 x 550 x 242	510x96	4	1	2	29.8
800 x 600 x 300	822412	770 x 550 x 282	510x96	4	1	2	31.0
800 x 600 x 400	822413	770 x 550 x 382	510x96	4	1	2	34.0
800 x 800 x 210	822414	770 x 750 x 192	310x96	2	2	2	35.0
800 x 800 x 300	822415	770 x 750 x 282	310x96	2	2	2	39.0
800 x 800 x 400	822416	770 x 750 x 382	310x96	2	2	2	43.0
Height 1000							
1000 x 600 x 260	822417	970 x 550 x 242	510x96	4	1	1 ⁽¹⁾	38.0
1000 x 600 x 300	822418	970 x 550 x 282	510x96	4	1	1 ⁽¹⁾	39.0
1000 x 800 x 260	822419	970 x 750 x 242	310x96	2	2	1 ⁽¹⁾	44.0
1000 x 800 x 300	822420	970 x 750 x 282	310x96	2	2	1 ⁽¹⁾	47.0
1000 x 800 x 400	822421	970 x 750 x 382	310x96	2	2	1 ⁽¹⁾	51.0
Height 1200							
1200 x 600 x 300	822422	1170 x 550 x 282	510x96	4	1	1 ⁽¹⁾	51.0
1200 x 800 x 300	822423	1170 x 750 x 282	310x96	2	2	1 ⁽¹⁾	60.0
1200 x 800 x 400	822424	1170 x 750 x 382	310x96	2	2	1 ⁽¹⁾	66.0

(1) 3 point espagnolet locking

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Sheet steel wall mounting enclosures, single door, without mounting plate



H x W x D	Enclosures IP66	Gland plate			No. of locks	Weight (kg)
		Size	Type	No. of openings		
Height 200						
200 x 200 x 155	822425	110x56	OS	1	1	2.2
Height 250						
250 x 200 x 155	822428	110x56	OS	1	1	2.4
250 x 250 x 155	822429	110x56	OS	1	1	3.2
Height 300						
300 x 250 x 155	822431	110x56	OS	1	1	3.5
300 x 250 x 210	822432	110x56	OS	1	1	4.2
300 x 300 x 155	822433	210x56	1S	1	1	3.9
300 x 300 x 210	822434	210x96	1	1	1	4.2
Height 350						
350 x 250 x 155	822436	110x56	OS	1	1	3.7
Height 400						
400 x 300 x 155	822437	210x56	1S	1	1	4.7
400 x 300 x 210	822438	210x96	1	1	1	5.2
400 x 400 x 210	822439	310x96	2	1	1	6.1
400 x 500 x 210	822440	410x96	3	1	1	7.2
400 x 600 x 210	822442	510x96	4	1	1	8.2
Height 500						
500 x 300 x 210	822443	210x96	1	1	1	6.3
500 x 400 x 155	822445	310x56	2S	1	1	5.3
500 x 400 x 210	822446	310x96	2	1	1	7.2
500 x 400 x 260	822447	310x96	2	1	1	8.0
500 x 400 x 300	822448	310x96	2	1	1	8.9
500 x 500 x 210	822449	410x96	3	1	1	8.4
500 x 500 x 300	822450	410x96	3	1	1	10.3
Height 600						
600 x 400 x 155	822451	310x56	2S	1	2	7.6
600 x 400 x 210	822452	310x96	2	1	2	8.3
600 x 400 x 260	822453	310x96	2	1	2	9.7
600 x 400 x 300	822454	310x96	2	1	2	10.6
600 x 500 x 155	822455	410x56	3S	1	2	9.1
600 x 500 x 210	822456	410x96	3	1	2	10.3
600 x 500 x 260	822457	410x96	3	1	2	11.5
600 x 500 x 300	822458	410x96	3	1	2	12.4
600 x 600 x 210	822459	510x96	4	1	2	14.8
600 x 600 x 300	822460	510x96	4	1	2	17.8
600 x 600 x 400	822461	510x96	4	1	2	20.8
600 x 800 x 300	822462	310x96	2	2	2	22.1
Height 700						
700 x 500 x 210	822463	410x96	3	1	2	15.0
700 x 500 x 260	822464	410x96	3	1	2	17.2
Height 800						
800 x 400 x 300	822465	310x96	2	1	2	18.3
800 x 600 x 210	822466	510x96	4	1	2	19.1
800 x 600 x 260	822467	510x96	4	1	2	20.9
800 x 600 x 300	822468	510x96	4	1	2	22.1
800 x 600 x 400	822469	510x96	4	1	2	25.1
800 x 800 x 210	822470	310x96	2	2	2	23.0
800 x 800 x 300	822471	310x96	2	2	2	27.0
800 x 800 x 400	822472	310x96	2	2	2	31.0
Height 1000						
1000 x 600 x 260	822473	510x96	4	1	1 ⁽¹⁾	27.0
1000 x 600 x 300	822474	510x96	4	1	1 ⁽¹⁾	28.0
1000 x 800 x 260	822475	310x96	2	2	1 ⁽¹⁾	29.0
1000 x 800 x 300	822476	310x96	2	2	1 ⁽¹⁾	32.0
1000 x 800 x 400	822477	310x96	2	2	1 ⁽¹⁾	36.0
Height 1200						
1200 x 600 x 300	822478	510x96	4	1	1 ⁽¹⁾	37.6
1200 x 800 x 300	822479	310x96	2	2	1 ⁽¹⁾	42.0
1200 x 800 x 400	822480	310x96	2	2	1 ⁽¹⁾	48.0

(1) 3 point espagnolet locking



Notes

Grid area for notes

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Sheet steel wall mounting enclosures with double door



Protection degree

IP55 / NEMA 12

Approvals



Standard delivery

- Two door mounting profiles on the right hand door.
- Mounting plate with fitting accessories.
- Gland plates with gaskets and fitting accessories.
- Earthing facilities for mounting plate and gland plates.
- Nylon washers to seal the fixing holes.

Construction

Body

Sheet steel, 1.5 mm.
Folded and seam welded. To allow for air circulation around the rear and for wall fixing, 4 off 20.4mm diameter x 2 mm deep depressions are pressed out with an 8.5 mm diameter hole.

Doors

Sheet steel, 1.5 mm (800x1200x300 and smaller),
Sheet steel, 2.0 mm (1000x1000x300 and larger)
Surface mounted with 130° opening.

Concealed removable hinges with captive pin.
Removable mounting profiles in the right hand door. Sealing is ensured by an extruded one piece polyurethane gasket.

Mounting plate

2.5 mm galvanised steel.
The plate is marked at 10mm intervals for easy horizontal positioning of equipment on the mounting plate. On the top and bottom are holes to facilitate cable fixing.
Fixed onto M8 press welded studs to the rear of the enclosure. All sides from 1000 mm and above are strengthened by folded edges. By using the mounting plate guides, the mounting plate position can be adjusted to any depth.

Lock

Customised lock with double grip for easy opening of the door, 3 mm double bit lock with 90° movement. Espagnolet three point locking. Other inserts are available.

Gland plate opening

Situated at the far rear of the enclosure to accommodate easy cabling onto the mounting plate.

Finish

Body, door and gland plate: grey RAL 7035 structure polyester powder paint.

- Dimensional drawings ● Page J.31
- Specifications for tender documents ● Page J.70
- Power dissipation values ● Page J.94

Sheet steel wall mounting enclosures, double door, with mounting plate



H x W x D	Enclosures IP55	Mounting plate dim. (H x W x D)	Gland plate			No. of locks	Weight - with mounting plate (kg)
			Size	Type	No. of openings		
Height 600							
600 x 800 x 300	822481	570 x 750 x 282	310 x 96	2	2	1	31.0
Height 800							
800 x 1200 x 300	822482	770 x 1150 x 282	510 x 96	4	2	2	48.0
Height 1000							
1000 x 1000 x 300	822484	970 x 950 x 282	410 x 96	3	2	1 ⁽¹⁾	63.0
Height 1200							
1200 x 1000 x 300	822485	1170 x 950 x 282	410 x 96	3	2	1 ⁽¹⁾	74.0
1200 x 1200 x 300	822486	1170 x 1150 x 282	510 x 96	4	2	1 ⁽¹⁾	86.0
1200 x 1200 x 400	822487	1170 x 1150 x 382	510 x 96	4	2	1 ⁽¹⁾	92.0
Height 1400							
1400 x 1000 x 300	822488	1370 x 950 x 282	410 x 96	3	2	1 ⁽¹⁾	84.0

(1) 3 point espagnolet locking

Sheet steel wall mounting enclosures, double door, without mounting plate



H x W x D	Enclosures IP55	Gland plate			No. of locks	Weight (kg)
		Size	Type	No. of openings		
Height 600						
600 x 800 x 300	822489				1	22.1
Height 800						
800 x 1200 x 300	822490				2	29.7
Height 1000						
1000 x 1000 x 300	822492				1 ⁽¹⁾	44.0
Height 1200						
1200 x 1000 x 300	822493				1 ⁽¹⁾	51.0
1200 x 1200 x 300	822494				1 ⁽¹⁾	58.0
1200 x 1200 x 400	822495				1 ⁽¹⁾	64.4
Height 1400						
1400 x 1000 x 300	822496				1 ⁽¹⁾	57.3

(1) 3 point espagnolet locking



Sheet steel wall mounting enclosures single door - Overview

Dimensions H x W x D	Enclosures with mounting plate	Enclosures without mounting plate	Replacement mounting plate	Telequick mounting plate	Transparent door Clear safety glass
200 x 200 x 155	822369	822425	822571		
250 x 200 x 155	822372	822428	822572		
250 x 250 x 155	822373	822429	822573	821456	
300 x 250 x 155	822375	822431	822574		822675
300 x 250 x 210	822376	822432	822574		822675
300 x 300 x 155	822377	822433	822575	821457	822676
300 x 300 x 210	822378	822434	822575	821457	822676
350 x 250 x 155	822380	822436	822580		
400 x 300 x 155	822381	822437	822581	821458	822677
400 x 300 x 210	822382	822438	822581	821458	822677
400 x 400 x 210	822383	822439	822582	821459	822678
400 x 500 x 210	822384	822440	822583		
400 x 600 x 210	822386	822442	822584		
500 x 300 x 210	822387	822443	822585		
500 x 400 x 155	822389	822445	822586	821460	822680
500 x 400 x 210	822390	822446	822586	821460	822680
500 x 400 x 260	822391	822447	822586	821460	822680
500 x 400 x 300	822392	822448	822586	821460	822680
500 x 500 x 210	822393	822449	822587		
500 x 500 x 300	822394	822450	822587		
600 x 400 x 155	822395	822451	822588	821461	822681
600 x 400 x 210	822396	822452	822588	821461	822681
600 x 400 x 260	822397	822453	822588	821461	822681
600 x 400 x 300	822398	822454	822588	821461	822681
600 x 500 x 155	822399	822455	822589	821462	822682
600 x 500 x 210	822400	822456	822589	821462	822682
600 x 500 x 260	822401	822457	822589	821462	822682
600 x 500 x 300	822402	822458	822589	821462	822682
600 x 600 x 210	822403	822459	822590	821463	822683
600 x 600 x 300	822404	822460	822590	821463	822683
600 x 600 x 400	822405	822461	822590	821463	822683
600 x 800 x 300	822406	822462	822591		
700 x 500 x 210	822407	822463	822592		822684
700 x 500 x 260	822408	822464	822592		822684
800 x 400 x 300	822409	822465	822593		
800 x 600 x 210	822410	822466	822594	821464	822685
800 x 600 x 260	822411	822467	822594	821464	822685
800 x 600 x 300	822412	822468	822594	821464	822685
800 x 600 x 400	822413	822469	822594	821464	822685
800 x 800 x 210	822414	822470	822595		
800 x 800 x 300	822415	822471	822595		
800 x 800 x 400	822416	822472	822595		
1000 x 600 x 260	822417	822473	822597		822686
1000 x 600 x 300	822418	822474	822597		822686
1000 x 800 x 260	822419	822475	822598	821465	822687
1000 x 800 x 300	822420	822476	822598	821465	822687
1000 x 800 x 400	822421	822477	822598	821465	822687
1200 x 600 x 300	822422	822478	822600		822688
1200 x 800 x 300	822423	822479	822601		822689
1200 x 800 x 400	822424	822480	822601		822689

Sheet steel wall mounting enclosures double door - Overview

Dimensions H x W x D	Enclosures with mounting plate	Enclosures without mounting plate	Replacement mounting plate		
600 x 800 x 300	822481	822489	822591		
800 x 1200 x 300	822482	822490	822596		
1000 x 1000 x 300	822484	822492	822599		
1200 x 1000 x 300	822485	822493	822602		
1200 x 1200 x 300	822486	822494	822603		
1200 x 1200 x 400	822487	822495	822603		
1400 x 1000 x 300	822488	822496	822604		



Inner door	Sloping roof	Plinth H = 100 mm	Plinth H = 200 mm
	822783		
	822783		
	822784		
	822785		
	822786		
	822783		
822645	822785		
822645	822786		
	822788		
	822792		
	822795		
	822786		
822646	822787		
822646	822788		
822646	822789		
822646	822790		
	822792		
	822794		
822647	822787		
822647	822788		
822647	822789		
822647	822790		
	822791		
	822792		
	822793		
	822794		
822648	822795		
822648	822797	822656 + 822666	822661 + 822669
822648	822798	822656 + 822667	822661 + 822670
	822801	822657 + 822666	822662 + 822669
822649	822792		
822649	822793		
	822790		
822650	822795		
822650	822796	822656 + 822665	822661 + 822668
822650	822797	822656 + 822666	822661 + 822669
822650	822798	822656 + 822667	822661 + 822670
	822799		
	822801	822657 + 822666	822662 + 822669
	822802	822657 + 822667	822662 + 822670
822651	822796	822656 + 822665	822661 + 822668
822651	822797	822656 + 822666	822661 + 822669
822652	822800	822657 + 822665	822662 + 822668
822652	822801	822657 + 822666	822662 + 822669
822652	822802	822657 + 822667	822662 + 822670
822653	822797	822656 + 822666	822661 + 822669
822654	822801	822657 + 822666	822662 + 822669
822654	822802	822657 + 822667	822662 + 822670

	Sloping roof	Plinth H = 100 mm	Plinth H = 200 mm
	822801	822657 + 822666	822662 + 822669
	822804	822659 + 822666	822664 + 822669
	822803	822658 + 822666	822663 + 822669
	822803	822658 + 822666	822663 + 822669
	822804	822659 + 822666	822664 + 822669
	822805	822659 + 822667	822664 + 822670
	822803	822658 + 822666	822663 + 822669

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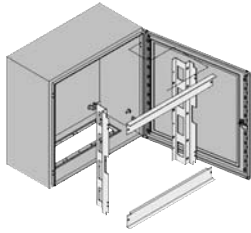
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Accessories



Modular vertical support

Support kit for the mounting of the modular cover plates and DIN rails by steps of 150 mm.

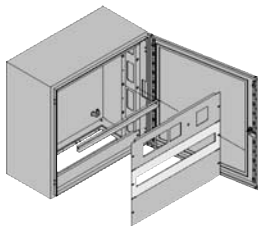
A space for equipment of 46 mm height is provided. Independent of the depth of the enclosure, the system could be used in combination with glazed door and a mounting plate is still usable. 50 mm of space is provided for the equipment between the door and the cover plates. In order to allow an easy installation 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 sheet steel

Finish: structure powder paint RAL 7035

For enclosure (H x W)

600 x 600	9 steps of 50 mm	822519	1
600 x 800	9 steps of 50 mm	822520	1
800 x 600	15 steps of 50 mm	822521	1
800 x 800	15 steps of 50 mm	822522	1
1000 x 600	18 steps of 50 mm	822523	1
1000 x 800	18 steps of 50 mm	822524	1
1200 x 600	21 steps of 50 mm	822525	1
1200 x 800	21 steps of 50 mm	822526	1



Modular slotted cover plate

Front cover plate for modules. Provided with one DIN-rail (15 x 35) per row.

Material: 1.5 mm sheet steel.

Finish: structure powder paint, RAL 7035.

For enclosure (W)

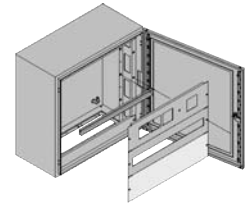
600	1 row - 24 modules - h = 150	822528	1
600	1 row - 24 modules - h = 200	822530	1
600	2 rows - 48 modules - h = 300	822532	1
600	3 rows - 72 modules - h = 450	822534	1
600	4 rows - 96 modules - h = 600	822536	1
800	1 row - 35 modules - h = 150	822529	1
800	1 row - 35 modules - h = 200	822531	1
800	2 rows - 70 modules - h = 300	822533	1
800	3 rows - 105 modules - h = 450	822535	1
800	4 rows - 140 modules - h = 600	822537	1

Modular blank cover plate

Front blank cover plate to cover unused space or to mount special equipment.

Material: 1.5 mm sheet steel

Finish: RAL 7035



For enclosure (W)

822548	1	600	1 step of 50 mm - h = 50
822550	1	600	2 steps of 50 mm - h = 100
822553	1	600	3 steps of 50 mm - h = 150
822555	1	600	4 steps of 50 mm - h = 200
822557	1	600	6 steps of 50 mm - h = 300
822559	1	600	9 steps of 50 mm - h = 450
822561	1	600	12 steps of 50 mm - h = 600
822563	1	600	18 steps of 50 mm - h = 900
822549	1	800	1 step of 50 mm - h = 50
822551	1	800	2 steps of 50 mm - h = 100
822554	1	800	3 steps of 50 mm - h = 150
822556	1	800	4 steps of 50 mm - h = 200
822558	1	800	6 steps of 50 mm - h = 300
822560	1	800	9 steps of 50 mm - h = 450
822562	1	800	12 steps of 50 mm - h = 600
822564	1	800	18 steps of 50 mm - h = 900

Modular chassis

Used for the mounting of standard modules with maximum height of 68 mm by steps of 125 mm. If required, the standard door can be replaced with the glazed doors.

The delivery includes: a slotted front cover plate and two vertical profiles, top and bottom blanking plates with one DIN rail per row and fixing material.

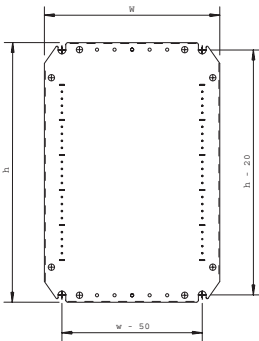
DIN Rails made of 1.5 mm galvanised steel, rest 1.5 mm sheet steel structure powder painted RAL 7035.



For enclosure (H x W)

822638	1	300 x 250	2 rows - 16 modules
822639	1	400 x 300	3 rows - 33 modules
822640	1	500 x 400	3 rows - 48 modules
822641	1	600 x 400	4 rows - 64 modules
822642	1	600 x 600	4 rows - 108 modules
822643	1	700 x 500	5 rows - 110 modules
822644	1	800 x 600	6 rows - 162 modules

Accessories



Mounting plates

2.5 mm galvanised sheet steel

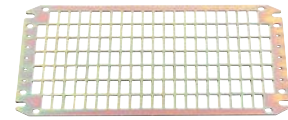
For enclosure (H x W)

200 x 200	822571	1
250 x 200	822572	1
250 x 250	822573	1
300 x 250	822574	1
300 x 300	822575	1
300 x 600	822576	1
300 x 800	822577	1
300 x 1000	822578	1
300 x 1200	822579	1
350 x 250	822580	1
400 x 300	822581	1
400 x 400	822582	1
400 x 500	822583	1
400 x 600	822584	1
500 x 300	822585	1
500 x 400	822586	1
500 x 500	822587	1
600 x 400	822588	1
600 x 500	822589	1
600 x 600	822590	1
600 x 800	822591	1
700 x 500	822592	1
800 x 400	822593	1
800 x 600	822594	1
800 x 800	822595	1
800 x 1200	822596	1
1000 x 600	822597	1
1000 x 800	822598	1
1000 x 1000	822599	1
1200 x 600	822600	1
1200 x 800	822601	1
1200 x 1000	822602	1
1200 x 1200	822603	1
1400 x 1000	822604	1

Telequick mounting plate

Simplifies installation and equipment fitting.
Rectangular holes 26 x 11 mm to obtain required fixing positions with snap-nuts.
The nuts can be moved around within the rectangular hole.

Material: 2 mm galvanised sheet steel.



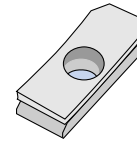
For enclosure (H x W)

821456	1	250 x 250
821457	1	300 x 300
821458	1	400 x 300
821459	1	400 x 400
821460	1	500 x 400
821461	1	600 x 400
821462	1	600 x 500
821463	1	600 x 600
821464	1	800 x 600
821465	1	1000 x 800

Snap nuts for telequick plates

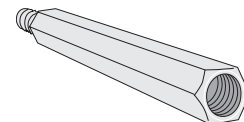
M4	821480	1 set
M5	821481	1 set
M6	821482	1 set

Set with 100 pieces



Height extension studs

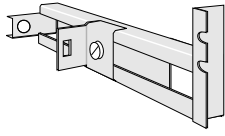
For depth adjustment of the mounting plate.
To be screwed on to the existing welded M-8 studs, provided for the mounting plate.
Metric thread M8.
Material: zinc plated steel.



822627	1 set	L = 10	Set with 50 pieces
822628	1 set	L = 12	Set with 50 pieces
822629	1 set	L = 14	Set with 50 pieces
822630	1 set	L = 16	Set with 50 pieces
822631	1 set	L = 18	Set with 50 pieces
822632	1 set	L = 20	Set with 50 pieces
822633	1 set	L = 30	Set with 50 pieces
822634	1 set	L = 40	Set with 20 pieces
822635	1 set	L = 50	Set with 20 pieces
822636	1 set	L = 55	Set with 20 pieces
822637	1 set	L = 100	Set with 20 pieces



Accessories



Mounting plate guides

To provide infinite depth adjustment for the mounting plate, the telequick plate or the profile mounting system. Set with 4 pieces.
Material: zinc plated steel.

	822622	1 set
D = 155		
	822623	1 set
D = 210		
	822624	1 set
D = 260		
	822625	1 set
D = 300		
	822626	1 set
D = 400		



Wall mounting brackets

822606 1 set
3 mm zinc plated steel
Set with 4 pieces



Plinth front/rear panels

The plinth consists of four corner pieces with removable front covers. *The side panels are to be ordered separately.*

Height 100 and 200 mm.

Material: 2.5 mm sheet steel for corners,

1.5 mm sheet steel for U-section.

Finish: structure powder paint RAL 7022

Set contains front and rear panel.

H x W		
100 x 400	822655	1 set
100 x 600	822656	1 set
100 x 800	822657	1 set
100 x 1000	822658	1 set
100 x 1200	822659	1 set
200 x 400	822660	1 set
200 x 600	822661	1 set
200 x 800	822662	1 set
200 x 1000	822663	1 set
200 x 1200	822664	1 set

Inner doors

For controls, meters, lamps etc.

Can be left or right hand hinged.

Usable depth: 35 mm.

Usable opening: H-55, W-108.

Material: 1.5 mm sheet steel.

Finish: structure powder paint, RAL 7035.



For enclosure (H x W)

	822645	1	400 x 300
	822646	1	500 x 400
	822647	1	600 x 400
	822648	1	600 x 600
	822649	1	700 x 500
	822650	1	800 x 600
	822651	1	1000 x 600
	822652	1	1000 x 800
	822653	1	1200 x 600
	822654	1	1200 x 800

Plinth side panels

Two U-section side pieces for height 100

and 4 U-section side pieces for height

200 mm.

Material: 1.5 mm sheet steel.

Finish: structure powder paint RAL 7022.



H x D

	822665	1 set	100 x 260
	822666	1 set	100 x 300
	822667	1 set	100 x 400
	822668	1 set	200 x 260
	822669	1 set	200 x 300
	822670	1 set	200 x 400

Accessories



Glazed door with clear glass

Fitted in place of the standard door, provides a clear view of the instrumentation installed inside the enclosure.
 Protection: IP55/NEMA 12.
 1.5/2.0 mm sheet steel.
 Finish: structure powder paint RAL 7035 with 3 mm clear safety glass.

H	W	Viewing area		No of locks			
		h	w				
300	250	159	93	1		822675	1
300	300	159	143	1		822676	1
400	300	259	143	1		822677	1
400	400	259	243	1		822678	1
500	300	359	143	1		822679	1
500	400	359	243	1		822680	1
600	400	459	243	2		822681	1
600	500	459	343	2		822682	1
600	600	459	443	2		822683	1
700	500	559	343	2		822684	1
800	600	659	443	2		822685	1
1000	600	859	427	1 ⁽¹⁾		822686	1
1000	800	859	627	1 ⁽¹⁾		822687	1
1200	600	1059	427	1 ⁽¹⁾		822688	1
1200	800	1059	627	1 ⁽¹⁾		822689	1

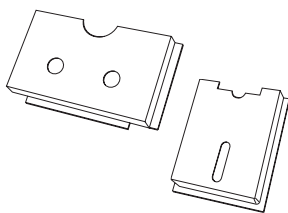
(1) 3 point espagnolet locking



Door stop

822753 1

To secure the door in an open position allowing to stay open at 90° and 110°. Mounted directly to the doorframe. Material: zinc plated steel.



Document pocket

811516 1

Self adhesive, for DIN A4 format. H x W = 180 x 325

832000 1

DIN A5 - transparent H x W = 225 x 155

Door switch

822754 1

To activate any electrical device (e.g. lighting, signalling or alarming, etc.) Supplied with a support for fitting to both the left and right hand side of the enclosure. Also possible to fit in combination with the door frame. Cable entry PG 13.5 - UL and CSA approved - Switching load 6A-230V.

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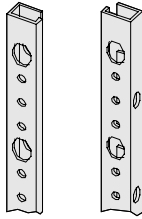
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J/X



Accessories



Door mounting profiles

To be fitted on the inside of the door. 1.5 mm galvanised steel.

Dimensions: 15 x 10 mm.

Pack 1 pair, with mounting material.

H = 200	822755	1
H = 250	822756	1
H = 300	822757	1
H = 400	822758	1
H = 500	822759	1
H = 600	822760	1
H = 700	822761	1
H = 800	822762	1
H = 1000	822763	1
H = 1200	822764	1
H = 1400	822765	1

Lock cover with grip on both sides

Without insert	822766	1
----------------	---------------	---

Locks

	822774	1
--	---------------	---

Standard 3 mm double bit lock

	822775	1
--	---------------	---

Slam/Push 3 mm double bit lock

	811311	1
--	---------------	---

Cylinder lock with 2 keys 2432E



Handles

For cabinets with 1 or 2 point closing system

	813146	1
--	---------------	---

Neutral handle

	813152	1
--	---------------	---

Handle with lock 333

	813153	1
--	---------------	---

Handle with lock 405E

	813154	1
--	---------------	---

Handle with lock 455E

	813155	1
--	---------------	---

Handle with lock 1242E

	813156	1
--	---------------	---

Handle with lock 2432E

	813157	1
--	---------------	---

Handle with lock 2433A

	813168	1
--	---------------	---

Padlocking handle



Keys

	832022	1 set
--	---------------	-------

For safety lock No. V2432E (2 pieces)

	832026	1
--	---------------	---

For safety lock with 8 mm square

	832027	1
--	---------------	---

For safety lock with 8 mm triangle

	832072	1
--	---------------	---

For safety lock with 11 mm triangle

	832028	1
--	---------------	---

For safety lock with double bit 3 mm



Inserts

	822767	1
--	---------------	---

DIN 3 mm

	822768	1
--	---------------	---

DIN 5 mm

	822769	1
--	---------------	---

Square 7 mm

	822770	1
--	---------------	---

Triangular 8 mm

	822771	1
--	---------------	---

Square 8 mm

	822772	1
--	---------------	---

Triangular 7 mm

	822773	1
--	---------------	---

Slotted 2x4 mm



Handles

For cabinets with 3 point espagnolet locking

	813151	1
--	---------------	---

Neutral handle

	813150	1
--	---------------	---

Handle with lock 333

	813158	1
--	---------------	---

Handle with lock 405E

	813159	1
--	---------------	---

Handle with lock 455E

	813160	1
--	---------------	---

Handle with lock 1242E

	813161	1
--	---------------	---

Handle with lock 2432E

	813162	1
--	---------------	---

Handle with lock 2433A

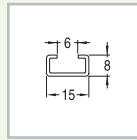


Accessories

Galvanised profiles

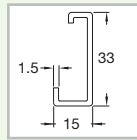
890848 1

Profile C
15 x 8 x 1
Length: 3 m



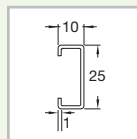
811176 1

Profile C
Assymetric
33 x 15 x 1.5
Length: 3 m



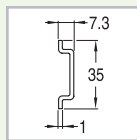
811177 1

Profile C
25 x 10 x 1
Length: 3 m



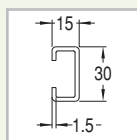
890847 1

DIN profile
35 x 7.3 x 1
Length: 3 m



811619 1

Profile C
30 x 15 x 1.5
Length: 3 m



811363 25

Sliding nuts for C 30 x 15 - M6



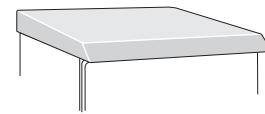
811365 50

Sliding nuts for C 25 x 10 - M6



Roof

To be fitted as an outdoor shelter on single mounted enclosures. The roof is slightly tilted and has a drip-strip.
Material: 1.5 mm sheet steel.
Finish: structure powder paint RAL 7035



W x D

822783	1	250 x 155
822784	1	250 x 210
822785	1	300 x 155
822786	1	300 x 210
822787	1	400 x 155
822788	1	400 x 210
822789	1	400 x 260
822790	1	400 x 300
822791	1	500 x 155
822792	1	500 x 210
822793	1	500 x 260
822794	1	500 x 300
822795	1	600 x 210
822796	1	600 x 260
822797	1	600 x 300
822798	1	600 x 400
822799	1	800 x 210
822800	1	800 x 260
822801	1	800 x 300
822802	1	800 x 400
822803	1	1000 x 300
822804	1	1200 x 300
822805	1	1200 x 400

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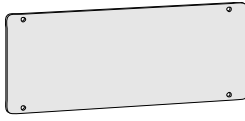
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Accessories



Standard cable entry plates

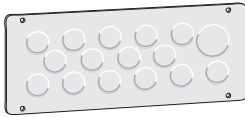
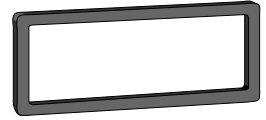
Flat cable entry plate for closing the standard gland opening - 1.5 mm sheet steel
Finish: structure powder paint, RAL 7035.

822816	1
Size OS - for opening 110 x 56	
822817	1
Size 1 - for opening 210 x 96	
822818	1
Size 1S - for opening 210 x 56	
822819	1
Size 2 - for opening 310 x 96	
822820	1
Size 2S - for opening 310 x 56	
822821	1
Size 3 - for opening 410 x 96	
822822	1
Size 3S - for opening 410 x 56	
822823	1
Size 4 - for opening 510 x 96	

Cable entry plate gaskets

For standard cable entry plates.
Material: 5 mm thick polyethylene foam.

822847	1
Size OS - for opening 110 x 56	
822848	1
Size 1 - for opening 210 x 96	
822849	1
Size 1S - for opening 210 x 56	
822850	1
Size 2 - for opening 310 x 96	
822851	1
Size 2S - for opening 310 x 56	
822852	1
Size 3 - for opening 410 x 96	
822853	1
Size 3S - for opening 410 x 56	
822854	1
Size 4 - for opening 510 x 96	



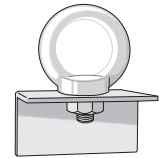
Cable entry plates with metric knock-outs

Material: 1.5 mm sheet steel cable entry plate with knock-outs according to table.
Finish: structure powder paint, RAL 7035.

For opening	16.5	20.5	25.5	32.5		
210 x 96	4	5	2	2	822836	1
210 x 96	12	-	1	1	822837	1
310 x 96	9	5	4	2	822838	1
310 x 96	21	-	1	1	822839	1
410 x 96	18	5	4	2	822840	1
410 x 96	21	10	-	-	822841	1
510 x 96	27	5	4	2	822842	1
510 x 96	18	14	3	1	822843	1
210 x 56	4	3	-	-	822844	1
310 x 56	6	3	1	-	822845	1
410 x 56	9	4	1	-	822846	1

Lifting eyes M12

822806 1 set
Complies with DIN 580 lifting requirements.
Set with 2 pieces.



Notes

Grid area for notes

A
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Optimal AISI



Stainless steel wall mounting enclosures with single door

Protection degree

IP66 / NEMA 4X, 12 and 13

Approvals



Standard delivery

- Includes: mounting plate, complete with fitting accessories and earthing facilities.
- Packaged in a reusable carton.

Features

Body

1.5 mm, AISI 304 S15 pre-grained stainless steel.
Stainless steel AISI 316 on request.

Door

2.0 mm, AISI 304 S15 pre-grained stainless steel.
Stainless steel AISI 316 on request.

Mounting plate

2.5 mm galvanised steel.

Body

Folded and seam welded. Marks for position of hinges for reverse door opening and wall fixing.

Door

Surface mounted with 130° opening.
Concealed removable hinge with removable pin.
Can be mounted to allow left or right hand opening.
Sealing is ensured by an extruded one piece polyurethane gasket. Inside of door carries four welded studs for equipment profiles.

Lock

Chrome plated 3 mm double bit lock with 90° movement.
Stainless steel lock and other versions are available as accessories.

Mounting plate

Fixed onto M8 studs welded to the rear of the enclosure.
In enclosures with height or width of 800 mm or more, the mounting plate has a fold to all four sides for extra rigidity. By using the mounting plate guides (accessory) the mounting plate can be adjusted in depth.

Cable access

No gland plate openings as standard to maximise sealing and clean lines.

Finish

Outer body and door: 180 grain finish.(0.8 - 1.2 micron). (Other grades and finishes available on request).

Dimensional drawings ● Page J.32

Specifications for tender documents ● Page J.70

Stainless steel wall mounting enclosures with single door



H x W x D	Enclosures IP66	Inner dimensions H x W	Usable depth	Number of locks	Weight (kg)
Height 300					
300 x 200 x 155	824669	270 x 150	135	1	5.6
Height 400					
400 x 300 x 155	824670	370 x 250	135	1	8.3
400 x 400 x 210	824672	370 x 350	190	1	11.2
400 x 600 x 210	824673	370 x 550	190	1	15.8
Height 500					
500 x 500 x 210	824674	470 x 450	190	1	17.0
Height 600					
600 x 400 x 210	824675	570 x 350	190	2	15.8
600 x 600 x 210	824676	570 x 550	190	2	22.2
600 x 600 x 300	824677	570 x 550	280	2	25.2
600 x 800 x 300	824678	570 x 750	280	2	32.4
Height 800					
800 x 600 x 210	824679	770 x 550	190	2	28.6
800 x 600 x 300	824680	770 x 550	280	2	32.3
800 x 800 x 210	824681	770 x 750	190	2	37.2
800 x 800 x 300	824682	770 x 750	280	2	42.0
Height 1000					
1000 x 800 x 300	824683	970 x 750	280	3	51.5
Height 1200					
1200 x 600 x 300	824684	1170 x 550	280	3	48.5
1200 x 800 x 300	824685	1170 x 750	280	3	59.5
1200 x 800 x 400	824686	1170 x 750	380	3	62.3
Height 1400					
1400 x 800 x 400	824687	1370 x 750	380	3	78.1

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Stainless steel wall mounting enclosures with double door



Protection degree

IP55 / NEMA 12

Approvals



Standard delivery

- Includes: mounting plate, complete with fitting accessories and earthing facilities.
- Packaged in a reusable carton.

Features

Body

1.5 mm, AISI 304 S15 pre-grained stainless steel.
Stainless steel AISI 316 on request.

Door

2.0 mm, AISI 304 S15 pre-grained stainless steel.
Stainless steel AISI 316 on request.

Mounting plate

2.5 mm galvanised steel.

Body

Folded and seam welded. With marks for wall fixing holes.

Door

Surface mounted with 130° opening.
Concealed removable hinge pins. Inside of door carries four welded studs for equipment profiles. Sealing is ensured by an extruded one piece polyurethane gasket.

Lock

Chrome plated 3 mm double bit lock with 90° movement. Stainless steel lock and other versions are available as accessories.

Mounting plate

Fixed onto M8 studs welded to the rear of the enclosure.
In enclosures with height or width of 800 mm or more, the mounting plate has a fold to all four sides for extra rigidity.
By using the mounting plate guides (accessory) the mounting plate can be adjusted in depth.

Cable access

No gland openings as standard to maximise the sealing and clean lines.

Finish

Outer body and door: 180 grain finish (0.8 - 1.2 micron). (Other grades and finishes available on request.)

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J/X

Dimensional drawings ● Page J.33
Specifications for tender ● Page J.70
documents

Stainless steel wall mounting enclosures with double door



H x W x D	Enclosures IP55	Inner dimensions H x W	Usable depth	Number of locks	Weight
Height 1000					
1000 x 1000 x 300	824688	970 x 950	280	1*	59.5
1000 x 1200 x 300	824689	970 x 1150	280	1*	69.7
Height 1200					
1200 x 1200 x 400	824690	1170 x 1150	380	1*	87.7

* 3 point espagnolette locking

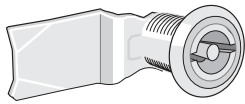
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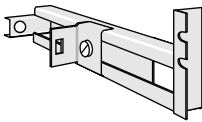
Accessories



Wall mounting brackets
824709 1 set
 Material: 3 mm stainless steel 316.
 Set with 4 pieces.

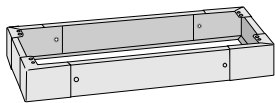


Stainless steel lock
824710 1
 3 mm double bit



Mounting plate guides
 To provide infinite depth adjustment for the mounting plate, the telequick plate or the profile mounting system.
 Material: zinc plated steel.
 Set with 4 pieces.

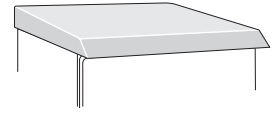
824711	1 set
D = 210	
824712	1 set
D = 300	
824713	1 set
D = 400	



Plinths
 Four U-section side pieces fixed by screws to the corner sections.
 Material: 2 mm 304 stainless steel.

H	W	D		
100	600	300	824714	1
100	800	300	824715	1
100	1000	300	824716	1
100	1200	300	824717	1
100	800	400	824718	1
100	1200	400	824719	1

Rain hoods
 To be fitted as an outdoor shelter on single mounted enclosures.
 The roof is slightly tilted and has a drip-strip.
 Material: 304 stainless steel.



		H	D
824720	1	400	210
824721	1	600	210
824722	1	600	300
824723	1	800	210
824724	1	800	300
824725	1	800	400
824726	1	1000	300
824727	1	1200	300
824728	1	1200	400



E.2 Optimal FS (sheet steel)

Application guide / e-catalogue	
Insulated boxes	A
Insulated wall mounting cabinets	B
Wall mounting system enclosures	C
Steel wall mounting enclosures	D
Steel floor standing enclosures	E

Pedestals

Subterranean enclosures

Climate control

General accessories

General characteristics / Index



Floor standing modular version single door



Protection degree

IP56 / NEMA 4, 12, 13.

Approvals



Standard delivery

- Frame with fitted door, rear panel, roof panel, bottom plates*, mounting plate* and door frame*.
- Earthing bolts.
- Delivered on a pallet with width identical with the enclosure to allow suiting without removal.
- All packing material recyclable.

*not included for 400 wide cable enclosures.

Construction

Frame

1.75 mm painted steel.
Seamwelded reversed open profiles with 25 mm hole pattern according to DIN 43660. Including integrated external hole pattern.

Door

2.0 mm painted steel.
Surface mounted with hinges allowing left or right hand opening. Including door frame with 25 mm hole pattern.

Rear panel

1.5 mm painted steel.
Fitted by M6 torx screws.
Standard facilities for rear door mounting.

Side panels

1.5 mm painted steel.
Supplied as an accessory.

Roof panel

1.5 mm painted steel.
Removable.

Bottom plates

1.5 mm galvanised steel.
Consists of three pieces.

Lock

Espagnolet 4-point locking system. Does not interfere with the enclosure inner space. Standard 3 mm double bit lock. Can be exchanged for standard inserts or profile cylinders, swing handle or digital locking system.

Mounting plate

3 mm galvanised steel.
Double folded and slides into position. Adjustable in depth by steps of 25 mm. Attached on the outside of the enclosure carton.

Earthing

All panels are earthed through their fittings and are equipped with a separate earthing stud.

Finish

RAL 7035 polyester powder structure paint.

Dimensional drawings ● Page J.34

Specifications for tender documents ● Page J.71

Power dissipation values ● Page J.106



Modular version, single door



H x W x D	Enclosures with mounting plate	Enclosures without mounting plate
Height 1800		
1800 x 400 x 500	821200	-
1800 x 600 x 400	821201	821226
1800 x 600 x 500	821202	821227
1800 x 800 x 400	821203	821228
1800 x 800 x 500	821204	821229
1800 x 1000 x 400	821205	821230
1800 x 1000 x 500	821206	821231
Height 2000		
2000 x 400 x 400	821207	-
2000 x 400 x 500	821208	-
2000 x 400 x 600	821209	-
2000 x 600 x 400	821210	821232
2000 x 600 x 500	821211	821233
2000 x 600 x 600	821212	821234
2000 x 600 x 800	821213	821235
2000 x 800 x 400	821215	821237
2000 x 800 x 500	821216	821238
2000 x 800 x 600	821217	821239
2000 x 800 x 800	821218	821240
2000 x 1000 x 400	821219	821241
2000 x 1000 x 500	821220	821242
2000 x 1000 x 600	821221	821243
Height 2200		
2200 x 600 x 600	821222	821244
2200 x 800 x 600	821224	821245
2200 x 800 x 800	821225	821246

A

B

C

D

E

F

G

H

I

J/X



Floor standing modular version double door



Protection degree

IP55 / NEMA 12, 13.

Approvals



Standard delivery

- Frame with fitted doors, rear panel, roof panel, bottom plates, mounting plate and door frame.
- Delivery also includes earthing bolts.
- Delivered on a pallet with width identical with the enclosure to allow suiting without removal.
- All packing material recyclable.

Construction

Frame

1.75 mm painted steel.

Seamwelded reversed open profiles with 25 mm hole pattern according to DIN 43660. Including integrated external hole pattern.

Doors

2.0 mm painted steel.

Surface mounted with four hinges. Including door frame with 25 mm hole pattern. Doors can not be reversed. Separate doors to be ordered for left hand door locking.

Rear panel

1.5 mm painted steel.

Fitted by M6 torx screws. Standard facilities for rear door mounting. Split rear panels in 1600 wide enclosures.

Side panels

1.5 mm painted steel.

Supplied as an accessory.

Roof panel

1.5 mm painted steel.

Removable.

Bottom plates

1.5 mm galvanised steel.

Consists of three pieces.

Lock

Espagnolet 4-point locking system. Does not interfere with the enclosure inner space. Standard 3 mm double bit lock. Can be exchanged for standard inserts or profile cylinders, swing handle or digital locking system.

Mounting plate

3 mm galvanised steel.

Double folded and adjustable in depth by steps of 25 mm.

Attached on the outside of the enclosure carton.

Earthing

All panels are earthed through their fittings and are equipped with a separate earthing stud.

Finish

RAL 7035 polyester structure powder paint.

Dimensional drawings ● Page J.35

Specifications for tender documents ● Page J.71

Power dissipation values ● Page J.106



Modular version, double door



H x W x D	Enclosures with mounting plate	Enclosures without mounting plate
Height 1800		
1800 x 800 x 500	821247	821269
1800 x 1000 x 400	821248	821270
1800 x 1000 x 500	821249	821271
1800 x 1200 x 400	821250	821272
1800 x 1200 x 500	821251	821273
1800 x 1600 x 400	821252	821274
Height 2000		
2000 x 800 x 500	821253	821275
2000 x 1000 x 400	821254	821276
2000 x 1000 x 500	821255	821277
2000 x 1000 x 600	821256	821278
2000 x 1000 x 800	821257	821279
2000 x 1200 x 400	821258	821280
2000 x 1200 x 500	821259	821281
2000 x 1200 x 600	821260	821282
2000 x 1200 x 800	821261	821283
2000 x 1600 x 400	821263	821285
Height 2200		
2200 x 1000 x 600	821265	821287
2200 x 1200 x 600	821267	821289

A

B

C

D

E

F

G

H

I

J/X





Floor standing mono version single door

Protection degree

IP66 / NEMA 4, 12, 13.
To achieve IP66, use gasket kit 821529 when fitting the bottom plate.

Approvals



Standard delivery

- Body with fitted door, rear panel, roof panel, bottom plates, mounting plate and door frame.
- Delivery also includes earthing bolts.
- Delivered on a pallet with width identical with the enclosure to allow suiting without removal.
- All packing material recyclable.

Construction

Body

1.5 mm painted steel.
Four times folded and seam-welded frame.
Integrated double row hole pattern.

Door

2.0 mm painted steel.
Surface mounted with hinges allowing left or right hand opening.
Including door frame with 25 mm hole pattern.

Rear panel

1.5 mm painted steel.
Fitted by M6 torx screws.
Standard facilities for rear door mounting.

Roof panel

1.5 mm painted steel.
Removable.

Bottom plates

1.5 mm galvanised steel.
Consists of three pieces.

Lock

Espagnolet 4-point locking system. Does not interfere with the enclosure inner space. Standard 3 mm double bit lock. Can be exchanged for standard inserts or profile cylinders, swing handle or digital locking system.

Mounting plate

3 mm galvanised steel.
Double folded and slides into position. Adjustable in depth by steps of 25 mm. Attached on the outside of the enclosure carton.

Earthing

All panels are earthed through their fittings and are equipped with a separate earthing stud.

Finish

RAL 7035 polyester structure powder paint.

Dimensional drawings ● Page J.36

Specifications for tender documents ● Page J.71

Power dissipation values ● Page J.106



Mono version, single door



H x W x D	Enclosures with mounting profile	Enclosures without mounting plate
Height 1600		
1600 x 600 x 400	821291	821300
1600 x 800 x 400	821292	821301
1600 x 1000 x 400	821293	821302
Height 1800		
1800 x 600 x 400	821294	821303
1800 x 800 x 400	821295	821304
1800 x 1000 x 400	821296	821305
Height 2000		
2000 x 600 x 400	821297	821306
2000 x 800 x 400	821298	821307
2000 x 1000 x 400	821299	821308

A

B

C

D

E

F

G

H

I

J/X



Floor standing mono version double door



Protection degree

IP55 / NEMA 12, 13.

Approvals



Standard delivery

- Body with fitted door, rear panel, roof panel, bottom plates, mounting plate and door frame.
- Delivery also includes earthing bolts.
- Delivered on a pallet with width identical with the enclosure to allow suiting without removal.
- All packing material recyclable.

Construction

Body

1.5 mm painted steel.

Four times folded and seam-welded frame. Integrated double row hole pattern. Separate doors to be ordered for left hand door locking.

Doors

2.0 mm painted steel.

Surface mounted with four hinges. Including door frame with 25 mm hole pattern. Doors can not be reversed. Separate doors to be ordered left or right hinged.

Rear panel

1.5 mm painted steel.

Fitted by M6 torx screws. Standard facilities for rear door mounting. Split rear panels on 1600 wide enclosures.

Roof panel

1.5 mm painted steel.

Removable.

Bottom plates

1.5 mm galvanised steel. Consists of three pieces.

Lock

External espagnolet 4-point locking system.

Standard fitted 3 mm double bit lock. Can be exchanged for standard inserts or profile cylinders and swing handle.

Mounting plate

3 mm galvanised steel.

Double folded and adjustable in depth by steps of 25 mm.

Attached on the outside of the enclosure carton.

Earthing

All panels are earthed through their fittings and are equipped with a separate earthing stud.

Finish

RAL 7035 polyester structure powder paint.

Dimensional drawings ● Page J.37

Specifications for tender documents ● Page J.71

Power dissipation values ● Page J.106



Mono version, double door



H x W x D	Enclosures with mounting plate	Enclosures without mounting plate
Height 1600		
1600 x 1200 x 400	821309	821314
Height 1800		
1800 x 1200 x 400	821310	821315
1800 x 1600 x 400	821311	821316
Height 2000		
2000 x 1200 x 400	821312	821317
2000 x 1600 x 400	821313	821318

A

B

C

D

E

F

G

H

I

J/X





Two tone industrial computer enclosure

Description

Multi purpose computer enclosure with aesthetic design and attractive colour scheme. Supplied in a two tone structured paint finish, grey (RAL 7035) and brown (RAL 7015) makes it suitable for both office and factory environments.

Protection degree

IP54 / NEMA 1 & 12

Approvals



Standard delivery

- Frame with fitted plane and glazed doors, hinged keyboard tray, mouse pad, monitor shelf, roof panel, bottom plates, side panels and fixing devices.
- Delivery also includes earthing bolts.
- Delivered on a pallet with width identical with the enclosure to allow suiting without removal.
- All packing material is recyclable.

Dimensional drawings ● Page J.38

Specifications for tender documents ● Page J.71

Power dissipation values ● Page J.106

Construction

Frame

1.75 mm painted steel. Seam welded reversed open profiles with 25 mm hole pattern according to DIN 43660. Including integrated external hole pattern.

Monitor shelf

Fully adjustable in height with newly developed rapid adjustment system

Front door

2.0 mm painted steel.

Surface mounted with concealed hinges.

Monitor door

Fitted with design strip in brown (RAL 7015) which allows customisation. Viewing area 375 x 455 mm for monitor 14"-21".

Keyboard tray

Hinged, with mouse pad (RH or LH). Painted in a two tone colour grey/brown. Max. keyboard width 470 mm.

Rear door

2.0 mm painted steel. Surface mounted with hinges allowing left or right hand opening.

Side panels

1.5 mm painted steel

Removable, fixed on the outside hole pattern of the frame for easy and rapid mounting. Access to the fixing screws is denied when the doors are closed.

Roof panel

1.5 mm painted steel

Removable and fixed from the inside.

Bottom plates

1.5 mm galvanised steel

Consists of three pieces for 600 mm deep and four pieces for 800 mm deep.

Lock

Espagnolet two or four point locking system. Does not interfere with the enclosure inner space. Standard 3 mm double bit lock. Can be exchanged for standard inserts or profile cylinders or swing handle. Monitor door and keyboard tray are fitted with key lock.

Earthing

All panels are earthed through their fittings and are equipped with a separate earthing stud.

Finish

Grey RAL 7035 polyester powder structure paint in combination with brown RAL 7015.

Industrial computer enclosure



H x W x D	Enclosures
Height 1600	
1600 x 600 x 600	821332
1600 x 600 x 800	821333

- A
- B
- C
- D
- E**
- F
- G
- H
- I
- J/X



Modular version, single door - Overview

Enclosures with mounting plate	H x W x D	Side panel	Plinth 100 mm front/rear ⁽¹⁾	Plinth 100 mm side panel ⁽¹⁾	Plinth transversal profiles	Vent. plinth front/rear ⁽¹⁾
821200	1800 x 400 x 500	821338	821349	821367	821384	-
821201	1800 x 600 x 400	821337	821351	821366	821383	821379
821202	1800 x 600 x 500	821338	821351	821367	821384	821379
821203	1800 x 800 x 400	821337	821353	821366	821383	821380
821204	1800 x 800 x 500	821338	821353	821367	821384	821380
821205	1800 x 1000 x 400	821337	821354	821366	821383	821381
821206	1800 x 1000 x 500	821338	821354	821367	821384	821381
821207	2000 x 400 x 400	821340	821349	821366	821383	-
821208	2000 x 400 x 500	821341	821349	821367	821384	-
821209	2000 x 400 x 600	821342	821349	821368	821385	-
821210	2000 x 600 x 400	821340	821351	821366	821383	821379
821211	2000 x 600 x 500	821341	821351	821367	821384	821379
821212	2000 x 600 x 600	821342	821351	821368	821385	821379
821213	2000 x 600 x 800	821343	821351	821369	821387	821379
821215	2000 x 800 x 400	821340	821353	821366	821383	821380
821216	2000 x 800 x 500	821341	821353	821367	821384	821380
821217	2000 x 800 x 600	821342	821353	821368	821385	821380
821218	2000 x 800 x 800	821343	821353	821369	821387	821380
821219	2000 x 1000 x 400	821340	821354	821366	821383	821381
821220	2000 x 1000 x 500	821341	821354	821367	821384	821381
821221	2000 x 1000 x 600	821342	821354	821368	821385	821381
821222	2200 x 600 x 600	821344	821351	821368	821385	821379
821224	2200 x 800 x 600	821344	821353	821368	821385	821380
821225	2200 x 800 x 800	821345	821353	821369	821387	821380

Modular version, double door - Overview

Enclosures with mounting plate	H x W x D	Side panel	Plinth 100 mm front/rear ⁽¹⁾	Plinth 100 mm side panel ⁽¹⁾	Plinth transversal profiles	Vent. plinth front/rear ⁽¹⁾
821247	1800 x 800 x 500	821338	821353	821367	821384	821380
821248	1800 x 1000 x 400	821337	821354	821366	821383	821381
821249	1800 x 1000 x 500	821338	821354	821367	821384	821381
821250	1800 x 1200 x 400	821337	821355	821366	821383	-
821251	1800 x 1200 x 500	821338	821355	821367	821384	-
821252	1800 x 1600 x 400	821337	821353 (x2)	821366	821383	821380 (x2)
821253	2000 x 800 x 500	821341	821353	821367	821384	821380
821254	2000 x 1000 x 400	821340	821354	821366	821383	821381
821255	2000 x 1000 x 500	821341	821354	821367	821384	821381
821256	2000 x 1000 x 600	821342	821354	821368	821385	821381
821257	2000 x 1000 x 800	821343	821354	821369	821387	821381
821258	2000 x 1200 x 400	821340	821355	821366	821383	-
821259	2000 x 1200 x 500	821341	821355	821367	821384	-
821260	2000 x 1200 x 600	821342	821355	821368	821385	-
821261	2000 x 1200 x 800	821343	821355	821369	821387	-
821263	2000 x 1600 x 400	821340	821353 (x2)	821366	821383	821380 (x2)
821265	2200 x 1000 x 600	821344	821354	821368	821385	821381
821267	2200 x 1200 x 600	821344	821355	821368	821385	-

Mono version, single door - Overview

Enclosures with mounting plate	H x W x D	Side panel	Plinth 100 mm front/rear ⁽¹⁾	Plinth 100 mm side panel ⁽¹⁾	Plinth transversal profiles	Vent. plinth front/rear ⁽¹⁾
821291	1600 x 600 x 400	-	821351	821366	821383	821379
821292	1600 x 800 x 400	-	821353	821366	821383	821380
821293	1600 x 1000 x 400	-	821354	821366	821383	821381
821294	1800 x 600 x 400	-	821351	821366	821383	821379
821295	1800 x 800 x 400	-	821353	821366	821383	821380
821296	1800 x 1000 x 400	-	821354	821366	821383	821381
821297	2000 x 600 x 400	-	821351	821366	821383	821379
821298	2000 x 800 x 400	-	821353	821366	821383	821380
821299	2000 x 1000 x 400	-	821354	821366	821383	821381

Mono version, double door - Overview

Enclosures with mounting plate	H x W x D	Side panel	Plinth 100 mm front/rear ⁽¹⁾	Plinth 100 mm side panel ⁽¹⁾	Plinth transversal profiles	Vent. plinth front/rear ⁽¹⁾
821309	1600 x 1200 x 400	-	821355	821366	821383	-
821310	1800 x 1200 x 400	-	821355	821366	821383	-
821311	1800 x 1600 x 400	-	821353 (2x)	821366	821383	821380 (2x)
821312	2000 x 1200 x 400	-	821355	821366	821383	-
821313	2000 x 1600 x 400	-	821353 (2x)	821366	821383	821380 (2x)

(1) Standard H = 100 mm. Also available H = 200 mm. See p. 52 & 53.



Cable fixing bars	Wide mounting plate	Union mounting plate	Door drawing desk	Ventilation roof	Separation plate
821513	-	821416	-	-	821783
821514	-	821416	821622	821716	821782
821514	-	821416	821622	821717	821783
821515	-	821416	821623	821720	821782
821515	-	821416	821623	821721	821783
821516	-	821416	-	821725	821782
821516	-	821416	-	821726	821783
821513	-	821417	-	-	821785
821513	-	821417	-	-	821786
821513	-	821417	-	-	821787
821514	821432	821417	821622	821716	821785
821514	821432	821417	821622	821717	821786
821514	821432	821417	821622	821718	821787
821514	821432	821417	821622	821719	821788
821515	821433	821417	821623	821720	821785
821515	821433	821417	821623	821721	821786
821515	821433	821417	821623	821722	821787
821515	821433	821417	821623	821723	821788
821516	821434	821417	-	821725	821785
821516	821434	821417	-	821726	821786
821516	821434	821417	-	821727	821787
821514	-	821418	821622	821718	821789
821515	-	821418	821623	821722	821789
821515	-	821418	821623	821723	821790

Cable fixing bars	Wide mounting plate	Union mounting plate	Door drawing desk	Ventilation roof	Separation plate
821515	-	821416	821623	821721	821783
821516	-	821416	-	821725	821782
821516	-	821416	-	821726	821783
821517	-	821416	821622 (2x)	821729	821782
821517	-	821416	821622 (2x)	821730	821783
821515 (x2)	-	821416	821623 (2x)	-	821782
821515	821433	821417	821623	821721	821786
821516	821434	821417	-	821725	821785
821516	821434	821417	-	821726	821786
821516	821434	821417	-	821727	821787
821516	821434	821417	-	821728	821788
821517	821435	821417	821622 (2x)	821729	821785
821517	821435	821417	821622 (2x)	821730	821786
821517	821435	821417	821622 (2x)	821731	821787
821517	821435	821417	821622 (2x)	821732	821788
821515 (x2)	-	821417	821623 (2x)	-	821785
821516	821434	821418	-	821727	821789
821517	821435	821418	821622 (2x)	821731	821789

Cable fixing bars	Wide mounting plate	Union mounting plate	Door drawing desk	Ventilation roof	Separation plate
821514	-	-	821622	821716	-
821515	-	-	821623	821720	-
821516	-	-	-	821725	-
821514	-	-	821622	821716	-
821515	-	-	821623	821720	-
821516	-	-	-	821725	-
821514	-	-	821622	821716	-
821515	-	-	821623	821720	-
821516	-	-	-	821725	-

Cable fixing bars	Wide mounting plate	Union mounting plate	Door drawing desk	Ventilation roof	Separation plate
821517	-	-	821622 (2x)	821729	-
821517	-	-	821622 (2x)	821729	-
821515 (2x)	-	-	821623 (2x)	-	-
821517	-	-	821622 (2x)	821729	-
821515 (2x)	-	-	821623 (2x)	-	-

A

B

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D

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J/X



A

B

C

D

E

F

G

H

I

J/X

Accessories



Side panels

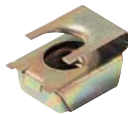
Easy one man assembly. Sealed by an extruded, one piece polyurethane gasket and mounted with 8 screws.
Can be replaced by the side door.
IP56 / NEMA 4, 12, 13.
Material: 1.5 mm sheet steel.
Finish: structure powder paint, RAL 7035
Set with two pieces.

H	D		
1600	600	821336	1 set
1800	400	821337	1 set
1800	500	821338	1 set
1800	600	821339	1 set
2000	400	821340	1 set
2000	500	821341	1 set
2000	600	821342	1 set
2000	800	821343	1 set
2200	600	821344	1 set
2200	800	821345	1 set
2200	900	821346	1 set

Clip-on cage nuts

821347 1 set

M6 - for fixing side panels.
Set with 50 pieces



Countersunk screws

821348 1 set

Torx countersunk screws M6 x 16
Set with 250 pieces



Plinths, front/rear

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 plinth side panels are to be ordered separately (p. 53). 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 height. All panels have double bends.
Materials: corner pieces in 2,5 mm zinc plated steel, panels in 2 mm sheet steel.
Finish: structure powder paint, RAL 7022
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 for side panels and transversal profiles.
Set with front and rear plinth.



		H	W
821349	1 set	100	400
821351	1 set	100	600
821353	1 set	100	800
821354	1 set	100	1000
821355	1 set	100	1200
821357	1 set	100	1400
821358	1 set	200	400
821360	1 set	200	600
821361	1 set	200	800
821363	1 set	200	1000
821364	1 set	200	1200
821365	1 set	200	1400

Accessories



Plinth side panels

Side panels to cover the depth of the plinth. Double bended panels for maximum strength. For 200 mm height use either two 100 mm plinths or one 200 mm high plinth.

Material: 2 mm sheet steel.

Finish: structure powder paint, RAL 7022

Set with 2 pieces.

H	D		
100	400	821366	1 set
100	500	821367	1 set
100	600	821368	1 set
100	800	821369	1 set
100	1000	821371	1 set
200	400	821372	1 set
200	500	821373	1 set
200	600	821374	1 set
200	800	821375	1 set
200	1000	821377	1 set



Ventilated front/rear plinth panels

Front and rear plinth sections with ventilated panels. Can be used in combination with the ventilated bottom plates. 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 (see above) 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 height. All panels have double bends.

Materials: corner pieces in 2.5 mm zinc plated steel, panels in 2 mm sheet steel.

Finish: structure powder paint, RAL 7022

Pack quantity: 1 set of 4 corner pieces including covers, 1 front and 1 rear panel with mounting material for side panels and transversal profiles.

Set with front and rear panel.

W = 600	821379	1 set
W = 800	821380	1 set
W = 1000	821381	1 set

Plinth transversal profiles

Acts as a stabiliser when cabling between coupled enclosures and full plinth side panels obstruct the cable routing. Can be used with 100 and 200 mm high plinths.

Material: 2 mm sheet steel.

Finish: structure powder paint, RAL 7022

Set with 2 pieces.



821383	1 set	D = 400
821384	1 set	D = 500
821385	1 set	D = 600
821387	1 set	D = 800
821389	1 set	D = 1000

Ventilated bottom plates

Three piece bottom plates.

Can be used in combination with a ventilated plinth.

Material: 1.5 mm perforated zinc plated steel.



		W	D
821390	1	600	600
821391	1	600	800
821392	1	800	600
821393	1	800	800

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Accessories



Mounting plates

Standard mounting plate. Fixing bracket kit 821419 to be ordered separately. Can also be mounted in the side of an enclosure by using bracket kit 821415 or slid in by the side by using the sliding profile (p. E.22).
Material: 3 mm galvanised steel.

H	W	h	w		
1600	600	1494	494	821395	1
1600	800	1494	694	821396	1
1600	1000	1494	894	821397	1
1600	1200	1494	1094	821398	1
1800	500	1694	394	821399	1
1800	600	1694	494	821400	1
1800	800	1694	694	821401	1
1800	1000	1694	894	821402	1
1800	1200	1694	1094	821403	1
2000	500	1894	394	821404	1
2000	600	1894	494	821405	1
2000	800	1894	694	821406	1
2000	1000	1894	894	821407	1
2000	1200	1894	1094	821408	1
2200	600	2094	494	821409	1
2200	800	2094	694	821410	1
2200	1000	2094	894	821411	1
2200	1200	2094	1094	821412	1



Mounting plate fixing brackets

For extra fixing of the mounting plate in the middle in addition to the normal fixing top and bottom.
Set with 2 pieces

821414 1 set



Mounting plate adjustment brackets

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.
Set with 2 pieces.

821413 1 set

Side mounting plate brackets

821415 1 set

To mount the standard mounting plate in the side of the enclosure frame.
Provides a flat mounting surface with the profiles.
Material: 3 mm galvanised steel.
Set with 4 pieces.



Union mounting plates

Covers the space between pairs of adjacent mounting plates to provide a continuous working surface, when two enclosures are mounted together.
Material: 2 mm galvanised steel.



821416 1 H = 1800

821417 1 H = 2000

821418 1 H = 2200

Mounting plate brackets

821419 1

To fix mounting plates to the furthest position in the rear of the enclosure, including adjustment brackets for depth adjustment in steps of 25 mm. Brackets are needed when an extra mounting plate is required.
Material: 3 mm zinc plated steel.
Pack quantity: 2 top brackets and 2 bottom sliding brackets, 2 adjustment brackets with mounting material.



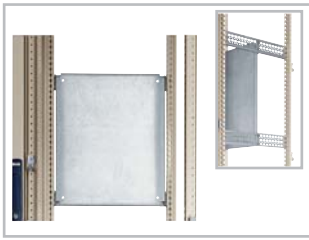
Wide mounting plate

To be mounted on sliding profiles (p. 56).
Nominal width equals the enclosure width.
Material: 3 mm galvanised steel.



		H	W
821432	1	2000	600
821433	1	2000	800
821434	1	2000	1000
821435	1	2000	1200

Accessories



Partial mounting plate

Can be mounted in any height or depth position within the 25 mm hole pattern. Appropriate sizes can also be used in the sides of the enclosure by using the corresponding depth profiles. For more mounting levels and easy exchange of defective components. Material: 3 mm galvanised steel.

For enclosure

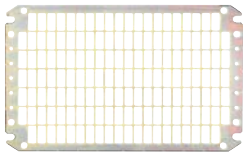
H/W	W/H	h/w	w/h		
400	400	294	294	821420	1
400	500	294	394	821421	1
600	400	494	294	821422	1
600	500	494	394	821423	1
600	800	494	694	821424	1
600	1000	494	894	821425	1
800	400	694	294	821426	1
800	800	694	694	821427	1
1000	400	894	294	821428	1
1000	800	894	694	821429	1
1200	400	1094	294	821430	1
1200	600	1094	494	821431	1

Universal mounting profile

40 mm wide and 25 mm high profile, which can be mounted in all directions in the enclosure frame. Four profiles with mounting material are packed in one package. Can be used in combination with the click-in profile. 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 foreseen. Material: zinc plated steel. Set with 4 pieces.



821442	1 set	L = 400
821443	1 set	L = 500
821444	1 set	L = 600
821445	1 set	L = 800
821446	1 set	L = 1000
821447	1 set	L = 1200
821448	1 set	L = 1600
821449	1 set	L = 1800
821450	1 set	L = 2000
821451	1 set	L = 2200



Telequick mounting plate

Simplifies installation and equipment fitting. Rectangular holes 26 x 11 mm to obtain required fixing positions with snap-nuts. The nuts can be moved around within the rectangular hole. Material: 2 mm galvanised steel.

For enclosure

H	W		
500	400	821460	1
600	400	821461	1
600	500	821462	1
600	600	821463	1
800	600	821464	1
1000	800	821465	1

Vertical dividing profile

Fitted in the centre of 1200 or 1600 mm wide enclosures to give standard mounting facilities of a 600 or 800 mm wide enclosure. This enables separate fitting of equipment such as swing frames, system profiles etc., in either side of the enclosure. Adjustable in depth within the 25 mm hole pattern. Material: 2 mm zinc plated steel. Set with 2 pieces.



For enclosure

821466	1 set	H = 1600
821467	1 set	H = 1800
821468	1 set	H = 2000
821469	1 set	H = 2200



Click-in profile

Can be used in width and depth directly onto the enclosure profile or in combination with the universal mounting profile. They have double bended returns for more rigidity and three rows of hole patterns (in the front) for cage nut fixing and self tapping screws. Set with 4 pieces. Material: 1.5 mm zinc plated steel.

For enclosure

W/D	w/d		
400	335	821436	1 set
500	435	821437	1 set
600	535	821438	1 set
800	735	821439	1 set
1000	935	821440	1 set
1200	1135	821441	1 set

Vertical depth dividing profile

In combination with the vertical dividing profile there is a full separation of the enclosure into two stand-alone enclosures within one frame. Can be used in combination with the click-in profile and the universal mounting profile. Material: zinc plated steel. Set with 2 pieces.

For enclosure

821470	1 set	D = 400
821471	1 set	D = 500
821472	1 set	D = 600
821473	1 set	D = 800



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Accessories

Fixing brackets

821474	1 set
821475	1 set

Use 821474 fixing brackets for mounting vertical (depth) dividing profiles into 1200 mm wide enclosures.

Use 821475 fixing brackets for mounting vertical (depth) dividing profiles into 1600 mm wide enclosures.

Material: zinc plated steel.
Set with 4 pieces.



Transversal sliding profile

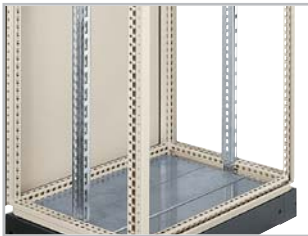
To be used when installing a wide or standard mounting plate.

Adjustable in depth in steps of 25 mm.

Material: 2 mm galvanised steel.
Set with 2 pieces.

For enclosure

W = 600	821452	1 set
W = 800	821453	1 set
W = 1000	821454	1 set
W = 1200	821455	1 set



Height profiles

Vertical profiles with 25 mm hole pattern, to support DIN rails and appropriate telequick mounting plates. Adjustable in depth in steps of 25 mm.

Material: 2 mm zinc plated steel.
Set with 2 pieces.

For enclosure

H = 1600	821476	1 set
H = 1800	821477	1 set
H = 2000	821478	1 set
H = 2200	821479	1 set



Snap nuts for telequick plates

821480	1 set
M4	

821481	1 set
M5	

821482	1 set
M6	

Set with 100 pieces

External coupling brackets

821485	1 set
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Brackets mounted on the outside hole pattern of the frame, ensuring a strong and 3 dimensional alignment of the coupled enclosures with "auto spacer" function. This method of coupling enclosures has also the advantage of realising a direct earthing connection between the enclosure frames.
Material: 3 mm zinc plated steel (6 pieces).



Internal coupling brackets

821486	1 set
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Brackets provide a rigid reinforcement of the enclosure assembly.
Automatic spacing between the enclosures is ensured. Material: 3 mm zinc plated steel.
Set with 6 pieces.



Internal corner coupling brackets

821487	1 set
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For extra support when coupled enclosures are fully equipped and require heavy duty lifting. Material: 3 mm zinc plated steel.
Set with 4 pieces.



Corner coupling kit

821488	1 set
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The enclosures can be coupled together side to front or side to side.
The IP rating is hereby secured
Material: 1.5 mm sheet steel
Finish: structure powder paint RAL 7035.



Depth coupling kit

For coupling enclosures rear to rear.
Material: profiles in 2 mm and covers in 1.5 mm sheet steel.
Protection: IP55
Finish: structure powder paint RAL 7035



For enclosure

821489	1	H = 1600
821490	1	H = 1800
821491	1	H = 2000

Accessories



Lifting eye bolts

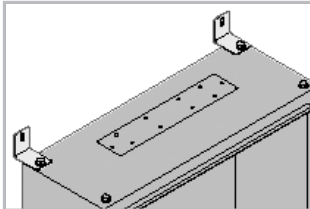
821493	1 set
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M12 thread. Complies with DIN 580 lifting requirements.
Set with 2 pieces.

Countersunk screws

821497	1 set
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Torx self tapping countersunk screws
M6 x 12
Set with 250 pieces.



Wall fixing brackets

821492	1 set
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To fix the enclosure to the wall by using the M12 screws on the top.
Prevents the enclosure from tipping over e.g. on board of ships.
Set with 2 pieces.
(Available on request.)

Self tapping screws

Torx self tapping screws for the fitting of accessories, click in profiles, earthing etc.
Set with 250 pieces.

821498	1 set
M5	
821499	1 set
M6	



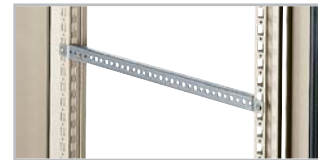
Lifting device

821494	1 set
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For optimal weight distribution when lifting coupled enclosures.
To be used in combination with internal corner coupling brackets.
Material: 5 mm zinc plated steel.
Set with 4 pieces.

Side mounting bar

For fixing cables, cable guides, etc. in the side or the width of an enclosure.
Material: 2 mm zinc plated steel.
Set with 10 pieces.



For enclosure

Cage nuts

821495	1 set
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Cage nuts M6 designed for universal use on the enclosure frame profiles and the profile system.
Set with 50 pieces.



821500	1 set	W/D = 400
821501	1 set	W/D = 500
821502	1 set	W/D = 600
821503	1 set	W/D = 800

Screws for clip-on cage nuts

821496	1 set
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Socket head screws M6x12 for clip-on cage nuts
Set with 250 pieces



Carrier bars

Used for heavy units, such as transformers, fitted in the bottom of the enclosure.
Material: 3 mm zinc plated steel.
Set with 2 pieces.



For enclosure

821504	1 set	W/D = 400
821505	1 set	W/D = 500
821506	1 set	W/D = 600
821507	1 set	W/D = 800

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Accessories



For enclosure

W = 400	821508	1 set
W = 600	821509	1 set
W = 800	821510	1 set
W = 1000	821511	1 set
W = 1200	821512	1 set

Cable fixing bar

Mounted above the bottom plates. Holds standard cable clamps to secure incoming cables. Fully adjustable in depth. Material: 2 mm zinc plated steel. Set with 2 pieces.



For enclosure

W = 400	821513	1 set
W = 600	821514	1 set
W = 800	821515	1 set
W = 1000	821516	1 set
W = 1200	821517	1 set

Cable fixing bar

Suspended below the bottom plates thereby maximising the full usable space in the enclosure. Holds standard cable clamps to secure incoming cables. Fully adjustable in depth. Material: 2 mm zinc plated steel with plastic counter parts. Set with 2 pieces.



Size

06-12 mm	821518	1 set
10-14 mm	821519	1 set
12-16 mm	821520	1 set
14-18 mm	821521	1 set
18-22 mm	821522	1 set
22-26 mm	821523	1 set
26-30 mm	821524	1 set
30-34 mm	821525	1 set
34-38 mm	821526	1 set
38-42 mm	821527	1 set
56-64 mm	821528	1 set

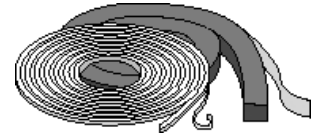
Cable clamps

To secure incoming cables onto the cable fixing bars. Holds the cable in position and supports the weight. Material: zinc plated steel. Set with 25 pieces.

Cable entry foam and bottom plate gasket

821529 1

The bottom of the enclosure is sealed by the use of an adhesive gasket applied on to the frame around the bottom openings. The cables are sealed by the addition of adhesive foam placed between the bottom plates. The elasticity and the size of this foam assure a tight seal around most cables. Pack: 1.6 m adhesive foam (30 x 25 mm) and 6 m adhesive gasket (4.5 x 8 mm).



EMC cable entry and bottom plate gasket

821530 1

The bottom of the enclosure is sealed by the use of an adhesive gasket applied to the frame around the bottom opening. The cables are sealed by the addition of adhesive foam placed between the bottom plates. The elasticity and the size of this foam assure a tight seal around most cables. Pack: 1.6 m adhesive EMC gasket for cable entry and 6 m adhesive bottom plate gasket.



Earthing cable

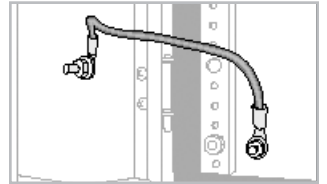
For earthing or potential compensation between units. Set with 10 pieces. Material: 6 mm² copper wire (yellow-green).

821533 1 set

L = 220 - M8 x M6

821534 1 set

L = 300 - M8 x M8



Earthing connection set for panels

Earth connection for the fixing of the earthing straps & cables to panels, mounting plates or profiles. Set with 10 pieces.

821537 1 set

M6

821538 1 set

M8



Earthing connections for frame

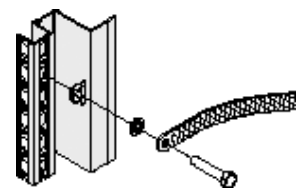
Earthing connections for the fixing of the earthing straps & cables to the enclosure frame. Set with 10 pieces.

821531 1 set

M6

821532 1 set

M8



Accessories



Earthing strap

For earthing or potential compensation between panels and enclosure frame.
Material: Tinned electrolytic copper wire with solder connection points
L = 300 mm.
Set with 10 pieces

821535	1 set
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Cross sectional area = 16 mm²
Ø holes = 8.5 mm - strap width = 15 mm

821536	1 set
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Cross sectional area = 25 mm²
Ø holes = 10.5 mm - strap width = 23 mm



Plain door

Standard door equipped with 3 mm double bit locking system and door frame.
Door mounting kit (hinges, rod catchers) to be ordered separately.
Allows all the options of the locking program and 180° hinges.
Material: 2 mm sheet steel
Finish: structure powder paint, RAL 7035.

H	W		
1600	600	821541	1
1800	600	821542	1
1800	800	821543	1
2000	600	821544	1
2000	800	821545	1
2200	600	821557	1
2200	800	821558	1

Glazed door

Standard door with fitted clear safety glass to view the inside of the enclosure.
Equipped with 3 mm double bit locking system and door frame. Allows all options of the locking program. Use hinge kit if not for replacement of standard door
Protection: IP55.
Material: frame 2 mm sheet steel.
Viewing area: 4 mm clear safety glass.
Finish: structure powder paint, RAL 7035



		H x W	h x w
821561	1	1600 x 600	1376 x 415
821562	1	1800 x 600	1576 x 415
821563	1	1800 x 800	1576 x 615
821564	1	2000 x 600	1776 x 415
821565	1	2000 x 800	1776 x 615
821566	1	2200 x 600	1976 x 415
821567	1	2200 x 800	1976 x 615

Side door

Replacing the side panel. For easy access to the equipment inside the enclosure or when enclosures are mounted rear to rear.
Lock: standard 3 mm double bit lock which makes all lock options possible.
Material: 2 mm sheet steel.
Finish: structure powder paint RAL 7035



		H x D
821609	1	1800 x 500
821610	1	1800 x 600
821611	1	2000 x 500
821612	1	2000 x 600

Door mounting kit

Required when fitting a door to the rear of an enclosure.
1 kit consists of 4 standard hinges, 4 rod catchers and mounting material .

821617	1
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For single door enclosures

821618	1
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For double door enclosures



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Accessories



Door switch

821577 1

Activates any electrical device (lighting, coolers, etc.). Can be fitted after installing the enclosure thereby keeping the door opening free. Fixed (without screws) on the inside hole pattern of the enclosure frame. Cable entry M 20, UL-CSA approved. Switching load 6A-230V.



Door switch leads

821578 1 set

Door switch connecting cable. Set with 5 pieces.



Enclosure light

Fluorescent lamp equipped with switch, electronic starter, integrated socket and a protection cap. A male GST 18/3 connector is provided for the connection to the power on one side and by a pass-through circuit a female connector allow a further connection on the other side. An additional connector ST 17/2 allows the command of the lamp by a door switch. Standard socket: 230V / 16A Schuko. Other country specific sockets available on request. Model with electronic starter for less disturbances available on request. With tube and fixing devices.

824875 1

14W - 400 mm - 115V*

824876 1

14W - 400 mm - 115V*

824877 1

18W - 630 mm - 220V

824878 1

18W - 630 mm - 220V

* Available on request

Inner door

Mounted on vertical plates, which prevent access on the sides. The inner door provides a hinged mounting surface for equipment behind a standard or glazed front door. A mounting space of 80 mm is available between the doors when the inner door is in forward position. The inner door can be adjusted in depth by steps of 25 mm. The mounting plate remains usable behind the inner door. The door is equipped with two locks, 3 mm double bit, and plastic handles

Material: 1.5 mm sheet steel.

Finish: structure powder paint, RAL 7035.



		H	W
821613	1	1800	600
821614	1	1800	800
821615	1	2000	600
821616	1	2000	800

Door hinges 180°

821619 1 set

Enables the door to open 180 degrees, even when enclosures are coupled together.

Material: die-cast zinc. Finish: blue

Set with 4 pieces.



Door stop

821620 1

To lock a door in open position.

Mounted directly to the doorframe and into the enclosure profile. The full mounting area of the frame is kept free.

Material: zinc plated steel.



Door wheel

821621 1 set

For easier closing and positioning of a heavily equipped door (cooling units etc).

Mounted directly to the door frame on the bottom of the door.

Set with 2 pieces.



Accessories

Drawing desk

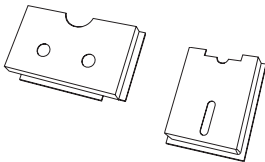
Mounted directly to the doorframe and it provides a stable surface for documents, computer or measuring devices. The desk can be easily folded and locked within the doorframe space. An automatic safety positioning system locks the desk at angles of 55, 70 and 90 degrees. The drawing desk W=800 can also be mounted on a 1000 mm wide door, by the use of the door mounting profiles 1000 mm
Material: 1.5 mm sheet steel.
Finish: structure powder paint, RAL 7035.



W = 600	821622	1
W = 800	821623	1

Document pocket

811516 1
DIN A4 - W x H = 325 x 180
832000 1
DIN A5 - transparent
H x W = 225 x 155



Drawing pocket

A large steel document pocket fixed directly onto the door frame. Usable depth: 68 mm.
Material: 1.5 mm sheet steel.
Finish: structure powder paint, RAL 7035.



W = 500/1000	821625	1
W = 600/1200	821626	1
W = 800/1600	821627	1
W = 1000	821628	1

Door frame mounting profiles

Horizontal assembly profiles with 25 mm hole pattern. Fit directly onto door frame. For easy mounting of light equipment by using torx self tapping screws M5, cables routing etc.
Material: 2 mm zinc plated steel.
Set with 2 pieces.



821633	1 set	W = 400
821634	1 set	W = 500
821635	1 set	W = 600
821636	1 set	W = 800
821637	1 set	W = 1000

Cable conduit

For flexible and safe protection of cables installed between the door or swing frame and the enclosure interior. Highly flexible and halogen free.
Material: polyethylene.
Set with 25 m.



821638	1 set	Ø = 16
821639	1 set	Ø = 29
821640	1 set	Ø = 36
821641	1 set	Ø = 48

Universal conduit holder

Universal holder for cable conduit. Can be mounted horizontally or vertically on any 25 mm hole pattern of door frame, enclosure frame or accessory profile.
Material: polycarbonate.
Set with 10 pieces.



821642	1 set	Ø = 16
821643	1 set	Ø = 29
821644	1 set	Ø = 36
821645	1 set	Ø = 48

Cable conduit

For flexible and safe protection of cables installed between the door or swing frame and the enclosure interior. Highly flexible and halogen free.
Material: polyamide, UL approved.
Set with 25 m.

821646	1 set	Ø = 16
821647	1 set	Ø = 29
821648	1 set	Ø = 36
821649	1 set	Ø = 48



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Accessories



Cooling door

Standard door with integrated cooling unit to be fitted to the OPTIMAL FS single door series. Attractive "low profile" design, that bleeds in harmoniously with any machine or system. Optimum cooling by virtue of extremely long passage of air in the inner airflow circuit. Aluminum and stainless steel chassis. Reliability under even the most extreme conditions, since the electronics in the cooling unit are located in the cooling circuit. Power indicator light on the front. Use hinge kit 821617 if used in front of frame without door. Equipped with 3 mm double bit locking system. Protection: IP54 against the enclosure, IP34 against the ambience (IEC 60529), when used as recommended. Standards: UL and cUL approved. Material: door 2 mm and cooler cover 1.5 mm sheet steel.

H	W	Watt	Volt		
1800	600	1000	230	821650	1
1800	600	1500	230	821651	1
1800	600	2000	400	821652	1
1800	600	2500	400	821653	1
1800	800	1000	230	821654	1
1800	800	1500	230	821655	1
1800	800	2000	400	821656	1
1800	800	2500	400	821657	1
2000	600	1000	230	821658	1
2000	600	1500	230	821659	1
2000	600	2000	400	821660	1
2000	600	2500	400	821661	1
2000	800	1000	230	821662	1
2000	800	1500	230	821663	1
2000	800	2000	400	821664	1
2000	800	2500	400	821665	1

Finish: structure powder paint, RAL 7035



Roof ventilation unit

Ventilation unit for mounting on top of the enclosure, providing high air flow and low noise level by the use of a centrifugal fan. Provided with sealing gasket to assure an IP 33/NEMA 1 protection. Free airflow 450 m³/h. Noise level: 61 dB. Maximum temperature: 50 °C. UL approved. Material: 1.5 mm sheet steel. Finish: structure powder paint RAL 7035. Package: 1 fan unit with connection cable, mounting material and installation template.

821666 1

230VAC - 50/60Hz

821667 1

115VAC - 50/60Hz

Roof exhaust unit

821668 1

Ventilation unit for mounting on the top of the enclosure providing natural ventilation i.e. without a fan. A sealing gasket to assure an IP 33 protection is supplied between the unit and the enclosure roof. The standard fitted dust filter protects the equipment up to a level of IP 43/NEMA 1. Material: 1.5 mm steel. Finish: structure powder paint RAL 7035. Package: 1 exhaust unit with mounting material and installation template.



Lock cover

821670 1

For inserts



Swing handle

821671 1

Neutral handle



T-handles

821706 1

Without cylinder



Swing handle

821690 1

For profile half cylinder locks



Accessories

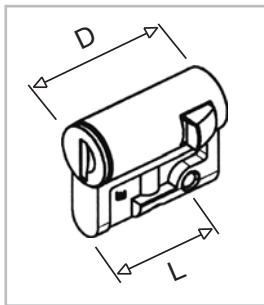


Keys	
832022	1 set
For safety lock No. V2432E (2 pieces)	
832026	1
For safety lock with 8 mm square	
832027	1
For safety lock with 8 mm triangle	
832072	1
For safety lock with 11 mm triangle	
832028	1
For safety lock with double bit 3 mm	

Fan	
220-240VAC Fan. Air flow 160 m ³ /h.	
Wiring kit consist of 6 pieces for connection to fan. Round/flat connection.	
821738	1
Inside mounting	
821739	1
Top mounting	
821740	1
Wiring kit for max. 6 fans	



Profile half cylinder locks	
Standard: D = 40 mm - L = 30,5 mm	
On demand: D = 45 mm - L = 35,5 mm	
832030	1
With 2 keys V2432-E	
832031	1
With 2 keys 1242-E	
832465	1
With 2 keys 455-E	
832466	1
With 2 keys 405-E	
843435	1
With 1 square key, 6 mm	
832032	1
With 1 square key, 8 mm	
832033	1
With 1 triangular key, 8 mm	
832034	1
With 1 triangular key, 11 mm	
832029	1
With 1 double-bit key, 3 mm	



Fan roof plates	
For mounting a combination of 6 fans (821739) or closing plates for unused holes in the top of the enclosure. To be used in combination with the ventilation roofs (821716-821732).	
Material: 2 mm zinc plated steel.	
W x D	
821733	1 600 x 600
821734	1 600 x 800
821735	1 800 x 600
821736	1 800 x 800
821737	1 800 x 900



Closing plate	
To close unused fan cut-outs.	
Material: 1.5 mm sheet steel.	
821862	1



Inserts	
Without cover for standard lock and T-handle	
821672	1
Double bit 3 mm	
821675	1
Square 8 mm	
821676	1
Triangle 7 mm	
821677	1
Triangle 8 mm	



A

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Accessories



Ventilation roof

Raised roof with 2.5 mm ventilation slots and filter material. Increases the enclosure height by 40 mm. IP31 and NEMA 1
Temperature resistance: 100°C.

Material: 1.5 mm sheet steel.

Finish: structure powder paint RAL 7035.

Filter material: EU 4 acc. to DIN 24185.

Package consists of 1 piece with mounting brackets and ventilation filter.

W x D			
600 x 400	821716	1	
600 x 500	821717	1	
600 x 600	821718	1	
600 x 800	821719	1	
800 x 400	821720	1	
800 x 500	821721	1	
800 x 600	821722	1	
800 x 800	821723	1	
800 x 900	821724	1	
1000 x 400	821725	1	
1000 x 500	821726	1	
1000 x 600	821727	1	
1000 x 800	821728	1	
1200 x 400	821729	1	
1200 x 500	821730	1	
1200 x 600	821731	1	
1200 x 800	821732	1	



Ventilated bottom plates

Three piece bottom plates. Can be used in combination with a ventilated plinth.

Material: 1.5 mm perforated zinc plated steel.

W x D			
600 x 600	821390	1	
600 x 800	821391	1	
800 x 600	821392	1	
800 x 800	821393	1	
800 x 900	821394	1	



Spacer kit

821746 1

Provides ventilation by raising the roof panel 15 mm.

Material: zinc plated steel

Pack: 1 kit = 4 pieces

Mounting profiles for telescopic ventilated shelf

Profiles for partial and full depth mounting.

Material: 2 mm zinc plated steel.

Set with 2 pieces.

	821872	1 set
600 deep		
	821873	1 set
800 deep		

Ventilated shelf

Mounted directly to enclosure frame.

The load carrying capacity is 50 kg.

Material: 2 mm, RAL 7035.



For enclosure

			W	D	w	d
	821771	1	600	600	509	555
	821772	1	600	800	509	755
	821773	1	800	600	709	555
	821774	1	800	800	709	755
	821775	1	800	900	709	855

Telescopic ventilated shelf

Mounted directly to enclosure frame. The

load carrying capacity is 50 kg.

Material: 2 mm, RAL 7035.

Pack: 1 shelf + 1 pair of telescopic slides



For enclosure

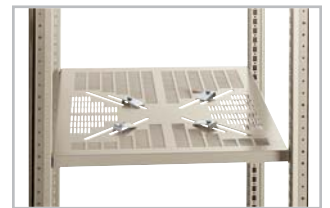
			W	D	w	d
	821778	1	600	600	460	550
	821779	1	600	800	460	750
	821780	1	800	600	660	550
	821781	1	800	800	660	750

Monitor shelf

Mounted directly on to the enclosure

frame. Provided with clamp-kit to hold the monitor in position

Material: 2 mm, RAL 7035.



For enclosure

			W	D	w	d
	821776	1	600	600	509	555
	821777	1	600	800	509	755

Accessories



Separation plates

Separates two coupled enclosures.

To be fixed with coupling kit 821803.

To achieve IP33/NEMA 1 a neoprene gasket 821804 can be fixed to the panel.

Material: 1.5 mm galvanised steel.

H x D			
1800 x 400	821782	1	
1800 x 500	821783	1	
2000 x 400	821785	1	
2000 x 500	821786	1	
2000 x 600	821787	1	
2000 x 800	821788	1	
2200 x 600	821789	1	
2200 x 800	821790	1	

Marshalling plates

Connector plate between two enclosures, or to be used in combination with a raised side door. Hole patterns for 16 pin or 24 pin connectors.

To be mounted with bracket set 821803.

Material: 2 mm galvanised steel.

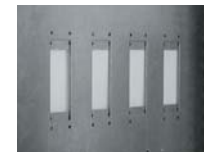


			H x D
821794	1		1800 x 500
821795	1		1800 x 600
821796	1		2000 x 500
821797	1		2000 x 600

Cover plates

To cover unused connector cut-outs of a marshalling plate or as adapter for 16 pins connectors to allow the mix of both type of connectors.

Material: 2 mm galvanised steel. (including seal)



		Description	Size
821798	1	Adapter plate	4 x 16 pin
821799	1 set		24 pin to 16 pin (4 pcs)
821800	1 set	Cover plate	16 pin (20 pcs)
821801	1 set		24 pin (20 pcs)
821802	1		4 x 24 pin

Internal coupling kit

821803 1 set

For coupling enclosures. To be used when separation or marshalling plates are fitted.

Material: 3 mm zinc plated steel.

Set with 12 pieces.



Raised side door

The side door is used for easy and fast access to the instrumentation fitted inside the enclosure as well as for mounting of accessories in the side of the enclosure.

Material: 2 mm sheet steel

Finish: structure powder paint RAL 7035.

H x D			
2000 x 500	821792	1	
2000 x 600	821793	1	

Gasket for EMC shielding

821805 1

To obtain an EMC shielded section in a suited panel in combination with the separation plate.

Protection: IP 33/NEMA 1.



Separation plate gasket

821804 1

To obtain IP 33/NEMA 1 sealing in combination with the separation plates.



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Accessories



Levelling feet

821813 1 set

Adjustable feet for the leveling of enclosures placed on uneven ground. Mounted directly to the frame. Maximum load: 300 kg per foot. Adjustment stroke = 30 mm.
Set with 4 pieces.



Wheels

For easy moving of the enclosure.
To be mounted to the frame or base by brackets.
Maximum load: 240 kg.
Raises the enclosure by 70 mm.
Set with 4 pieces.

821810 1 set

Without breaks

821811 1 set

2 with breaks / 2 without breaks

821812 1 set

With breaks



Cage nuts

M6 - designed for universal use on the enclosure frame profiles and the profile system.
Set with 50 pieces.

821868 1 set

M6 - for 2.0 mm

821869 1 set

M8 - for 1.5 mm

821870 1 set

M8 - for 2.0 mm



Paint can

Airdrying paint, for repairs and touch-up of powder coated or wet painted surfaces.
Contents: 300 ml

821871 1

Black RAL 7022

821874 1

Light grey RAL 7035



- F.5 EH1 (non-metallic)
- F.6 EH2 (non-metallic)
- F.10 EH3 (non-metallic)
- F.20 EH4 (non-metallic)
- F.22 EH6 (non-metallic)
- F.24 RVS (stainless steel)

Application guide / e-catalogue

Insulated boxes

Insulated wall mounting cabinets

Wall mounting system enclosures

Steel wall mounting enclosures

Steel floor standing enclosures

Pedestals

Subterranean enclosures

Climate control

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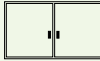
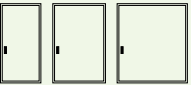
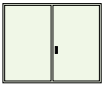
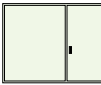
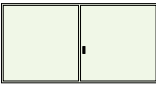
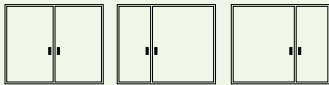
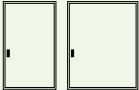
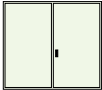
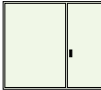
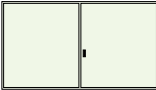
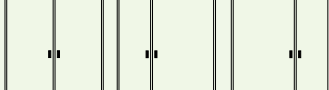

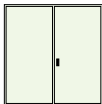
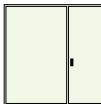
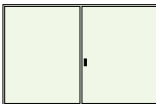
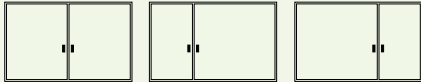

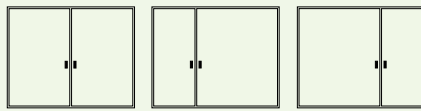
Overview non-metallic pedestals

	EH1 IP43/IP23	EH3/F IP44	EH3/AP IP44	EH3/DC IP44	EH4 IP43	EH6 IP44/IP54
	 752 x 385 x 270	 875 x 590 x 320	 875 x 590 x 320	 875 x 785 x 320	 1600 x 395 x 224	 830 x 470 x 320
	EH2-S IP43 590 x 425 x 240	 875 x 785 x 320	 875 x 785 x 320	 875 x 1115 x 320	 1600 x 495 x 224	 830 x 605 x 320
	 860 x 425 x 240	 875 x 1115 x 320	 875 x 1115 x 320	EH3/GD-AP IP23 875 x 676 x 424	 1600 x 745 x 224	 830 x 800 x 320
	EH2 IP44 1097 x 433 x 240	 875 x 1445 x 320	 875 x 1445 x 320	 875 x 871 x 424	 1600 x 745 x 224	
A			 1125 x 590 x 320	 875 x 1200 x 424	EH4-S IP44 1420 x 320 x 234	
B			 1125 x 785 x 320	 1125 x 676 x 676	 1850 x 320 x 234	
C			 1125 x 1115 x 320	 1125 x 871 x 676		
D			 1125 x 1445 x 320	 1125 x 1200 x 676		
E						
F						
G						
H						
I						
J/X						

H x W x D in mm



Overview stainless steel pedestals

RVS with single door IP43			RVS with double door IP43			RVS with double door and 2 compartments IP43
DIN 00	DIN 0	DIN 1	DIN 2	DIN 3	DIN 4	DIN 2
						
650 x 460 x 355 650 x 595 x 355 650 x 790 x 355			650 x 1120 x 355			650 x 1120 x 355
						
900 x 460 x 355 900 x 595 x 355 900 x 790 x 355				900 x 1120 x 355 900 x 1450 x 355 900 x 1780 x 355		900 x 1120 x 355
						
1000 x 595 x 355 1000 x 790 x 355				1000 x 1120 x 355 1000 x 1450 x 355 1000 x 1780 x 355		1150 x 1120 x 355
						DIN 3 
1150 x 790 x 355				1150 x 1120 x 355 1150 x 1450 x 355 1150 x 1780 x 355		900 x 1450 x 355
						
			1350 x 1450 x 355 1350 x 1780 x 355			1150 x 1450 x 355

H x W x D in mm

Pedestals

A

B

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D

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J/X



Cabinets for underground cable distribution and all kind of outdoor industrial application



Standards

EN 60439-5
IEC 60439-5

A wide range of pedestals has completed our comprehensive range of non-metallic enclosures for several years. In power distribution application pedestals enable the connection of underground cables and the distribution to several consumers within the cabinets. Besides there are lots of applications that require reliable outdoor housings like Telecommunication or Traffic signalling.

Applications

- Power distribution
- Cable television (CATV) in one or two ways
- Telecommunication and electronics
- Traffic signalling and public lighting
- Temporary service for construction sites
- Camping sites and market places
- Marinas
- Water treatment
- Sub-stations
- 48 cm (19") racking systems

Features

- Cabinets to be mounted on a plinth.
- The base is partly buried into the ground.
- For some types the base is an integrated part of the pedestals.
- As with all our polyester boxes and cabinets, the pedestal feature high protection and total insulation \square to BS 5486, Part 1 and IEC 60439.
- Degree of protection is at least IP43.
- Very high mechanical impact strength IK10 (EN 50102) and a high thermal insulation which results in reduced temperature variations within the enclosure.
- All cabinets are corrosion resistant and UV stabilised for outdoor applications.



Small pedestal

Features

- Small outdoor enclosure with integrated base.
- Hood grey colour RAL 7036
 - ventilated version in thermoplastic engineering polymer
 - non ventilated version in hot moulded, glass fibre reinforced polyester
 - blackened triangular zamac locking screws, vandalproof and for all seasons
- Degrees of protection:
 - IP43 for the non ventilated hoods
 - IP23 for the ventilated hoods.
 According to IEC 60529 and BS 5490
- Protection degree IK10 against external mechanical impacts according to EN 50102
- Base in high density polyethylene (HDPE) RAL 9005
- Base resists a ground temperature of -50°C
- The upper part of the base serves as a mounting plate and is provided with three slots for fixation points.
- Moulded-in indication of burial depth.
- Easy to install by one person only (weight: 4.5 kg).

Applications

- Cable television distribution (CATV)
- Gas distribution
- Telecommunication (surface terminal cabinet)
- Camping sites

Standards

EN 60439-5
IEC 60439-5

EH1 - Pedestal

Type	Ref. No.	Pack.
Ventilated, thermoplastic	841017	1
Ventilated, thermoplastic + lock 2432E	841023	1
Non-ventilated, polyester	841016	1
Non-ventilated, polyester + lock 2432E	841022	1
Key for triangular screws	851016	1

Cable television distribution



- Overview of the range ● Page F.2
- Dimensional drawings ● Page J.48
- Specifications for tender documents ● Page J.78
- Power dissipation values ● Page J.124



Pedestals without base

Features

- Enclosure made of hot moulded, glass fibre reinforced polyester.
- Dyed in mass RAL 7035 light grey.
- Protection degree IP43 according to EN 60529, IEC 60529 and BS 5490.
- Total insulation ☐
- Protection degree IK10 against external impacts according to EN 50102.
- Corrosion resistant.
- UV stabilised for outdoor applications.
- Suitable for use in environments from -35° C to + 125°C.
Temporary exceeding temperatures will not be harmful.
- Fully integrated locking clamp, suitable for operation by a half profile cylindrical lock.
- The cylindric lock can be fitted in a recessed lock box, protected by a vandal proof plastic cap.
- The enclosure can be accessed by removing the frontal lift-off segment (not hinged).
- Fixing holes for threaded inserts M6 are provided in the rear panel allowing direct mounting of busbars, a frame, a mounting plate or components.
- The bottom is closed with a bottom plate in glassfibre reinforced polyester, allowing for floor mounting or wall mounting.
- The rainhood shape prevents water stagnation on the roof.

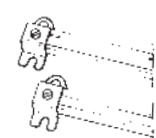
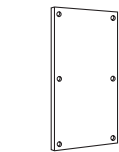
Applications

- Cable TV distribution (CATV)
- Camping sites and market places
- Traffic signalling and public lighting
- Power distribution

Standards

EN 60439-5
IEC 60439-5

EH2-short - Pedestals without base

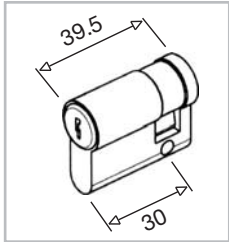


Mounting plate
Pertinax with fixing bolts

Wall fixing unit
Two aluminium C-profiles
with wall fixing lugs

	EH2-S2	EH2-S3
Type	EH2-S2	EH2-S3
H x W x D	590 x 425 x 240	860 x 425 x 240
Ref. No.	842044	842045
H x W x D	450 x 395 x 5	700 x 395 x 5
Ref. No.	842000	842001
Length	510	510
Ref. No.	842056	842056

Accessories



Locks - profile half cylinder type

843001	1
With 2 keys, V2432-E	
843002	1
With 1 square key, 8 mm	
843003	1
With 1 triangular key, 8 mm	
843248	1
With 2 keys A434	

Spare keys are available on request

Vandal proof nameplate holder

843304 1
 Can be placed on every flat surface, by drilling two holes Ø 5.5 mm; the identification window is used as a drill template. Steady against vandalism; it keeps its total isolation .
 Possibility to write on manually and/or to use the standard letteringsystems; the maximal letterheight is 18 mm.
 Usefull dimensions of letters: 18 x 143
 Outside dimensions: 30 x 183 x 5



890846 100
 Threaded inserts M6 x 11



852003 1
 Special tool for securing threaded inserts M6



842004 1
 Support for cable release clamp (to be ordered separately)



Pedestals without base

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D

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F

G

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- Dimensional drawings ● Page J.48
- Specifications for tender documents ● Page J.79
- Power dissipation values ● Page J.124





Column cabinets

Features

- Columns made of hot moulded, glass fibre reinforced polyester.
- Dyed in mass RAL 7035 light grey.
- Protection degree IP44 according to EN 60529, IEC 60529 and BS 5490
- Total insulation ☐
- Protection degree IK10 against external impacts according to EN 50102
- Corrosion resistant.
- UV stabilised for outdoor applications, coated version for improved resistance against UV-corrosion.
- Suitable for use in environments from -35° C to +125°C. Temporary exceeding temperatures will not be harmful.
- Fully integrated locking clamp, suitable for operation by a half profile cylindrical lock.
- The cylindric lock can be fitted in a recessed lock box, protected by a vandal proof plastic cap.
- The enclosure can be accessed by removing the frontal lift-off segments (not hinged).
- Fixing holes for threaded inserts M6 are provided in the rear panel allowing direct mounting of busbars, a frame, a mounting plate or components. Inserts to fix the mounting plate are already installed.
- The base and the rear panel of the column are molded as one part.
- The base allows for stable installation of the column.
- For easy access to the inside of the cabinet, the hinged roof offers an opening angle of 90°.
- The rainhood shape prevents water stagnation on the roof.


Applications

- Power distribution
- Cable TV distribution (CATV)
- Traffic signalling
- Camping sites
- Pump application

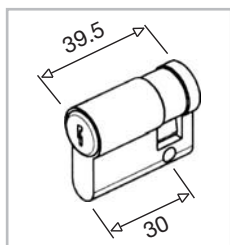
Standards

EN 60439-5
IEC 60439-5

EH2 - Column cabinets

	Type	EH2-NA	EH2-NB	EH2-NC	EH2-ND
Standard	H x W x D	1097 x 433 x 240	1347 x 433 x 240	1622 x 433 x 240	1896 x 433 x 240
	Ref. No.	842072	842073	842074	842075
Coated, for improved resistance against UV-erosion	H x W x D	1097 x 433 x 240	1347 x 433 x 240	1622 x 433 x 240	1896 x 433 x 240
	Ref. No.	842082	842083	842084	842085
 Mounting plate Pertinax with fixing bolts	H x W x D	200 x 395 x 5	450 x 395 x 5	700 x 395 x 5	700 x 395 x 5
	Ref. No.	842002	842000	842001	842001

Accessories



843001 1

With 2 keys, V2432-E



843002 1

With 1 square key, 8 mm



843003 1

With 1 triangular key, 8 mm



843248 1


With 2 keys A434

Spare keys are available on request.

Vandal proof nameplate holder

843304 1

Can be placed on every flat surface, by drilling two holes \varnothing 5.5 mm; the identification window is used as a drill template.

Steady against vandalism; it keeps its total isolation .

Possibility to write on manually and/or to use the standard letteringsystems, the maximal letterheight is 18 mm.

Usefull dimensions of letters: 18 x 143

Outside dimensions: 30 x 183 x 5



Inserts

890846 100

Threaded inserts M6 x 11



852003 1

Special tool for securing threaded inserts M6



842004 1

Support for cable release clamp (to be ordered separately)



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- Dimensional drawings ● Page J.49
- Specifications for tender documents ● Page J.79
- Power dissipation values ● Page J.124





Applications

- Power distribution
- Water treatment
- Cable television distribution (CATV) in one or two ways
- Camping sites and market places
- Traffic signalling and public lighting



Pedestals

Common features

- Cabinets made of hot moulded, glass fibre reinforced polyester.
- Dyed in mass RAL 7035 light grey.
- Delivered in kit-form (on request: factory assembled).
- Protection degree IP44 according to EN 60529, IEC 60529 and BS 5490
- Total insulation \square
- Protection degree IK10 against external impacts according to EN 50102
- Corrosion resistant.
- UV stabilized for outdoor applications, coated cabinets for increased resistance against UV-corrosion on request.
- Suitable for use in environments from -35°C to $+125^{\circ}\text{C}$. Temporary exceeding temperatures will not be harmful.
- The open door can be manually unhinged to allow free access for maintenance. Door opening angle exceeds 180° .
- Studs are moulded in the rear panel which can receive M8 inserts to allow direct mounting at busbars, a frame or a mounting plate for components.
- Fixation points at the side panel are foreseen to mount busbars.
- Supplied with open bottom.
- To be mounted on a basement according to DIN 43629 standard dimensions between the fixation points.
- The rainhood shape prevents water stagnation on the roof.
- Cabinets can be coupled together side to side or double deep.
- Removable bottom profile for easy cable access without tools.

Standards

EN 60439-5
IEC 60439-5

EH3/F

Cabinets with flat surface







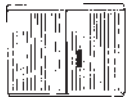
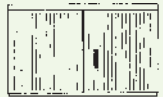


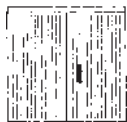
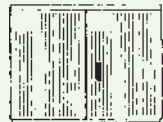


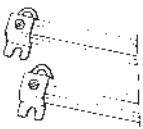
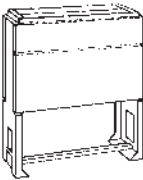
- Four sizes in four different widths; all sizes feature the same height and depth.
- Three point locking mechanism, operated by a swing handle.
- The swing handle is designed to receive a half profile cylindrical lock.

EH3/AP

Cabinets with anti fly posting surface

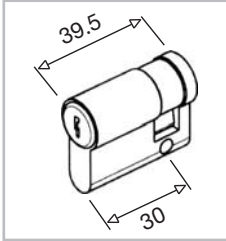
- Eight sizes in four different widths and two different heights; all sizes feature the same depth.
- Three point locking mechanism, operated by a solid handle.
- The solid, not recessed handle allows for more usable space inside the cabinet and is designed to receive a half profile cylinder lock.
- Profiled door and rear panels make poster sticking difficult and causes poster to drop off.

EH3 - DIN-size pedestals in kit-form

		DIN 0	DIN 1	DIN 2	DIN 3	
Type EH3 / F (H = 875) Kit-form ⁽¹⁾ IP44						
	Type	EH3/F - 0	EH3/F - 1	EH3/F - 2	EH3/F - 3	
	H x W x D	875 x 590 x 320	875 x 785 x 320	875 x 1115 x 320	875 x 1445 x 320	
	Ref. No.	843125	843127	843128	843129	
Type EH3 / AP (H = 875) Kit-form ⁽¹⁾ IP44						
	Type	EH3/AP - 0	EH3/AP - 1	EH3/AP - 2	EH3/AP - 3	
	H x W x D	875 x 590 x 320	875 x 785 x 320	875 x 1115 x 320	875 x 1445 x 320	
	Ref. No.	843150	843151	843152	843153	
Type EH3 / AP (H = 1125) Kit-form ⁽¹⁾ IP44						
	Type	EH3/AP - 20	EH3/AP - 21	EH3/AP - 22	EH3/AP - 23	
	H x W x D	1125 x 590 x 320	1125 x 785 x 320	1125 x 1115 x 320	1125 x 1445 x 320	
	Ref. No.	843154	843155	843156	843157	
 Mounting plate Height 875 mm	H x W x D	665 x 485 x 5	665 x 680 x 5	705 x 1000 x 5	705 x 1340 x 5	
	Ref. No.	843024	843044	843057	843067	
	Height 1125 mm	H x W x D	915 x 485 x 5	915 x 680 x 5	915 x 1000 x 5	915 x 1340 x 5
	Ref. No.	843070	843071	843072	843256	
Pertinax with fixing bolts						
 Bottom plate Polyester 3 mm with mounting bolts	H x W	562 x 285	757 x 285	1086 x 285	1416 x 285	
	Ref. No.	843300	843301	843302	843303	
	 Wall fixing unit Two aluminium C-profiles with wall fixing lugs	W	710	885	1215	
		Ref. No.	843441	843442	843443	
 Polyester bases Kit-form		H x W x D	900 x 585 x 310	900 x 780 x 310	900 x 1110 x 310	900 x 1430 x 310
		Ref. No.	842099	842100	842101	843144

(1) Versions factory-assembled available on request.

Accessories



Locks - profile half cylinder type

843001	1
With 2 keys, V2432-E	
843002	1
With 1 square key, 8 mm	
843003	1
With 1 triangular key, 8 mm	
843248	1
With 2 keys A434	
Spare keys are available on request.	

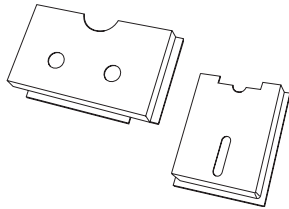
Vandal proof nameplate holder

843304	1
Can be placed on every flat surface, by drilling two holes Ø 5.5 mm; the identification window is used as a drill template. Steady against vandalism; it keeps its total isolation <input type="checkbox"/>	
Possibility to write on manually and/or to use the standard letteringsystems; the maximal letterheight is 18 mm.	
Usefull dimensions of letters: 18 x 143	
Outside dimensions: 30 x 183 x 5	



Inserts

890845	100
Threaded inserts M8	
Type dodge for rear panel and door.	
844039	1
Special tool for securing threaded inserts M8	

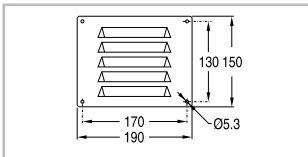


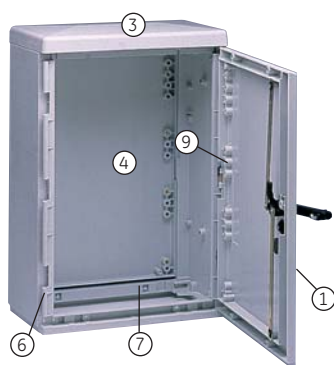
Document pocket

811516	1
DIN A4 - W x H = 325 x 180 mm	
832000	1
DIN A5 - W x H = 155 x 225 mm	

Louvre plate IP44

832019	1
Fits one ventilation opening.	
Package includes 2 grids and 4 nylon nails. Total insulation.	
RAL 7035	




EH3/F (H = 875)

- ① Door (with handle)
- ② Doorpost
- ③ Roof
- ④ Rear panel
- ⑤ Middle beam
- ⑥ Side panel
- ⑦ Bottom profile
- ⑧ Support
- ⑨ Set hinges

EH3/AP (H = 875)

- ① Left door (without handle)
- ② Doorpost
- ③ Roof
- ④ Rear panel
- ⑤ Middle beam
- ⑥ Side panel
- ⑦ Bottom profile
- ⑧ Support
- ⑨ Set hinges

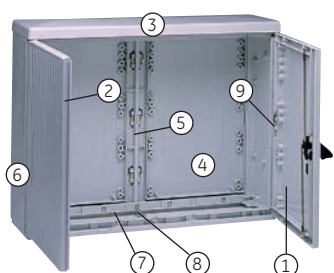
⑩ Set accessories includes all screws, washers and bolts for assembly of the individual polyester parts into a cabinet.

EH3 - Spare parts

EH3/F (H = 875)	DIN 0		DIN 1		DIN 2		DIN 3	
	EH3/F - 0		EH3/F - 1		EH3/F - 2		EH3/F - 3	
	left	right	left	right	left	right	left	right
①	843035		843049		843526	843063	843530	843069
②	-		-		843031		843031	
③	843010		843043		843055		843066	
④	843519		843521		843524	843523	843528	843527
⑤	-		-		843011		843011	
⑥	843505	843504	843505	843504	843505	843504	843505	843504
⑦	843515		843516		843517		843518	
⑧	-		-		-		-	
⑨	843445		843445		843445		843445	
⑩	843447		843447		843452		843452	

EH3/AP (H = 875)	EH3/AP - 0		EH3/AP - 1		EH3/AP - 2		EH3/AP - 3	
	left	right	left	right	left	right	left	right
	①	843101		843104		843538	843108	843542
②	-		-		843031		843031	
③	843010		843043		843055		843066	
④	843531		843533		843536	843535	843540	843539
⑤	-		-		843011		843011	
⑥	843505	843504	843505	843504	843505	843504	843505	843504
⑦	843515		843516		843517		843518	
⑧	-		-		-		-	
⑨	843445		843445		843445		843445	
⑩	843447		843447		843452		843452	

For polyester parts with special UV topcoat for prolonged smooth surface of roof, door, rear and side panels, please contact us.


EH3/AP (H = 1125)

- ① Door (with handle)
- ② Doorpost
- ③ Roof
- ④ Rear panel
- ⑤ Middle beam
- ⑥ Side panel
- ⑦ Bottom profile
- ⑧ Support
- ⑨ Set hinges

⑩ Set accessories includes all screws, washers and bolts for assembly of the individual polyester parts into a cabinet.

EH3 - Spare parts

EH3/AP (H = 1125)	DIN 0		DIN 1		DIN 2		DIN 3	
	EH3/AP - 20		EH3/AP - 21		EH3/AP - 22		EH3/AP - 23	
	left	right	left	right	left	right	left	right
①	843117		843120		843550	843122	843554	843124
②	-		-		843080		843080	
③	843010		843043		843055		843066	
④	843543		843545		843548	843547	843552	843551
⑤	-		-		843075		843075	
⑥	843511	843510	843511	843510	843511	843510	843511	843510
⑦	843515		843516		843517		843518	
⑧	-		-		843564		843564	
⑨	843445		843445		843445		843445	
⑩	843447		843447		843452		843452	





Pedestals with two separate compartments

Features

- Cabinets made of hot moulded, glass fibre reinforced polyester.
- Dyed in mass RAL 7035 light grey.
- Two sizes in two different widths, both sizes feature the same height and depth.
- Two compartments partitioned for separate functional requirements.
- Shipped fully assembled.
- Protection degree IP44 according to EN 60529, IEC 60529 and BS 5490
- Total insulation ☐
- Protection degree IK10 against external impacts according to EN 50102
- Corrosion resistant.
- UV stabilized for outdoor applications.
- Suitable for use in environments from -35° C to + 125°C.
Temporary exceeding temperatures will not be harmful.
- Each door has a three point locking mechanism operated by a recessed handle designed to receive a half profile cylindric lock.
- The open doors can be manually unhinged to allow free access for maintenance.
- Mounting plates included, except for the right compartment of EH3/DC-2
- Threaded inserts for bolts M10 are moulded in the rear panel, allowing for direct mounting of busbars, a frame or a mounting plate for components.
- Supplied with open bottom.
- To be mounted on a basement according to DIN 43629 standard dimensions between the fixation points.
- The rainhood shape prevents water stagnation on the roof.
- Cabinets can be coupled together side to side or double depth.

Applications





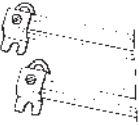
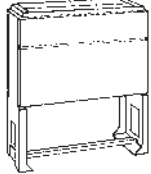
- Camping sites
- Temporary connections
- Metering/distribution combined cabinet
- Traffic signalling

Standards

EN 60439-5
IEC 60439-5

- Overview of the range ● Page F.2
- Dimensional drawings ● Page J.53
- Specifications for tender documents ● Page J.80
- Power dissipation values ● Page J.125

EH3/DC - Pedestals with separate compartments

		DIN 1	DIN 2
<p>Type EH3/DC Two compartments Factory-assembled IP44</p>			
	Type	EH3/DC - 1	EH3/DC - 2
	H x W x D	875 x 785 x 320	875 x 1115 x 320
	Ref. No.	843192	843193
 <p>Mounting plate for the right compartment Pertinax with fixing bolts</p>	H x W x D	included	705 x 620 x 5
	Ref. No.	-	843194
 <p>Bottom plate Polyester 3 mm with mounting bolts</p>	H x W	757 x 285	1026 x 285
	Ref. No.	843301	843302
 <p>Wall fixing unit Two aluminium C-profiles with wall fixing lugs</p>	W	885	1215
	Ref. No.	843442	843443
 <p>Polyester bases Kit-form</p>	H x W x D	900 x 780 x 310	900 x 1110 x 310
	Ref. No.	842100	842101

Pedestals with two separate compartments

A

B

C

D

E

F

G

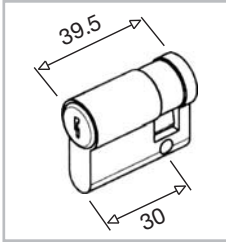
H

I

J/X



Accessories

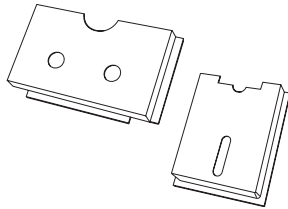


Locks - profile half cylinder type

843001	1
With 2 keys, V2432-E	
843002	1
With 1 square key, 8 mm	
843003	1
With 1 triangular key, 8 mm	
843248	1
With 2 keys A434	
Spare keys are available on request.	

Vandal proof nameplate holder

843304	1
Can be placed on every flat surface, by drilling two holes Ø 5.5 mm; the identification window is used as a drill template. Steady against vandalism; it keeps its total isolation <input type="checkbox"/> .	
Possibility to write on manually and/or to use the standard letteringsystems; the maximal letterheight is 18 mm.	
Usefull dimensions of letters: 18 x 143	
Outside dimensions: 30 x 183 x 5	

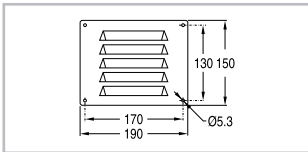


Document pocket

811516	1
DIN A4 - W x H = 325 x 180 mm	
832000	1
DIN A5 - W x H = 155 x 225 mm	

Door blocker

843251	1
- To prevent unwanted closing of opened door in case of strong wind.	
- To be mounted easily on the ridges in side wall and door	
- Corrosion free	



Louvre plate IP44

832019	1
Fits one ventilation opening.	
Package includes 2 grids and 4 nylon nails.	
Total insulation RAL 7035	

Clamps for quick removal of bottom profile

843250	1
- Replace the standard fixation of bottom profile with fixed screws.	
- Permits to remove the bottom profile without tools, after withdrawing the door.	
- Better entry to the pedestal for cable connection.	



Inserts

890845	100
Threaded inserts M8	
Type dodge for side panel.	



844039	1
Special tool for securing threaded inserts M8	



Notes

Grid area for notes.

A
B
C
D
E
F
G
H
I
J/X





Pedestals with greater depth

Features

- Door, rear and side panels made of hot moulded, glass fibre reinforced polyester.
- Dyed in mass RAL 7035 light grey.
- Rainhood made of hand lay-up glass fibre reinforced polyester.
- Rainhood with RAL 7035 topcoat.
- Six sizes in two heights, two depths and three widths.
- Shipped fully assembled.
- Protection degree IP23 according to EN 60529, IEC 60529 and BS 5490
- Total insulation \square
- Protection degree IK10 against external impacts according to EN 50102
- Corrosion resistant.
- UV stabilized for outdoor applications.
- Suitable for use in environments from -35° C to + 125°C
Temporary exceeding temperatures will not be harmful.
- Three point locking mechanism, operated by a solid handle.
- The solid, not recessed handle allows for more usable space inside the cabinet and is designed to receive a half profile cylinder lock.
- The open doors can be manually unhinged to allow free access for maintenance.
- Possibility of pivoting door on side or back.
- Threaded inserts for bolts M10 are moulded in the rear panel, allowing for direct mounting of busbars, a frame or a mounting plate for components.
- Supplied with open bottom.
- Provided with fixing points for floor or base mounting.
- The rainhood shape prevents water stagnation on the roof.
- Anti poster surface make poster sticking difficult and causes poster to drop off.

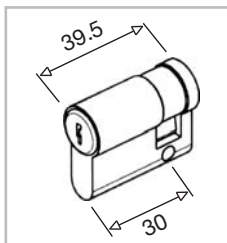
Applications

- Power distribution
- Gas meter units
- Power supply and control units
- Rectifier or inverters
- Generators or transformer stations
- Pumping installations
- 19" rack electronic systems

Standards

EN 60439-5 • IEC 60439-5

Accessories



Locks - profile half cylinder type

	843001	1
	With 2 keys, V2432-E	
	843002	1
	With 1 square key, 8 mm	
	843003	1
	With 1 triangular key, 8 mm	
	843248	1
	With 2 keys A434	
	Spare keys are available on request.	

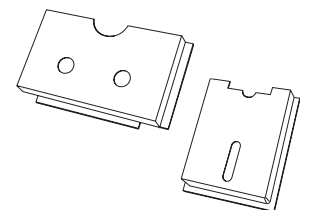
Vandal proof nameplate holder

843304	1
Can be placed on every flat surface, by drilling two holes \varnothing 5.5 mm; the identification window is used as a drill template.	
Steady against vandalism; it keeps its total isolation \square .	
Possibility to describe manually and/or to use the standard letteringsystems, the maximal letterheight is 18 mm.	
Usefull dimensions of letters: 18 x 143	
Outside dimensions: 30 x 183 x 5	



Document pocket

811516	1
DIN A4 - W x H = 325 x 180 mm	
832000	1
DIN A5 - W x H = 155 x 225 mm	



EH3/GD - Pedestals with greater depth

	Width	676	871	1200
<p>Type EH3 / GD (H 875, D 424 mm) Factory-assembled IP23</p>				
	Type	EH3/GD-AP - 031	EH3/GD-AP - 041	EH3/GD-AP - 051
	H x W x D	875 x 676 x 424	875 x 871 x 424	875 x 1200 x 424
	Ref. No.	843296	843360	843359
<p>Type EH3 / GD (H 1125, D 676 mm) Factory-assembled IP23</p>				
	Type	EH3/GD-AP - 233	EH3/GD-AP - 243	EH3/GD-AP - 253
	H x W x D	1125 x 676 x 676	1125 x 871 x 676	1125 x 1200 x 676
	Ref. No.	843358	843357	843356
<p> Mounting plate H = 875 mm</p>	H x W x D	665 x 485 x 5	665 x 680 x 5	705 x 1000 x 5
	Ref. No.	843024	843044	843057
	H x W x D	915 x 485 x 5	915 x 680 x 5	915 x 1000 x 5
	Ref. No.	843070	843071	843072
<p> Bottom plate D = 424 mm</p>	H x W	635 x 380	830 x 380	1158 x 380
	Ref. No.	843413	843411	843409
	D = 676 mm	635 x 632	830 x 632	1158 x 632
	Ref. No.	843425	843410	843408
<p> Polyester bases Kit-form For cabinets D = 424 mm</p>	H x W x D	900 x 645 x 393	900 x 835 x 393	900 x 1164 x 393
	Ref. No.	843394	843397	843400
	D = 676 mm	900 x 645 x 645	900 x 835 x 645	900 x 1164 x 645
	Ref. No.	843396	843399	843402

Accessories

<p></p>	<p>Louvre plate IP44</p> <p>832019 1</p> <p>Fits one ventilation opening.</p> <p>Package includes 2 grids and 4 nylon nails.</p> <p>Total insulation.</p> <p>RAL 7035</p>	<p></p> <p>Clamps for quick removal of bottom profile</p> <p>843250 1</p> <ul style="list-style-type: none"> - Replace the standard fixation of bottom profile with fixed screws. - Permits to remove the bottom profile without tools, after withdrawing the door. - Better entry to the pedestal for cable connection.
	<p></p>	

Overview of the range ● Page F.2
Dimensional drawings ● Page J.54

Specifications for tender documents ● Page J.81
Power dissipation values ● Page J.125





Applications

- Power distribution
- Cable TV distribution
- Traffic signalling
- Camping sites
- Pump application

Standards

EN 60439-5
IEC 60439-5



- Overview of the range ● Page F.2
- Dimensional drawings ● Page J.48
- Specifications for tender documents ● Page J.75
- Power dissipation values ● Page J.118

Column cabinets

Common features

- Pedestal and base are made of hot moulded glass fibre reinforced polyester.
- Dyed in mass RAL 7035 light grey.
- Protection degree IP43/IP44 according to EN 60259, IEC 60259 and BS 5490
- Total insulation ☑
- Impact strength IK10 against external impacts according EN 50102
- Corrosion resistant.
- UV stabilised for outdoor applications.
- Suitable for use in environments from -35°C to $+125^{\circ}\text{C}$.
Temporary exceeding temperatures will not be harmful.
- Fixing holes for threaded inserts M6 are provided in the rear panel allowing direct mounting of busbars, mounting plate or components.
Inserts to fix a mounting plate are installed.
- The base can be buried into the ground for stable installation of the column.
- The rainhood shape prevents water stagnation on the roof.

Features for EH4

Cabinets with hinged door - IP43

- Pedestal and base are delivered together.
- Swing handle for half profile cylindrical lock.
- Door opening angle of 180°

Features for EH4-S

Cabinets with frontal lift-off segments - IP44

- Base and rear panel are moulded as one part.
- Recessed lock box for half profile cylindrical lock, protected by a vandal proof cover.
- The enclosure can be accessed by removing the frontal lift-off segments (not hinged).









EH4-00


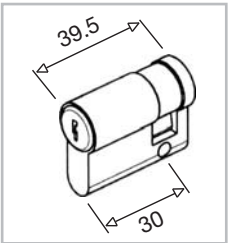
EH4-0

EH4-1

EH4/EH4S - Column cabinets

	Width	395	495	745	320	320
	Type					
	Type	EH4-00	EH4-0	EH4-1	EH4-S1	EH4-S2
	H x W x D	1600 x 395 x 224	1600 x 495 x 224	1600 x 745 x 224	1420 x 320 x 234	1850 x 320 x 234
	Ref. No.	844130	844131	844132	844153	844185
	Type					
	H x W x D	790 x 370 x 5	790 x 470 x 5	790 x 470 x 5	600 x 278 x 5	950 x 278 x 5
	Ref. No.	844133	844134	844135	844154	844186

Accessories

	Locks - profile half cylinder type	Swing handle																
		<table border="1"> <tr> <td>832297</td> <td>1</td> </tr> <tr> <td colspan="2">For EH4 - security lock V2432E</td> </tr> <tr> <td>832331</td> <td>1</td> </tr> <tr> <td colspan="2">For EH4 - security lock V2432E for double locking</td> </tr> <tr> <td>843001</td> <td>1</td> </tr> <tr> <td colspan="2">For EH4-S - with 2 keys, V2432-E</td> </tr> </table>	832297	1	For EH4 - security lock V2432E		832331	1	For EH4 - security lock V2432E for double locking		843001	1	For EH4-S - with 2 keys, V2432-E		<table border="1"> <tr> <td>844152</td> <td>1</td> </tr> <tr> <td colspan="2">For EH4 - with double bit locking</td> </tr> </table>	844152	1	For EH4 - with double bit locking
832297	1																	
For EH4 - security lock V2432E																		
832331	1																	
For EH4 - security lock V2432E for double locking																		
843001	1																	
For EH4-S - with 2 keys, V2432-E																		
844152	1																	
For EH4 - with double bit locking																		

A

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Pedestals IP44/54

Features

- Cabinets are made of hot moulded, glass fibre reinforced polyester.
- Dyed in mass RAL 7035 light grey.
- Three sizes in three widths; all sizes feature the same height and depth.
- Each size is available in two protection degrees; IP44 and IP54 according to EN 60529, IEC 60529 and BS 5490
- Delivered in space saving kit-form or factory assembled.
- Total insulation ☑
- Protection degree IK10 against external impacts according to EN 50102
- Corrosion resistant.
- UV stabilized for outdoor applications.
- Suitable for use in environments from -35°C to + 125°C. Temporary exceeding temperatures will not be harmful.
- Three point locking mechanism, operated by an integrated handle.
- The open doors can be manually unhinged to allow free access for maintenance.
- The door opening angle exceeds 180°
- The rear panel has mounting holes for self tapping screws HiLo 7.2 x 26 mm and threaded inserts M8, allowing direct mounting of busbars, a frame, a mounting plate for components.
- Supplied with open bottom.
- To be mounted on a plinth according to DIN 43629 standard dimensions between the fixation points.
- The rainhood shape prevents water stagnation on the roof.
- Cabinets can be coupled side to side or double deep.

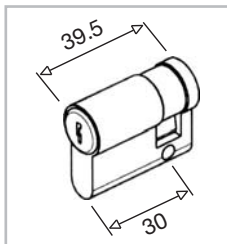
Applications

- Power distribution
- Cable TV
- Camping sites
- Traffic signalling

Standards

EN 60439-5
IEC 60439-5

Accessories



Locks - profile half cylinder type

843001	1
With 2 keys, V2432-E	
843002	1
With 1 square key, 8 mm	
843003	1
With 1 triangular key, 8 mm	
843248	1
With 2 keys A434	

Spare keys are available on request.

Vandal proof nameplate holder

843304 1

Can be placed on every flat surface, by drilling two holes Ø 5.5 mm; the identification window is used as a drill template. Steady against vandalism; it keeps its total isolation ☑.

Possibility to write on manually and/or to use the standard letteringsystems; the maximal letterheight is 18 mm.

Usefull dimensions of letters: 18 x 143
Outside dimensions: 30 x 183 x 5



Inserts

890845 100

Threaded inserts M8 (Type Dodge for rear panels)

851372 50

Threaded inserts M5 (Type Dodge for side panels)

844039 1

Special tool for securing threaded inserts M8

890851 100




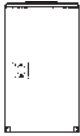

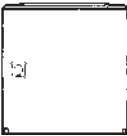

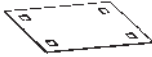

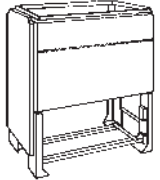
Hi-Lo screws 7.2 x 26 mm to fix the busbar system



- Overview of the range ● Page F.2
- Dimensional drawings ● Page J.56
- Specifications for tender documents ● Page J.81
- Power dissipation values ● Page J.125



EH6 - Pedestals IP44/54

	Width	DIN 00	DIN 0	DIN 1
Type EH6 IP44 Factory-assembled IP44 Kit form, IP44				
	Type	EH6 - 00	EH6 - 0	EH6 - 1
	H x W x D	830 x 470 x 320	830 x 605 x 320	830 x 800 x 320
	Ref. No.	844000	844049	844070
		844003	844053	844074
Type EH6 IP54 Factory-assembled IP54 Kit form, IP54				
	Type	EH6 - 00	EH6 - 0	EH6 - 1
	H x W x D	830 x 470 x 320	830 x 605 x 320	830 x 800 x 320
	Ref. No.	844001	844050	844071
		844114	844057	844081
 Mounting plate Pertinax with fixing bolts	H x W x D	703 x 360 x 5	703 x 495 x 5	703 x 690 x 5
	Ref. No.	844016	844065	844093
 Bottom plate Polyester 3 mm with mounting bolts	H x W	427 x 285	562 x 285	757 x 285
	Ref. No.	843299	843300	843301
 Wall fixing unit Two aluminium C-profiles with wall fixing lugs	W	540	675	870
	Ref. No.	843440	843441	843442
 Polyester bases Kit-form	H x W x D	900 x 450 x 310	900 x 585 x 310	900 x 780 x 310
	Ref. No.	842098	842099	842100

Pedestals IP44/54

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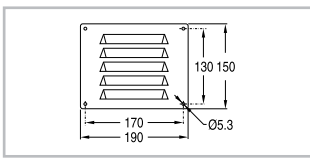
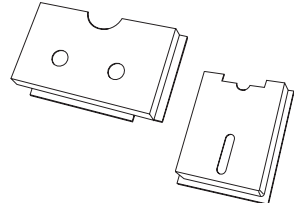
C

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Accessories

 	Louvre plate IP44 832019 1 Fits one ventilation opening. Package includes 2 grids and 4 nylon nails. Total insulation. RAL 7035	Document pocket 811516 1 DIN A4 - W x H = 325 x 180 mm 832000 1 DIN A5 - W x H = 155 x 225 mm	
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Stainless steel pedestals

Applications

- Energy distribution
- Recreation grounds
- Cable television
- Traffic regulation & signalling
- Telecommunications
- Market connections
- Event connections
- Gas distribution

Standards

IEC 60439-5
IEC 60529
EN 60439-5
EN 60529
EN 50102

Advantages

- Flexibility in dimensions, colour and design.
- Easy and cheap to recycle.
- Guaranteed 30-year service life.
- Maintenance-free.
- Good mechanical properties (IEC 60947).
- High torsion resistance.
- Resists impact test with sharp point according to EN 60439-5.
- High IK value.
- Twists and bends (no tears or holes) on impact.
- High fire resistance.
- High vandal resistance.
- Special designs rapidly available, even as single orders.

Overview of the range ● Page F.3

Dimensional drawings ● Page J.58

Specifications for tender documents ● Page J.82

Power dissipation values ● Page J.126

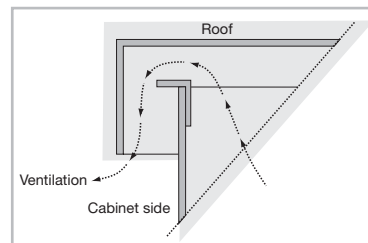
A wide range of stainless steel cabinets RVS for outdoor use completes the delivery programme of outdoor enclosures.

Together with the EH series of fibreglass-reinforced polyester cabinets and the full range of UTS cabinets for subterranean solutions, it provides an extremely versatile product offering.

RVS cabinets for outdoor use make it possible to offer professional above-ground solutions for cable networks, telecommunications, recreation grounds and other applications. The cabinets have partially sunken bases.

Features

- The cabinets can be placed on either concrete or stainless steel bases.
- They can also be adapted for wall mounting.
- The protection degree IP43-IK 10 according to IEC 60529 and EN 50102.
- A high mechanical impact resistance according to IEC 60439-5 ensures that the cabinet is extremely vandal proof.
- Condensation is limited by the natural ventilation provided by labyrinth openings.



Construction

- Cabinets are made of 2 mm AISI 304 stainless steel with polyester surface treatment in RAL 7034.
- Anti-graffiti treatment available on request.
- Other RAL colours available on request.
- Doors are fitted with stainless steel hinged rods (8 mm) and the opened door is easy removable without tools.
- Doors hinge pins turn in nylon bushings, no corrosion at critical points of rotation is possible
- Natural ventilation with protection degree IP43.
- Large opening between doors and cabinet frame, no moisture accumulation is possible.
- Automatic condensation evacuation thanks to unique design of cabinet base.
- Natural ventilation thanks to labyrinth openings on top of the side panels and special base design.
- No internal moisture problems thanks to polystyrene plate inside the roof panel; any moisture formed is automatically discharged along vertical sides of cabinet.
- A 3 point rod closing mechanism sliding in synthetic bearings for high cabinets and double door cabinets. A single locking point mechanism for smaller doors.
- Standard handle suitable for profile half-cylinder lock. Other lock types are available on request.
- Cabinet suitable for fixing, with four M12 bolts, to concrete or stainless steel basements according to DIN 43629. The stainless steel fixing bolts are adjustable.
- Wall mounting brackets and a stainless steel bottom plate in the RAL 7034 are available in case of wall mounting.
- Four or six fixing holes in rear panel for mounting a mounting plate or frame.
- Cables easily inserted thanks to removable bottom profile. (sill profile).
- Guaranteed earthing independent of corrosion-sensitive transitional surfaces.



door stop



handle



cable entry door



cable entry door (inside)



wall mounting

Customisation on request



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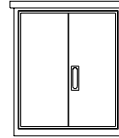
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J/X

Stainless steel pedestals IP43-IP10

Pedestals

Pedestals with single door Pedestals with double door



Standard delivery

- a plain door
- central locking system
- handle without lockinsert
- open bottom
- without mounting plate

		DIN 00	DIN 0	DIN 1	DIN 2	DIN 3	DIN 4
Pedestal	Type	RVL 300	RVL 30	RVL 31	RVL 32		
Height 650	H x W x D	650 x 460 x 355	650 x 595 x 355	650 x 790 x 355	650 x 1120 x 355		
	Ref. No.	422841	422842	422843	422844		
Mounting plate	Type	MPL 300	MPL 30	MPL 31	MPL 32		
	Ref. No.	422845	422846	422847	422848		
Pedestal	Type	RVN 300	RVN 30	RVN 31	RVN 32	RVN 33	RVN 34
Height 900	H x W x D	900 x 460 x 355	900 x 595 x 355	900 x 790 x 355	900 x 1120 x 355	900 x 1450 x 355	900 x 1780 x 355
	Ref. No.	422851	422852	422853	422854	422855	422856
Mounting plate	Type	MPN 300	MPN 30	MPN 31	MPN 32	MPN 33	MPN 34
	Ref. No.	422857	422858	422859	422860	422861	422862
Pedestal	Type		RVD 30	RVD 31	RVD 32	RVD 33	RVD 34
Height 1000	H x W x D		1000 x 595 x 355	1000 x 790 x 355	1000 x 1120 x 355	1000 x 1450 x 355	1000 x 1780 x 355
	Ref. No.		422863	422864	422865	422866	422867
Mounting plate	Type		MPD 30	MPD 31	MPD 32	MPD 33	MPD 34
	Ref. No.		422868	422869	422870	422871	422872
Pedestal	Type			RVH 31	RVH 32	RVH 33	RVH 34
Height 1150	H x W x D			1150 x 790 x 355	1150 x 1120 x 355	1150 x 1450 x 355	1150 x 1780 x 355
	Ref. No.			422873	422874	422875	422876
Mounting plate	Type			MPH 31	MPH 32	MPH 33	MPH 34
	Ref. No.			422877	422878	422879	422880
Pedestal	Type					RVS 33	RVS 34
Height 1350	H x W x D					1350 x 1450 x 355	1350 x 1780 x 355
	Ref. No.					422881	422882
Mounting plate	Type					MPS 33	MPS 34
	Ref. No.					422883	422884

Accessories

Fixation kit for mounting plate Special bolts and nuts	Ref. No.	422849	422849	422849	422850	422850	422850
Bases in stainless steel	Type	RF 200	RF 20	RF 21	RF 22	RF 23	RF 24
	Ref. No.	422892	422893	422894	422895	422896	422897

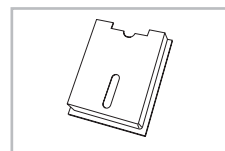
Optional : kit for mounting fuse strips

General accessories

Door stop	Ref. No.	422898
Document pocket DIN A4	Ref. No.	811516
Document pocket DIN A5	Ref. No.	832000
Paint touch-up kit RAL 7034	Ref. No.	422901



Door stop



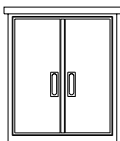
Document pocket DIN A5



Paint touch-up kit



Pedestals with double door and 2 compartments



Standard delivery

- a plain double door
- central locking system / door
- handle without lockinsert / door
- with one mounting plate in melamine over the total width of the pedestal
- with separation sheet in melamine - IP20
- open bottom

	DIN 2			Double door		Mounting plate				Fig.
	H x W x D	Ref. No.	Type	usefull width		outer dimensions		usefull width compartment		
				X1 Left	X2 Right	Height	Z Width	Y1 Left	Y2 Right	
Height 650	650 x 1120 x 355	422906	RVL 32 S 1 ZZ	480	480	530	1020	500	500	1
Height 900	900 x 1120 x 355	422907	RVN 32 S 1 ZZ	480	480	780	1020	500	500	1
		422908	RVN 32 S 2 ZZ	315	645	780	1020	335	665	1
		422909	RVN 32 S 3 ZZ	645	315	780	1020	665	335	2
Height 1150	1150 x 1120 x 355	422913	RVH 32 S 1 ZZ	480	480	1030	1020	500	500	3
		422914	RVH 32 S 2 ZZ	315	645	1030	1020	335	665	1
		422915	RVH 32 S 3 ZZ	645	315	1030	1020	665	335	2
Base										3
In stainless steel		422895	RF 22							
DIN 3										
Height 900	900 x 1450 x 355	422910	RVN 33 S 1 ZZ	645	645	780	1350	665	665	
		422911	RVN 33 S 2 ZZ	480	810	780	1350	500	830	1
		422912	RVN 33 S 3 ZZ	810	480	780	1350	830	500	2
Height 1150	1150 x 1450 x 355	422916	RVH 33 S 1 ZZ	645	645	1030	1350	665	665	3
		422917	RVH 33 S 2 ZZ	480	810	1030	1350	500	830	1
		422918	RVH 33 S 3 ZZ	810	480	1030	1350	830	500	2
Base										3
In stainless steel		422896	RF 23							

Mounting plate in melamine

Usefull dimensions:
 enclosures height minus 120 mm
 enclosures width minus 100 mm
 thickness 19 mm

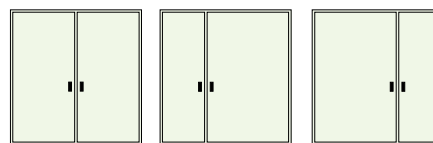
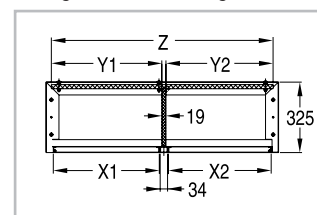


Fig. 1

Fig. 2

Fig. 3



Cross section



Notes

Pedestals

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Application guide / e-catalogue

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Insulated wall mounting cabinets

Wall mounting system enclosures

Steel wall mounting enclosures

Steel floor standing enclosures

Pedestals

Subterranean enclosures

Climate control

General accessories

General characteristics / Index

G.4 UTS



Protected Underground Solutions Technology



Standards

- IEC 60529
- IEC 60439-5
- EN 14452
- EN 124

Respect for the environment

As we share the same space with an ever increasing number of people, public areas like streets, squares and parks will be used with increasing intensity, creating a strong demand for solutions that manage to avoid obstacles at street level as much as possible.

GE Power Controls, being a major supplier of street level distribution switchboxes for telecommunications, energy and CATV distribution connectivity, has developed UTS enclosures for this purpose.

UTS enclosures are switchboxes that are installed underground and are suitable for installing all kinds of equipment for permanent or temporary connectivity. The distinguishing characteristic of UTS enclosures is that they can remain underground both in active and passive condition, which means that they do not constitute any obstacle whatsoever.

These UTS enclosures can be employed, among other applications, for temporary mains hook-ups for the benefit of markets, fairs or other events. However, they are also eminently suitable for permanent connections, low voltage energy distribution, glass fibre connections for a variety of IT related applications, or for installing supporting equipment for mobile telephony.

An additional yet important advantage is that these enclosures cannot be smeared with graffiti and offer hardly any opportunities for acts of vandalism. The tops of the underground UTS enclosures can be finished in such a way that they become an aesthetically pleasing part of their surroundings.

Dimensional drawings ● Page J.60
 Specifications for tender ● Page J.83
 documents



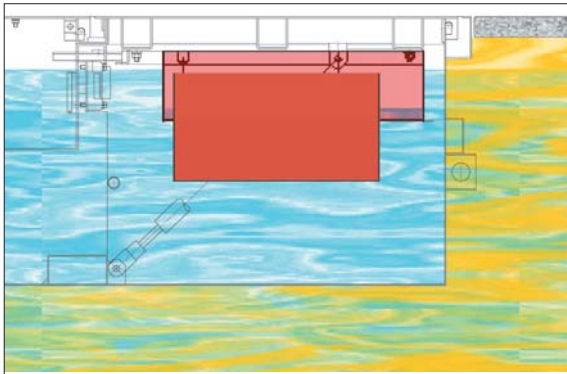
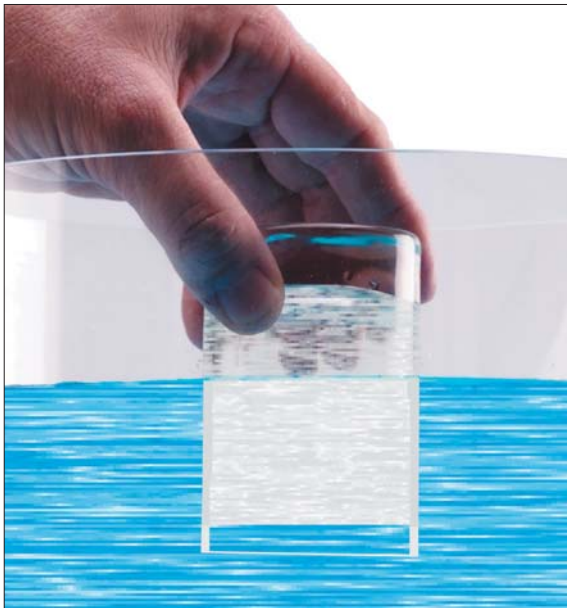
Avoids any water infiltration

The principle of the diving bell

- The principle of the UTS enclosure is based on the same principle as the diving bell.
- A diving bell is a 5-walled, hermetically sealed compartment.
- Under normal conditions, the opening is at the bottom, so that in case of a rising water table the underside is closed off completely by water.
- As the water table rises, the air present in the sealed unit will be compressed until an equilibrium is reached between the air pressure and the force exerted by the rising water, at which point the water will rise no further (Boyle's Law).

- Even if the UTS enclosure becomes fully immersed in water, for example in the case of flooding, heavy rains etc. the air bubble trapped in the sealed compartment will remain large enough to prevent the plastic enclosures in which the equipment has been installed from coming into contact with water.
- The UTS enclosure is made entirely from stainless steel (AISI 304).
- The cover, because of requirements for the minimum permissible load laid down in the applicable EN 124 standard, is constructed from special double-layered stainless steel (material according to EN 1.4462).

UTS enclosures are only suitable for applications where under normal conditions the ground water table remains at least 5 cm below the underside of the sealed compartment. In other words, the underside of the sealed compartment may only be immersed in water temporarily.



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Enclosure for markets & events

UTS enclosure for temporary connections

In this implementation the UTS enclosure features two separately sealable compartments. One of the sealed compartments is for the switching or monitoring equipment and/or the utility company connections. The other sealed compartment is where the sockets are located.



Important

The bell principle only works if it is impossible for air to escape from the sealed unit as it is sealed off at the bottom by the rising water. This means that if the water were to rise so high, that the sealed compartments in which the sockets are located were to become fully or partly immersed, the plugs must be removed. Otherwise it would be possible for the pressurised air to escape by means of the power cables.

The UTS enclosure in which the sealed compartment is attached to a hinged cover essentially consists of two separate sealed compartments. These two sealed compartments, which have different dimensions, are inserted one into the other with their open ends facing each other, thereby forming a water seal. In this configuration it is impossible for water to gain access to the equipment, even if it has risen to the same level as the cover. The cover with the container mounted to it is designed to move upwards and downwards with the assistance of two gas struts which allow the UTS enclosure to be operated by one person.

Characteristics

- Reduced depth of the enclosure, as the equipment is mounted sideways, surface area approx. 110 x 110 cm.
- Due to the limited depth of the enclosure (approx. 55 cm) it is usually possible to install without reconfiguring existing cables or power lines.
- Easy maintenance due to the absence of a counter weight and associated ancillary equipment.
- Easy access to switchbox by simply removing the bottom half of the sealed compartment, or swivelling it aside.
- Permissible load on standard cover: up to 12.5 tonnes, depending on total dimensions. Maximum permissible load 25 tonnes according to EN 124 standard if the cover is constructed from special double-layered stainless steel (material according to EN 1.4462).
- In contrast to the sealed compartment that can be raised and lowered, with this model the cover cannot be opened if the water level is higher than the underside of the upper half.
- Access to the compartment containing the wall sockets is by means of a square drive key. The main compartment is locked with a reduced depth profile half cylinder lock
- Normal level of groundwater table should not extend above 25 cm below surface (street) level.
- The cover over the compartment containing the switching and monitoring equipment can be provided with a paving material or other finish to make it blend into its surroundings.



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Enclosure for distribution applications (fig.1)

UTS enclosure for energy distribution applications

In a hermetically sealed 5-walled container (sealed compartment) with its open end faced upwards a 400A rated rail system is mounted on a hinged frame which accepts 6 fused load distributing rails also rated at 400 amps. The maximum load per fuse-protected distributing rail must not exceed 250A.

The hinged construction, aided by a gas strut, can easily be tilted from the horizontal to the vertical position, whereupon it is accessible just like a normal aboveground switchbox. When the frame is in the horizontal position the upper sealed compartment, which is mounted to the underside of the hinged cover, can be swivelled until it is over the lower sealed compartment, causing a so-called air lock to be formed between the walls of the two super-imposed sealed compartments.

This prevents power distribution devices from coming into contact with water, even if the enclosure was to become fully immersed in water. Of course the enclosure may also be fitted with a horizontally placed distribution unit that lacks the swivel function. This unit is adequately protected, so fuses can be replaced without any risk of touching live parts accidentally.

Cable connections

Cables can be connected in two different ways:

- In the case of horizontally mounted switchboxes, they can be connected directly to the load distributor rails.
- In the case of swivelling arrangements, they are connected by means of flexible cables which are connected, using a clamping device installed especially for this purpose, to an underground cable with a maximum conductor gauge of 150 mm²; the entire cable entry box is sealed by pouring in a liquid insulating compound.

Characteristics

- Dimensions: L x W x D= 1500 x 1100 x 500 mm.
- Cover can be secured by means of a reduced-depth profile half cylinder lock
- Normal level of groundwater table should not extend above 30 cm below surface (street) level.
- Maximum permissible load 25 tonnes according to EN 124 standard
- Under certain conditions the cover can be provided with a paving material or similar finish to make it blend in with its surroundings.

Enclosure for telecommunications applications (fig. 2)

UTS enclosure for RAM installations

Repeater Access Module

This enclosure has been designed specifically for housing sensitive electrical equipment such as is used for telecommunication links. The equipment is protected by a built-in enclosure (IP65) which, in turn, is integrated into a sealed compartment.

Characteristics

- Dimensions: L x W x D = 1165 x 895 x 515 mm.
- The cover features a brass surface-mounted lock that accepts reduced-depth profile half cylinder lock
- Normal level of groundwater table should not extend above 25 cm below surface (street) level.
- Maximum permissible load 25 tonnes according to EN 124 standard
- Under certain conditions the cover can be provided with a paving material or similar finish so that it blends into its surroundings.



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Insulated wall mounting cabinets

Wall mounting system enclosures

Steel wall mounting enclosures

Steel floor standing enclosures

Pedestals

Subterranean enclosures

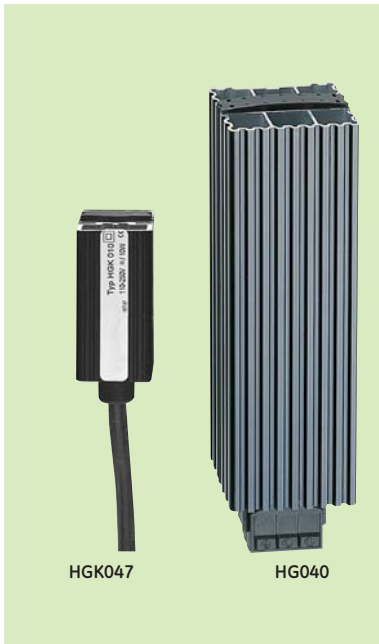
Climate control

General accessories

General characteristics / Index

H.2 Heating
H.8 Ventilation
H.14 Cooling





Advantages

- Energy saving
- Dynamic heating-up
- Self-regulating
- Temperature-limiting
- Quick snap-on fixing
- No maintenance
- Long endurance
- Compact housing

Standards

VDE 0700
IEC 60 335-1
UL on request

Applications

Switch cabinets, instrument cases, display panels, control desks, automatic bank machines, car park control systems, etc.

Fitting

Push-fit onto DIN 35 mm rail (EN 50 022).
Installation preferably at the bottom of the cabinet, at about 40 mm from the equipment itself.

Heating units

Function

Small heating units for enclosures are important accessories for guaranteeing operational safety of control and distribution units. They are mainly used to prevent formation of condensation or to maintain a minimum temperature inside the enclosure, that is, a few degrees above the temperature of the surrounding air.

Operating principle

Small heating units are fitted with PTC heating resistances (positive temperature coefficient semi-conductors). The self-regulating and self-limiting semi-conductor heating elements maintain a constant temperature on the heating surface of the small heating units. The aluminium casing transmits heat to the surrounding air by natural radiation. Special extruded sections ensure the heat is fully radiated.

Heating requirements calculation

Using the formula: $P = A \times \Delta T \times k$

P = power supplied by the resistance (W)

A = external free surface of the enclosure (m²)

ΔT = difference in temperature between the internal temperature after heating, and the external temperature, in °K.

k = thermal radiation coefficient: sheet steel: 5.5 W/m²K
polyester: 3.5 W/m²K

Approximation rule: recommended value 100 w/m³ of enclosure volume.
For an outdoor installation, the calorific power should be doubled.
Several small heating units are better than a single large heating unit.

Heating units HGK047-HG140



HGK047

HG040

Technical data

Nominal voltage	140-250 V AC/DC (max. 265 V)
Power	10 to 150 W
Heating element	self-regulating PTC resistance
Heating body	anodised aluminium sections
Protection class	II, test voltage 4000 V/3 sec
Protection level	IP54
Connection	Series HGK047: silicon cable 2 x 0.75 m ² length 300 mm Series HG040: with terminals 0.5 - 2.5 mm ²
Dimensions (H x D)	Series HGK047: 25 x 60 mm Series HG040: 70 x 60 mm

Order codes

	W ⁽¹⁾	I max. (A)	H (mm)	Wt. (kg)	Ref. No.	Pack.
HGK047	10	0.8	50	0.10	818105	1
	20	1.0	60	0.11	818106	1
	30	1.5	70	0.12	818107	1
HG140	15	0.5	65	0.3	818092	1
	30	1.0	65	0.3	818093	1
	45	1.0	65	0.3	818094	1
	60	1.5	140	0.5	818097	1
	75	1.8	140	0.5	818098	1
	100	2.4	140	0.5	818099	1
	150	4.5	220	0.8	818102	1

(1) At ambient temperature 20°C

Heating unit HGL046 with fan



With forced ventilation with an axial fan. Prevents formation of dangerous levels of condensation, and maintains a constant temperature inside the enclosure.

Technical data

Nominal voltage	220/280V 50-60Hz
Power	250 and 400W
Heating element	traditional heating element with built-in thermostat
Heating body	anodised aluminium sections
Surface temperature	±75°C
Protection class	I
Protection level	IP20
Connection	three-pole terminal strip 2.5 mm ²
Fitting	on DIN 35 mm rail
Fan	rate: 35 m ³ /h without counter-pressure ball bearing service: 30000 hrs at 20°C

Order codes

	W	B x D	H (mm)	Wt. (kg)	Ref. No.	Pack.
HGL046	250	80 x 80	178	0.95	818103	1
	400	80 x 80	252	1.30	818104	1



HV031: Heating element, extra compact, flatter, only 22mm thick.

HVL031: HV031 heating element with an axial fan to give optimal heat radiation. Fresh air drawn in from outside is heated and dried. If the fan fails, thermal power drops automatically to prevent overheating.

Applications

Telecommunications systems, control panels, display panels, control desks, bank cash machines, car park control systems.



- Compact heater with integrated ventilation CR 027 350/550W 230V.
- Heating capacity adjusts to ambient temperature.
- Safely cut-out in case of fan failure.
- Adjustable temperature range.

Heating units HV031 and HVL031 (with fan)

Technical data

Nominal voltage	220/230V 50-60Hz
Power	100 - 150 - 200 - 300 - 400W
Heating element	traditional heating element with built-in thermostat
Heating body	thermostat
Connection	anodised aluminium sections
Surface temperature with fan	five-pole terminal strip 2.5 mm ² 45°C at a distance of 50 mm
Fitting	on DIN rail
Protection class	I
Fan rate (without counter-pressure)	35 m ³ /h (100 - 150W) 108 m ³ /h (200 - 300 - 400W)
Dimensions (H x W x D)	80 x 112 x 22 mm (100 - 150W) 119 x 151 x 22 mm (200 - 300 - 400W)
Weight	240 g (100 - 150W) 490 g (200 - 300 - 400W)

Order codes

	Power	Ref. No.	Pack.
HV031	100W	818177	1
	150W	818178	1
	200W	818091	1
	300W	818162	1
	400W	818163	1
HVL031 with fan	100W	818179	1
	150W	818180	1
	200W	811542	1
	300W	818164	1
	400W	818165	1

Semi conductor fan heater

Technical data

Nominal voltage	220/230V 50-60Hz
Power	350 / 550W
Current at make	7.5 A - 350W / 230V 8.5 A - 550W / 230V
Heating element	PTC resistor - self regulating
Temperature regulation	Adjustment range 0 - 60°C
Optical indicator	Thermostat control lamp
Casing	Plastic, light grey
Protection class	II (double insulated)
Protection level	IP 20
Connection	4 pole terminal connector, 2.5 mm ²
Fitting	on DIN 35 mm rail
Axial fan	45 m ³ /h, ball bearing service life 50,000 h at 25°C
Dimensions	128 x 100 x 165 mm (HxWxD)
Weight	1.1 kg
Approval	UL file E 204590

Order codes

	Ref. No.	Pack.
CR 027	818193	1

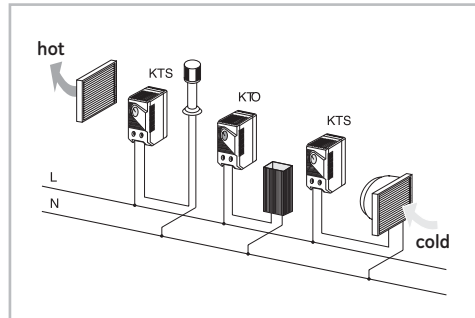


Temperature regulators



Function

FZK 011, KTO, KTS and ZR 011 elements regulate and control the temperature inside the enclosure by means of small heating elements, fans, heat exchangers and refrigeration units.

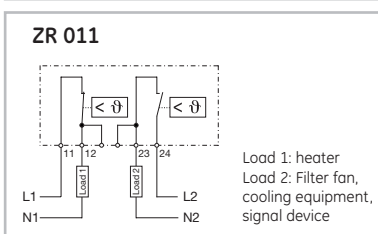
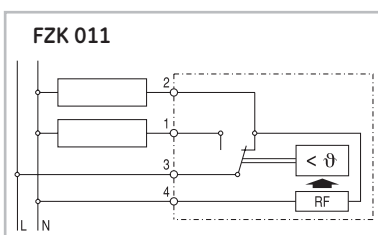


Technical data

Type	FZK 011	KTO	KTS	ZR 011
Range of adjustment:				
Temperature	10°C - 60°C	0°C - 60°C	0°C - 60°C	0°C - 60°C
Hysteresis	0.5K	7K	7K	7K
Contact type	Inverter: single pole	NC 	NO 	NO
Power ⁽¹⁾	NC 10A (4) 250V AC NO 5A (2) 250V AC resistive load	10A (2) 250V AC resistive load	10A (2) 250V AC resistive load	10A (2) 250V AC resistive load
Weight	100 g	36 g	36 g	90 g
Dimensions (H x W x D)	67 x 50 x 38	60 x 33 x 35	60 x 33 x 35	67 x 50 x 46
Application diagram	(see below)	red button: heating	blue button: cooling, fan, alarm signal	(see below)
Protection level	IP20	IP20	IP20	IP20
Connection	2.5 mm ² screw connector			
Fitting	push fit on DIN 35mm rail (EN 50022)			
Case	plastic UL 94 VO			
EMC	according to EN 55014-1-2, EN 61000-3-2, EN 61000-3-3			

(1) Values in brackets = inductive load $\cos \varphi = 0,60$

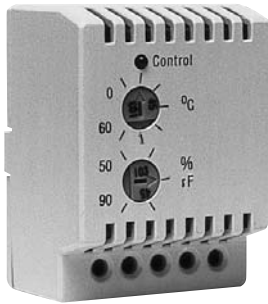
Application diagram



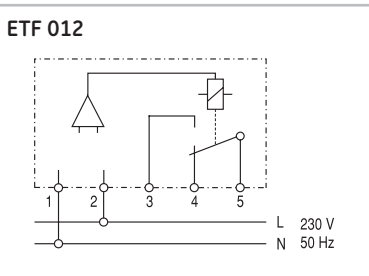
Order codes

	Ref. No.	Pack.
FZK 011	818079	1
KTO	818080	1
KTS	818081	1
ZR 011	818217	1



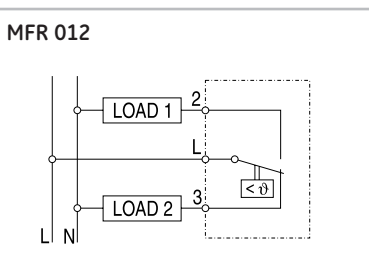


The electronic temperature regulator and humidity controller controls the temperature and humidity level of the air independently of each other by switching resistive and inductive loads (e.g. small heating units and refrigeration units).



The electromechanical hygrometer is designed to control enclosure heaters so that the dew point is raised when a critical relative humidity of 65% is exceeded.

In this way condensation and corrosion are effectively prevented.



Humidity controller

Technical data

Range of adjustment:	
Temperature	0°C - 60°C
Hysteresis	2K
Humidity	50 %-90 %
Response time	160 sec.
Power supply voltage	230V/50-60Hz
Contact type	relay output/inverter contact
Power ⁽¹⁾	8A (4) 250V AC 0.5A 100V DC 8A 12V DC 5A 35V DC
On/off indicator	LED
Weight	140 g
Dimensions (H x W x D)	50 x 67 x 43
Protection level	IP20
Connection	2.5 mm ² screw connector
Fitting	push fit on DIN 35mm rail (EN 50022)
Case	plastic UL 94 VO
Interference protection	N according to VDE 0875

Order codes

	Ref. No.	Pack.
ETF 012	818083	1

(1) Values in brackets = inductive load $\cos \varphi = 0,80$

Mechanical hygrometer

Technical data

Adjustment range	35-95% relative humidity
Switching accuracy	$\pm 3\%$
Voltage	250V AC
Switching capacity, max. load	
resistive load	5 A 250V
inductive load $\cos \phi 0.8$	0.2 A AC 250V
inductive load L/R = 3 ms	1 A DC 50V - DC 75V
switching capacity, min.load	100 mA DC/AC 20V
contact type	change over contact
Connection	terminals in casing 3 x 2.5 mm ²
Casing	Plastic, light grey
Mounting	on DIN 35 mm rail
Protection level	IP 20
Dimensions	67x50x38 mm (HxWxD)
Weight	60 g

Order codes

	Ref. No.	Pack.
MFR 012	818190	1



Notes

Grid area for notes.

Heating

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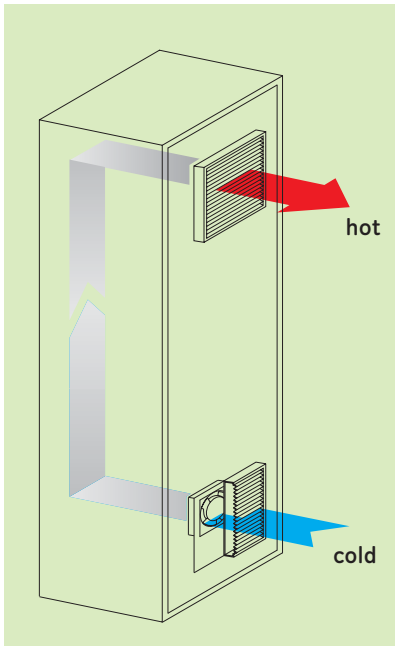
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The electrical operating elements built into a control enclosure, such as power converters, transformers, inductance coils, contactors, relays, etc., emit dissipation heat into the surrounding air.

If this dissipation heat is not removed, it may cause the temperature inside the enclosure to exceed the temperature permissible for electrical equipment. This poses a hazard to, in particular, electronic components.

The heat must therefore be removed to avoid malfunction and, ultimately, idle time. Natural aeration (by domes, gills, etc.) is not recommended, as the risk of contamination is very high and, in addition, the degree of protection of the enclosure cannot be maintained.

In such cases, forced aeration with appropriate built-in filters is the answer. In this system, the cooler ambient air is sucked by a fan into the lower part of the control enclosure, simultaneously filtered, and then blown into the body of the enclosure.

Here the air absorbs the dissipated heat and is then removed via an exhaust filter located in the upper part of the enclosure. An overpressure created simultaneously in the enclosure prevents dust particles penetrating any openings in the housing. Removing warm air by suction is not recommended, as the partial vacuum created within the enclosure would neutralise the dust-protective effect.

Enclosure ventilation

- Colour RAL 7035
- Gasket included
- IP54 as standard
- On request: filter fans and exhaust filters type LS...K and type LG...K in colour RAL 7032

Filter fan selection

The air flow (volume flow rate) of the filter fan depends on the total thermal loss and the temperature difference Δt between the permissible interior temperature and the ambient temperature.

The following formula applies here:

$$V \text{ (m}^3\text{/h)} = \frac{3.1 P \text{ (W)}}{\Delta T \text{ (K)}} \times 1.15$$

V = required air flow (m³/h) - P = thermal loss in watts (W)

ΔT = interior/ambient temperature difference in Kelvin (K)

3.1 = constant numerical value of miscellaneous ventilation data

1.15 = 15% margin

Air flows (m³/h) for thermal losses up to 3000 watts and temperature differences (DT) of 5...25 (K) can be taken from the selection chart.

It is recommended that a 15% margin be added to allow for contaminated filter mats or extreme conditions.

The air flows specified for the individual filter fans were measured in accordance with DIN 24163. At an air density of 1.2 kg/m³, the tolerance is $\pm 5\%$.

Filter material

DIN-tested VILEDON P15/350S, P15/500S or T3/290S filter mats (to DIN 24185) are used in the filter fans and exhaust filters. The material is thermally bonded. Behaviour in fire corresponds to DIN 53438, class F1.

The P15/350S filter mat collects dust particles of a minimum size of 10 μm at a separation efficiency of 85%, while the P15/500S filter mat collects dust particles of a minimum size of 5 μm at a separation efficiency of 94%.

If the dust particles are extremely fine, the supplementary, denser T3/290S filter mat may be used. This collects dust particles of a minimum size of 0.5 μm at a separation efficiency of 96% (please note the reduced air flow).

Soiled filter mats can be cleaned by rinsing out with water, by beating, or by blowing through with compressed air (do not wring out!).

Housing

Housings are made of heat-resistant ABS plastic (-35°C to +85°C), self-extinguishing to UL 94 VO, tracking resistance to 3kA. Colour RAL 7035.

Other colours available upon request.

Degree of protection

Our filter fans are conform to relevant CE regulations.

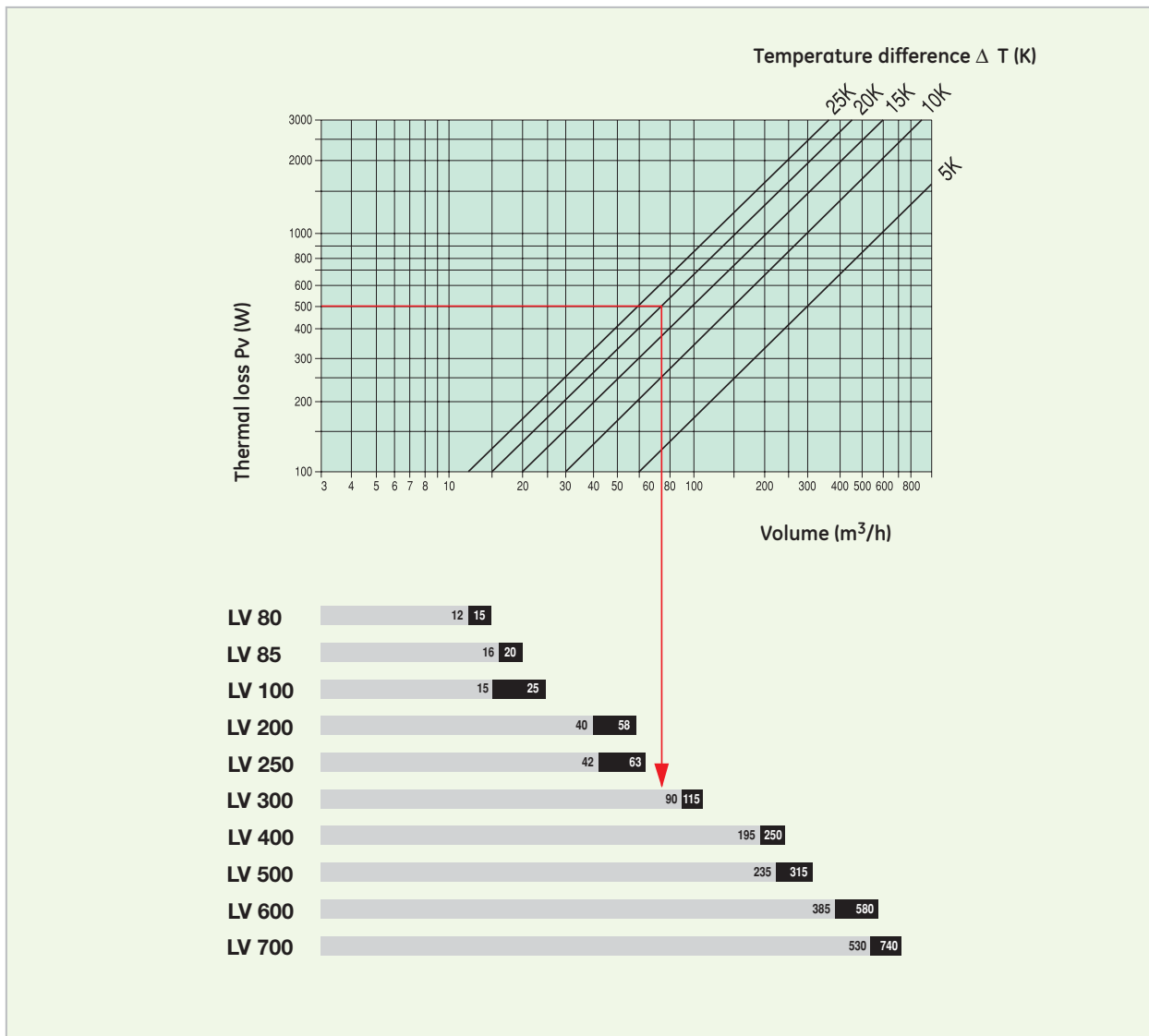
Contact-voltage proof to DIN 31001. Resistance to foreign bodies and water to IP54 (EN 60529) is achieved by combining a horizontal air flow with a gasket, delivered as a standard.

Advantages

Serie LV filter fans offer the follow advantages:

- | | |
|--------------------|---|
| Quick mounting | Snap into the cut-out, no screws needed |
| Low shape | Maximum protrusion of the cover is only 6,5 mm |
| Interchangeability | Filter fans LV 200, LV 400 & LV 500 fit into the cut-outs of the comparable LS range of filter fans |

Selection of the filter fan and the exhaust filter



Example

Parameters

Thermal loss 500W
 Temperature difference 20K

Selection



LV 300 + GV 300

90	Filter fan + exhaust filter
115	Filter fan free blowing with filter mat P15/350S



Filter fans and exhaust filters

Standard delivery

Filter fan				Exhaust filter		
230VAC - 50/60Hz IP54 sealing included standard filter mat P15/350 S RAL 7035				IP54 sealing included standard filter mat P15/350 S RAL 7035		
						
Type	Ref. No.	m ³ /h	Cutout in mm ⁽³⁾	Type	Ref. No.	m ³ /h
LV 80 ⁽²⁾	818195	15	68 x 68	GV 80	818200	12
LV 85 ⁽¹⁾⁽²⁾	818196	20	68 x 68	GV 80	818200	16
LV 100 ⁽²⁾	818197	25	92 x 92	GV 100	818201	15
LV 200	818140	58	116 x 116	GV 200	818144	40
LV 250	818198	63	125 x 125	GV 250	818202	42
LV 300	818141	115	177 x 177	GV 300	818145	90
LV 400	818142	250	223 x 223	GV 400/500	818146	195
LV 500	818143	315	223 x 223	GV 400/500	818146	235
LV 600	818199	580	292 x 292	GV 600/700	818182	385
LV 700	818181	740	292 x 292	GV 600/700	818182	530

(1) 24VDC (2) P15/150S



(3) Detail drawing see page J.56

Technical data filter fan

Filter fan 230VAC 50/60Hz	818195	818196	818197
Filter fan type	LV 80	LV 85	LV 100
Exhaust filter	GV 80	GV 80	GV 100
IP54 & sealing is standard	yes	yes	yes
Free air flow	m ³ /h	15	20
In combination with exhaust filter	m ³ /h	12	16
Standard filter mat P 15/150 S (67 % efficiency)	yes	yes	yes
Standard filter mat P 15/350 S (85 % efficiency)	-	-	-
Optional filter mat P 15/500 S (94 % efficiency)	-	-	-
Free air flow	m ³ /h	-	-
In combination with exhaust filter	m ³ /h	-	-
Optional filter mat P 15/350 S + fine filter mat T3/290 S (96 % efficiency)	-	-	-
Free air flow	m ³ /h	-	-
In combination with exhaust filter	m ³ /h	-	-
Power input 230VAC - 50/60Hz	W	5/4	3 (24VDC)
Current 230VAC - 50/60Hz	A	22/16mA	130mA
Noise level	dB (A)	27	48.5
Service life	hour	40000	60000
Speed	rpm	2550/3100	6850
Temperature	-10°C to +55°C	-20°C ... +65°C	-20°C ... +65°C
Approval	CE/UL/CSA	yes	yes
Turn motor 180° to change from blowing to sucking (reduced air flow)	yes	yes	yes
Suction version can be ordered as option	-	-	-
115VAC	on request	-	yes
400VAC	on request	-	-
24VDC	on request	yes	standard
12VDC	on request	yes	yes
Options			
Spare filter mat P15/350 S	-	-	yes
Spare filter mat P15/500S	-	-	-
Fine filter mat T3/290S	-	-	-
Gasket IP 54	-	-	-

Dimensional drawings ● Page J.56



Gasket (spare part)		Filter mat (spare part)							
IP54 Polyethylen		P15/150S degree of separation 67% filter class ⁽⁴⁾ G2 (EU 2)		P15/350S degree of separation 85% filter class ⁽⁴⁾ G3 (EU 3)		P15/500S degree of separation 94% filter class ⁽⁴⁾ G4 (EU 4)		T3/290 S degree of separation 96% filter class ⁽⁴⁾ G4 (EU 4)	
									
Type	Ref. No.	Type	Ref. No.	Type	Ref. No.	Type	Ref. No.	Type	Ref. No.
D 80	818203	AM 815 P	818206	-	-	-	-	-	-
D 80	818203	AM 815 P	818206	-	-	-	-	-	-
D 100	818204	AM 115 P	818207	-	-	-	-	-	-
D 200	818173	-	-	AM 235 P	818208	AM 200 P	818166	-	-
D 250	818205	-	-	AM 0135 P	818209	AM 01 P	818213	-	-
D 300	818174	-	-	AM 335 P	818210	AM 300 P	818167	AM 300 T	818170
D 400	818175	-	-	AM 435 P	818211	AM 400 P	818168	AM 400 T	818171
D 400	818175	-	-	AM 435 P	818211	AM 400 P	818168	AM 400 T	818171
D 700	818176	-	-	AM 735 P	818212	AM 700 P	818169	AM 700 T	818172
D 700	818176	-	-	AM 735 P	818212	AM 700 P	818169	AM 700 T	818172

(4) DIN EN 779

818140	818198	818141	818142	818143	818199	818181
LV 200	LV 250	LV 300	LV 400	LV 500	LV 600	LV 700
GV 200	GV 250	GV 300	GV 400/500	GV 400/500	GV 600/700	GV 600/700
yes	yes	yes	yes	yes	yes	yes
58	63	115	250	315	580	740
40	42	90	195	235	385	530
-	-	-	-	-	-	-
yes	yes	yes	yes	yes	yes	yes
46	48	90	220	260	430	580
30	31	60	165	195	250	410
-	-	58	125	165	255	390
-	-	51	115	145	210	330
19/18	19/18	19/18	45/39	50/61	64/80	115/155
0.11	0.11	0.11	0.3	0.24/0.27	0.39/0.45	0.51/0.68
42	42	51	52	65	60	70
27500	27500	27500	40000	40000	40000	40000
2650/3100	2650/3100	2650/3100	2760/3030	2740/3120	2550/2800	2550/2750
yes	yes	yes	yes	yes	yes	-10°C ... +50°C
yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	-	yes	-
-	-	-	-	yes	-	818194
yes	yes	yes	yes	yes	yes	yes
-	-	-	-	yes	-	yes
yes	yes	yes	yes	-	yes	-
-	-	-	-	-	-	-
yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes
-	-	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes

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Roof mounted fan

Sucks warm air out of the top of the enclosure.

Optimal air conduction, low noise level and high air flow through the use of a built-in radial ventilator.

In combination with an air inlet type GV 400/500 or GV 600/700 in the bottom of the enclosure.

In sheet steel and painted in RAL 7035

Low built-in depth: 50 mm.

Sealing included.

Mounting: inserted from above, into the cut-out and fastened with M6 nuts from below.

Connection: with a plug.

Order codes

Type	Ref. No.	m ³ /h	Cutout (mm)	Pack.
DL 400	818214	405	345 x 265	1
DL 420	818215	690	345 x 265	1

Technical data

Filter fan 230VAC 50/60Hz		818214	818215
Roof mounted fan		DL 400	DL 420
Free air flow	m ³ /h	405	690
In combination with exhaust filter GV 600/700	m ³ /h	350	610
Power input 230VAC - 50/60Hz	W	40/45	110/150
Current 230VAC - 50/60Hz	A	0.20 / 0.21	0.55 / 0.73
Noise level	dB (A)	58 / 62	73 / 76
Temperature	-10°C ... +60°C	•	•
115VAC	on request	•	•

Roof mounted air vent

Without filter fan.

With filter mat to prevent entering of dust.

Sealing included.

Order codes

Type	Ref. No.	Cutout (mm)	Pack.
DE 400	818216	345 x 265	1

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Notes

Grid area for notes.

Ventilation

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Cooling units - top/roof mounting

Technical data

Ozone-friendly refrigerant R 134a	
Cooling unit for top-mounting: cools at source of heat	
Sturdy cooling unit for industrial use means: long service life	
Seal with protected edge means no extra work on the cutout	
Every unit is fitted with a fault contact	
Every unit is fitted with lifting lugs to facilitate installation	
6 x M6 threaded holes in the base plate ensure tight connection between cabinet and cooling unit	
Finish	RAL 7035
Protection	IP54 against the switch cabinet IP34 against the ambience (DIN 40050)
Frequency	50Hz 230V 50/60Hz, 115V 60Hz on request 400/440V 50/60Hz, UL approved.

Order codes

H x W x D	Capacity	Volt	Ref. No.	Pack.
400 x 600 x 390	810W	115/230	821820	1
400 x 600 x 390	1150W	115/230	821821	1
400 x 600 x 390	1600W	115/230	821822	1
465 x 720 x 465	3000W	400/440	821823	1

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Cooling units - side and door mounting

Technical data

Description: Ozone-friendly refrigerant R 134a	
Cooling unit for lateral installation	
Seal with protected edge means no extra work on the cutout	
Every unit is fitted with a fault contact	
Suspension device for easy installation	
4/6 x M6 threaded holes for mounting on side panel or door	
Finish	RAL 7035
Protection	IP54 against the switch cabinet IP34 against the ambience (DIN 40050)
Frequency	115V 60Hz on request 230V 50/60Hz, 400V 50Hz, 440V 60Hz

Order codes

H x W x D	Capacity	Volt	Ref. No.	Pack.
330 x 375 x 190	220 W	115/230	821824	1
445 x 315 x 225	350 W	115/230	821825	1
580 x 320 x 210	470 W	230	821826	1
920 x 390 x 200	820 W	230	821827	1
1350 x 390 x 200	1400 W	230	821828	1
1350 x 390 x 140	1400 W	230	821829	1
1350 x 400 x 270	2000 W	400/440	821830	1
1350 x 390 x 140	1100 W	230	821831	1
1350 x 390 x 200	1100 W	230	821832	1
1350 x 400 x 270	2500 W	400/440	821833	1

J/X

Air/Water cooling unit



Technical data

For vertical installation - Sealed with protective edging.

No extra work on the installation cutout necessary.

Water circuit tested for 30 bar pressure.

Temperature regulated by integrated thermostat.

10 bar operating pressure.

Frequency: 50/60Hz

Finish: RAL 7035

Order codes

H x W x D	Capacity	Volt	Ref. No.	Pack.
Sheet steel				
500 x 200 x 100	650W	230	821834	1
500 x 200 x 100	1000W	230	821835	1
587 x 390 x 114	2400W	230	821836	1
1350 x 390 x 140	3200W	230	821837	1
860 x 560 x 137	3550W	230	821838	1
Stainless steel*				
1350 x 390 x 140	3200W	230	821839	1

* Other versions available on request

Cooling units - door/side mounting



Technical data

Ozone friendly refrigerant R134a.

Easy to install with "snap in" installation

Light weight construction

Finish RAL 7035

Frequency 50/60Hz UL approved

Protection IP54 against the switch cabinet

IP34 against ambient

Order codes

H x W x D	Capacity	Volt	Ref. No.	Pack.
1543 x 485 x 240	1000W	230V	821840	1
1543 x 485 x 240	1500W	230V	821841	1
1543 x 485 x 240	2000W	400V	821842	1
1543 x 485 x 240	2500W	400V	821843	1

Air/Water heat exchanger



Technical data

For horizontal mounting - Water circuit tested for 30 bar pressure.

Sealed with protective edging.

No extra work on the installation cutout necessary.

Temperature regulated by integrated thermostat and solenoid valve.

10 bar max. operating pressure.

Tubes and heat exchangers are available in stainless steel (1.4571).

Frequency: 50/60Hz

Finish: RAL 7035

Order codes

H x W x D	Capacity	Ref. No.	Pack.
140 x 600 x 390	1450-2150W	821844	1
190 x 720 x 465	2100-3200W max.	821845	1



Notes



Climate control

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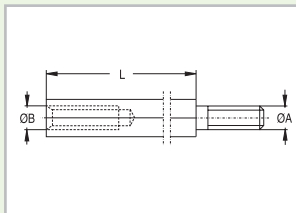
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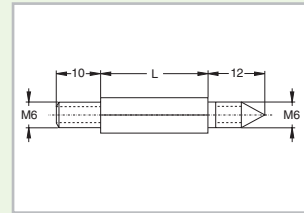
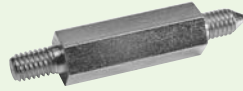
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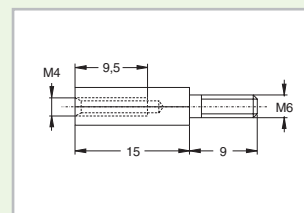
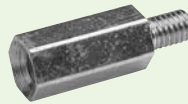
Height extension studs				
L (mm)	Ø A	Ø B	Type M4	
10	M4	M4		890800 50
15	M4	M4		890801 50
20	M4	M4		890802 50
25	M4	M4		890803 50
30	M4	M4		890804 50
60	M4	M4		890805 50
65	M4	M4		890806 50
97	M4	M4		890807 50
102	M4	M4		890808 50



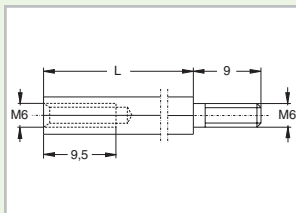
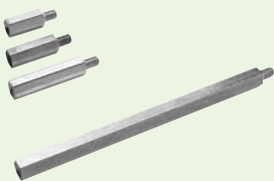
Height extension studs			
Type M6		L (mm)	Ø
811342	100	60	M6-M6
811343	100	30	M6-M6



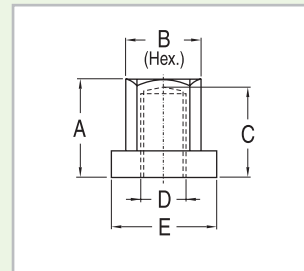
Type M4-M6			
811336	100	15	M6-M4



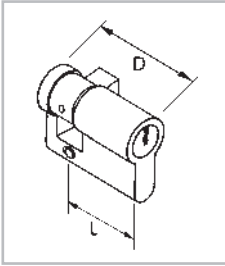
Height extension studs				
L (mm)	Ø	Type M6		
15	M6-M6		811337	100
20	M6-M6		811338	100
25	M6-M6		811454	100
30	M6-M6		811339	100
35	M6-M6		811455	100
45	M6-M6		811456	100
55	M6-M6		811457	100
65	M6-M6		811458	100
70	M6-M6		811340	100
80	M6-M6		811460	100
100	M6-M6		811461	100
120	M6-M6		811341	100



Insulated nuts (grey RAL 7035)							
		A	B	C	D	ØE	
601223	100	M4	15	13,2	8,5	M4	11
601224	100	M5	18	17,0	10	M5	14
601225	100	M6	22,3	20,4	9	M6	17
601226	50	M8	25,3	24,2	10	M8	20



Profile half cylinder locks

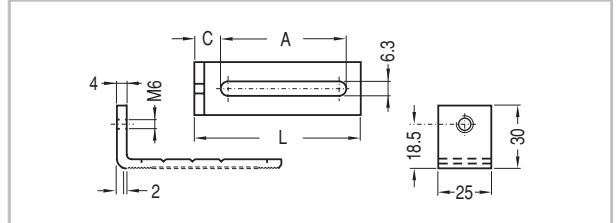


Standard: D = 40 mm - L = 30.5 mm
On demand: D = 45 mm - L = 35.5 mm

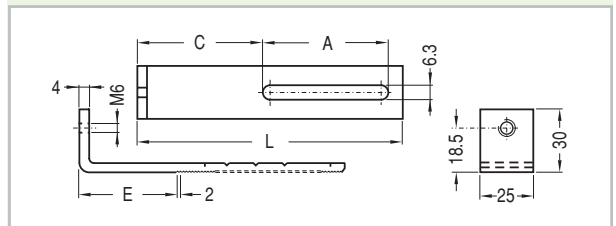
	832030	1
	With 2 keys V2432-E	
	832031	1
	With 2 keys 1242-E	
	832465	1
	With 2 keys 455-E	
	832466	1
	With 2 keys 405-E	
	843435	1
	With 1 square key, 6 mm	
	832032	1
	With 1 square key, 8 mm	
	832033	1
	With 1 triangular key, 8 mm	
	832034	1
	With 1 triangular key, 11 mm	
	832029	1
	With 1 double-bit key, 3 mm	

Brackets

		L	A	C	E
811477	100	25	10	9,5	-
811478	100	40	24	9,5	-
811479	100	80	64	9,5	-



811480	100	120	64	49,5	41,5
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Keys

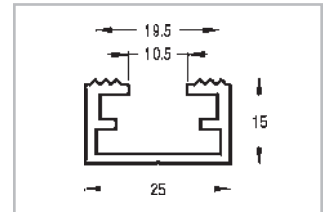


	832022	2
	For safety lock No. V2432E	
	832026	1
	For safety lock with 8 mm square	
	832027	1
	For safety lock with 8 mm triangle	
	832072	1
	For safety lock with 11 mm triangle	
	832028	1
	For safety lock with double bit 3 mm	

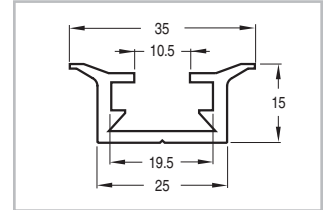
Aluminium profiles

Profile length 3 m

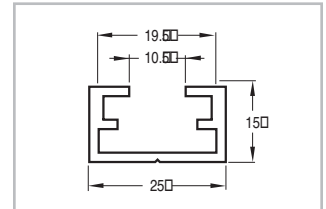
811417	1
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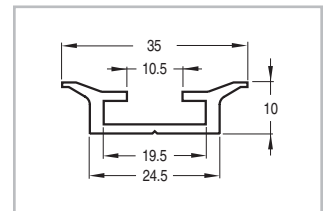
811501	1
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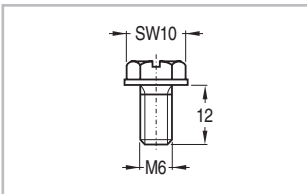
811421	1
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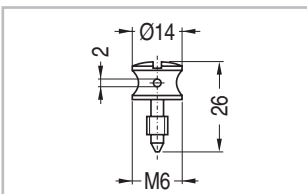
811502	1
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Screws

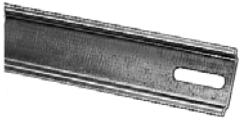


811483	100
Screws M6 with flanges	



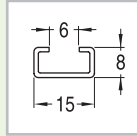
811451	100
Screws M6 in PVC for cover plate (sealable)	

Galvanised profiles



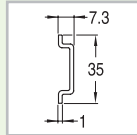
890848 1

Profile C 15 x 8 x 1
Length: 3 m



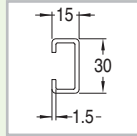
890847 1

DIN profile 35 x 7.3 x 1
Length: 3 m



811619 1

Profile C 30 x 15 x 1.5
Length: 3 m



811363 25

Sliding nuts for C 30 x 15
M6



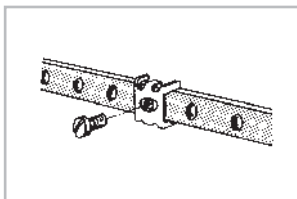
811365 50

Sliding nuts for C 25 x 10
M6



811263 1

Cu profile 12 x 5 with thread M 5
Length: 3 m



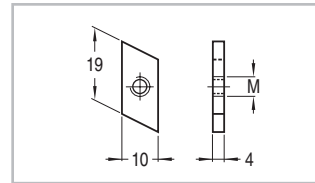
851123 10

Connectors + screws M 5 x 13
Max. 2 x 10 mm² per connector

Nuts in metal

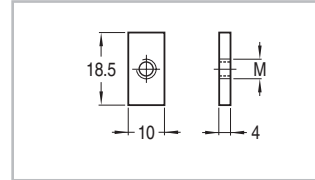
811435 100

M6



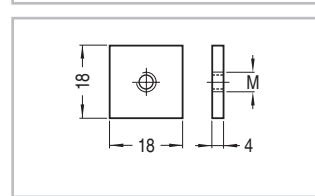
811438 100

M4



811442 100

M6



811446 100

M6

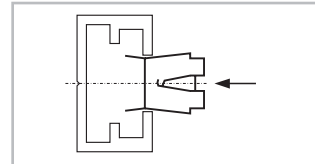
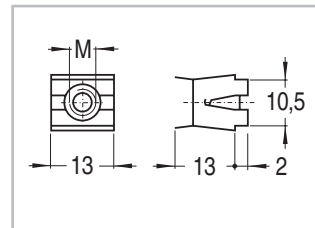
811447 100

M8

Nuts in PVC

811443 100

M6



Sliding nuts

For perforated mounting plate

831328 50

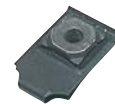
Bolt M4

831329 50

Bolt M5

831330 50

Bolt M6



Height extension studs

610312 10

For use on symmetrical
DIN-rail
Height: 21 mm



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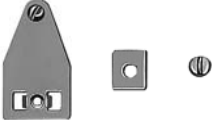






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Fixation material

	890835	10
Sliding contact + screw M4		
	890836	10
Sliding contact + washer + screw M4		
	890842	10
Set for meter fixation M4		
	890843	20
Screw M5 for meter fixation L = 11 mm		
	890844	20
Screw M5 for meter fixation L = 21 mm		
	890849	50
Screw M 4 x 8		
	890841	50
Sliding nut M4		
	890850	20
Washer M4		
	890840	20
Coupling kit		
	890839	2
Cross fixation for C-profiles		

Profiles

Type AB (C 15 x 8)

Profile length	Width of the box		
100 mm	150	890809	10
135 mm	185	890812	10
250 mm	300	890817	10
320 mm	370	890822	10
506 mm	555	890827	10
550 mm	600	890831	10

Type HB (C 15 x 8)

Profile length	Width of the box		
110 mm	185	890813	10
225 mm	300	890818	10
295 mm	370	890823	10
481 mm	555	890828	10
525 mm	600	890832	10

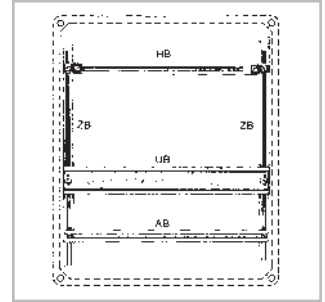
Type UB (1)

Profile length	Width of the box		
90 mm	150	890810	10
100 mm	150	890811	10
135 mm	185	890814	10
200 mm	250	890816	10
250 mm	300	890820	10
276 mm	300	890819	10
320 mm	370	890824	10
506 mm	355	890829	10
550 mm	600	890833	10


(1) DIN 46.277/bl.3


Type ZB (C 15 x 8)

Profile length	Height of the box		
105 mm	185	890815	10
220 mm	300	890821	10
290 mm	370	890825	10
405 mm	485	890826	10
476 mm	555	890830	10
520 mm	600	890834	10





Mounting plate in polyurethane foam	
	
	890500 1
	1305 H x 670 W x 12 D

Insulated cover plate in orange colour	
	Thickness 3 mm
	811096 1
	1900 x 900 x 3 mm

General accessories

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- B
- C
- D
- E
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Compression glands - Metric - IP68 in polyamide (RAL 7035)

Metric size D2	Drill Ø (mm)	Clamping range D1 (mm)	L1	L2	L3	E	Keywidth Sw (mm)		
M12	12.5	3 - 6,5	21	12	8	17	15	851650	50
M16	16.5	4 - 8	25	15	8	21	19	851651	50
M20	20.5	6 - 12	35	20	10	27	24	851652	50
M25	25.5	12 - 18	36	22	12	36	33	851653	25
M32	32.5	17 - 25	42	25	12	47	42	851654	10
M40	40.5	20 - 32	46	30	13	58	53	851655	10
M50	50.5	32 - 38	47	30	13	66	60	851656	5
M63	63.5	37 - 44	47	30	14	71	65/68*	851657	5

*body 68 / nut 65 Temperature : - 30° C up to + 100° C

Lock nuts in polyamide - Metric - (RAL 7035)

		Metric size D1	Width D3	Thickness M2	Keywidth Sw (mm)	
	851664	100	M12	19	5	17
	851665	100	M16	25	5	22
	851666	100	M20	29	6	26
	851667	100	M25	36	6	32
	851668	50	M32	46	7	41
	851669	25	M40	54	7	50
	851670	25	M50	67	8	60
	851671	25	M63	83	8	75

Temperature : - 40° C up to + 100° C

Compression glands - Metric - IP54 in polystyrene (RAL 7035)

Metric size D2	Drill Ø (mm)	Clamping range D1 (mm)	L1	L2	L3	E	Keywidth Sw (mm)		
M12	12.5	3 - 6	22	13.6	8	18	16	851658	50
M16	16.5	5 - 9,5	24	14.2	8	23	21	851659	50
M20	20.5	8 - 13	27	16.2	9.5	28	25	851660	50
M25	25.5	10 - 16	30	18.2	10	33	30	851661	50
M32	32.5	14 - 20	35	21.5	12	40	36	851662	10
M40	40.5	19 - 27	43	24.5	12	51	46	851663	10

Temperature : - 30° C up to + 60° C

Blanking plugs - Metric - IP54 in polyamide (RAL 7035)

		Metric size D1	Width D2	Thickness L1	Thread L2 length (mm)	
	851672	100	M12	15	10	6
	851673	100	M16	20	10.5	6
	851674	100	M20	24	10.5	6
	851675	100	M25	30	13	8
	851676	100	M32	37	13.5	8
	851677	100	M40	46	14	8
	851678	50	M50	56	16.5	10
	851679	25	M63	70	18	12

Temperature : - 40° C up to + 100° C

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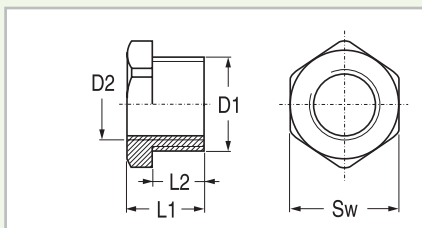
J/X



Reducing ring - Metric - IP54 in polyamide (RAL 7035)

Metric size D1 - D2	Thread (mm)		Keywidth		
	L1	L2	Sw (mm)		
M20 - M16	12.5	8.5	24	851680	50
M25 - M20	14	8	29	851681	50
M32 - M25	16	10	36	851682	25
M40 - M32	16	10	46	851683	10
M50 - M40	18	12	55	851684	5
M63 - M50	18	12	68	851685	5

Temperature : - 40° C up to + 100° C

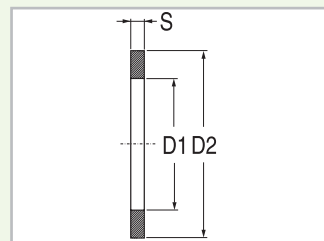


Connection thread grummet - Metric - in polyethylene (RAL 7035)

			Metric size	S (mm)	D1 (mm)	D2 (mm)
851691	100	M12	1.5	11.6	16	
851692	100	M16	1.5	15.6	21	
851693	100	M20	2	19.4	25	
851694	100	M25	2	24.4	32	
851695	100	M32	2	31.4	39	
851696	100	M40	2	39.4	47	
851697	100	M50	3	49.3	57	
851698	100	M63	3	62.2	70	

Temperature : up to + 70° C

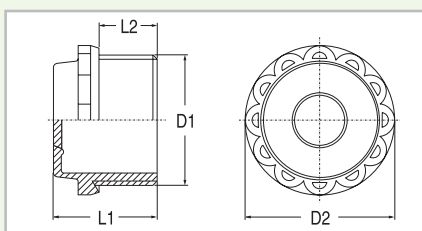
thickness s - diameter d1 - diameter d2



Universal cable entries - Metric - IP54 in polyethylene (RAL 7035)

Metric size D1	Cable section D2	Thread in mm				
		(mm)	L1			L2
M16	20	6 - 8	16	8	851686	100
M20	24	9 - 12	19	10	851687	100
M25	30	11 - 17	22	12	851688	50
M32	37	16 - 22	25	14	851689	25
M40	46	19 - 25	28	16	851690	10

Temperature : - 40° C up to + 80° C



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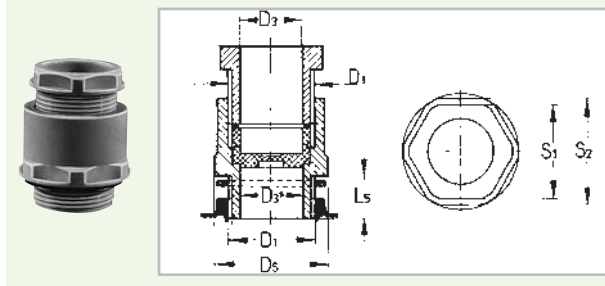
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Compression glands - PG - IP54 in polycarbonate (grey)									
PG	D1 (mm)	Drill Ø (mm)	D3	D5	L5	S1	S2		
11	18.6	19	11	24	8	19	22	851038	50
13.5	20.4	21	13	26.5	9	21	24	851042	50
16	22.5	23	16	29.5	10	23	27	851046	50
21	28.3	29	21	35	11	30	32	851051	25
29	37	38	27.5	45	11	41	42	851056	10
36	47	48	34	57	13	50	53	851060	5
42	54	55	42	64	12.5	55	60	851062	5
48	59.3	61	46	69.5	14	60	65	851063	5

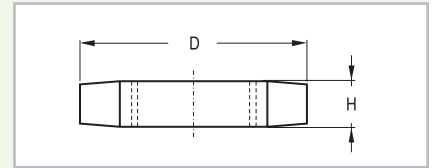
Compression glands - PG - IP54 in polystyrene (black)									
PG	D1 (mm)	Drill Ø (mm)	D3	D5	L5	S1	S2		
11	18.6	19	11	24	8	19	22	851036	50
13.5	20.4	21	13	26.5	9	21	24	851040	50
16	22.5	23	16	29.5	10	23	27	851044	50
21	28.3	29	21	35	11	30	32	851049	25
29	37	38	27.5	45	11	41	42	851054	10
36	47	48	34	57	13	50	53	851058	5



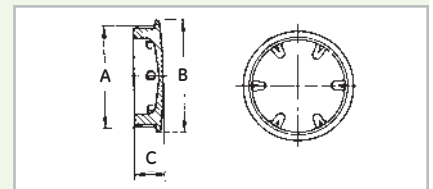
Compression glands - PG - IP54 with nuts	
Glass fibre reinforced polyamid Grey	
600504	25
Compression gland PG21 + nut	
600505	25
Compression gland PG29 + nut	
Brown	
600501	25
PG21 compression glands in impact-resistant polystyrene and nut in glasfibre reinforced polyamid	
600502	25
PG29 compression glands in impact-resistant polystyrene and nut in glasfibre reinforced polyamid	



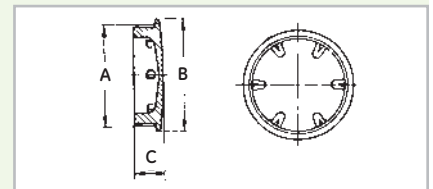
Locknuts - Polycarbonate (grey)				
		PG	D	H
851075	50	11	25	5
851076	50	13.5	27.5	5.5
851077	50	16	31	6
600506	100	21	40	7
600507	50	29	46	7.5
851079	50	36	61.5	8.5
851080	50	42	69.3	9
851081	20	48	77.4	9.5



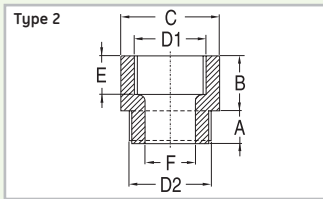
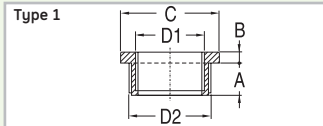
Blanking plugs (black)				
		A	B	C
851053	50	PG11	21	13
851067	50	PG13.5	24	11
851064	50	PG16	26	11
851065	50	PG21	32	11.5
851066	50	PG29	41	13
851068	50	PG36	51	12.5



Blanking plugs (grey RAL 7035)				
		A	B	C
616915	20	PG11	21	13
616918	20	PG13.5	24	11
616916	20	PG16	26	11
616917	20	PG21	32	11.5
616920	20	PG29	41	13
616919	20	PG36	51	12.5

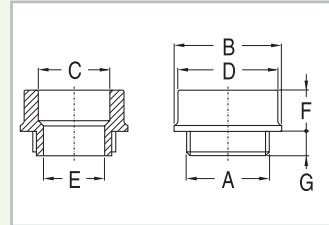


Reducing bushes - threaded									
Type	A	B	C	D1	D2	E	F		
2	10	13	24	PG11	PG13.5	10	14	851086	20
1	9.5	3	26	PG11	PG16	-	-	851087	20
2	11	13	26	PG13.5	PG16	10	16	851088	20
1	9.5	3	32	PG13.5	PG21	-	-	851089	20
1	9.5	3	32	PG16	PG21	-	-	851090	20
1	9.5	3	41	PG21	PG29	-	-	851091	20
1	9.5	3	51	PG29	PG36	-	-	851092	10

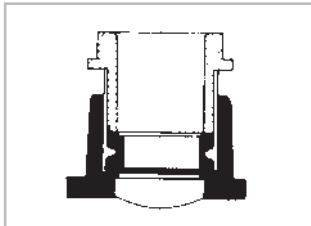


Tube-inlet bushes - Non-threaded (black)									
		Ø tube	A	B	C	D	E	F	G
851069	20	5/8"	PG16	26	17	21	14.1	15	9
851070	20	3/4"	PG16	26	20	24	16	15	9
851071	20	3/4"	PG21	34	24	-	16	25	9
851072	10	1"	PG21	33	26.5	32	21	20	9
851073	10	1 1/4"	PG29	39	33	-	30	21	9
851074	20	1 1/2"	PG29	45	39	-	30	21	9

Tube-inlet bushes - Non-threaded (grey)									
		Ø tube	A	B	C	D	E	F	G
600933	25	5/8"	PG16	26	17	21	14.1	21	9
600934	25	3/4"	PG16	26	20	24	16	21	9



Compression bushes in polystyrene (black)



851037	20
PG11	
851041	20
PG13.5	
851045	20
PG16	
851050	20
PG21	
851055	10
PG29	
851059	10
PG36	

Inlet bushes for metric tubes - Ø16 and Ø20 (RAL 7035)



Compression bushes in polycarbonate (grey)



851039	20
PG11	
851043	20
PG13.5	
851047	20
PG16	
851052	20
PG21	
851057	10
PG29	
851061	10
PG36	

A

B

C

D

E

F

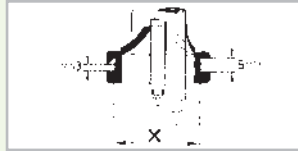
G

H

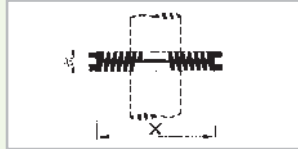
I

J/X

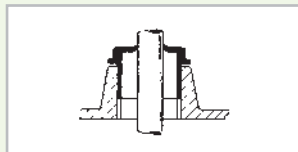
Universal cable entries (grey)				
Max. Ø cable	Drill Ø		Colour	
	PG	X (mm)		
18	16	23	grey	610130 25
24	21	29	grey	610132 25
32	29	38	grey	610133 25
49	42	54	grey	852191 1



Max. Ø cable	Drill Ø		Colour	
	PG	X (mm)		
12	48	55	grey	851096 20
12	30	35	grey	851097 20
12	36	45	grey	851098 20
22	66	75	grey	851099 10
22	58	65	grey	851100 10

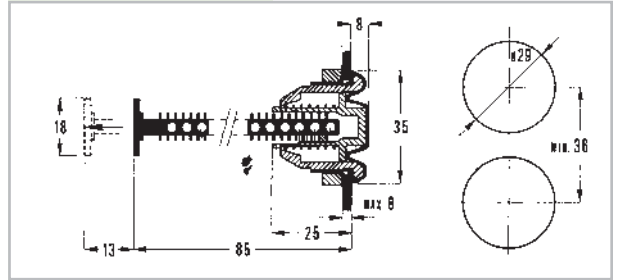
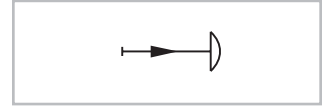


Max. Ø cable	PG	Colour	
14	13.5	grey	851083 100
16.5	16	grey	851084 100
21	21	grey	851085 100



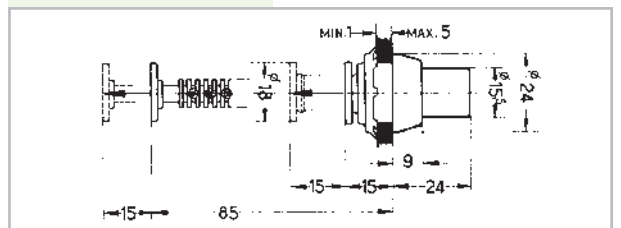
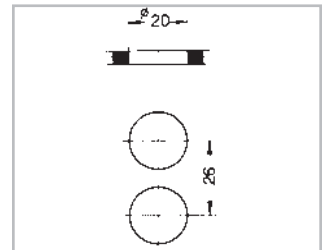
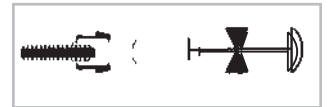
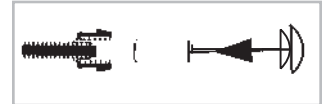
Push-buttons □ IP55

	851007	10
Green		
	851008	10
Red		
	851009	10
Black		

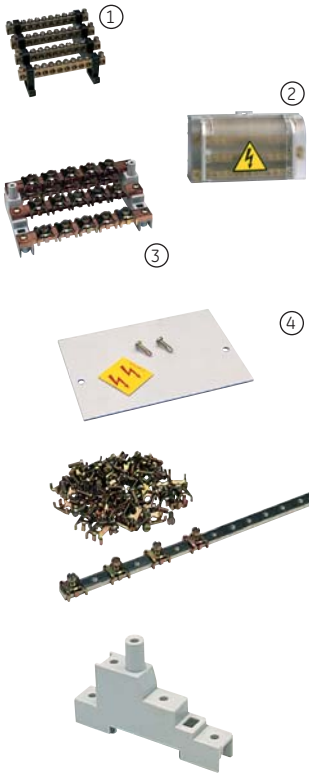


Push-buttons □

	851011	10
Yellow		
	851013	10
Red		
	851012	10
Yellow		
	851014	10
Red		
	851010	10
Yellow		



Terminals



①	610022	12
4 pole terminal - 6.5 x 9 mm bars 63A For DIN-rail mounting		
②	617992	1
4 pole terminal with cover - 160A For DIN-rail mounting		
③	610020	12
4 pole terminal - 12 x 5 mm bars 160A For DIN-rail mounting		
④	610021	12
Protective screen for 610020		
	610017	10
Earth-neutral bar 12 x 5 mm Length 1.2 m + 50 clamps + 50 nuts Max. distance between supports: 200 mm To use with support 851192		
	610018	1
Support for four bars 12 x 5 Max. distance between support: 200 mm For DIN-rail mounting Use with above bars		

Cable on bus bar connection

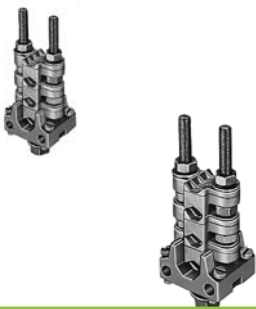
4 connections possibility
 - Aluminium cable can be connected
 - Bar thickness: max. 12 mm
 - Bar width: no limit

35-70 mm²

1 cable	779220	4
2 cables	779221	4
3 cables	779222	4
+ 4 connections (16 mm ²)		

90-150 mm²

1 cable	779217	4
2 cables	779218	4
3 cables	779219	4
+ 4 connections (25 mm ²)		



Insulation hood in rubber



	779224	4
For terminal 35-70 mm ²		
	779223	4
For terminal 95-150 mm ²		

Branch terminals

	610185	4
Phase bar - black 6 x 10 mm ² and 2 x 16 mm ² To clip on 12 x 2 mm bar		
	610186	4
Earth bar - green 6 x 10 mm ² and 2 x 16 mm ² To clip on 12 x 2 mm bar		
	610187	4
Neutral bar - blue 6 x 10 mm ² and 2 x 16 mm ² To clip on 12 x 2 mm bar		
	610065	4
14 x 16 mm ² Fixation on DIN-rail		
	851021	10
Earth bar 12 x 4 with 3 clamps Screw fixation		
	851325	5
Neutral clamp with screw fixation (also snap on bar 12 x 2)		
	851172	10
Neutral clamp with screw fixation		



Bar on busbar connections

		Main bar	Secondary bar	Total bar thickness	
				Min.	Max.
851125	50	12	12	5	15
851120	10	20	15-20	5-4	26-24
851129	10	30	15-20-30	7-6-5	28-27-26



Cable on bar connection

	Max. Ø Cable cross (mm ²)	Bar thickness (mm)	Bar width (mm)	
851117	10	10 to 50	5 to 6	30
851118	10	4 to 35	3 to 5	15
851121	10	16 to 20	2 to 5	12 to 5



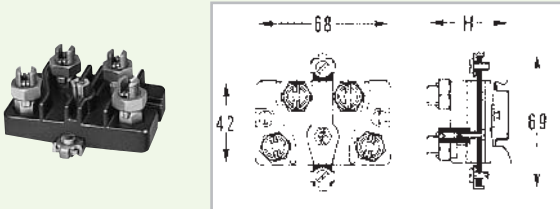
Terminals for Al and Cu cable 10-16 mm²

4 terminals with max. capacity

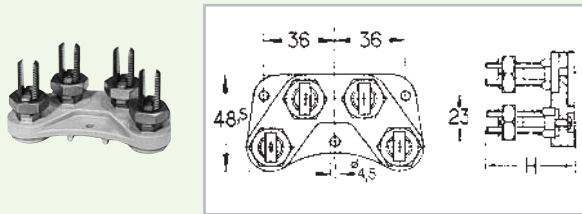
Single compression unit: 4 x 4 mm² - 4 x 6 mm² - 4 x 10 mm² - 3 x 16 mm²

Double compression unit is optional

Fixation	Earth terminal	H	10-16 mm ²	
with screws	without	46		779212 5
on DIN-profile	without	48		779213 5
with screws	with	46		779214 5
on DIN-profile	with	48		779215 5



with screws	without	48		890705 5
-------------	---------	----	--	-----------------



Double compression unit

				779216 1
--	--	--	--	-----------------

Set of 4 compression nuts

Insulated hood



				890704 20
--	--	--	--	------------------

In rubber

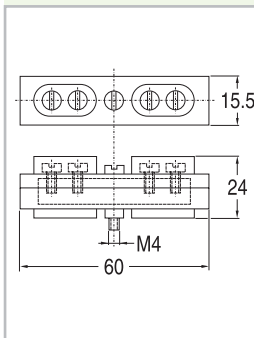
Conduct through terminal

16 mm² with double clamp

Conductors 4 - 16 mm² - 500V

Al conductors 4 - 25 mm²

				601231 20
--	--	--	--	------------------



Terminals 25-35 mm²

Without insulation hood

				779201 10
--	--	--	--	------------------

1 compression nut • Al/Cu cable

				779202 10
--	--	--	--	------------------

2 compression nuts • Al/Cu cable

With insulation hood

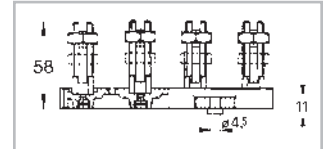
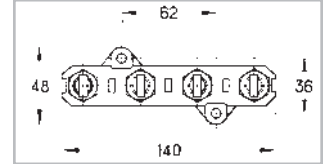
				779204 10
--	--	--	--	------------------

2 compression nuts • Al/Cu cable

With insulation hood and DIN-rail fixation

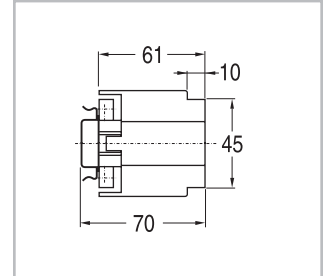
				779205 10
--	--	--	--	------------------

2 compression nuts • Al/Cu cable



Insulation hood

				890838 10
--	--	--	--	------------------



Double compression unit

				779203 10
--	--	--	--	------------------

Set of 4 compression nuts

Key

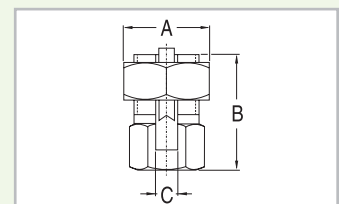
				601222 1
--	--	--	--	-----------------

Insulated key M20 - 1000V for terminals 25-35 mm².



Cable connection for outer lines

		Section	A	B	C
601227	100	10 mm ²	14	24	4.5
601228	50	16 mm ²	22	29	5.5
601229	25	35 mm ²	25	35	7.5
601230	25	50 mm ²	28	43.5	9.0

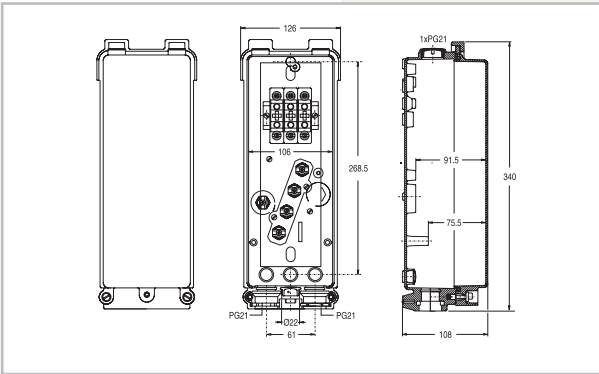


Street lighting pole box



890702 1

Empty unit in fiberglass reinforced polyester - IP44 - IK09.
Cover with triangular screw (TTR).
Top: one threaded entry for PG21 cable gland.
Bottom: two entries for either two universal entries for PG21 or two cable glands PG21



Fixation on the back (Al)

891680 1

Set of 2 fixations with 4 self-tapping screws (stainless steel)



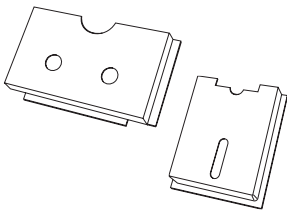
Fixation on the back (stainless steel)

891681 1

Set of 2 fixations with 4 self-tapping screws (stainless steel)



Document pocket - Self adhesive



811516 1

DIN A4 325 W x 180 H

832000 1

DIN A5 transparent 155 W x 225 H

Marking strip



851321 1m

Self-adhesive

Blanking plates

610142 10

For 4 modules break off 1/2 module



828056 1m

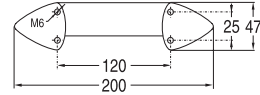
Spare blank plate for screening off rectangular openings



Handle

851244 1

Height 50 mm
With reinforced rib + screws
Made of Vyncolite



Enclosure lighting

230V 50/60Hz 11W
With magnetic attachment
355 x 65 x 65 mm

818192 1

With "Schuko" socket 250V/16A



818112 1

With "CEBEC" socket 250V/16A
Without cover



818191 1

Cover for lamp



Air vents IP44



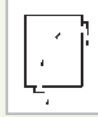
Kits of two pieces in polyamide

RAL 7035	833677	1
RAL 7036	852001	1

Two air vents must be mounted per enclosure to ensure sufficient air circulation and prevent condensation water.

Complete with template and screws.

Air vents are preferably mounted in the upper and lower part of the base.



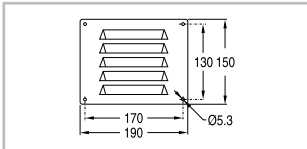
Louvre plate IP44



Fits one ventilation opening

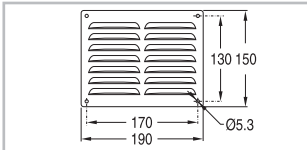
Package includes 2 grids and mounting accessories

Total insulation



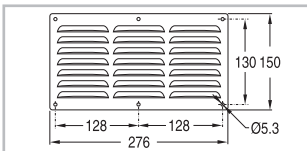
832019	1
---------------	---

Outlet 2000 mm²



832743	1
---------------	---

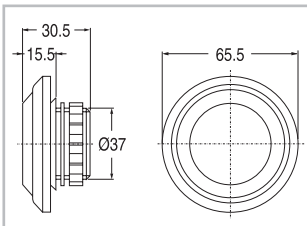
Outlet 3000 mm²



832744	1
---------------	---

Outlet 4500 mm²

Pressure compensation plug DA 084 (grey)



Kit of two pieces

818078	1
---------------	---

In a tightly closed enclosure, pressure differentials can occur during extreme temperature variations, such as day/night operation. The risk of dust and humidity being absorbed increases dramatically. The plug permits a controlled change in pressure.

Easy installation in each enclosure.

Technical data

Dimensions: dia 65.5 mm x 30.5 mm

Cut-out: dia 37 mm

Fixation with PG 29 thread or nut

Material: ABS / PC

Air inlet: ± 7 cm²

Protection: IP45

Remark: for optimal pressure compensation the use of 2 plugs, installed diagonally to each other, is recommended.

Surface-mounted windows

Including drill template and mounting

①	861395	1
---	---------------	---

77 x 60 mm - 2 mod.

①	861396	1
---	---------------	---

77 x 96 mm - 4 mod.

①	861397	1
---	---------------	---

77 x 130 mm - 6 mod.

①	861398	1
---	---------------	---

77 x 163 mm - 8 mod.

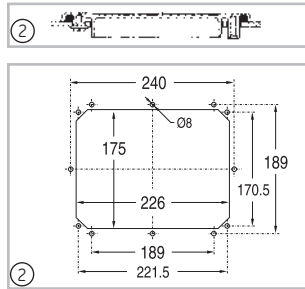
①	861399	1
---	---------------	---

77 x 200 mm - 10 mod.



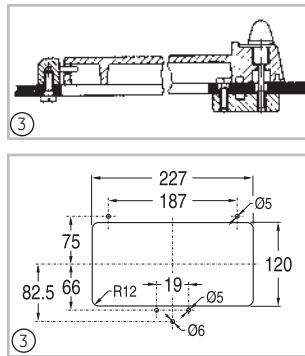
②	866001	1
---	---------------	---

Screwed IP67



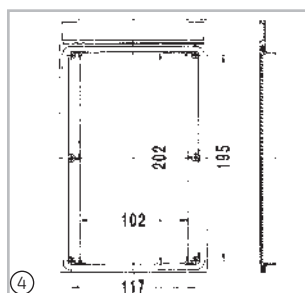
③	890837	1
---	---------------	---

Hinged, with gasket IP55



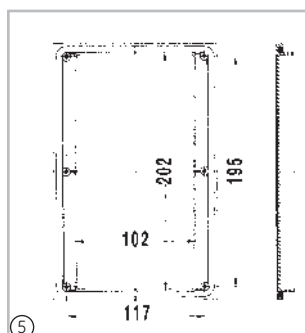
④	866002	1
---	---------------	---

Screwed IP67, with indication strip



⑤	866003	1
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Screwed IP67, without indication strip





J.2	Agreements	J.60	Specifications for tender documents
J.2	Abbreviations	J.60	MultiBox
J.3	Advantages of polyester enclosures	J.61	VJ-Box
J.4	Degrees of protection	J.62	APO
J.6	Engineering specifications	J.63	ARIA
J.9	Legal units	J.64	PolySafe
J.10	Dimensional drawings	J.65	Superpolyrel 400
J.10	MultiBox	J.66	VMS
J.13	VJ-Box	J.67	Fix-o-Rail Senior
J.14	APO	J.68	Modula 630K
J.18	ARIA	J.70	Optimal WM
J.20	PolySafe	J.71	Optimal FS
J.22	Superpolyrel 400	J.72	EH1
J.24	VMS	J.73	EH2-S
J.28	Fix-o-Rail Senior	J.73	EH2
J.29	Modula 630K	J.74	EH3/DC
J.30	Optimal WM	J.74	EH3/F & EH3/AP
J.32	Optimal AISI	J.75	EH3/AP-GD
J.34	Optimal FS	J.75	EH4
J.40	EH1	J.76	EH6
J.40	EH2-short	J.77	RVS
J.41	EH2	J.78	UTS
J.42	EH3	J.79	Power dissipation values
J.45	EH3/DC	J.80	VJ-Box
J.46	EH3/GD	J.82	APO
J.48	EH4	J.84	ARIA
J.50	EH6	J.86	PolySafe
J.52	RVS	J.88	Superpolyrel 400
J.54	UTS	J.90	VMS
J.56	Ventilation	J.91	Fix-o-Rail Senior
		J.92	Modula 630K
		J.94	Optimal WM
		J.106	Optimal FS
		J.118	EH1 • EH2 • EH4
		J.119	EH3 • EH6
		J.120	RVS

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Agreements

	AS	Australia
	ÖVE	Austria
	CEBEC	Belgium
	CSA, CEC	Canada
	DEMKO	Denmark
	SETI	Finland
	UTE	France
	VDE	Germany
	BS	Great Britain
	ASTA	Great Britain
	IMQ	Italy
	KEMA	Netherlands
	NEMKO	Norway
	CERTIF	Portugal
	AEE	Spain
	SEMKO	Sweden
	SEV	Switzerland
	UL, NEC, OSHA	U.S.A.
	UR	U.S.A.
	Lloyd's Register of Shipping	
		

Abbreviations

Al	Aluminium
ASTM	American Society for Testing Materials
BS	British Standards
CENELEC	European Committee for Electrotechnical Standardisation (Comité Européen de Normalisation Electronique)
CCA	Cenelec Certification Agreement
Cu	Copper
DIN	Deutsche Institut für Normung e.V.
E . .	Edison thread
IEC	International Electrotechnical Commission
IP..	Protection degree
M..	Metric thread
NBN	Belgian Standards (Norme belge / Belgische norm)
NEC	Netherlands Electrotechnical Committee (Nederlands Elektrotechnisch Comité)
NF	French Standards (Norme française)
1P	Unipolar
2P	Bipolar
3P	Tripolar
4P	Tetrapolar
PG..	Thread following DIN 40430 (Panzerrohrgewinde)
RAL..	Colour Standard (Ausschuss für Lieferbedingungen und Gütesicherung)
VDE	Verband Deutscher Elektrotechniker

Advantages of polyester enclosures



Temperature resistant



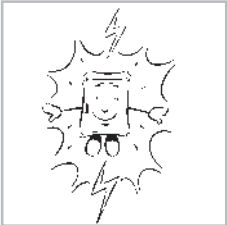
Temperature resistant



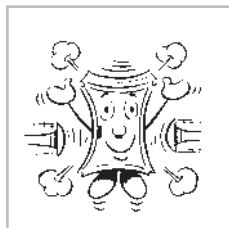
Corrosion resistant



Self extinguishing



Total insulation



Impact resistant



High IP rating



Lightweight

Normal corrosion resistance
Acid rain

Saline corrosion resistance
Sea shore

Extreme corrosion resistance
Industry

Impact resistance
Up to 50J

Total insulation
Polyester enclosures provide protection against indirect electrical contact

Maintenance free

Self extinguishing
Limit fire propagation

Fire retardant
Protect equipment

Halogen-free
No toxic gas release in a fire

Coloured in mass

U.V.-resistant

High IP rating
Gasket tongue/groove arrangement
Polyurethane gasket

- no joint
- gasket stick on bottom and sides

Temperature resistant
Resist to wide temperature variations without modification of properties
(FRP: -50°C to +150°C)

Lightweight
Weight: 1/4 of steel
Easy to handle

Constant quality
Because of machine moulding

Installer friendly
Easy to work (standard tools)
Easy to install (mounting feet, lightweight)
Easy to maintain (when scratches occur, some vaselin gives back appearance of FRP)

Aesthetic
Suitable for indoor/outdoor designs

Condensation limiting
Reduced change of inside condensation versus metallic enclosures

Technical data

- on protection degrees, see pages J.4-J.5
- on materials, see page J.6-J.8



A

B

C

D

E

F

G







H









I

J/X

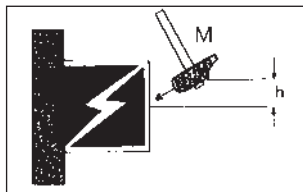
Degrees of protection of the electrical equipment up to 1000V a.c. and 1500V d.c.

IP X1 X2 according to IEC 60529 (2001) and EN 60529 (1991)

X1	Protection of persons against contact with live parts Protection of equipment against ingress of solid foreign bodies	
	Test	
0		No protection
1		Against access with hand and ingress of solid objects greater than 50 mm
2		Against access with finger and ingress of solid objects greater than 12 mm
3		Against access with tools and ingress of solid objects greater than 2.5 mm
4		Against access with wires of strips and ingress of solid objects greater than 1 mm
5		Complete protection against contact with live parts and ingress of harmful deposits of dust
6		Complete protection against contact with live parts and ingress of dust

X2	Protection against ingress of liquids	
	Test	
0		No protection
1		Against vertically falling drops
2		Against drops of falling liquid at an angle up to 15° from the vertical
3		Against water falling in rain at an angle up to 60° from the vertical
4		Against water splashed from any direction (over 360°)
5		Against water jets from any direction (over 360°)
6		Against water projected in powerful jets as from heavy seas
7		Against immersion in water under defined conditions of pressure and time
8		Against continuous submersion in water

After 10 strokes, the enclosure should show neither visible crack or damage that might jeopardize the protection degree IP X1X2



* = no protection

X3	Protection against external mechanical damage According to NBN C20-001 Impact strength		
	Hammer mass (kg)	Fall (m)	Impact energy (J)
0.5	M = 0.15	h = 0.1	0.2
1	M = 0.15	h = 0.15	0.3
1.5	M = 0.15	h = 0.2	0.4
2	M = 0.15	h = 0.25	0.5
3	M = 0.25	h = 0.2	0.6
4	M = 0.5	h = 0.2	1
5	M = 0.5	h = 0.4	2
6	M = 1.5	h = 0.27	4
7	M = 1.5	h = 0.4	6
8	M = 5	h = 0.2	10
9	M = 5	h = 0.4	20
10	M = 15	h = 0.235	35
11	M = 15	h = 0.4	60

IK	Protection against external mechanical damage According to EN 62262 and IEC 62262 Impact strength		
	Hammer mass (kg)	Fall (mm)	Impact energy (J)
00	*	*	*
01	M = 0.25	h = 56	0.14
02	M = 0.25	h = 80	0.2
03	M = 0.25	h = 140	0.35
04	M = 0.25	h = 200	0.5
05	M = 0.25	h = 280	0.7
06	M = 0.25	h = 400	1
07	M = 0.5	h = 400	2
08	M = 1.7	h = 300	5
09	M = 5	h = 200	10
10	M = 5	h = 400	20
	M = 10	h = 500	50

Explanation

The standard NBN C20-001/A was valid until April 15, 1997. The tables mentioned above are classified according to the impact energy. The IPxx-X3 values and the IK-values can not just be compared to each other, because there exists a difference between the form of the hammer and the

number of tests. In that case, it is impossible to set up a conversion table. Notice that no value was defined to replace the IPxx-11. If a shock resistance higher than IK10 is needed, the new standard will only provide a recommendation.

The IK-value is shown with a figure of two numbers to exclude the confusion with the IPxx-X3 value.





Degrees of protection

Type	Intended use and description	Type	Intended use and description	Type	Intended use and description
1	Indoor use, primarily to provide a degree of protection against limited amounts of falling dirt.	4	Indoor or outdoor use, primarily to provide a degree of protection against windblown dust and rain, splashing water, hose-directed water and damage from external ice formation.	12 12K	Indoor use, primarily to provide a degree of protection against circulating dust, falling dirt and dripping non-corrosive liquids.
2	Indoor use, primarily to provide a degree of protection against limited amounts of falling water and dirt.	4X	Indoor or outdoor use, primarily to provide a degree of protection against corrosion, wind blown dust and rain, splashing water, hose-directed water and damage from external ice formation.	13	Indoor use, primarily to provide a degree of protection against dust, spraying of water, oil and non-corrosive coolant.
3	Outdoor use, primarily to provide a degree of protection against rain, sleet, wind blown dust and damage from external ice formation.	5	Indoor use, primarily to provide a degree of protection against settling airborne dust, falling dirt and dripping noncorrosive liquids.		
3R	Outdoor use, primarily to provide a degree of protection against rain, sleet and damage from external ice formation.	6	Indoor or outdoor use, primarily to provide a degree of protection against hose-directed water and the entry of water during occasional temporary submersion at a limited depth and damage from external ice formation.		
3S	Outdoor use, primarily to provide a degree of protection against rain, sleet, windblown dust and to provide for operation of external mechanisms when ice laden.	6P	Indoor or outdoor use, primarily to provide a degree of protection against hose-directed water, the entry of water during prolonged submersion at a limited depth and damage from external ice formation.		

Degrees of protection

Rating of enclosures following UL 50 and CSA C22.2 no. 94-M91

Enclosure	1	2	3	3R	3S	4	4X	5	6	6P	12	12K	13
VJ-BOX													
Standard	•		•	•	•	•	•		•		•		•
With raised cover, standard	•		•	•	•	•	•		•		•		•
With stainless steel hinges	•		•	•	•	•	•		•		•		•
With raised cover with stainless steel hinges	•		•	•	•	•	•		•		•		•
With plastic hinges	•		•	•	•	•	•		•		•		•
With raised cover with plastic hinges	•		•	•	•	•	•		•		•		•
Window 8" x 4" factory assembled	•		•	•	•	•	•		•		•		•
Window 8" x 4" factory assembled	•		•	•	•	•	•		•		•		•
APO													
With polyester cover	•		•	•	•	•	•		•	•	•		•
With polycarbonate cover	•		•	•	•	•	•		•	•	•		•
With hinged cover	•		•	•	•	•	•		•	•	•		•
With polyester cover and stainless steel hinges	•		•	•	•	•	•		•	•	•		•
With polycarbonate cover and stainless steel hinges	•		•	•	•	•	•		•	•	•		•
With polyester cover and plastic hinges	•		•	•	•	•	•		•	•	•		•
With polycarbonate cover and plastic hinges	•		•	•	•	•	•		•	•	•		•
With polyester cover and depth extension frame	•		•	•	•	•	•		•	•	•		•
With polycarbonate cover and depth extension frame	•		•	•	•	•	•		•	•	•		•
With hinged cover and depth extension frame	•		•	•	•	•	•		•	•	•		•
With polyester cover, depth extension frame and stainless steel hinges	•		•	•	•	•	•		•	•	•		•
With polycarb. cover, depth extension frame and stainless steel hinges	•		•	•	•	•	•		•	•	•		•
With polyester cover, depth extension frame and plastic hinges	•		•	•	•	•	•		•	•	•		•
With polycarbonate cover, depth extension frame and plastic hinges	•		•	•	•	•	•		•	•	•		•
VMS													
Single	•	•	•	•	•				•		•	•	
Modular system	•	•	•	•	•				•		•	•	
Modular system using coupling set 853063	•	•	•	•	•				•		•	•	
With hinged cover	•	•	•	•	•				•		•	•	
With external plastic hinges	•	•	•	•	•				•		•	•	
ARIA													
Standard	•		•	•	•	•	•				•		•
PolySafe													
Factory assembled with single door	•		•	•	•	•	•				•	•	•
Factory assembled with double door	•		•	•	•	•	•				•	•	•
Factory assembled coupled cabinets	•		•	•	•	•	•				•	•	•
Factory assembled with drain ventilators	•		•	•	•	•	•				•	•	•
SUPERPOLYREL 400													
Factory assembled with single door	•		•	•	•	•	•				•		•
Factory assembled with double door	•		•	•	•	•	•				•		•
Factory assembled with drain ventilators	•		•	•	•	•	•				•		•

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Plastics

A plastic is a material that can be formed and shaped into finished articles using heat (thermoformed). It has a molecular structure that consists of very long chains of polymers formed by the interaction of many molecules (monomers) or molecular pairs.

A distinction is made between thermoplastics and thermosettings.

Thermoplastics

Made by injection of the molten plastic into a cool mould. Parts formed from thermoplastics can be repeatedly softened by an increase of temperature. Most thermoplastics are soluble in a suitable organic solvent.

Thermosettings

Made by forming the plastic objects in a hot mould. Once formed, it becomes substantially infusible and also insoluble because of the crosslinked molecular structure. Thus products from materials made using thermosettings do not melt upon heating and are practically insoluble to most commercial solvents. Some softening under the effect of commercial solvents is however possible.

Advantages of plastics

Double insulation ensures perfect safety against direct and indirect contact.

The frame does not need to be earthed.

Unlike metals, plastics are **corrosion-resistant**.

The enclosures are homogeneous, thus they do **not require any maintenance** even when scratched, as only more of the same materials will be exposed.

Due to their **light weight** plastic enclosures can be very easily handled and installed.

Technical data of plastics

Properties	Standards	Unit	Polyester glassfibre reinforced
Mechanical			
Impact strength	ISO179	kJ/m ²	55
Notched impact strength	ISO 179	kJ/m ²	55
Flexural strength	ISO 178	MPa	150
Tensile strength	ISO 3268	MPa	50-60
Electrical			
Tracking resistance	IEC 112	V/50dr	KC600
Surface resistivity	IEC 93	Comparative fig.	12
Special resistivity	IEC 93	Ω cm	≥ 10 ¹²
Dielectric strength	IEC 243	kV/mm	18
Physical			
Deflection temperature	ISO 74/A	°C	> 250
Vicat softening point	ISO 306/B50	°C	-
Temperature resistance	continuous	°C	-50 to +130
Colour fastness	ISO 877	Blue wool scale 1-8	8
Tropicalisation and resistance to mould and fungus growth	IEC 68-2-3	-	no degradation
Water absorption	ISO 62/1 96h	mg	45
Density	ISO 1183	kg/dm ³	1.75
Flame resistance			
Oxygen index	ISO 4589	% O ₂	26
Flammability	UL 94 (3 mm)		94 HB
Hot wire resistance	IEC 695-2-11	°C	960
Toxicity of fumes	ISO 4615	% Cl	halogen-free



Special features

Polyester (UP)

A thermoset derived from unsaturated polyester resins reinforced with glass fibres. Readily worked with common tools such as drills, punches and saws. Polyester enclosures are ideally suited for outdoor installations and use in hot, humid and/or chemically aggressive environments. The glassfibre has a minimum diameter of 12 μ and is considered as not harmful.

Polystyrene and related polymers (PS/SB/ABS)

Polystyrene is a general purpose thermoplastic with good electrical properties.

Where higher impact resistance is needed, styrene-butadiene (SB) or acrylonitrile-butadiene-styrene (ABS) is used.

Polyurethane (PUR)

Thermosetting material, with good chemical resistance. In its foamed and elastic form it is used for gaskets.

Neoprene rubber (CR)

Elastomer with excellent chemical resistance and excellent flame resistance.

Ethylene-propylene-terpolymer (EPDM)

Elastomer with good chemical resistance and excellent aging resistance.

Polycarbonate (PC)

Thermoplastic with high impact resistance over a wide temperature range. The UV-stabilised grades can be used for outdoor applications.

Polyphenylene oxide (PPO)

Thermoplastic with good mechanical rigidity and excellent dimensional stability.

This material is normally not used for outdoor applications because of its tendency to discolour when exposed to UV-radiation.

Polyamide (PA)

Thermoplastic with good mechanical, thermal and electrical properties. It is resistant to most commonly used solvents, but is readily attacked by acids.

Polybutyleneterephthalate (PBT)

Thermoplastic with good electrical, chemical and thermal resistance.

Polyvinylchloride (PVC)

Thermoplastic with good resistance to weathering and excellent flame resistance.

Polycarbonate	Polycarbonate glassfibre reinforced	PPO	PA6 (2.5% humidity)	PVC
no rupture	50	40	40	25
30-50	15	15	25	20
no rupture	160-170	no rupture	no rupture	no rupture
65-70	100	37	60	65
KC200	KC175	KC175	KC600	KC600
15	15	> 12	12	15
≥ 10 ¹⁶	≥ 10 ¹⁶	≥ 10 ¹⁴	≥ 10 ¹²	≥ 10 ¹³
35	39	16	34	30
135	145	95	60	50
145-150	160-165	109	210-220	70
-35 to +120	-35 to +120	-35 to +80	-35 to +100	-10 to +65
4	4	4	8	4
no degradation	no degradation	no degradation	no degradation	no degradation
10	10	7	320	5
1.2	1.33	1.1	1.14	1.38 to 1.40
24.3	34.4	27.5	23	43 to 47
94 V2	94 V1	94 V1	94 V2	94 V0
850	960	960	650	960
halogen-free	halogen-free	halogen-free	halogen-free	halogens

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Resistance against submersion at room temperature

Product	UP	PC	PA	PS/SB ABS	PPO	PBT	PVC	PP	PUR	Neo- prene	EPDM
Water	S	S	S	S	S	S	S	S	S	S	S
Seawater	S	S	S	S	S	S	S	S	L	S	S
Acid, diluted	S	S	NS	S	S	S	S	S	L	S	S
Acid, conc.	NS	L	NS	L	S	L	S	S	NS	L	S
Acid, oxid.	NS	NS	NS	L	L	NS	L	L	NS	NS	NS
Alkalis, diluted	L	L	S	S	S	L	S	S	L	S	S
Alkalis, conc. ammoniac	NS	NS	S	S	L	L	S	S	NS	S	S
Salt, aqueous sol. chlorides	S	S	S	S	S	S	S	S	S	S	S
Alcohols	S	L	S	L	S	L	S	S	L	S	S
Ketones acetone	L	NS	S	NS	NS	L	NS	S	NS	S	S
Esters n-butylacetate	L	NS	L	NS	NS	L	NS	S/L	L	NS	L
Ethers	L	NS	S	NS	NS	L	L	S	L	L	NS
Hydrocarbons aliphatic white spirit	S	S	S	NS	L	S	S	S	L	L	NS
Hydrocarbons aromatic xylene	NS	NS	S	NS	NS	L	NS	NS	L	NS	NS
Hydrocarbons halogenated chlorobenzene	L	NS	L	NS	NS	L	NS	L/NS	NS	ONS	NS
Mineral oils	NS	NS	NS	NS	NS	NS	NS	S	NS	NS	NS
Oils and fats	S	NS	S	L	S	S	S	S	S	S	NS
Propylene glycol	L	S	S	S			S	NS	S		
Nitrobenzene	NS	NS	L	NS	NS	NS	NS	S	NS	NS	L
Phenol	NS	NS	NS	NS	NS	NS	L	S	NS	L	S
Temperature limits (for continuous use)											
min. (°C)	-50	-35	-35	(1)	-35	-35	-10	-5	-30	-30	-50
max. (°C)	130	120	100	70	80	120	65	65	100	90	120

By resistance is meant the maintenance of isolation and mechanical properties necessary for good functioning. An eventual changing outlook is not taken into consideration (ex. loose of gloss).

Abbreviations

S = satisfactory	UP: polyester	PPO: polyphenylene oxide
L = limited	PC: polycarbonate	PBT: polybutyleneterephthalate
NS = not satisfactory	PA: polyamide	PVC: polyvinylchloride
	PS: polystyrene	PP: polypropylene
	SB: styrene-butadiene	PUR: polyurethane
	ABS: acrylonitrile-butadiene-styrene	EPDM: ethylene-propylene-terpolymer

- (1) PS (standard): -10°C
 PS (higher impact): -20°C
 ABS: -20°C
 SB: -20°C

For satisfactory and lasting trouble-free operation of outdoor enclosures, the following precautions are recommended

Material selection

Select proper enclosure material and gasket:

- sufficient U.V. resistance
- resistance to normal corrosion (e.g. acid rain)
- resistance to saline corrosion (e.g. sea shore)
- resistance to extreme corrosion (e.g. industrial sea shore)

Glassfibre reinforced polyester enclosures satisfy all those requirements.

Ice stagnation

Avoid water stagnation on top of enclosures.

Icing, de-icing and dirt will deteriorate gaskets by allowing corrosive deposits in cracks.

For Superpolyrel 400 we recommend the use of a rainhood.

Ventilation

If condensation inside enclosure will be harmful, there are two ways to avoid it:

- natural ventilation, made by creating openings in the enclosure to allow air to circulate and remove moisture. This can be done if the required protection does not exceed raintightness
- if the enclosure must be raintight and watertight (IP55 or more), heating of the enclosure may be necessary to remove moisture.



Legal units (SI), conversion and formulas

Quantity	Symbol	Formule for proportions	Unit	Abbreviation (symbol)	Related	Abbreviation (symbol)	Other units	Symbol	Conversion
Length	l		metre	m		km, hm, dam dm, cm, mm, µm, nm	Inch Foot	in ft	1 in = 2.54 cm 1 ft = 12 in = 30.48 cm
Width	w		metre	m					
Height, depth	h		metre	m					
Radius	r		metre	m					
Diameter	d		metre	m					
Way, waylength	s		metre	m	lightyear	ly	mile yard	mile yd	1 ly = 9.46 x 10 ¹² km 1 mi = 1609 m; 1 min _{out} = 1852 m 1 yd = 0.9144 m; 1 mi = 1760 yd
Wavelength	λ		metre	m					λ = c / f
Area	A (S)	A = l.b	square metre	m ²	are	a, ha, ca km ² , cm ² , mm ²	square inch	in ²	1 ca = 1 m ² ; 1 a = 100 m ² 1 ha = 100 a = 10 000 m ² 1 in ² = 6.45 cm ²
Volume	V	V = l.b.h	cubic metre	m ³ , dm ³ , cm ³ , mm ³	liter	l hl, dl, cl, ml 1 hl = 100 l st st (wood)	gallon barrel pint	gal bbl pt	1 l = 1 dm ³ ; 1 gal = 4.546 l 1 bbl = 42 gal = 158.9 l (oil Am) 1 pt = 0.5683 l 1 st = 1 m ³
Plane angle	α, β, φ		radian	rad, °	degree, min, sec rotation	°', '' rot.			1° = π/180 rad = 60' = 3600'' 1 tr = 2 rad = 360°
Mass	m		kilogram	kg	ton	t	pound ounce	mg, µg lb oz	1 t = 1000 kg 1 lb = 16 oz = 0.4536 kg 1 oz = 28.35 g
Time	t		second	s	minute, hour, day	min., h, d, ms, µs, ns			1 day = 24 h; 1 h = 60'
Period	T		second	s					
Frequency	f	f = 1 / T	Hertz (=1/s)	Hz					kHz, MHz, GHz
Rotation frequency (No of revolutions)	n	n = β / t		rad/s				rpm, r/s rpm, r/s	1 rpm = π / 30 rad/s
Angular velocity	ω	ω = β = t		rad/s					1 rpm = 0.10472 rad/s
Linear velocity	v, u, w	v = s / t		m/s	kilometer/hour	km/h	miles/hour	miles/h	1 mile/h = 1.61 km/h
Light velocity	c								c _i = 299 792 km/s (vacuum)
Sound velocity	c								c _g = 332 m/s in air at 0°C
Acceleration	a	a = Δv/Δt		m/s ²	earth acceleration	g			g = 9.81 m/s ² (Belgium)
Output	q	q = V/t		m ³ /s					
Force	F	F = m.a	Newton	N (kg.m/s ²)		kN, MN	[kg-force]	[kgf]	[1 kgr = 9.81 N]
Weight	G	G = m.g	Newton	N					
Pressure	p	p = F / A(S)	Pascal	Pa (N/m ²)	hecto Pascal	hPa	bar mmmerc.col. mmwat.col. lb/squareinch	bar mm Hg mm H ₂ O psi	1 bar = 10 ⁵ Pa; 1 hPa = 100 Pa 1 mm Hg = 133.322 Pa 1 mm H ₂ O = 9.81 Pa 1 psi = 6.894 kPa
Energy, work	W, E	W = F.s W = P.t	Joule (= N.m) Joule (= W.s)	J (N.m) J	kilowatthour	kJ, MJ kWh	electronvolt 1Ws=1Nm	eV	1 eV = 0.160219.10 ⁻¹⁸ J 1 kWh = 3 600 000 J
Moment of force	M	M = F.r	Newtonmeter	N.m		kN.m, kN.cm, N.cm			
Quantity of heat	Q		Joule	J			calory therm	cal therm	1 kcal = 4 187 J 1 therm = 105 506 k J
Power	P	P = W / t P = F.v	Watt	W(=J/s) W(=N.m/s)	kilowatt	mW, kW, MW	horse power kcalory/hour	hp kcal/h	1 hp = 736 W 1 kcal/h = 1.163 W
Thermodynamic temperature	T, θ		degree Kelvin	°K	degree Celsius	°C	degree Fahrenheit	°F	1°C = 1 K; x°C = (x + 273.15)K 1°F = 5/9 °C; x°F = 5/9(x-32)°C
Elec. current	I		ampere	A		µA, mA, kA			
Voltage	E, U		Volt	V		kV, mV, ÷V			
Resistance	R	R = U/I	Ohm	Ω		MΩ, kΩ, mΩ			1 Ω = 1V / 1A
Impedance	Z	Z = U/I	Ohm	Ω		MΩ, kΩ, mΩ			
Power (DC)	P	P = U.I	Watt	W		MW, kW, mW			1 W = 1V . 1A
Power (AC)									
Single phase	active	P = U.I.cos	Watt	W		MW, kW, mW			1 W = 1V . 1A
reactive	Q	Q = U.I.sinφ	VAreactive	var		kvar			cos φ = P/S = P/√(P ² +Q ²)
apparent	S	S = U.I	Volt-ampere			kVA, MVA			S ² = P ² + Q ²
Three-phase	active	P = √3.U.I.cosφ	Watt	W		MW, kW, mW			
reactive	Q	Q = √3.U.I.sinφ	VAreactive	var		kvar			
apparent	S	S = √3.U.I	Volt-ampere	VA		kVA, MVA			
Energy Consumption Active									
Single phase	Wa	Wa = U.I.t.cosφ	Joule	J		kWh			1 kWh = 3 600 000 J
Three-phase	Wa	Wa = √3.U.I.t.cosφ	Joule	J		kWh			1 kWh = 3 600 000 J
Energy Consumption Reactive									
Single phase	Wr	Wr = U.I.t.sinφ				kvarh			cos φ = Wa/√(Wa ² +Wr ²)
Three-phase	Wr	Wr = √3.U.I.t.sinφ				kvarh			
Resistance conductors	R	R = ρ.L/S	Ohm	Ω	ρ in Ω mm ² /m	L in m	S in mm ²		ρ _{cu} = 0.0178 Ω.mm ² /m
Efficiency	η	η = Pn/Pt							Pn = useful power Pt = added power
Motor slip	s	s = (ns - nr) . 100 / ns	percent	%					ns = f . 60 / p Pt = Pn / η
Power mec	Pn(Pmec)	Pn = 2π x Cm . n / 60							

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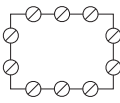

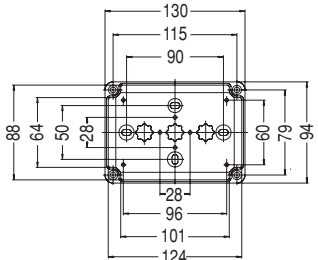
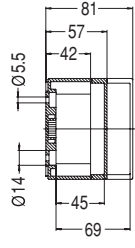
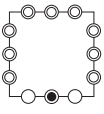
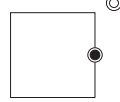
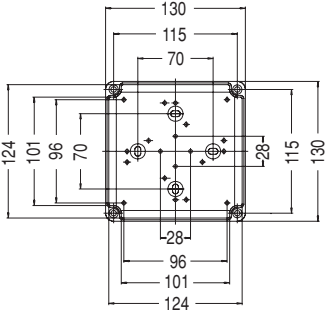
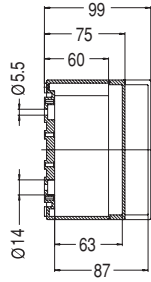
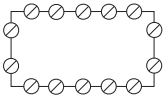

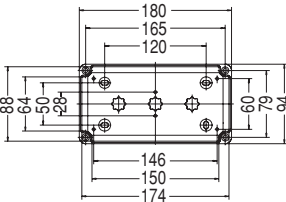
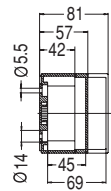
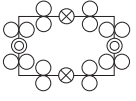
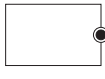
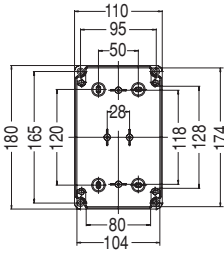
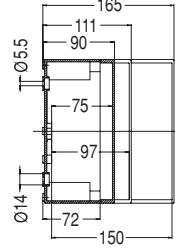
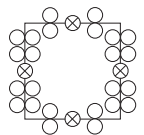
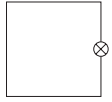
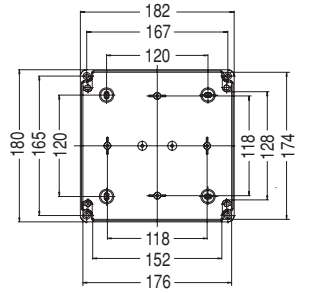
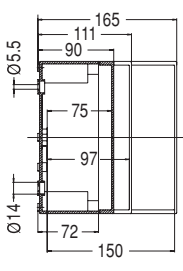
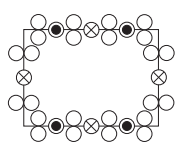

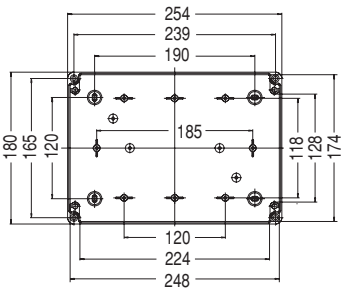
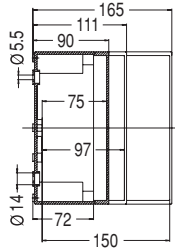
MB00 - MB33

	Polystyrene/Polycarbonate	Polycarbonate (*)		
	MB00			<p>Metric knock-outs ● = M12/16</p>
	MB10			<p>Metric knock-outs ● = M12/16</p>
A	MB11			<p>Metric knock-outs ∅ = M16/20</p>
B	MB21			<p>Metric knock-outs ∅ = M16/20</p>
C	MB22			<p>Metric knock-outs ∅ = M16/20</p>
D	MB33			<p>Metric knock-outs ∅ = M20/25</p>

(*) Smooth = one metric knock-out on short side for power supply cord



MB42 - MB85

Polystyrene/Polycarbonate	Polycarbonate (*)			
<p>MB42</p> 		<p>Metric knock-outs ○ = M16/20</p>		
<p>MB44</p> 		<p>Metric knock-outs ○ = M20 ⊙ = M20/25 ● = M25/32</p>		
<p>MB52</p> 		<p>Metric knock-outs ○ = M16/20</p>		
<p>MB53</p> 		<p>Metric knock-outs ○ = M20 ⊙ = M20/25 ● = M25/32 ⊗ = M32/40</p>		
<p>MB65</p> 		<p>Metric knock-outs ○ = M20 ⊗ = M32/40</p>		
<p>MB75</p> 		<p>Metric knock-outs ○ = M20 ● = M25/32 ⊗ = M32/40</p>		

(*) Smooth = one metric knock-out on short side for power supply cord



A

B

C

D

E

F

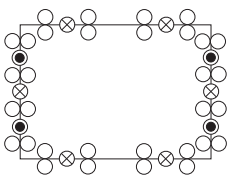

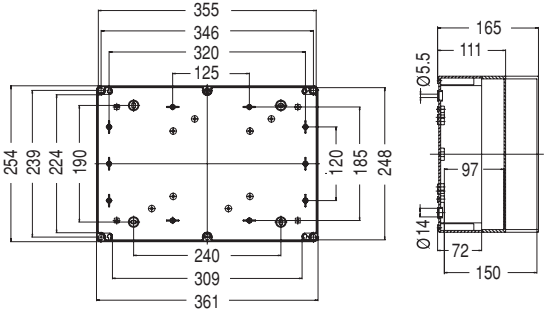
G

H

I

J/X

MB87

Polystyrene/Polycarbonate	Polycarbonate (*)		
<p>MB87</p> 		<p>Metric knock-outs</p> <ul style="list-style-type: none"> ○ = M20 ● = M25/32 ⊗ = M32/40 	

Dimensional drawings

A

B

C

D

E

F

G

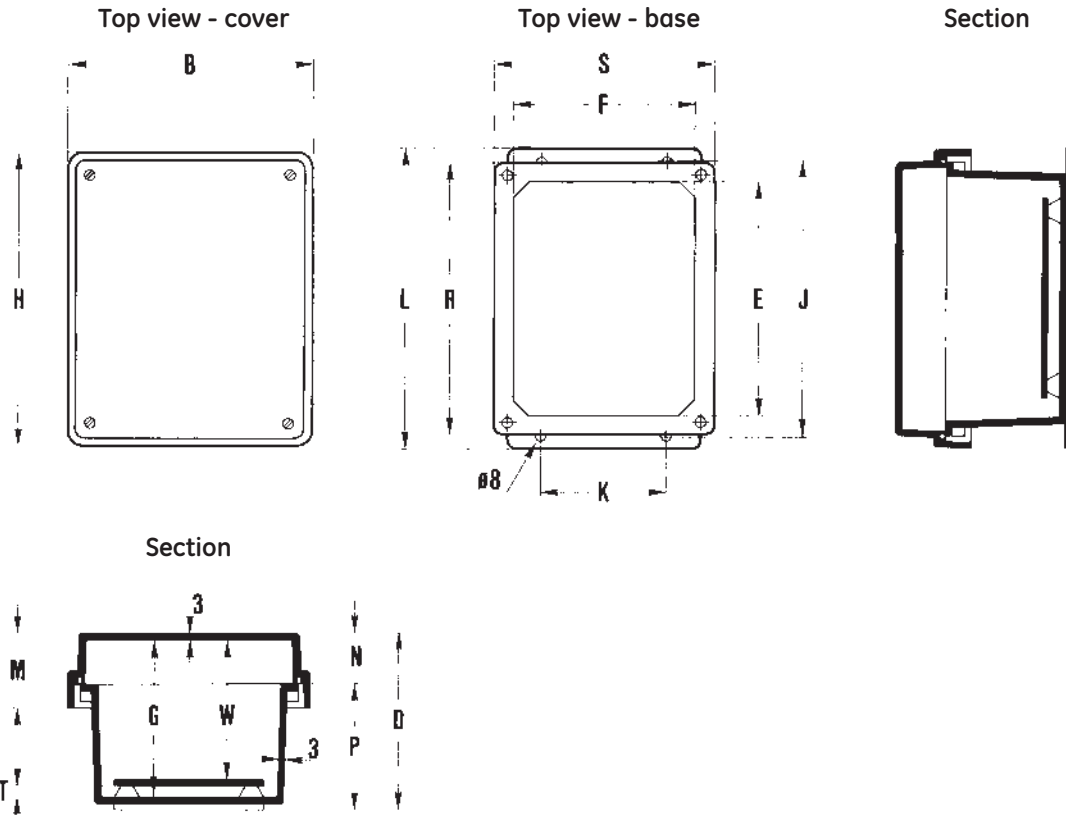
H

I

J/X



VJ-Box



Dimensional drawings

A

B

C

D

E

F

G

H

I

J/X

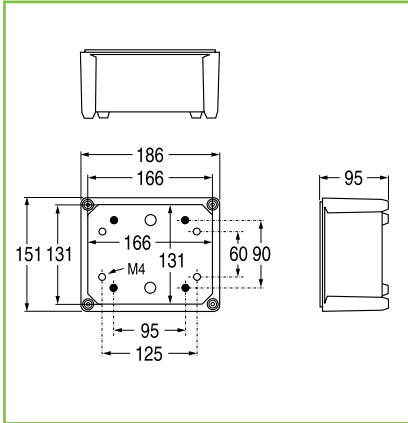
Dimensions																
Type	H	B	D	E	F	G	J	K	L	M	N	P	R	S	T	W
VJ66	186	186	126	152	152	118	172	102	191	35	16	110	172	172	10	105
VJ86	236	186	126	203	152	118	222	102	241	35	16	110	222	172	10	105
VJ108	287	236	138	254	203	130	273	153	292	41	22	116	273	222	10	118
VJ108	287	236	176	254	203	168	273	153	292	80	61	116	273	222	10	156
VJ1210	338	287	142	305	254	133	324	203	343	41	22	120	324	273	10	121
VJ1210	338	287	180	305	254	172	324	203	343	80	61	120	324	273	10	160
VJ1412	389	338	170	356	305	162	375	254	394	44	25	145	375	324	13	146
VJ1412	389	338	208	356	305	200	375	254	394	83	64	145	375	324	13	184
VJ1614	440	389	170	406	356	162	425	305	445	44	25	145	425	375	13	146
VJ1614	440	389	208	406	356	200	425	305	445	83	64	145	425	375	13	184
VJ1816	491	440	243	457	406	235	476	305	495	44	25	218	476	425	13	219



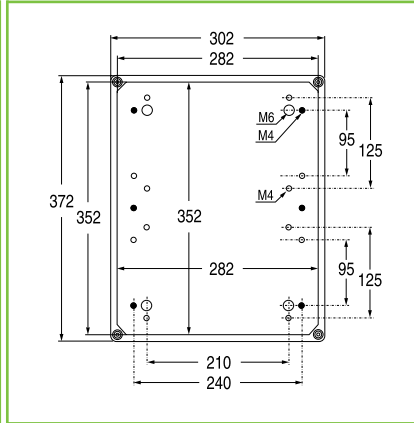
Bases

● = insert standard delivered in APO boxes (base + cover)
○ = with insert M4 or M6

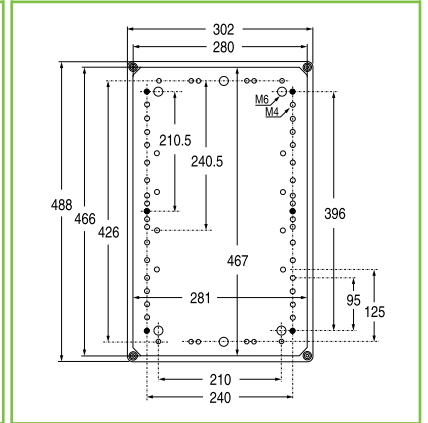
APO 1



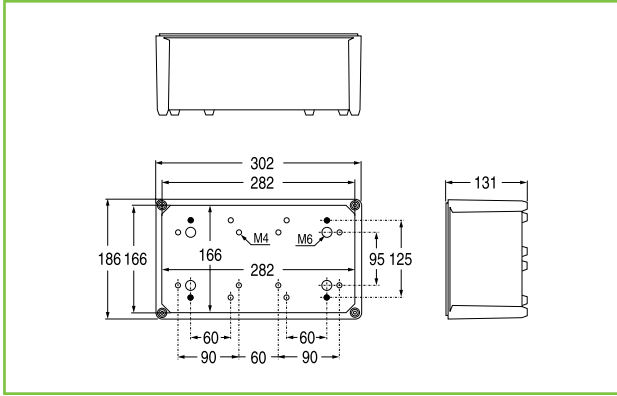
APO 71



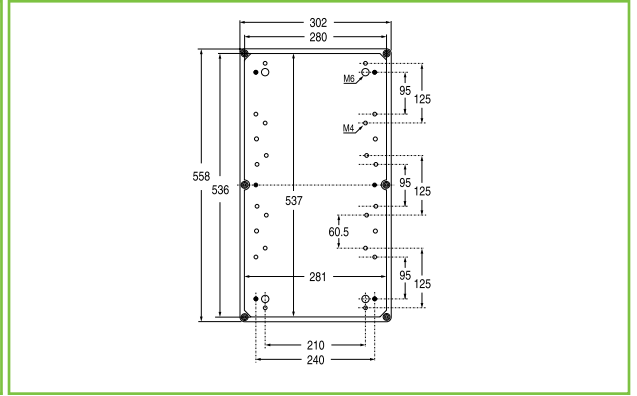
APO 51



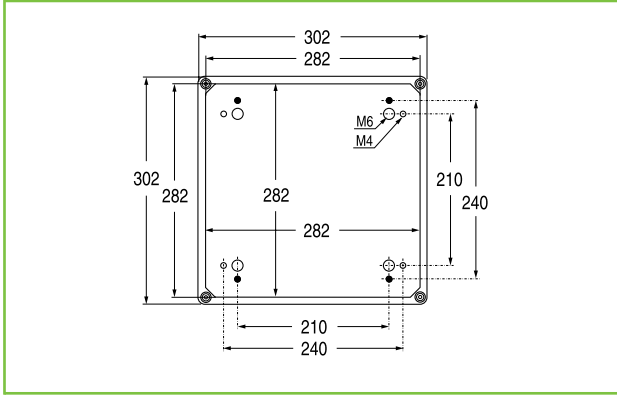
APO 31



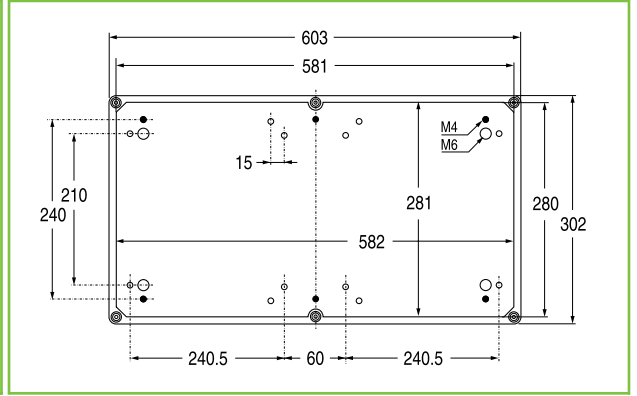
APO 81



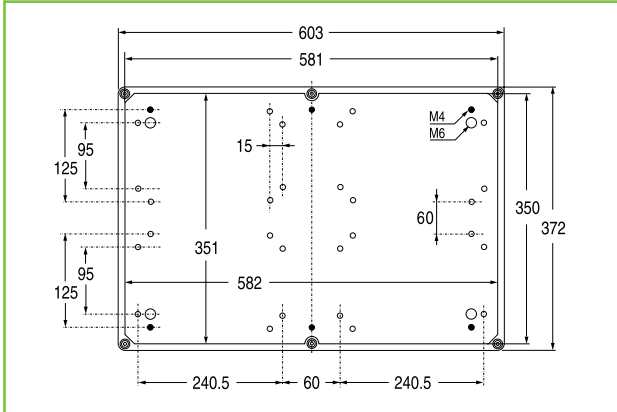
APO 41



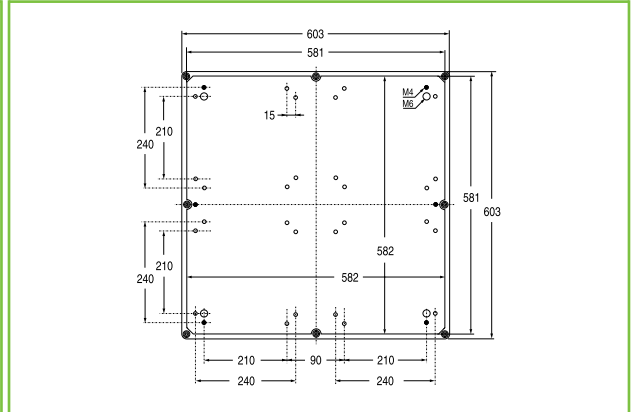
APO 61



APO 11

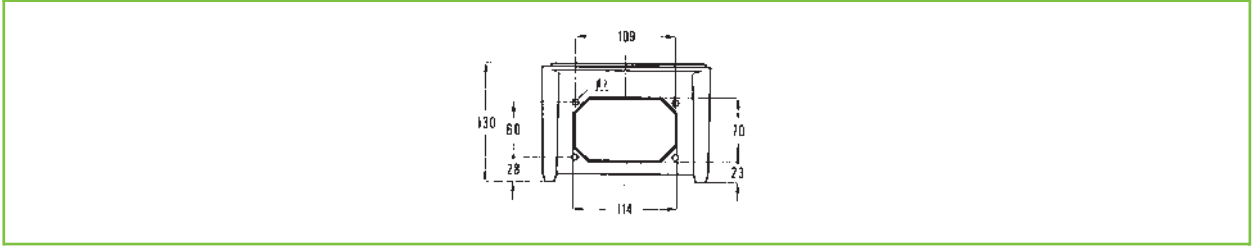


APO 12

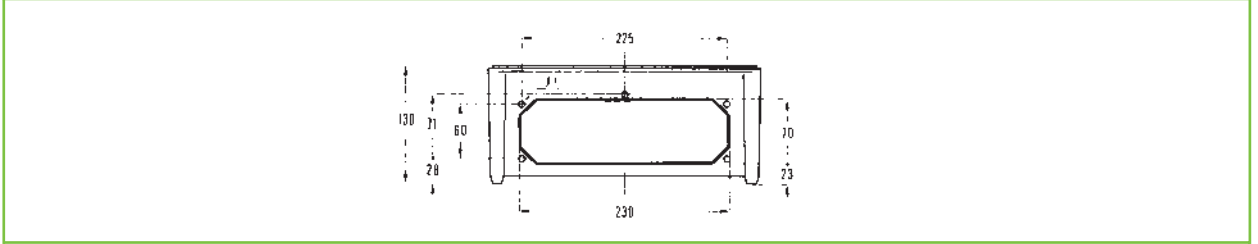


Cut-outs in side panels

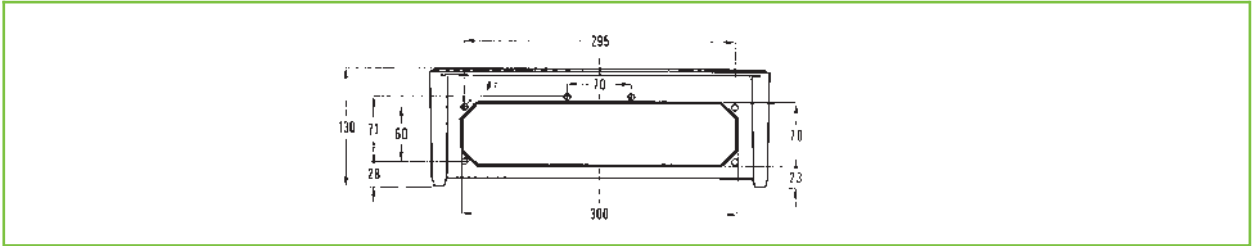
Side 185



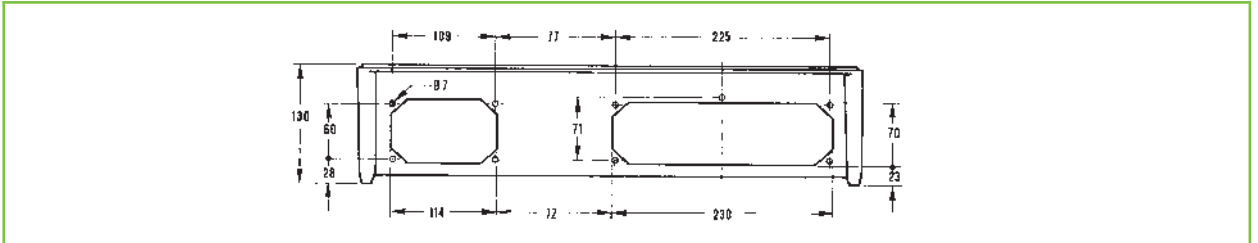
Side 300



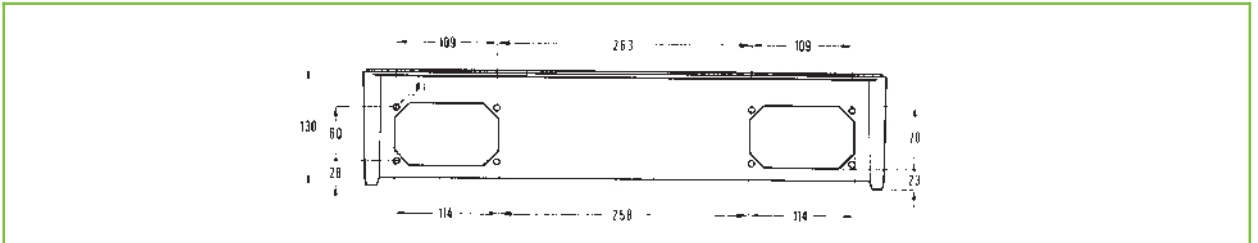
Side 370



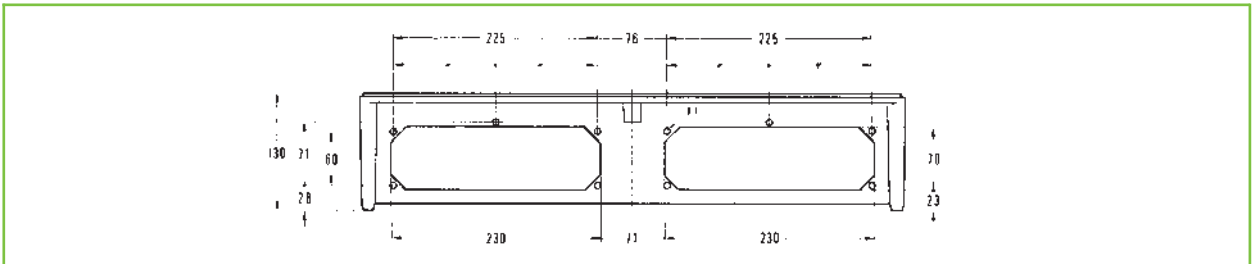
Side 485



Side 555



Side 600



A

B

C

D

E

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G

H

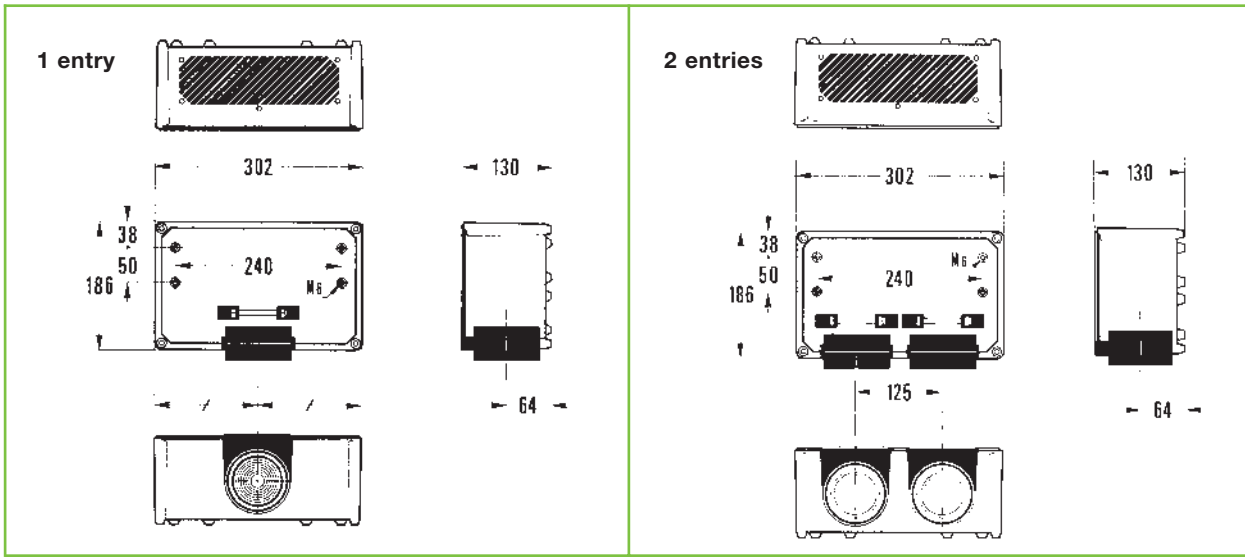
I

J/X

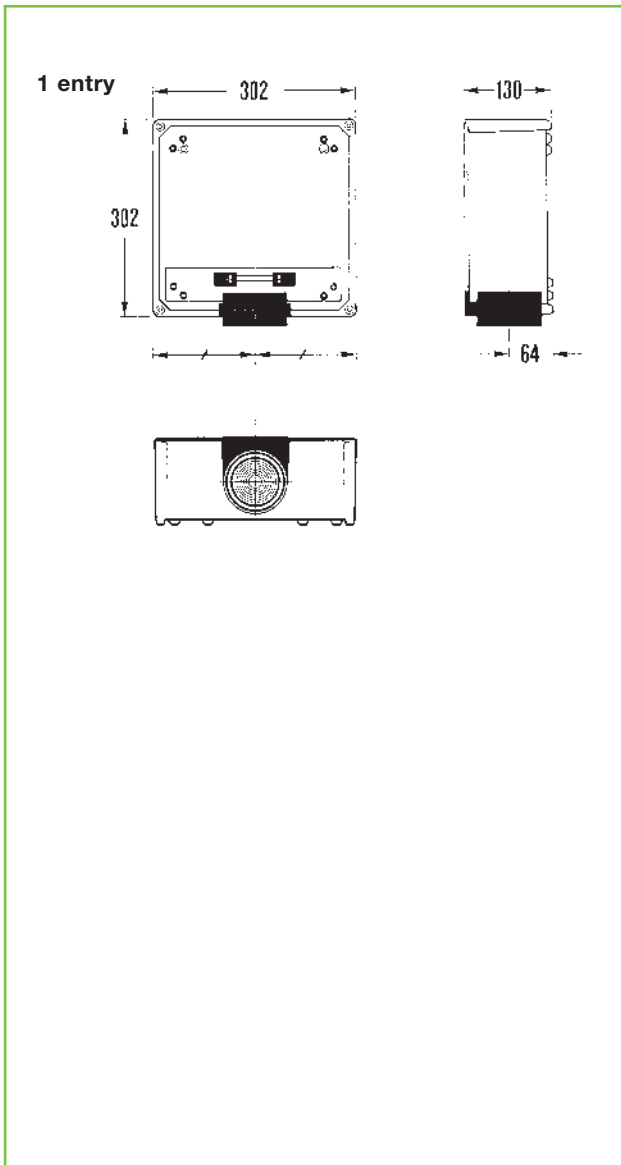


Cable-end boxes

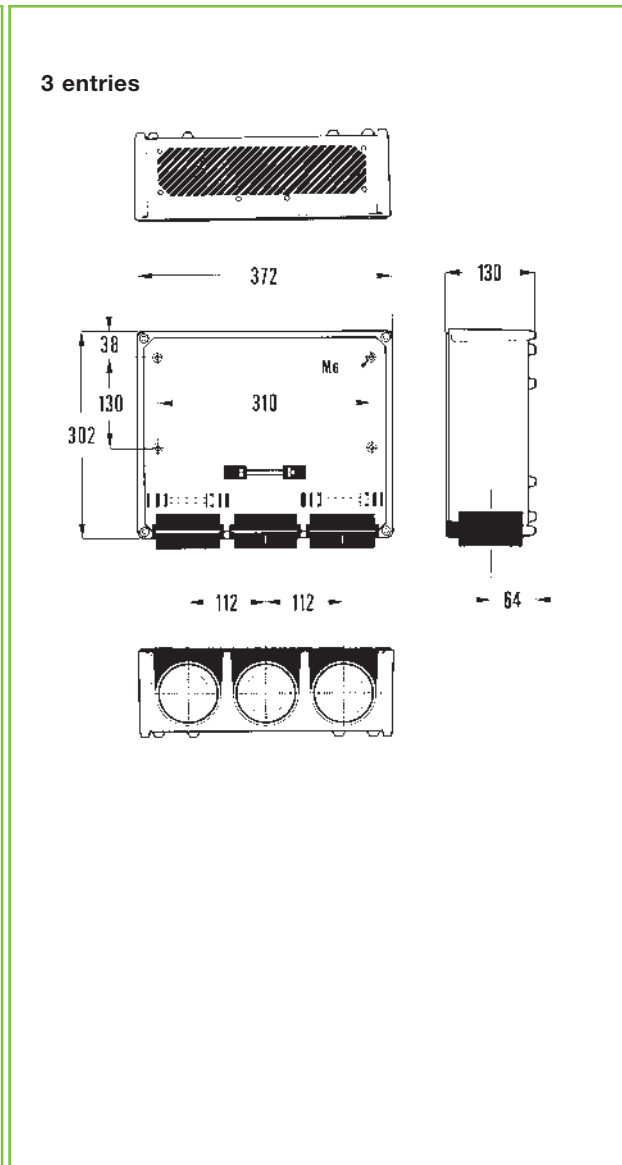
APO 31



APO 41



APO 71



Dimensional drawings

A

B

C

D

E

F

G

H

I

J/X



Cabinets

Wall mounting

Dimensional drawings

A

B

C

D

E

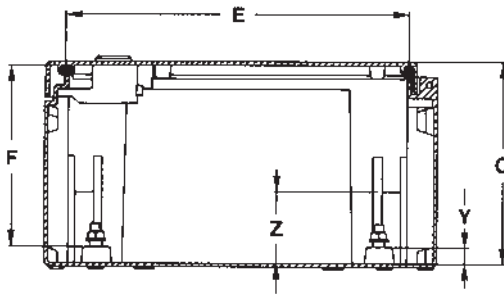
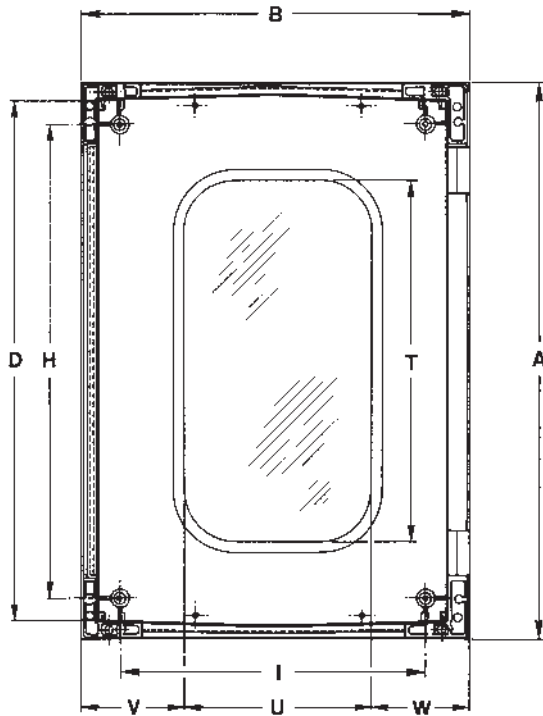
F

G

H

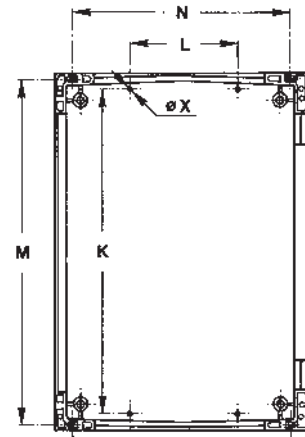
I

J/X

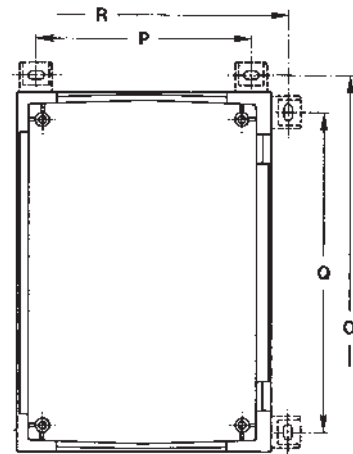


Dimensions							
ARIA	32	43	54	64	75	86	108
A	315	415	515	615	735	835	1035
B	215	315	415	415	535	635	835
C	170	170	230	230	270	300	300
D	275	375	475	575	675	775	975
E	170	270	370	370	470	570	770
F	148	148	208	208	248	278	277
H	225	325	425	525	625	725	925
I	125	225	325	325	425	525	725
K	275	375	475	575	675	775	975
L	70	150	200	200	300	400	600
M	295	395	495	595	-	-	-
N	155	255	355	355	-	-	-
O	362	462	562	662	782	882	1082
P	162	262	362	362	482	582	782
Q	262	362	462	562	682	782	982
R	262	362	462	462	582	682	882
T	-	280	380	480	580	680	880
U	-	130	230	230	330	430	630
V	-	70	70	70	80	80	80
W	-	115	115	115	125	125	125
X	6	6	6	6	8	8	8
Y	14	14	15,5	15,5	15,5	15,5	15,5
Z	28	25	88	88	118	148	148

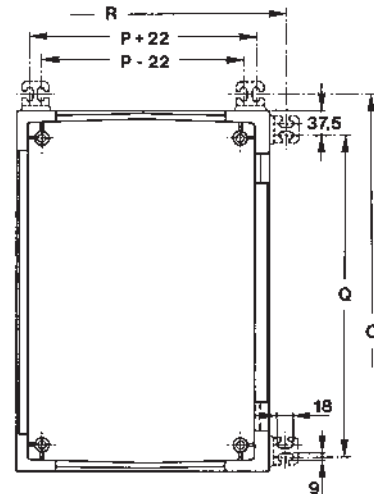
Direct to the wall



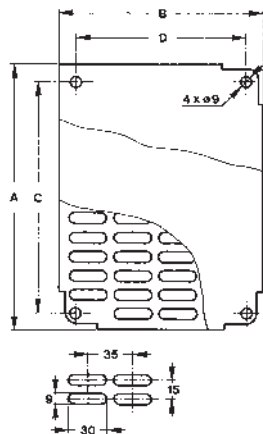
By fixing lugs in polyamide



By fixing lugs in stainless steel



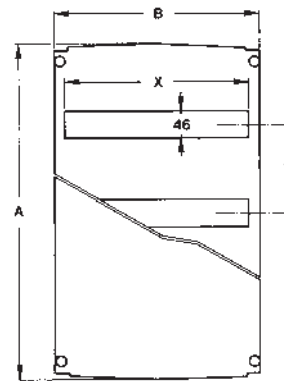
Mounting plates



Dimensions				
ARIA	A	B	C	D
32	250	150	225	125
43	350	250	325	225
54	450	350	425	325
64	550	350	525	325
75	650	450	625	425
86	750	550	725	525
108	950	750	925	725

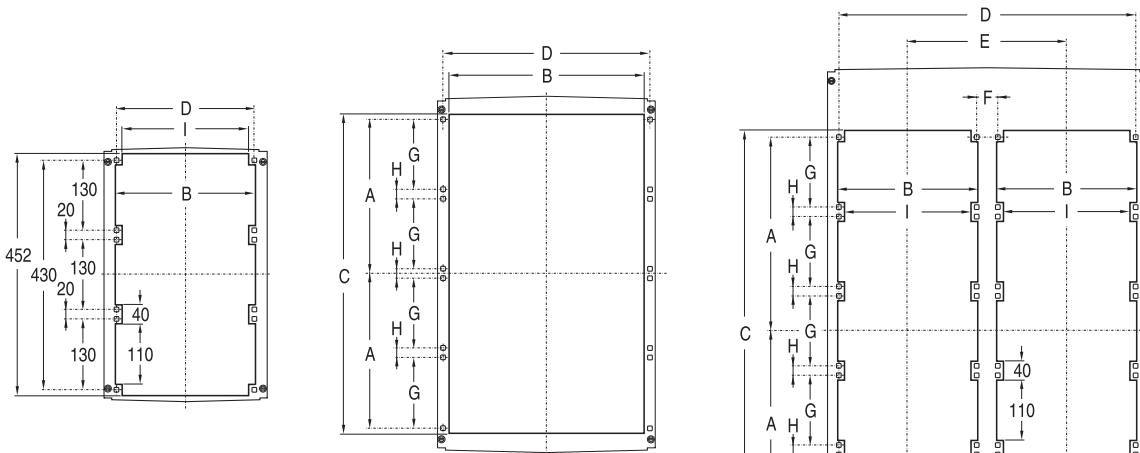
Cover plates

Plain and with openings for DIN-rail equipment



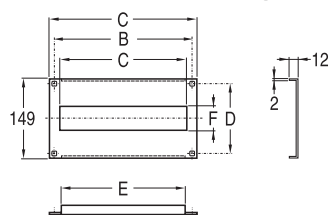
Dimensions					
ARIA	A	B	X	Y	
32	2 rows	279	162	108	125
43	2 rows	379	262	216	150
54	3 rows	479	362	324	150
64	3 rows	579	362	324	150
75	4 rows	690	462	396	150
86	4 rows	790	562	2 x 216	150
108	5 rows	990	762	2 x 324	150

Cover plates with cut-out for individual modular cover plates



Dimensions										
Type	A	B	C	D	E	F	G	H	I	Mod.
ARIA 43	140	216	302	236	-	-	130	20	-	24
ARIA 54	-	308	-	303	-	-	-	-	283	51
ARIA 64	-	326	-	336	-	-	-	-	316	54
ARIA 75	290	400	602	428	-	-	130	20	-	88
ARIA 86	290	216	602	524	288	52	130	20	-	96
ARIA 108	365	326	752	732	396	60	130	20	316	180

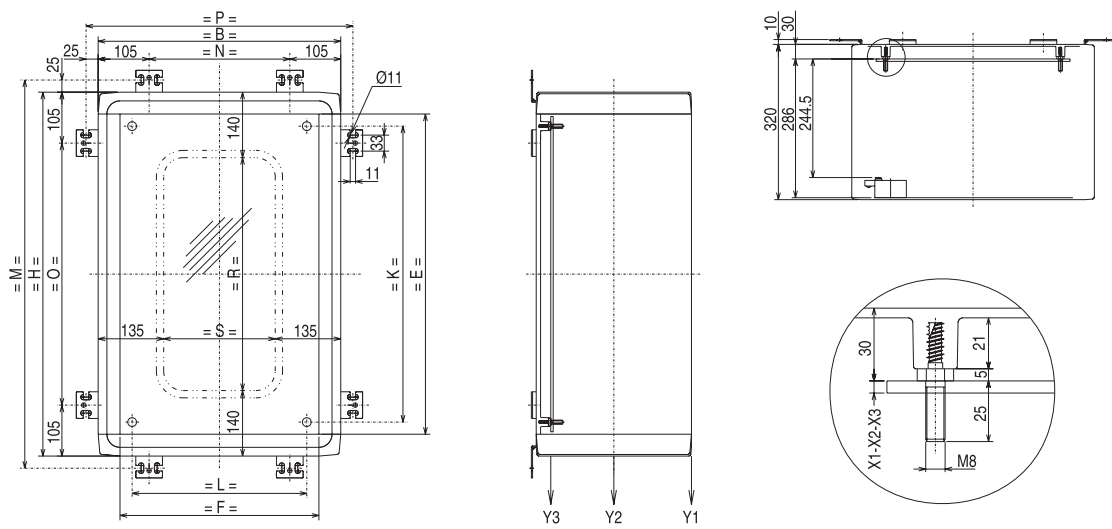
Individual modular cover plate



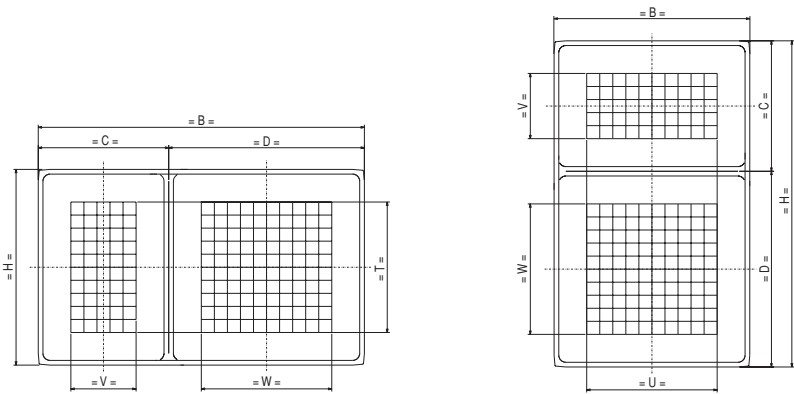
Dimensions						
Ref. No.	A	B	C	D	E	F
831796	255	236	216	130	210	46
831797	255	236	0	130	210	0
831798	322	303	306	130	280	46
831799	322	303	0	130	280	0
831800	355	336	324	130	312	46
831801	355	336	0	130	312	0
831802	455	428	396	130	396	46
831803	455	428	0	130	396	0

Enclosures

Dimensional drawings



Usable mounting space on the doors

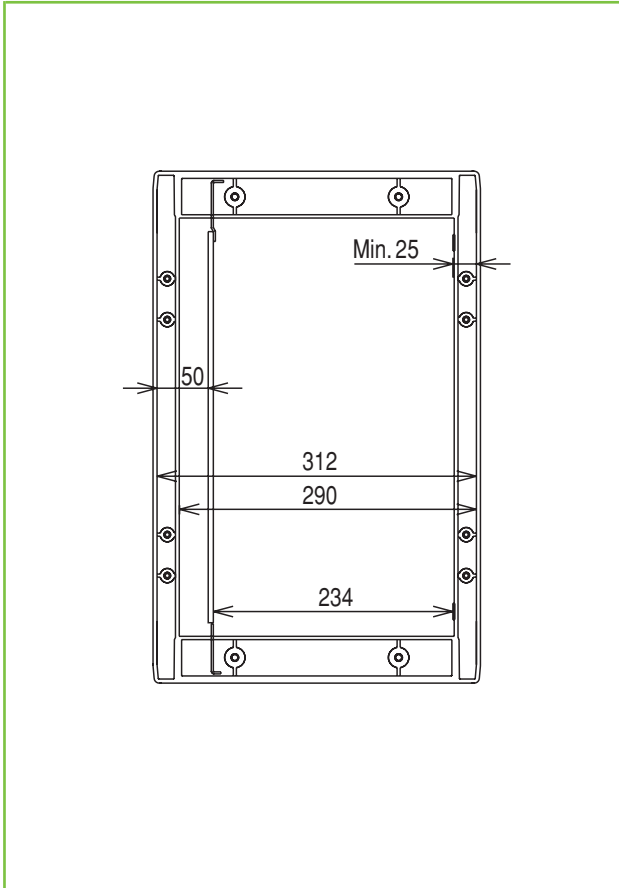


Dimensions																								
Type	H	B	C	D	E	F	K	L	M	N	O	P	R	S	T	U	V	W	X1	X2	X3	Y1	Y2	Y3
220	500	500			410	410	360	360	550	290	290	550	220	230	250	250			5	2	-	8	80	110
230	500	750			410	660	360	610	550	540	290	800	220	480	250	500			5	2	-	8	80	110
320	750	500			660	410	610	360	800	290	540	550	470	230	500	250			5	2	-	8	80	110
330	750	750			660	660	610	610	800	540	540	800	470	480	500	500			5	2	-	8	80	110
340	750	1000			660	910	610	860	800	790	540	1050	470	730	500	750			5	2	-	6	80	110
352	750	1250	500	750	660		610	1110	800	1040	540	1300			500		250	500	5	2	10	5	80	110
420	1000	500			910	410	860	360	1050	290	790	550	720	230	750	250			5	2	-	8	80	110
430	1000	750			910	660	860	610	1050	540	790	800	720	480	750	500			5	2	-	8	80	110
440	1000	1000			910	910	860	860	1050	790	790	1050	720	730	750	750			5	2	10	6	80	110
442	1000	1000	500	500	910		860	860	1050	790	790	1050			750		250	250	5	2	10	6	80	110
452	1000	1250	500	750	910		860	1110	1050	1040	790	1300			750		250	500	5	2	10	5	80	110
530	1250	750			1160	660	1110	610	1300	540	1040	800	970	480	1000	500			5	2	10	8	80	110
542	1250	1000	500	750		910	1110	860	1300	790	1040	1050				750	250	500	5	2	10	6	80	110
546	1250	1000	500	750		910	1110	860	1300	790	1040	1050				750	250	500	5	2	10	6	80	110
	Enclosure external dimensions		Door dimensions		Enclosure let-through		Centres of the mounting plate		Centres for wall mounting				Window surface		Usable mounting space on the doors			Thickness of the mounting plate		Admissible charge in kg				
																		X1 = perfinax 5 mm X2 = metal perforated 2 mm X3 = perfinax 10 mm						

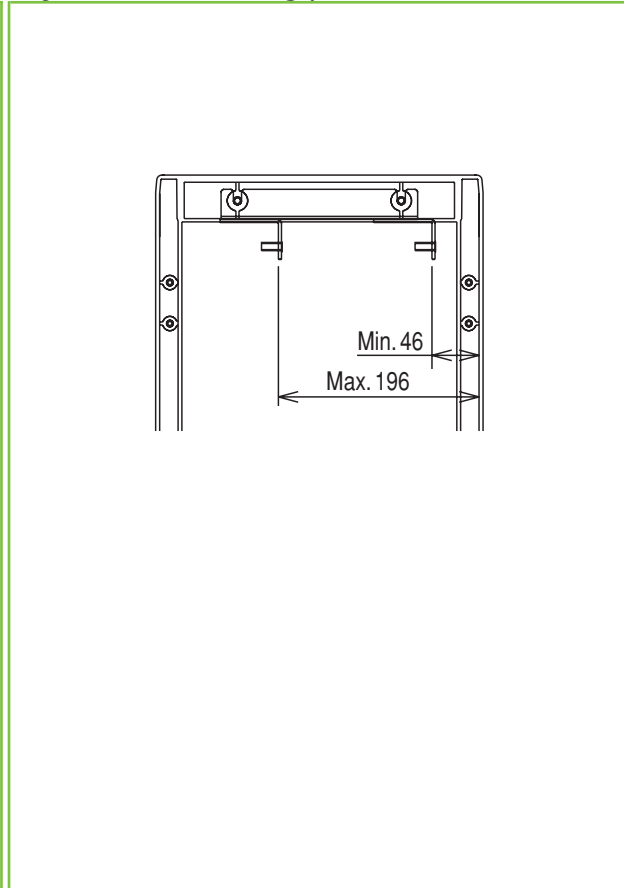
J/X



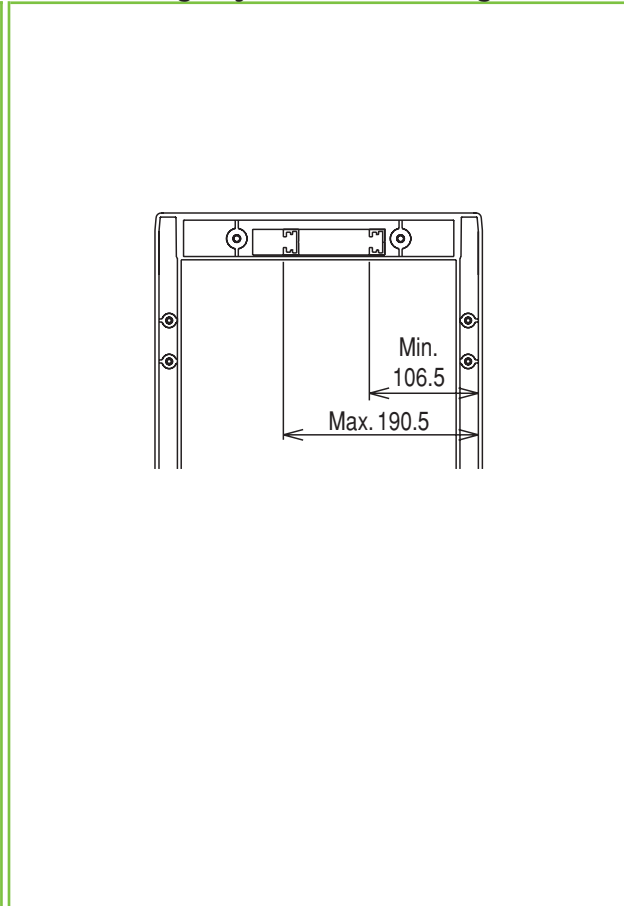
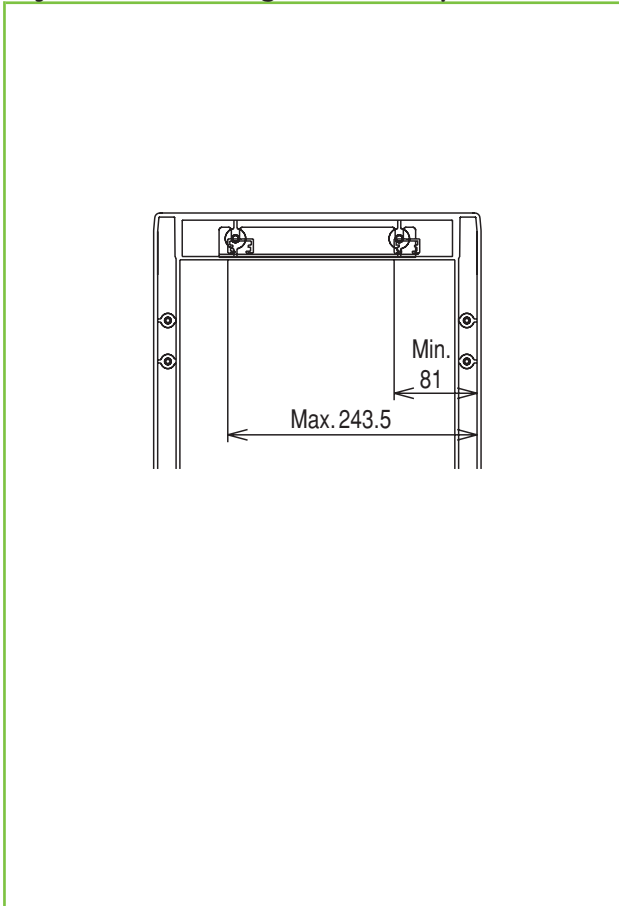
Inner door



Adjustable mounting plate



Adjustable mounting frame in steps of 12.5 mm Continuously adjustable mounting frame



A

B

C

D

E

F

G

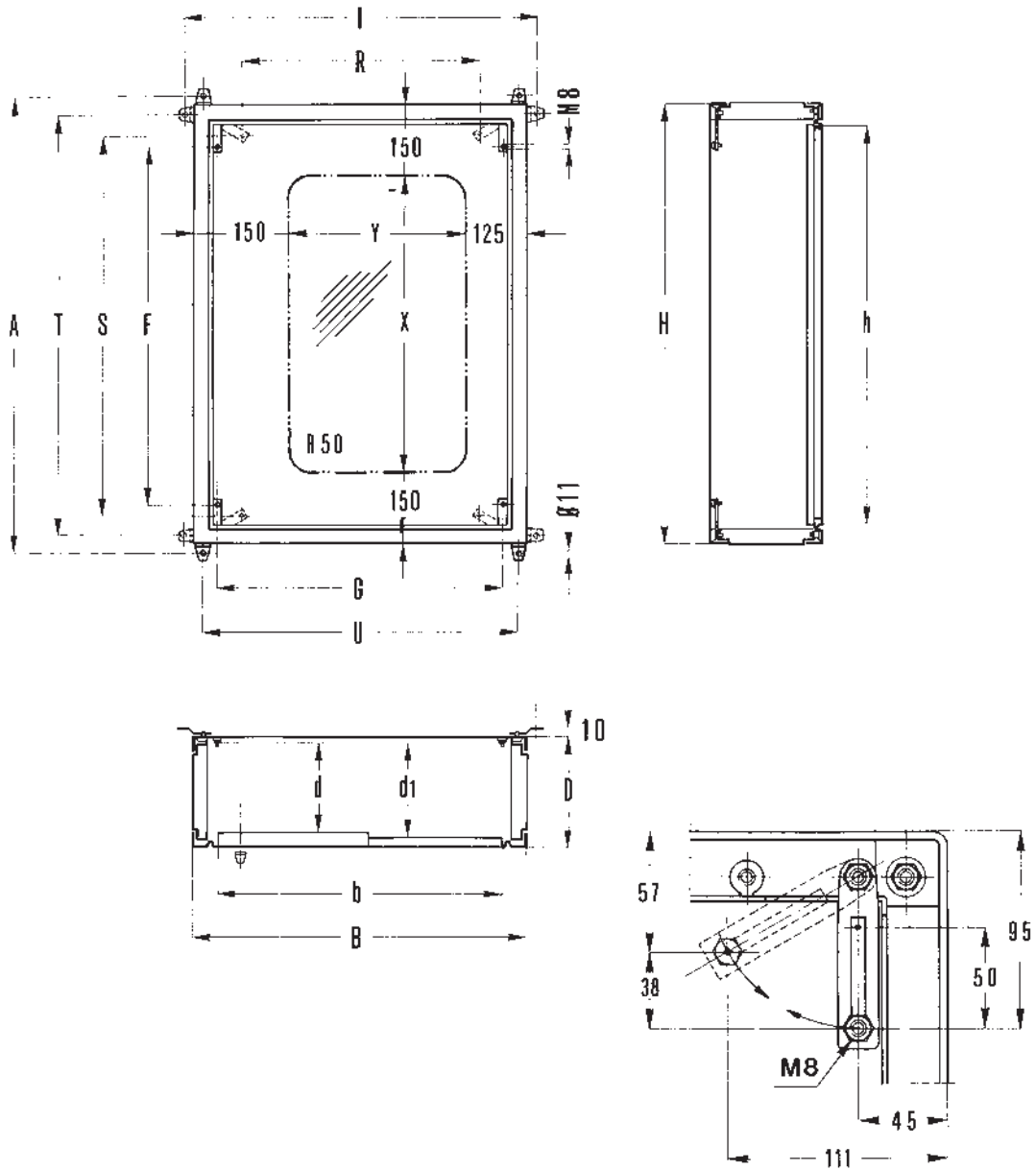
H

I

J/X

Universal polyester cabinets in kit-form

Dimensional drawings



Dimensions																	
Type	H	B	D	h	b	d	d1	A	F	G	I	R	S	T	U	X (max)	Y (max)
SP 230	500	750	400	410	660	355	380	540	310	660	790	528	386	460	710	200	475
SP 320	750	500	400	660	410	355	380	790	560	410	540	278	636	710	460	450	225
SP 330	750	750	400	660	660	355	380	790	560	660	790	528	636	710	710	450	475
SP 340	750	1000	400	660	910	355	380	790	560	910	1040	778	636	710	960	450	725
SP 430	1000	750	400	910	660	355	380	1040	810	660	790	528	886	960	710	700	475
SP 440	1000	1000	400	910	910	355	380	1040	810	910	1040	778	886	960	960	700	725
SP 452	1000	1250	400	910	1160	355	380	1040	810	1160	1290	1028	886	960	1210	-	-
SP 530	1250	750	400	1160	660	355	380	1290	1060	660	790	528	1136	1210	710	950	475
SP 546	1250	1000	400	1160	910	355	380	1290	1060	910	1040	778	1136	1210	960	-	-

J/X



Notes

Grid area for notes.

Dimensional drawings

A

B

C

D

E

F

G

H

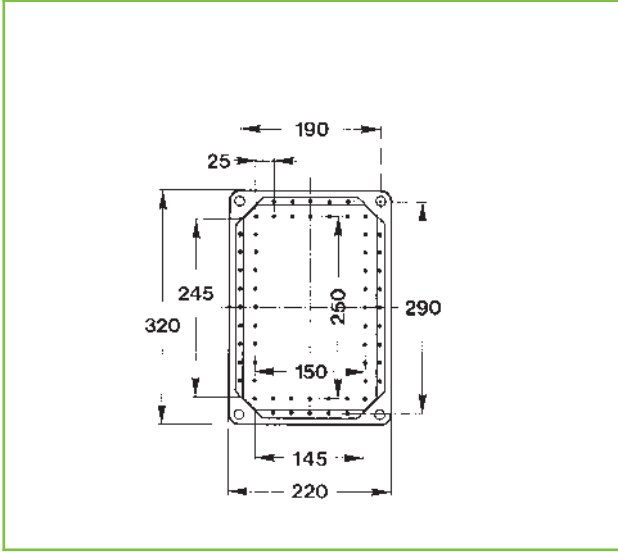
I

J/X

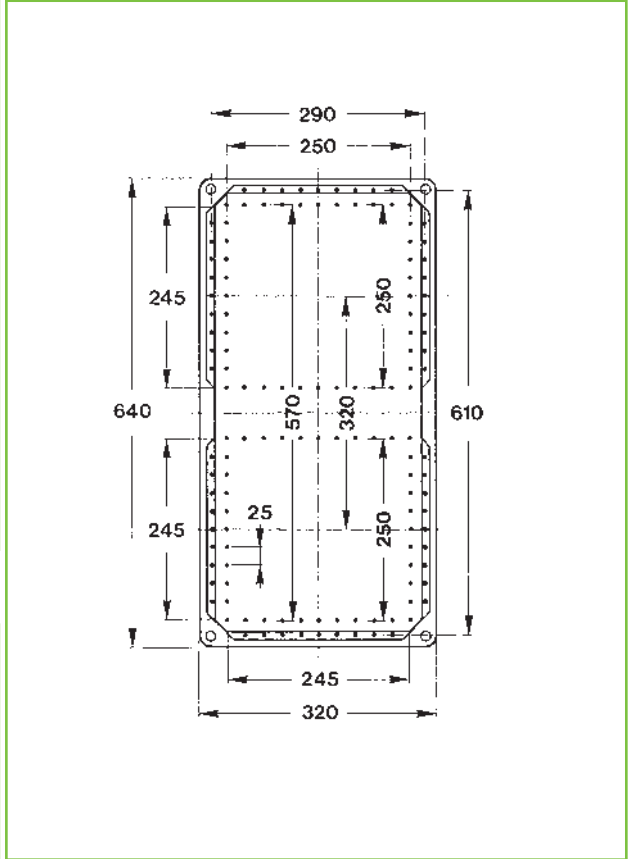


Bases

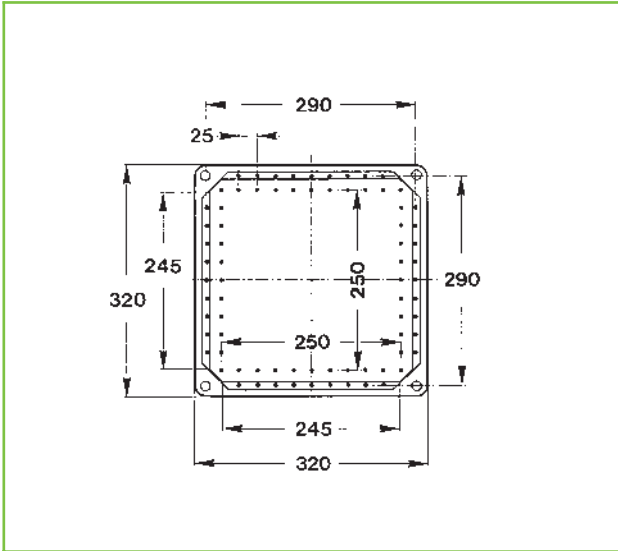
VMS 32



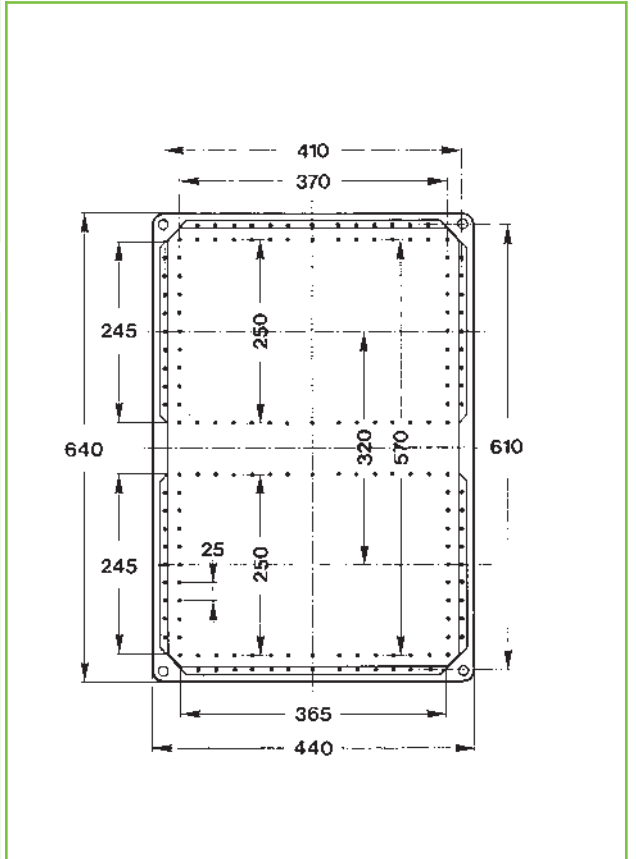
VMS 63



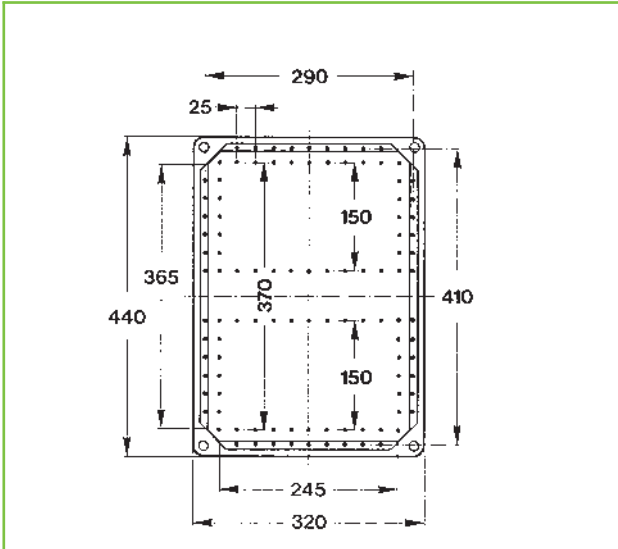
VMS 33



VMS 64



VMS 43



Dimensional drawings

A

B

C

D

E

F

G

H

I

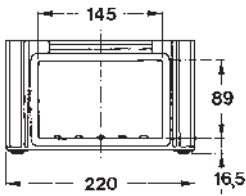
J/X



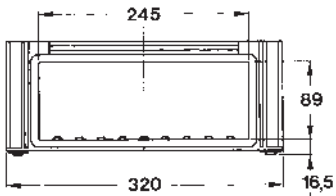
Bases

Openings in the base side walls

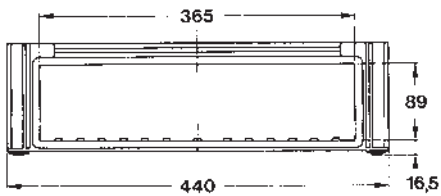
Side 220



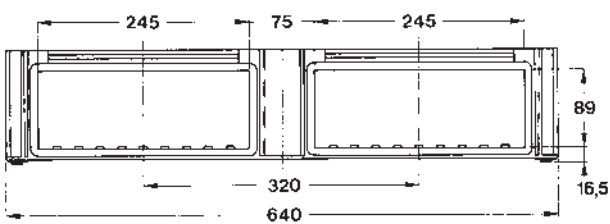
Side 320



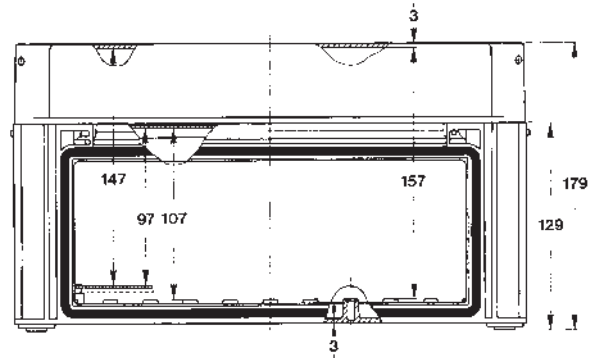
Side 440



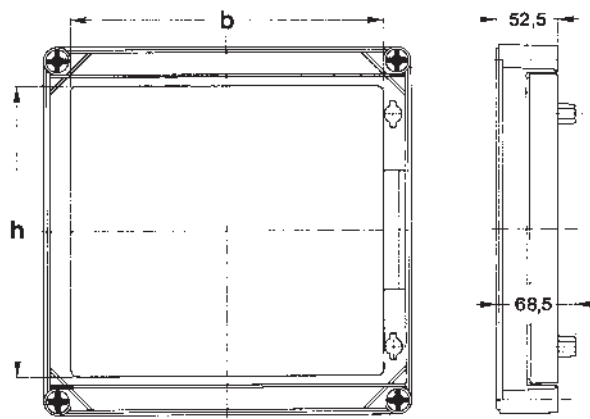
Side 640



Built-in heights



Pivoting covers



Type	Dimensions	b	h
VMS 33	320 x 320	260	241
VMS 43	440 x 320	260	361

A

B

C

D

E

F

G

H

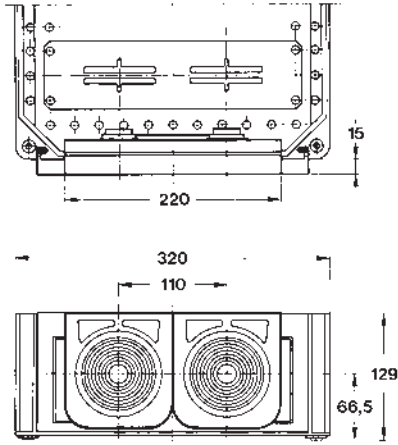
I

J/X

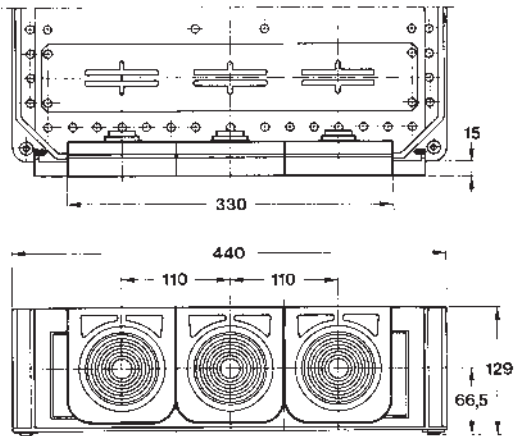


Cable end plates and universal cable stress releases **Mounting brackets**

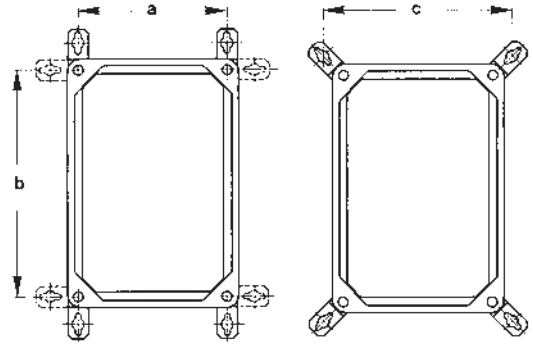
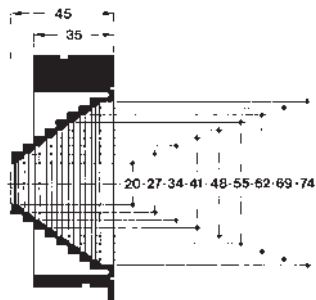
Side 320



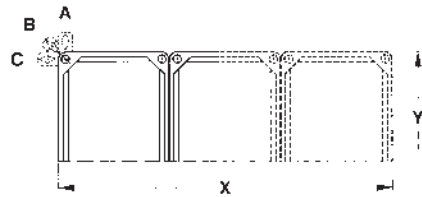
Side 440



Side view



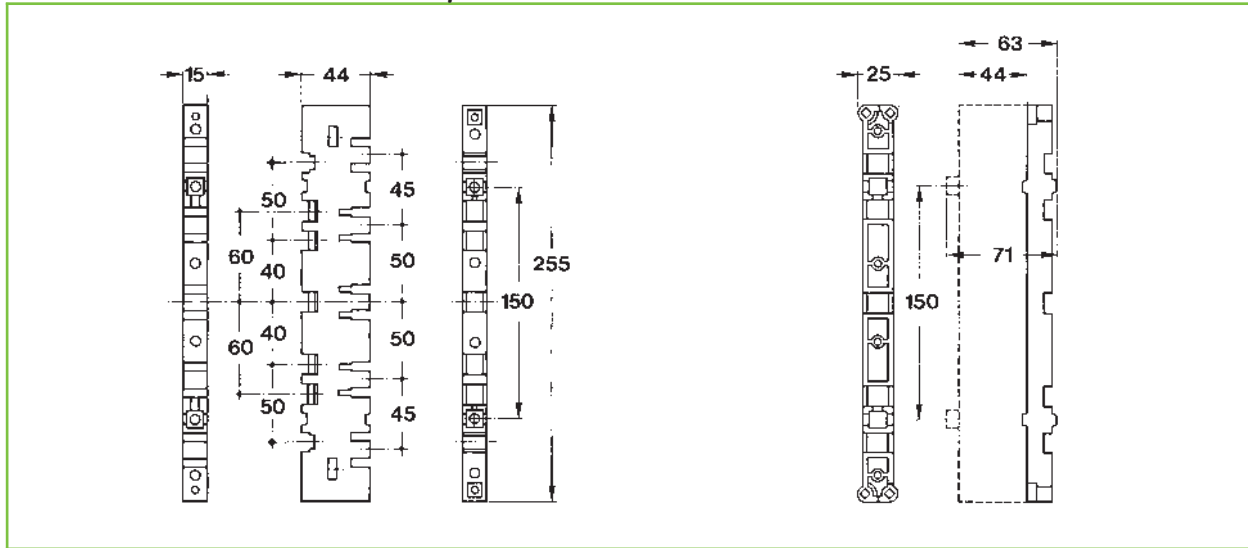
Type	Dimensions	a	b	c
VMS 32	320 x 220	193	293	254
VMS 33	320 x 320	293	293	354
VMS 43	440 x 320	293	413	354
VMS 63	640 x 320	293	613	354
VMS 64	640 x 440	413	613	474



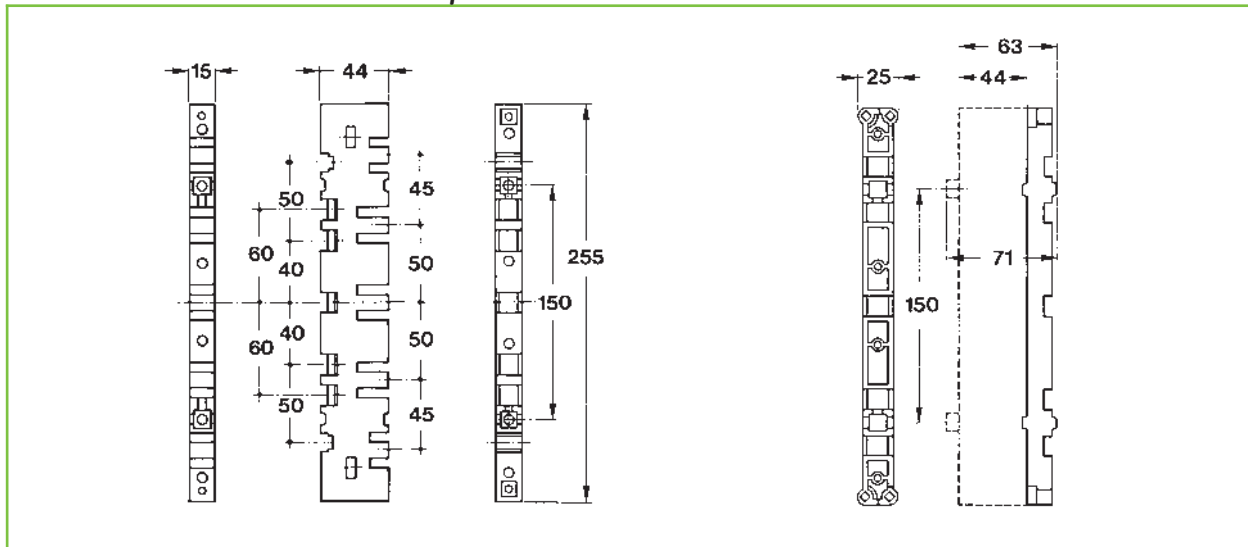
	Centre dimensions	
A	X - 27	Y + 40
B	X + 34	Y + 34
C	X + 40	Y - 27

Busbar supports

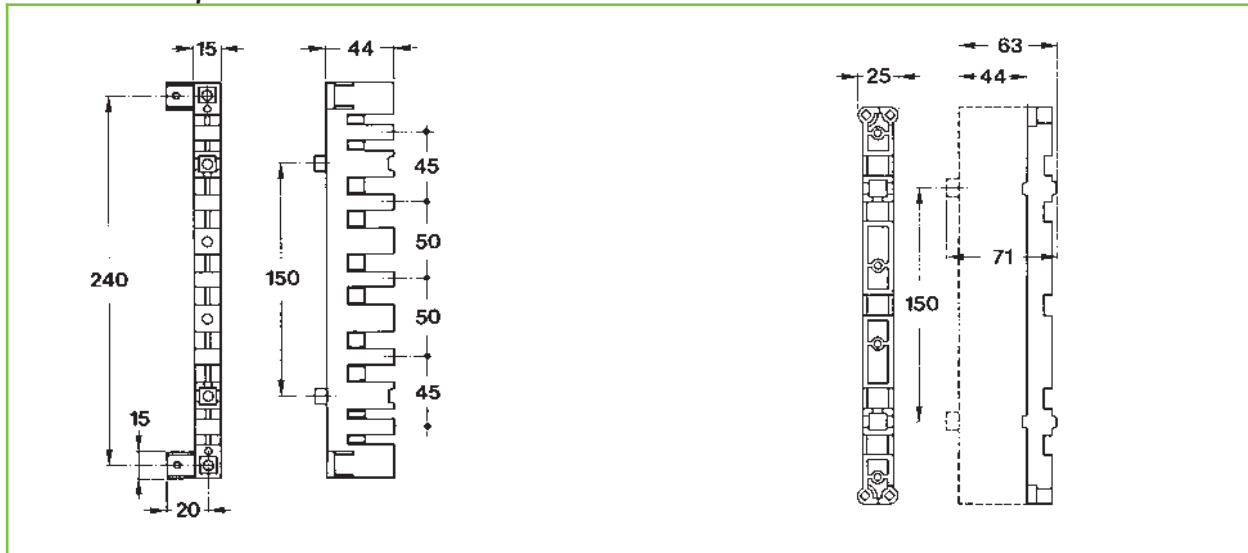
125A-250A - horizontal • 250A - parallel



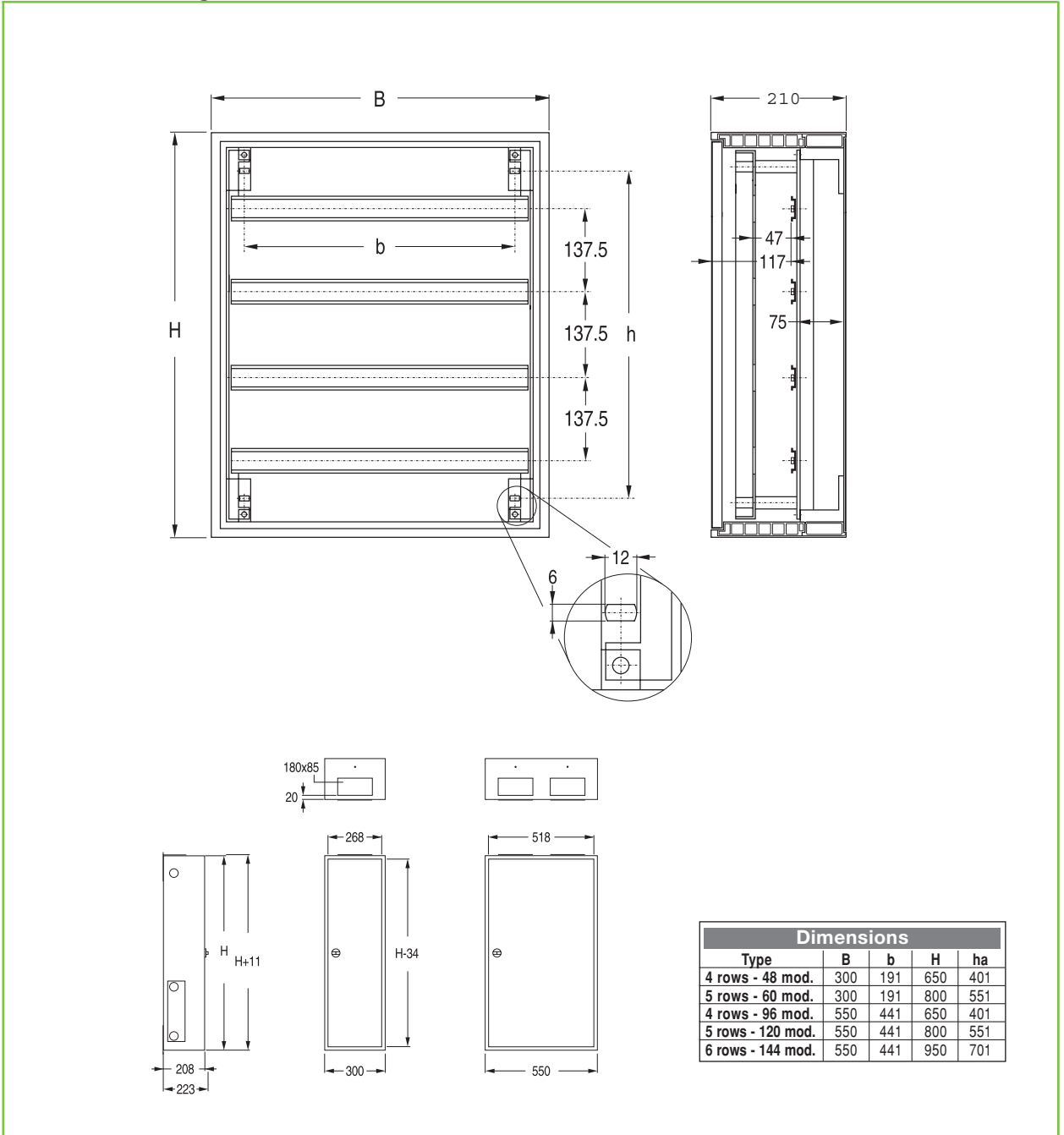
125A-250A - horizontal • 400A - parallel



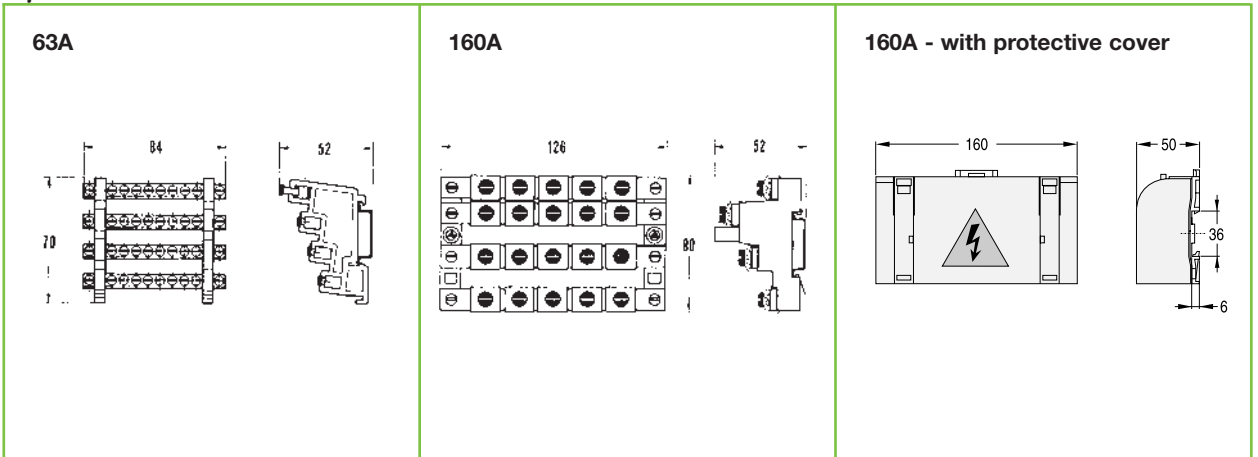
630A-1250A - parallel



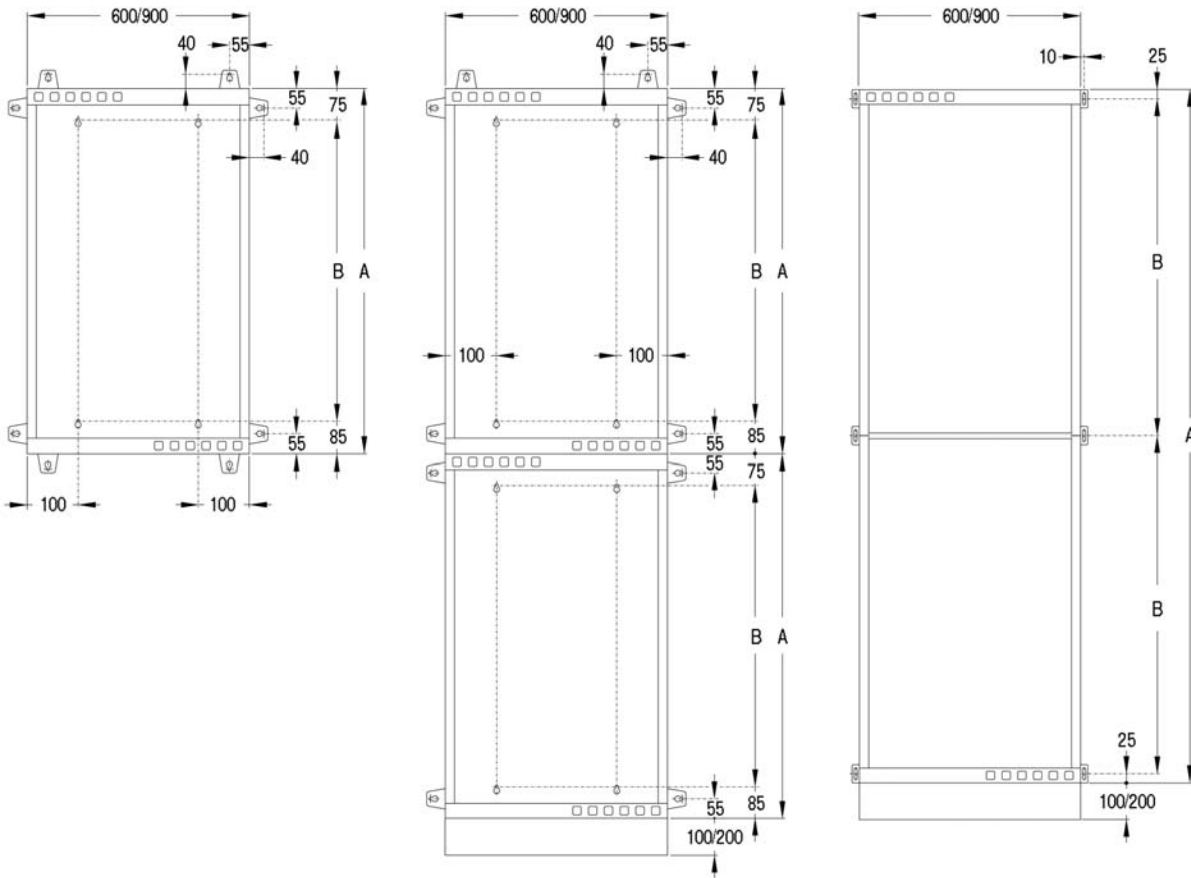
Surface mounting



4 pole terminals



Enclosures

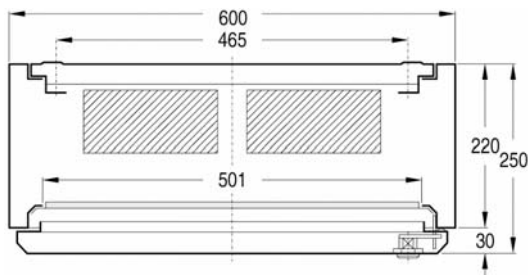


Dimensions						
Stacked units	3	4	5	6	7	8
A	545	695	845	995	1145	1295
B	385	535	685	835	985	1135

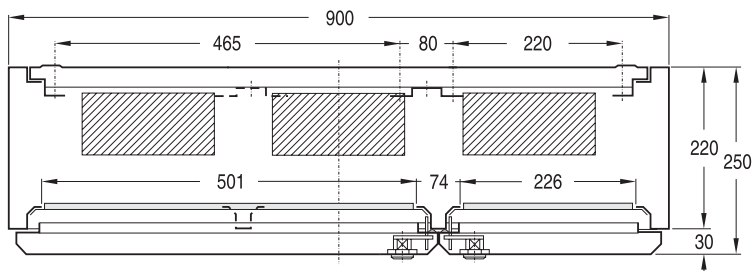
Dimensions				
Stacked units	9	10	11	12
A	1460	1610	1760	1910
B	705	780	855	930

Cross sections

600 mm width



900 mm width



Dimensional drawings

A

B

C

D

E

F

G

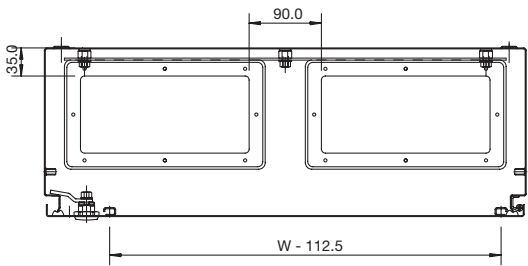
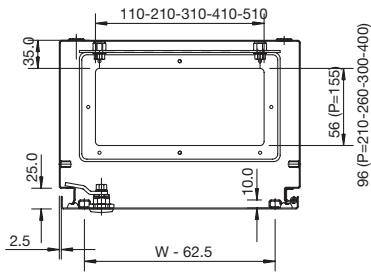
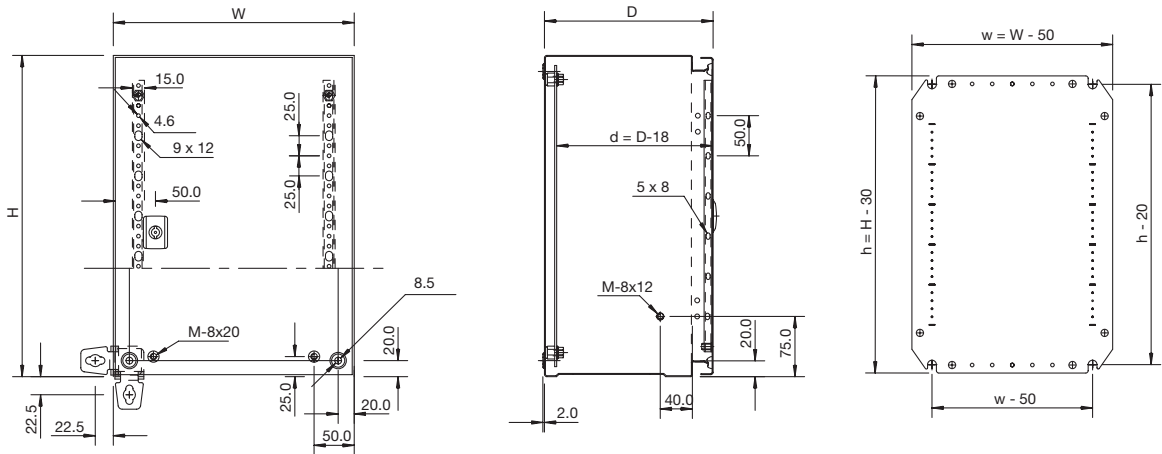
H

I

J/X



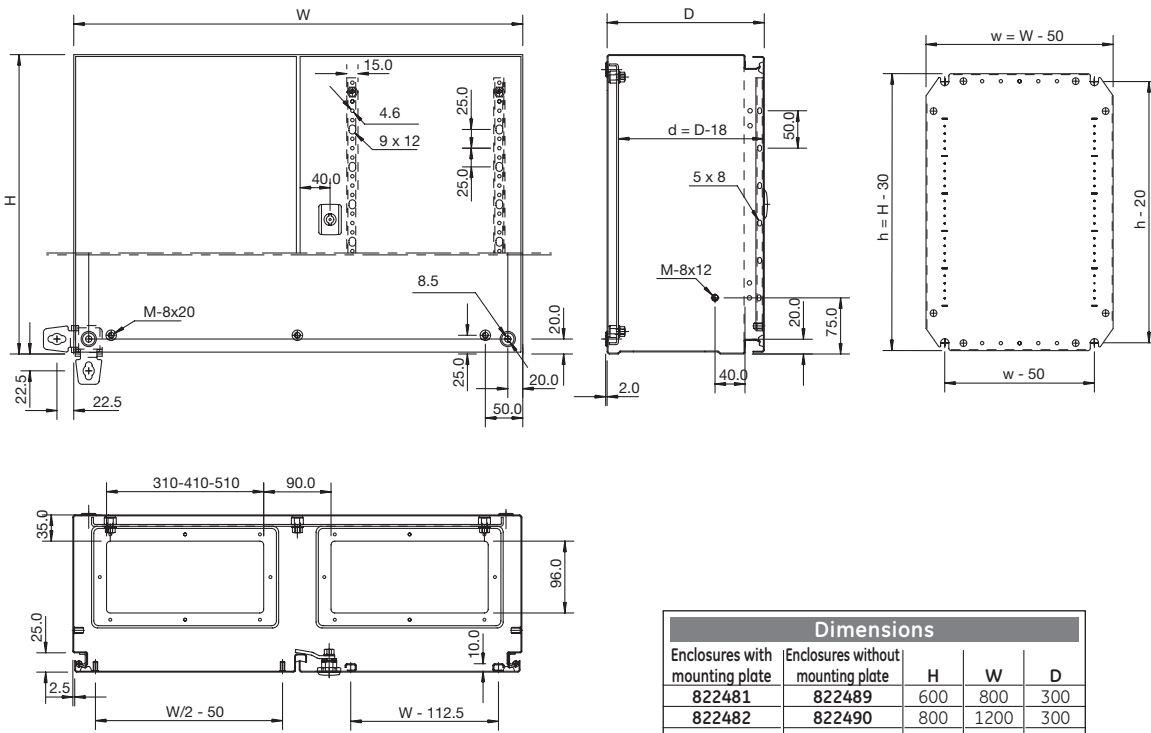
Enclosure with single door



Dimensions				
Enclosures with mounting plate	Enclosures without mounting plate	H	W	D
822369	822425	200	200	200
822372	822428	250	200	250
822373	822429	250	250	250
822375	822431	300	250	300
822376	822432	300	250	300
822377	822433	300	300	300
822378	822434	300	300	300
822380	822436	350	250	350
822381	822437	400	300	400
822382	822438	400	300	400
822383	822439	400	400	400
822384	822440	400	500	400
822386	822442	400	600	400
822387	822443	500	300	500
822389	822445	500	400	500
822390	822446	500	400	500
822391	822447	500	400	500
822392	822448	500	400	500
822393	822449	500	500	500
822394	822450	500	500	500
822395	822451	600	400	600
822396	822452	600	400	600
822397	822453	600	400	600
822398	822454	600	400	600
822399	822455	600	500	600
822400	822456	600	500	600
822401	822457	600	500	600
822402	822458	600	500	600
822403	822459	600	600	600
822404	822460	600	600	600
822405	822461	600	600	600
822406	822462	600	800	600
822407	822463	700	500	700
822408	822464	700	500	700
822409	822465	800	400	800
822410	822466	800	600	800
822411	822467	800	600	800
822412	822468	800	600	800
822413	822469	800	600	800
822414	822470	800	800	800
822415	822471	800	800	800
822416	822472	800	800	800
822417	822473	1000	600	1000
822418	822474	1000	600	1000
822419	822475	1000	800	1000
822420	822476	1000	800	1000
822421	822477	1000	800	1000
822422	822478	1200	600	1200
822423	822479	1200	800	1200
822424	822480	1200	800	1200



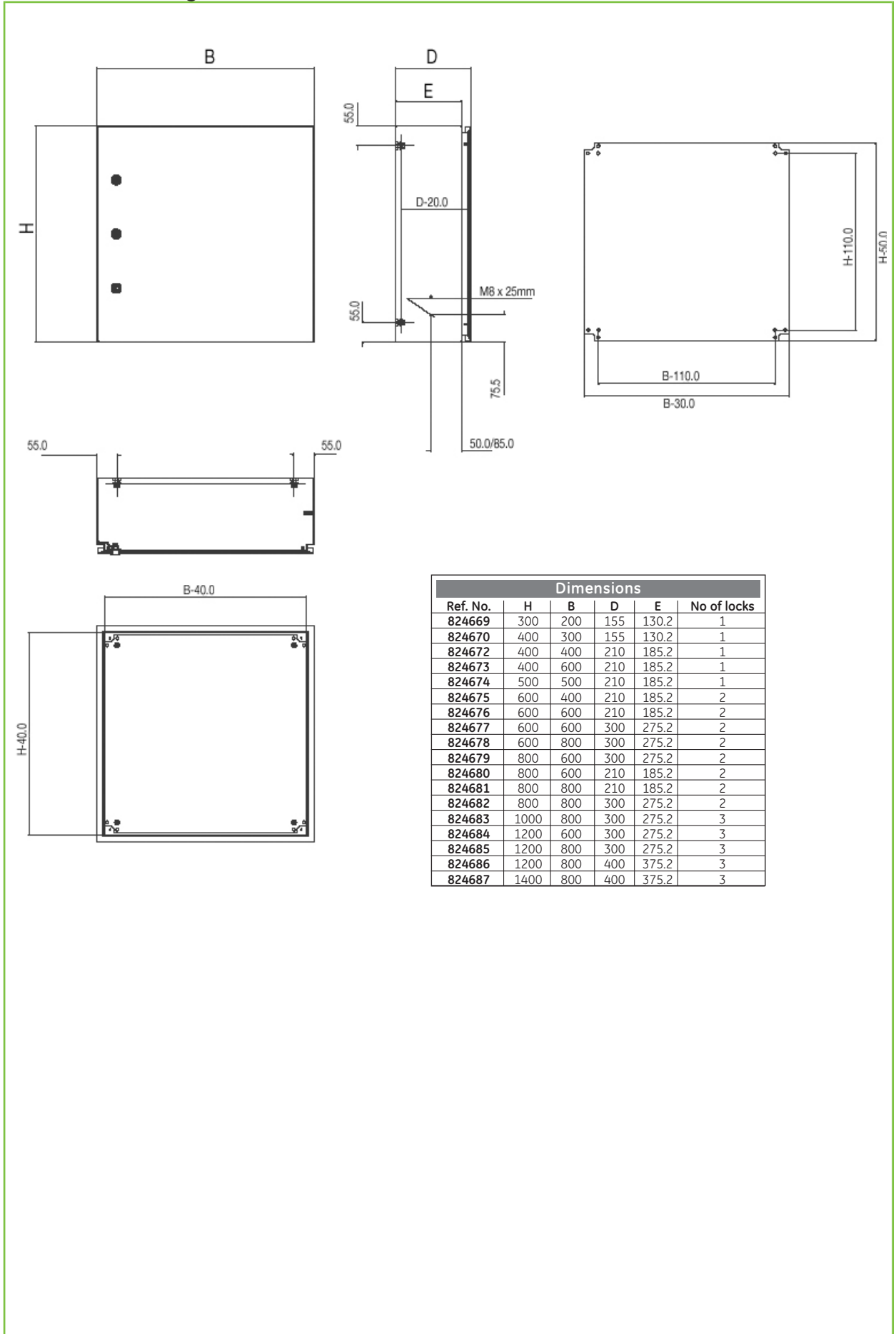
Enclosure with double door



Dimensions				
Enclosures with mounting plate	Enclosures without mounting plate	H	W	D
822481	822489	600	800	300
822482	822490	800	1200	300
822484	822492	1000	1000	300
822485	822493	1200	1000	300
822486	822494	1200	1200	300
822487	822495	1200	1200	400
822488	822496	1400	1000	300



Enclosure with single door



Dimensions					
Ref. No.	H	B	D	E	No of locks
824669	300	200	155	130.2	1
824670	400	300	155	130.2	1
824672	400	400	210	185.2	1
824673	400	600	210	185.2	1
824674	500	500	210	185.2	1
824675	600	400	210	185.2	2
824676	600	600	210	185.2	2
824677	600	600	300	275.2	2
824678	600	800	300	275.2	2
824679	800	600	300	275.2	2
824680	800	600	210	185.2	2
824681	800	800	210	185.2	2
824682	800	800	300	275.2	2
824683	1000	800	300	275.2	3
824684	1200	600	300	275.2	3
824685	1200	800	300	275.2	3
824686	1200	800	400	375.2	3
824687	1400	800	400	375.2	3

Dimensional drawings

A

B

C

D

E

F

G

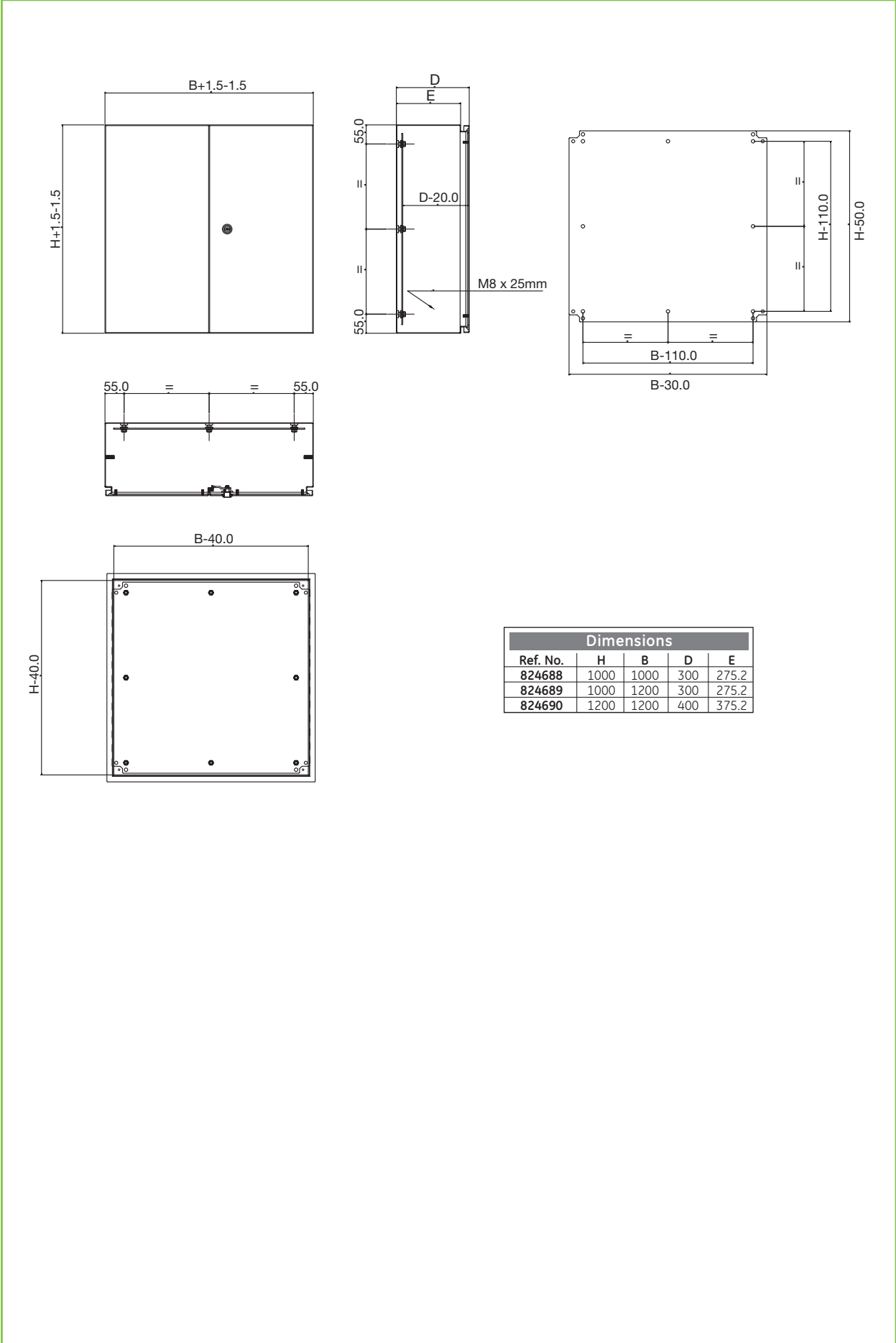
H

I

J/X



Enclosure with double door



Dimensions				
Ref. No.	H	B	D	E
824688	1000	1000	300	275.2
824689	1000	1200	300	275.2
824690	1200	1200	400	375.2

Dimensional drawings

- A
- B
- C
- D
- E
- F
- G
- H
- I

J/X



Modular version - single door

A

B

C

D

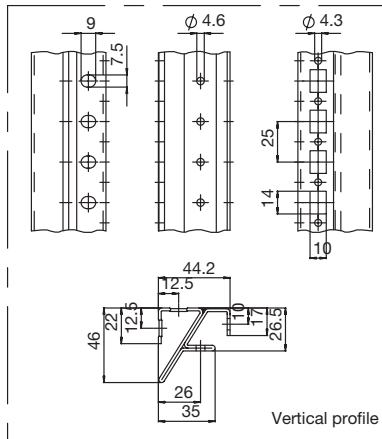
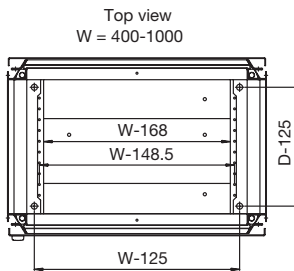
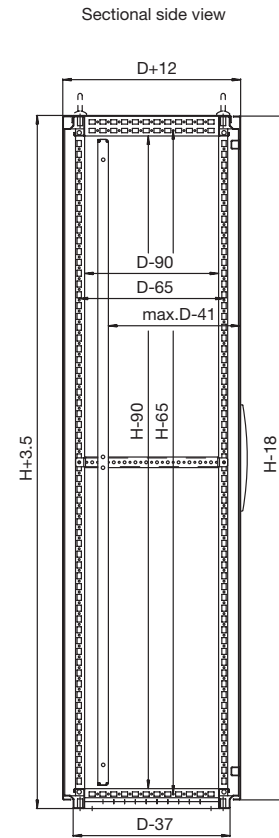
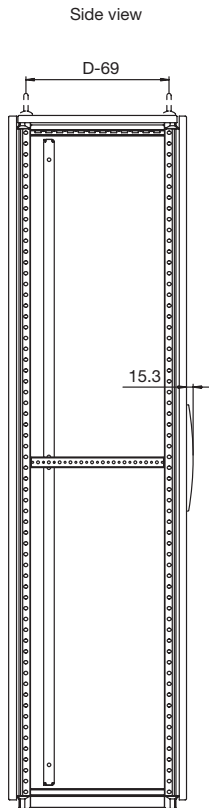
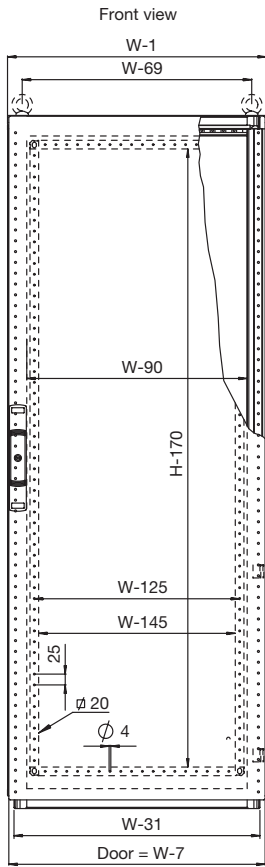
E

F

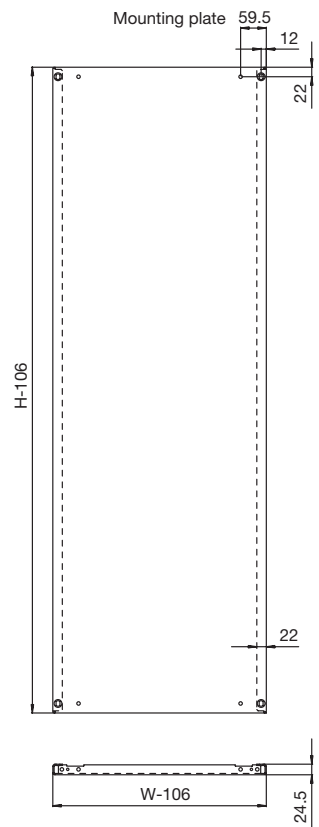
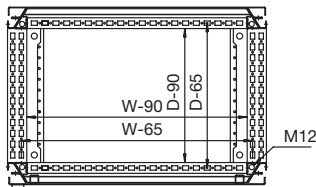
G

H

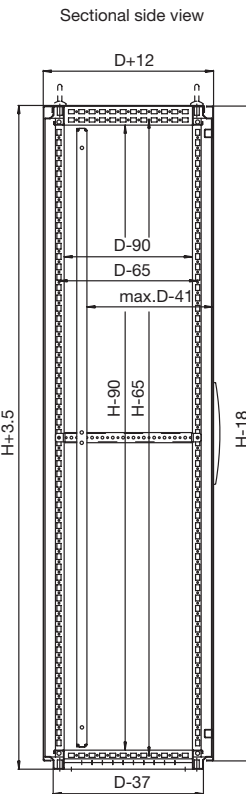
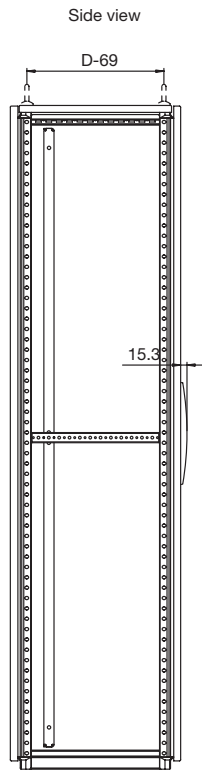
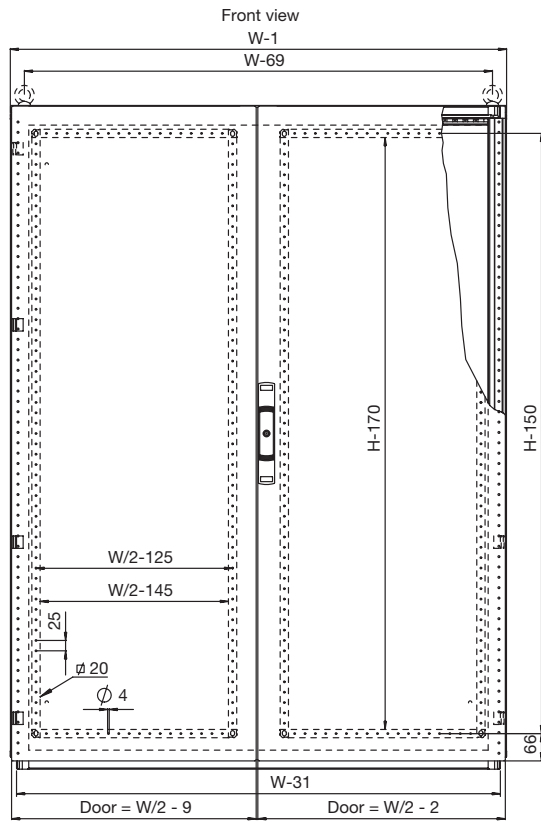
J/X



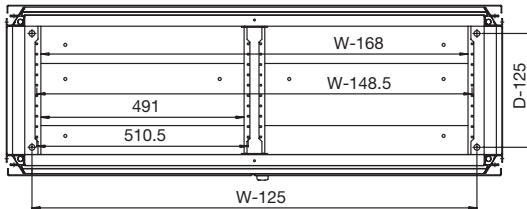
Sectional top view (without bottomplates)
W = 400-1000



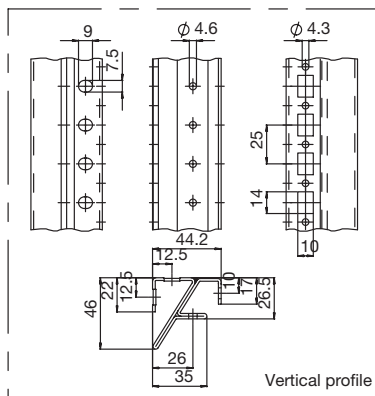
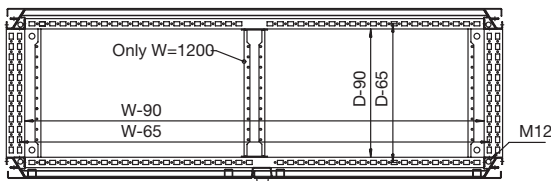
Modular version - double door



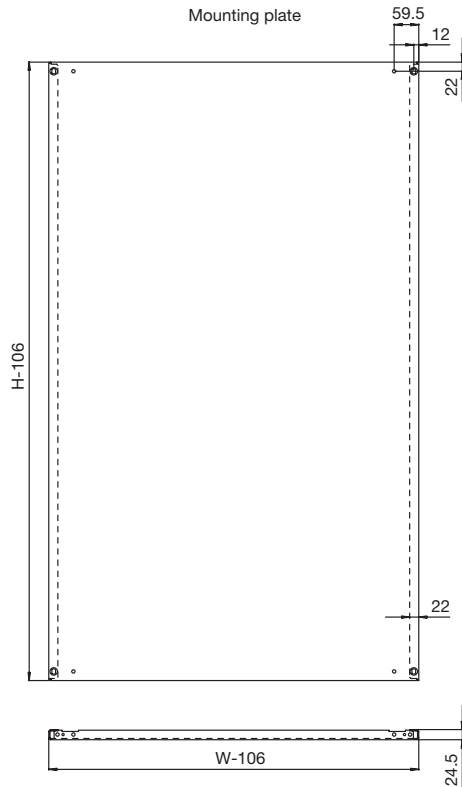
Top view W = 800-1200



Sectional top view (without bottomplates) W = 800-1200



Mounting plate



A

B

C

D

E

F

G

H

I

J/X



Mono version - single door

A

B

C

D

E

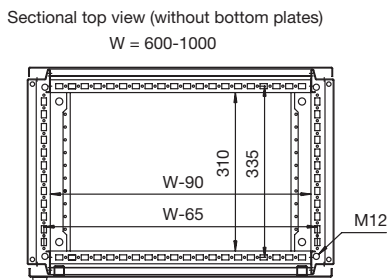
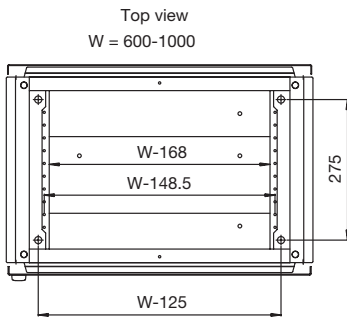
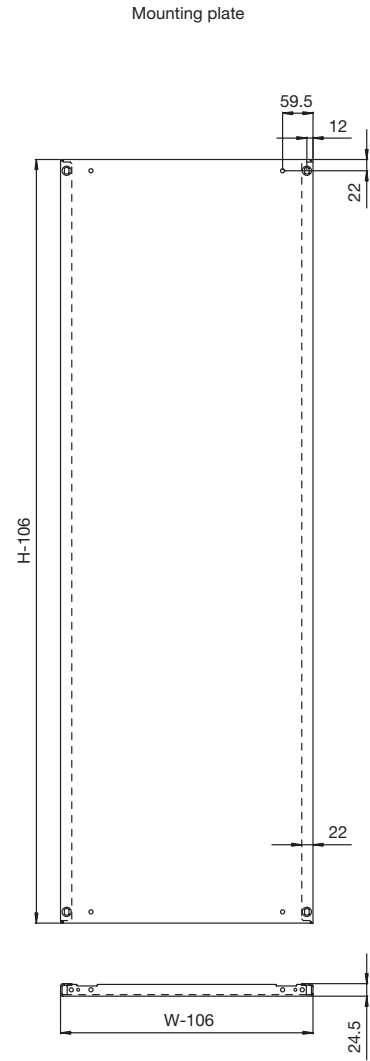
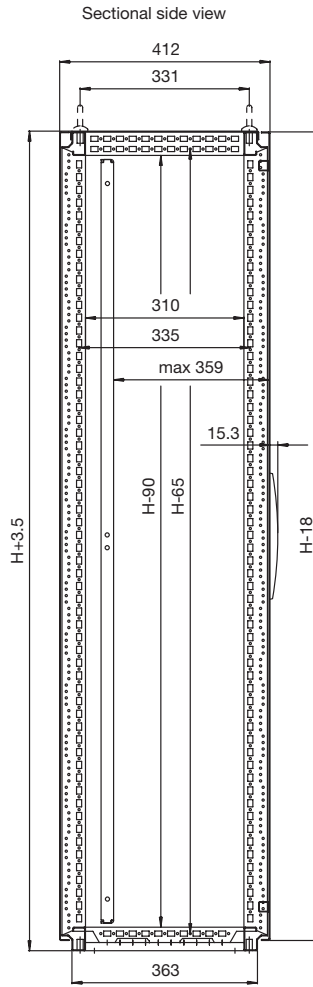
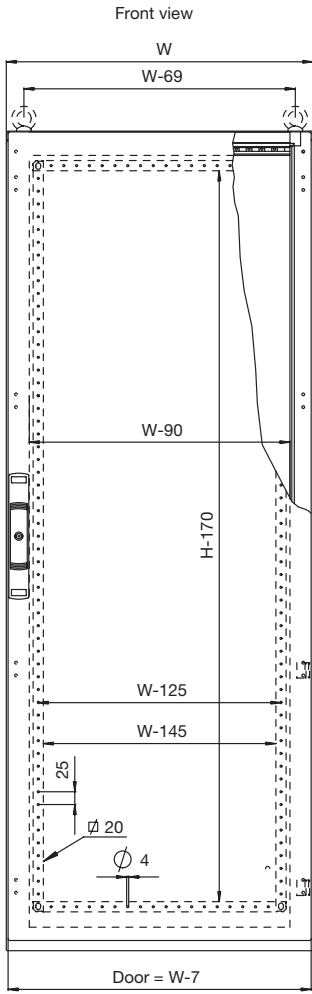
F

G

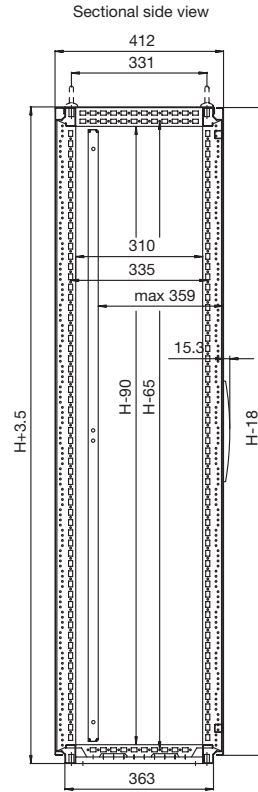
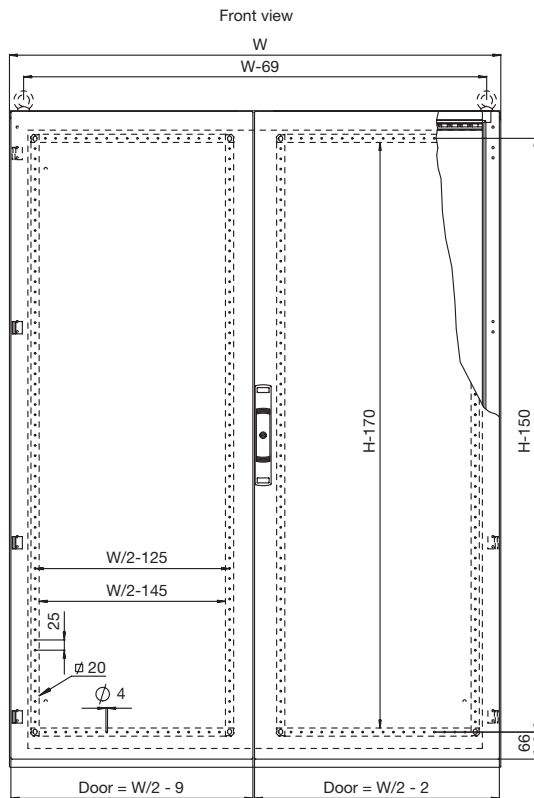
H

I

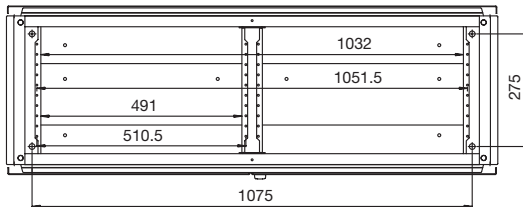
J/X



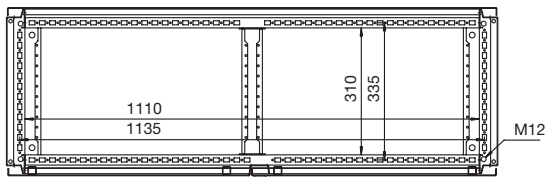
Mono version - double door



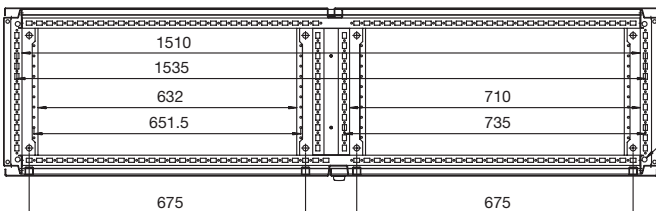
Top view W = 1200



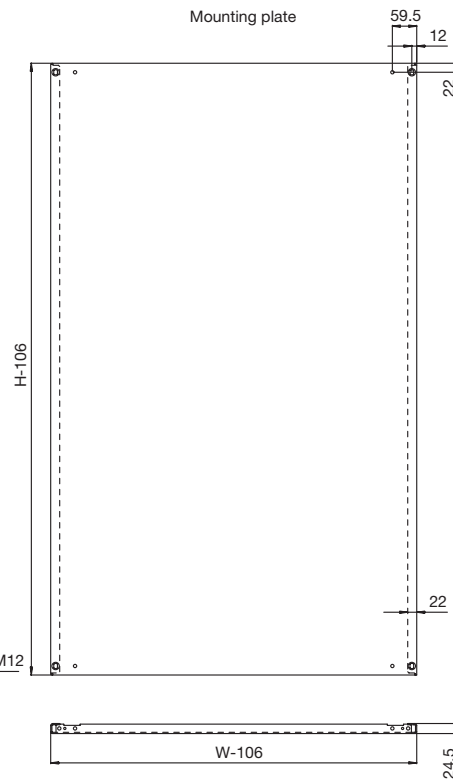
Sectional top view (without bottom plates) W = 1200



Sectional top view (without bottom plates) W = 1600



Mounting plate



Dimensional drawings

A

B

C

D

E

F

G

H

I

J/X



Industrial computer enclosure

Dimensional drawings

A

B

C

D

E

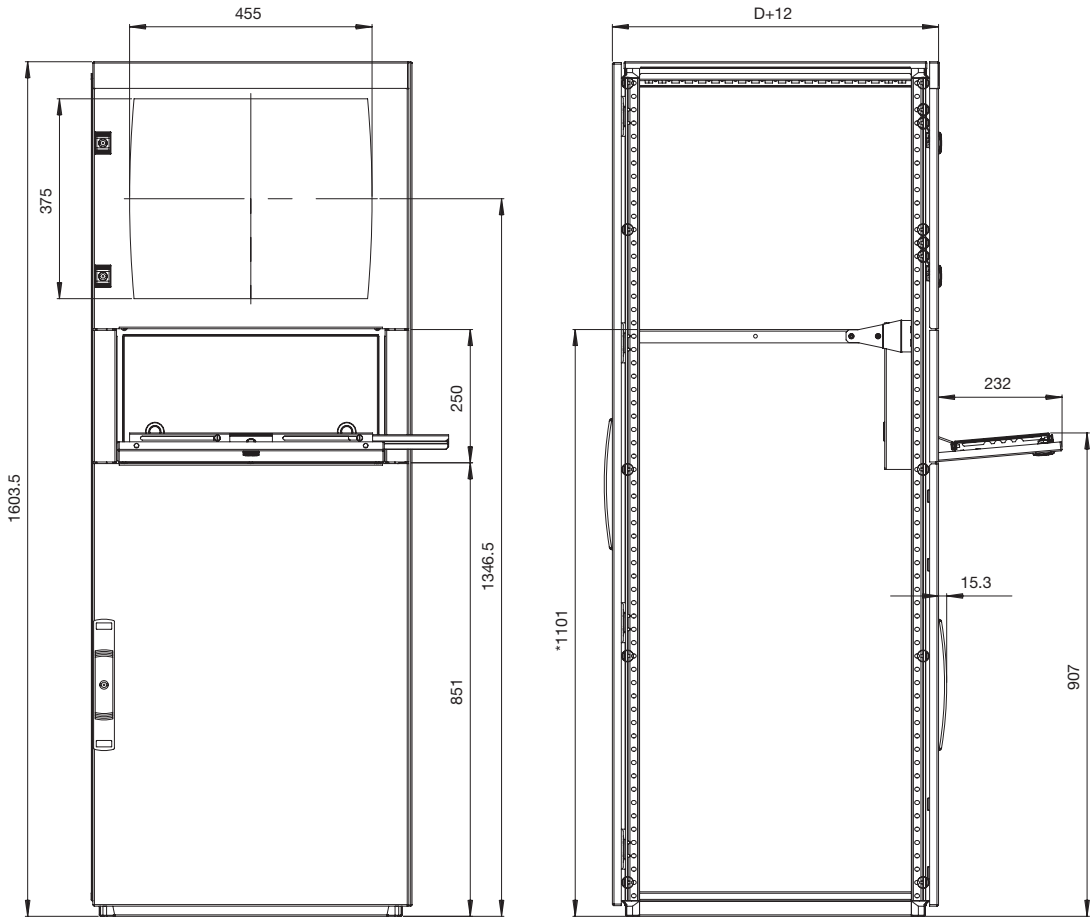
F

G

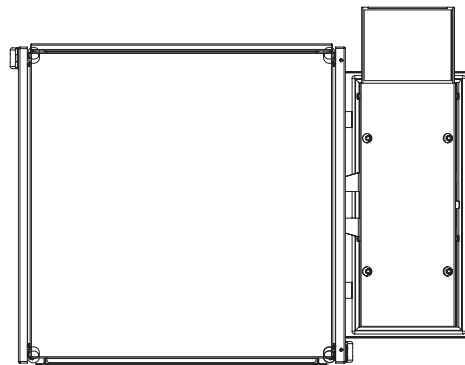
H

I

J/X



* Standard position, adjustable in height.



Notes

Grid area for notes.

Dimensional drawings

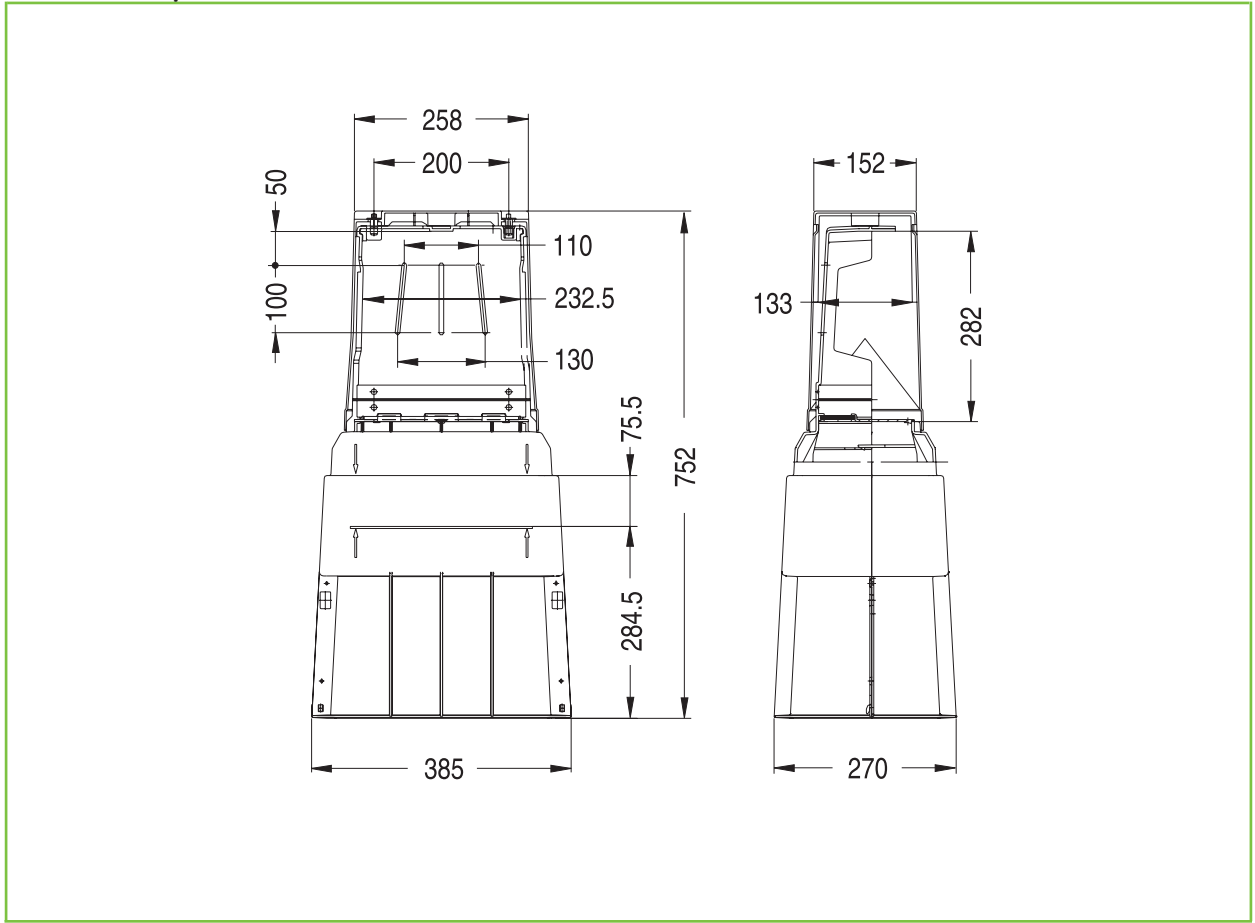
- A
- B
- C
- D
- E
- F
- G
- H
- I

J/X

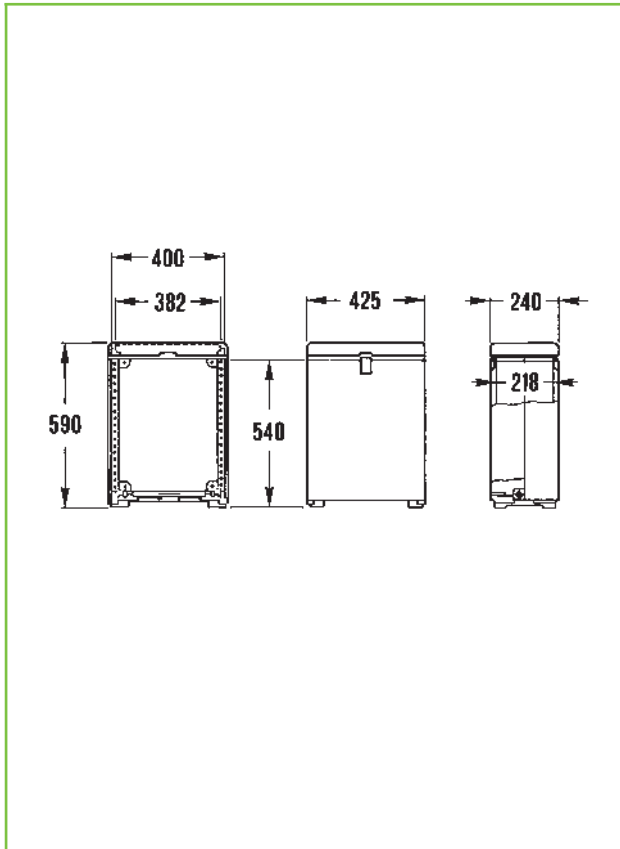


EH1 & EH2-short

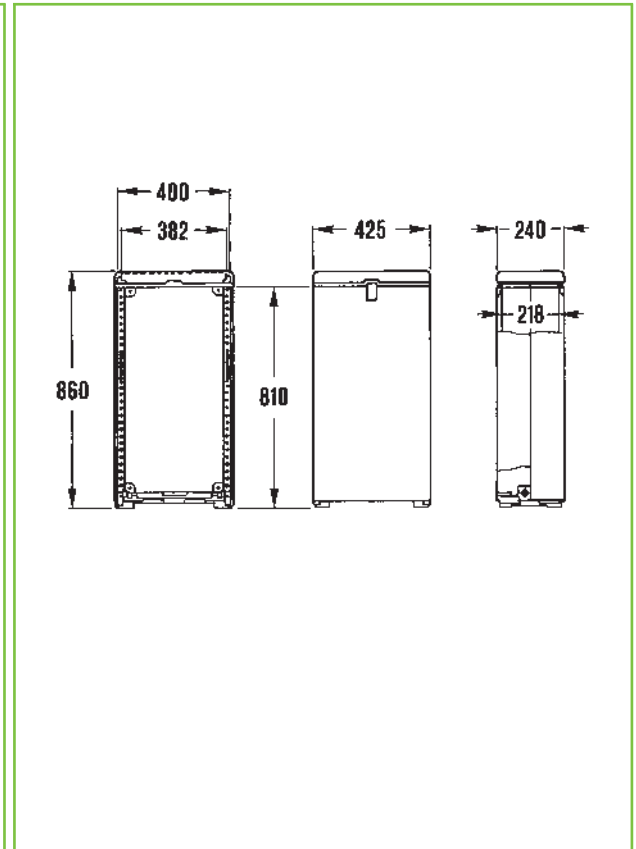
EH1 - Small pedestal



EH2-S2 - Pedestals without base



EH2-S3 - Pedestals without base



Dimensional drawings

A

B

C

D

E

F

G

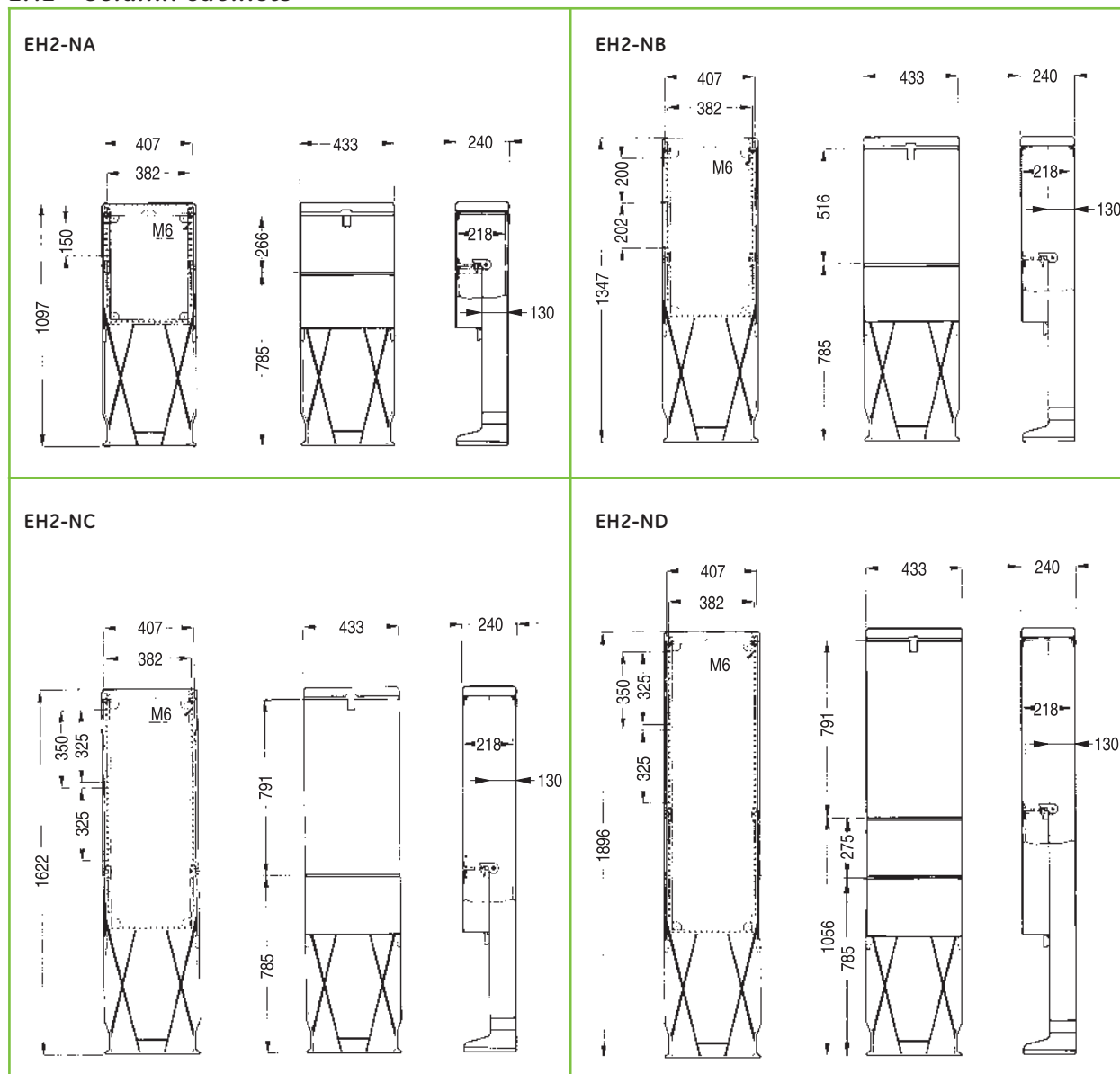
H

I

J/X



EH2 - Column cabinets



Dimensional drawings

A

B

C

D

E

F

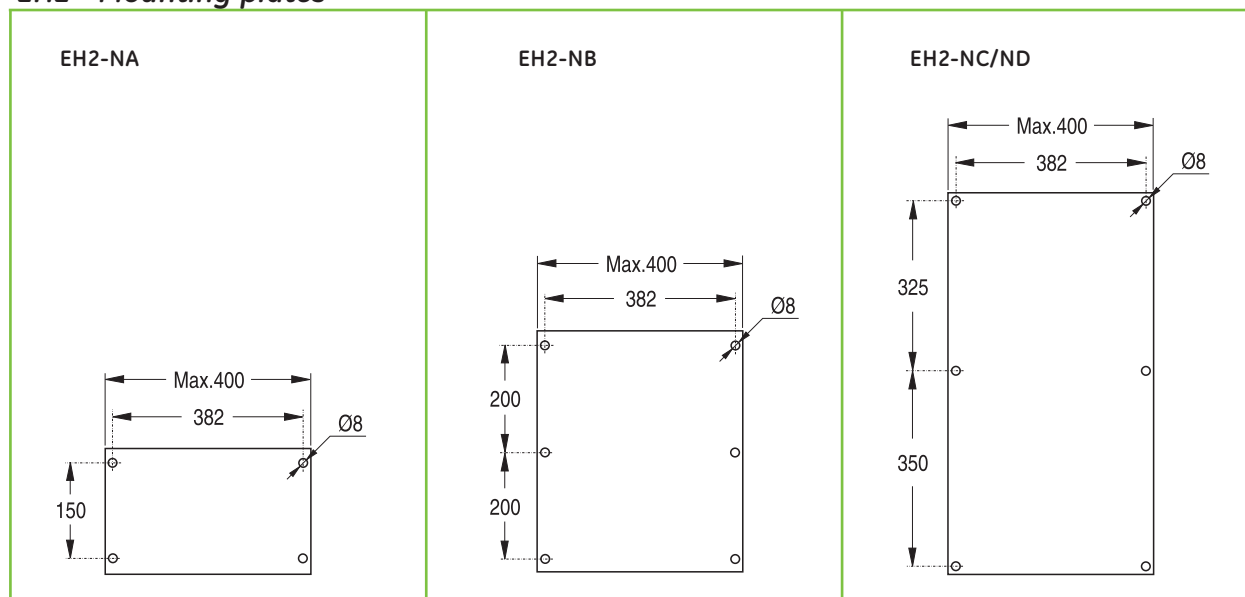
G

H

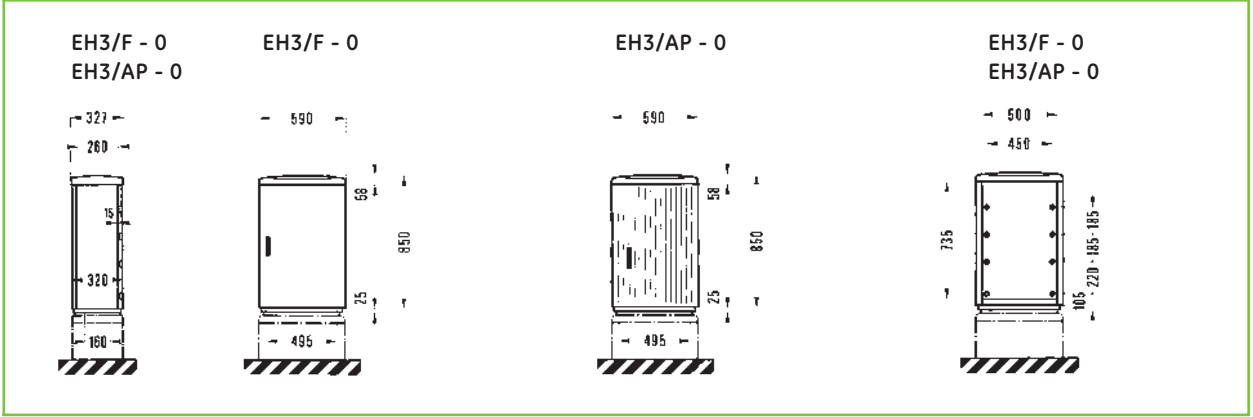
I

J/X

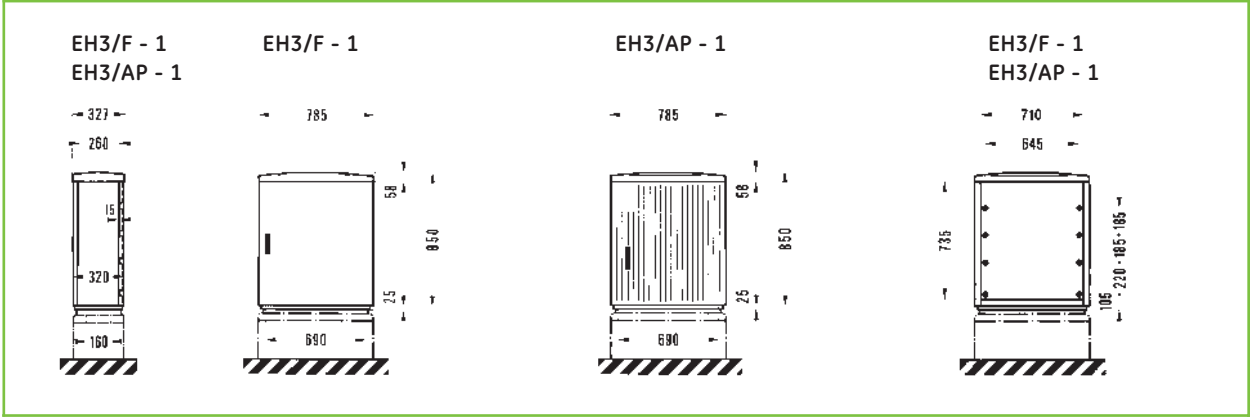
EH2 - Mounting plates



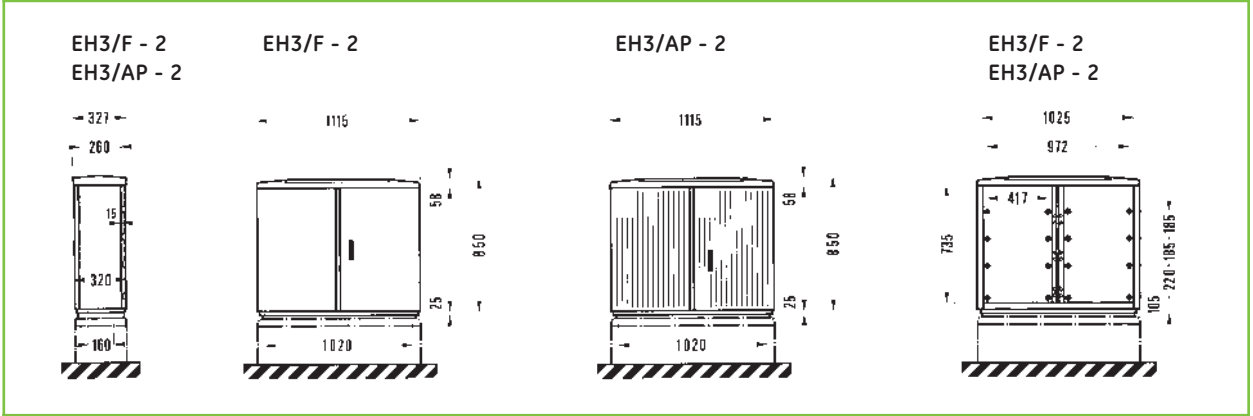
EH3 - 0



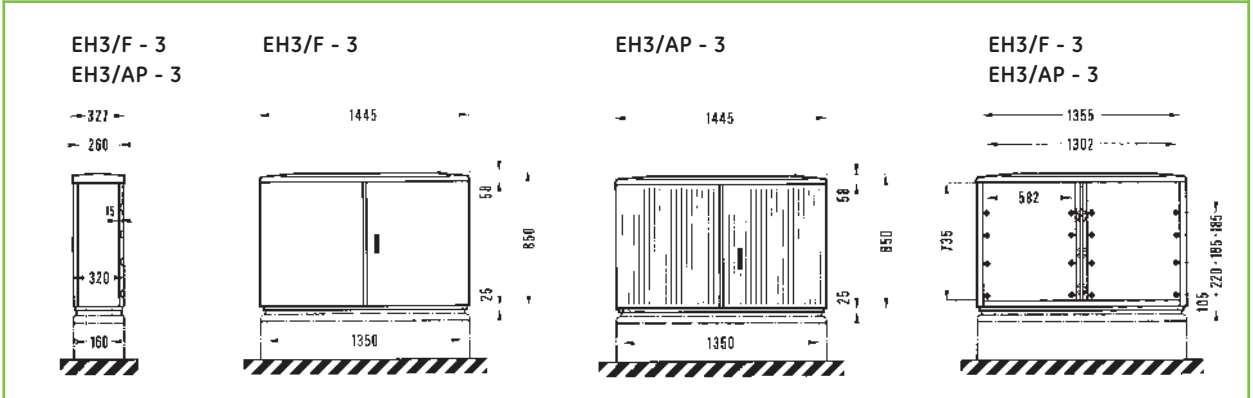
EH3 - 1



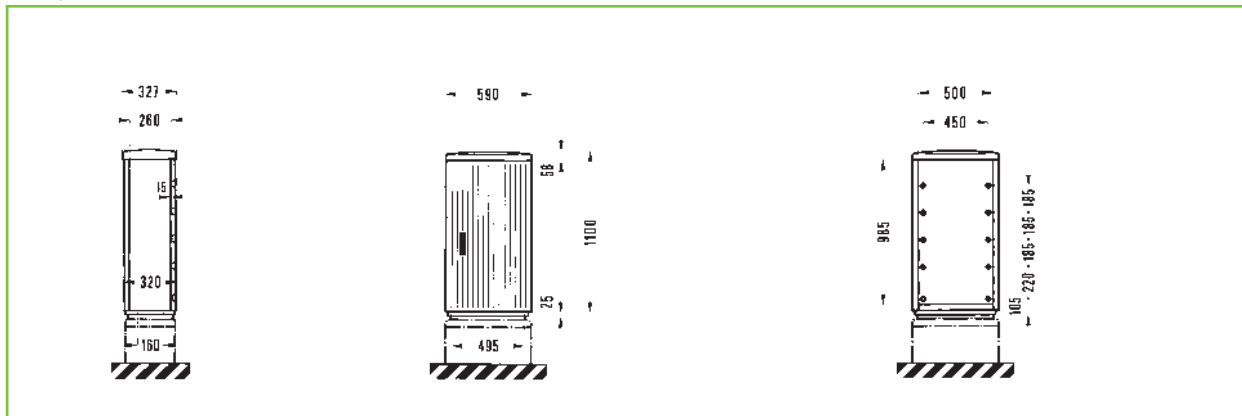
EH3 - 2



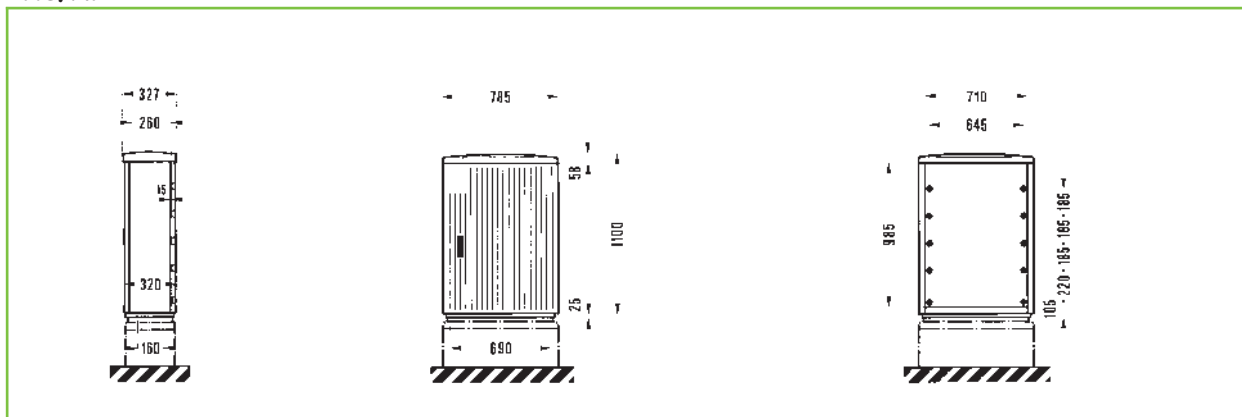
EH3 - 3



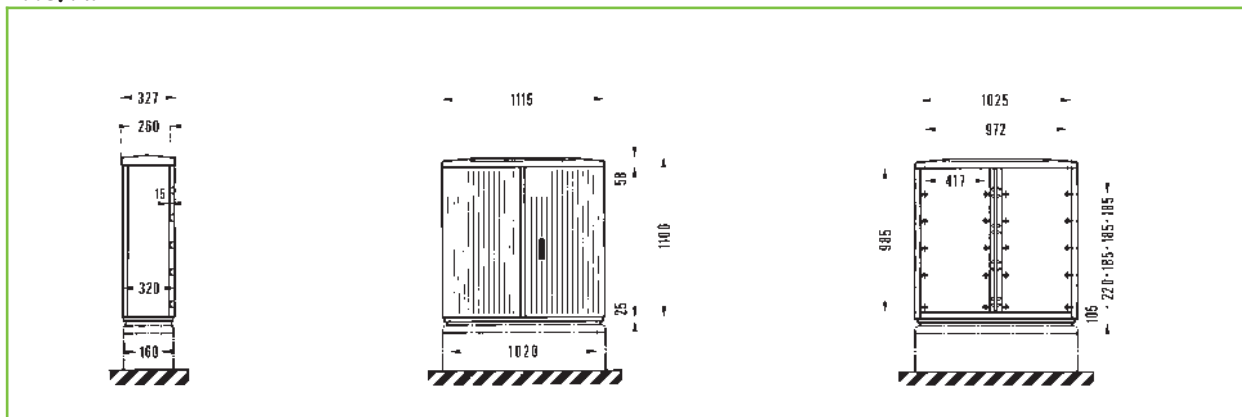
EH3/AP - 20



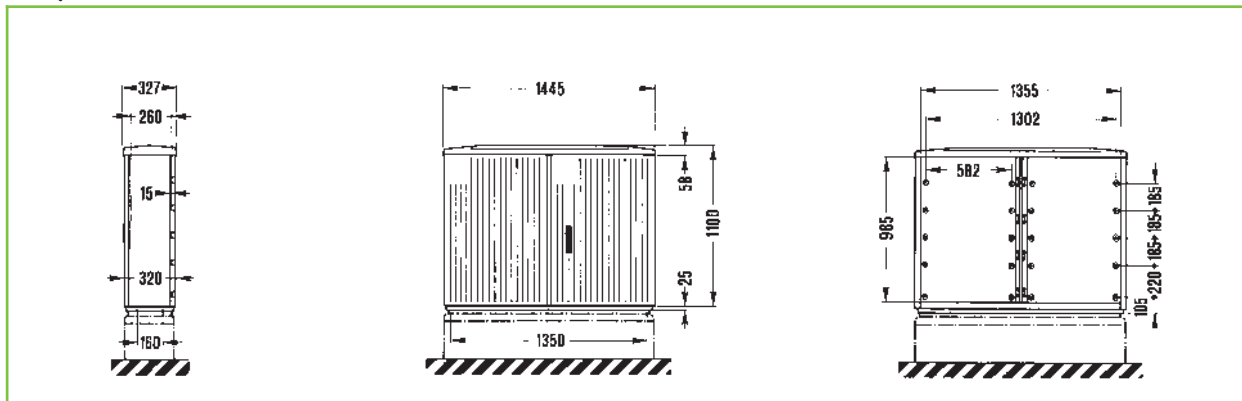
EH3/AP - 21



EH3/AP - 22



EH3/AP - 23



A

B

C

D

E

F

G

H

I

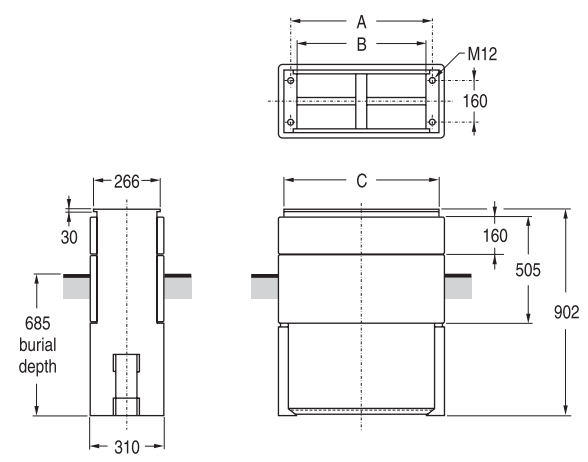
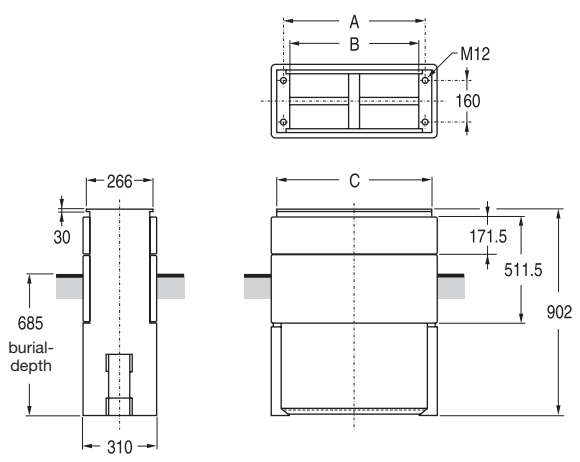
J/X



Polyester bases DIN 0-1-2

Polyester bases DIN 3

Dimensional drawings

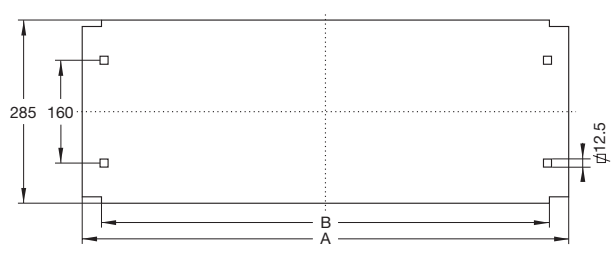


The dimensions of the base fixation points are in accordance with DIN 43629.

Dimensions			
DIN	0	1	2
A	495	690	1020
B	457	652	982
C	543	738	1068

Dimensions	
DIN	3
A	1350
B	1315
C	1400

Bottom plate



To be mounted between pedestal and DIN-base or as bottom plate of the enclosure.

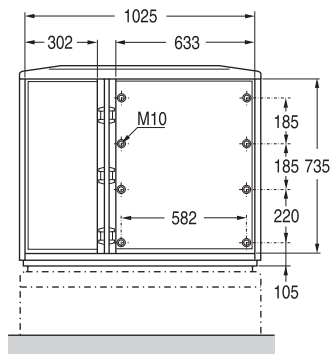
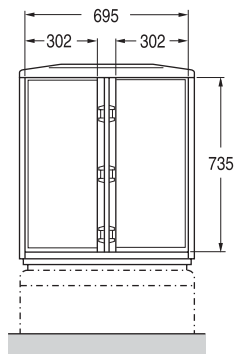
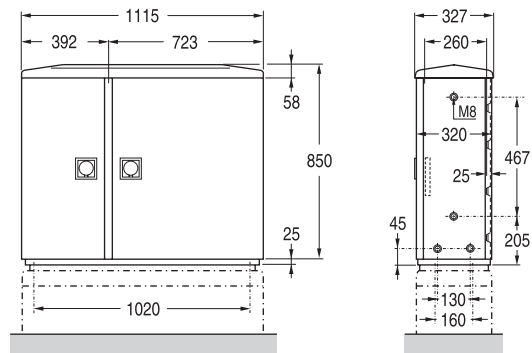
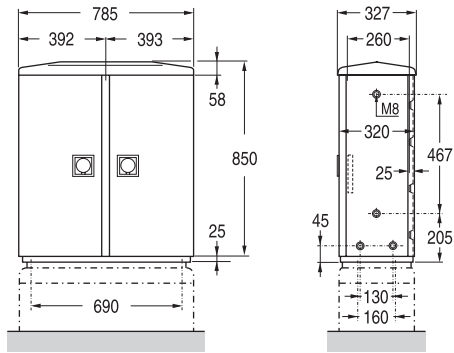
Dimensions				
DIN	0	1	2	3
A	562	757	1086	1416
B	495	630	1020	1350

- A
- B
- C
- D
- E
- F
- G
- H
- I
- J/X



EH3/DC - 1

EH3/DC - 2



Dimensional drawings

A

B

C

D

E

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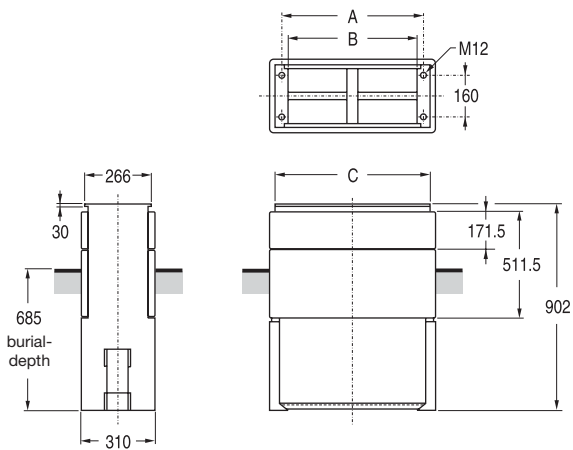
G

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J/X

Bases DIN 1-2

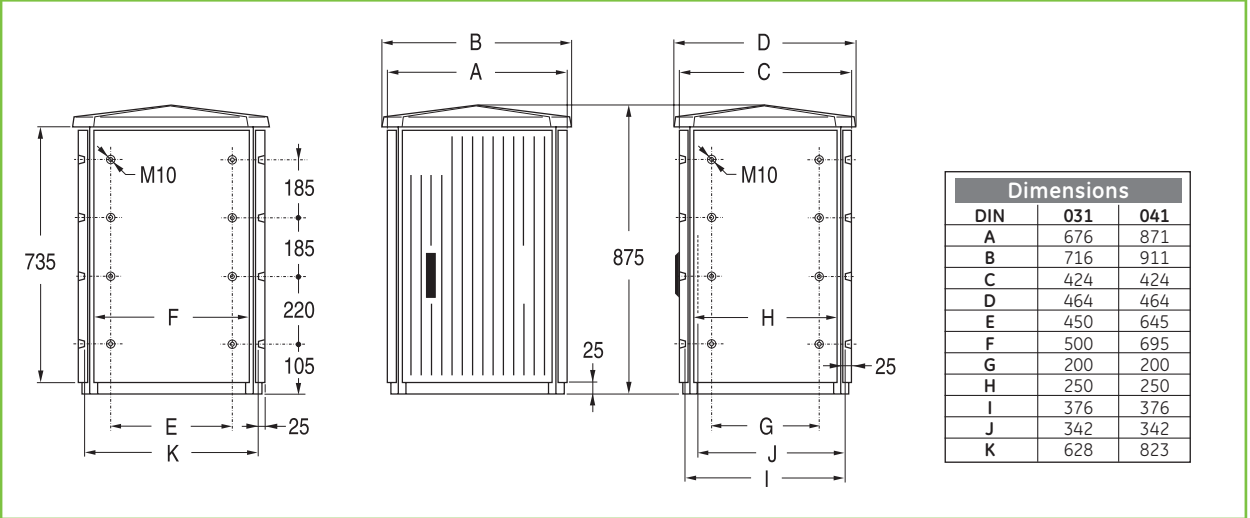


The dimensions of the base fixation points are in accordance with DIN 43629.

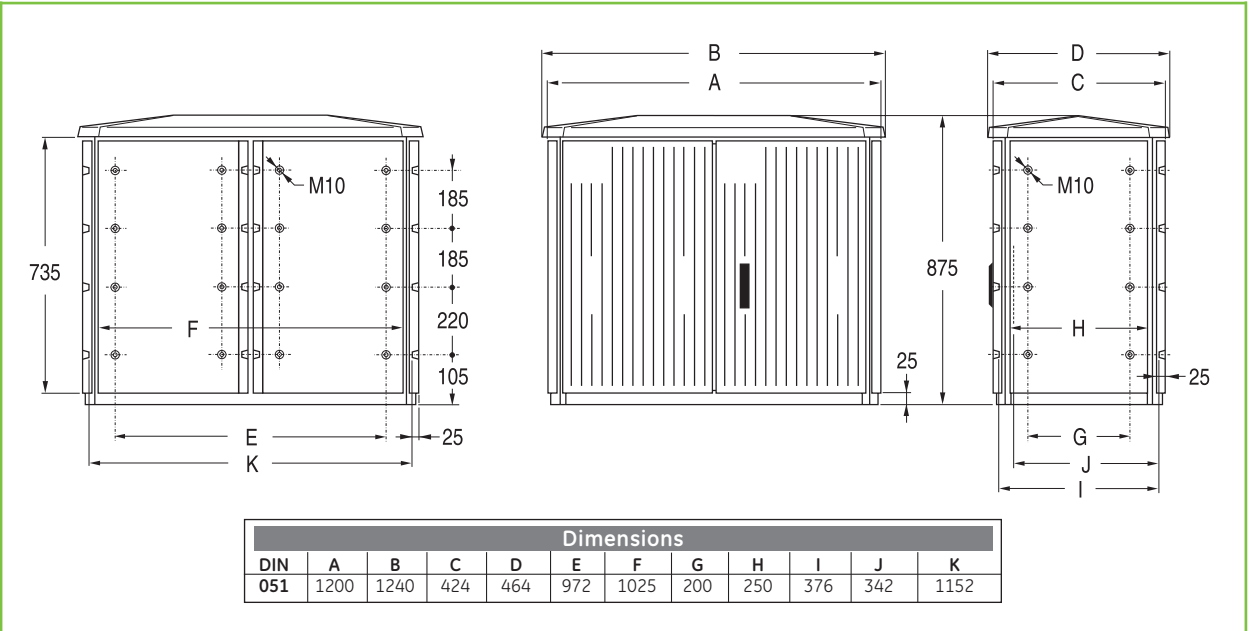
Dimensions		
DIN	1	2
A	690	1020
B	652	982
C	738	1068



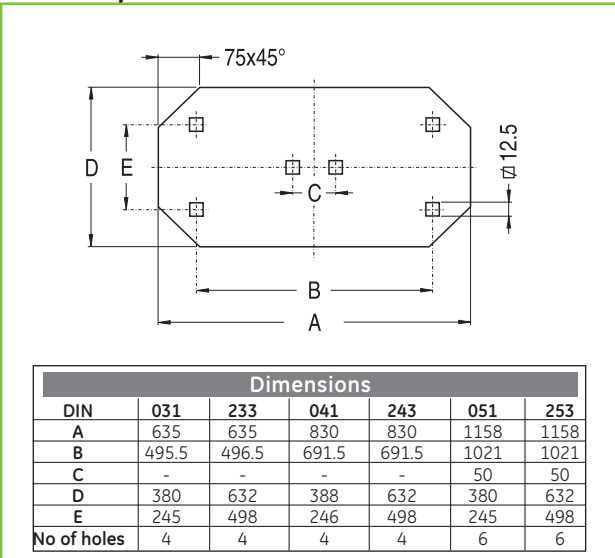
EH3/GD-AP 031 - EH3/GD-AP 041



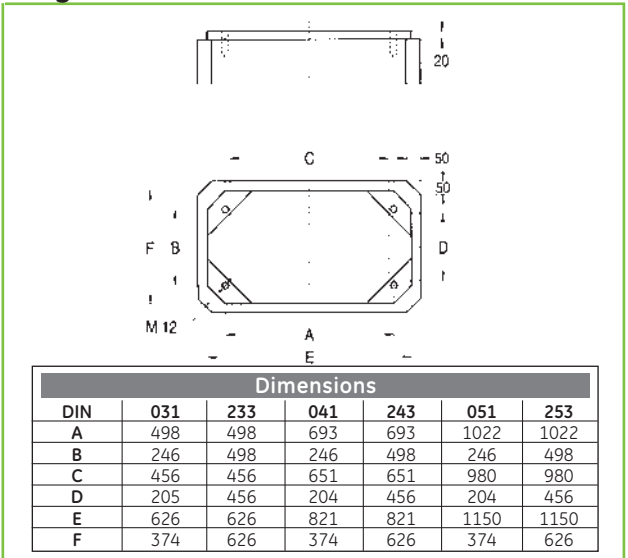
EH3/GD-AP 051



Bottom plate



Polyester base



Dimensional drawings

A

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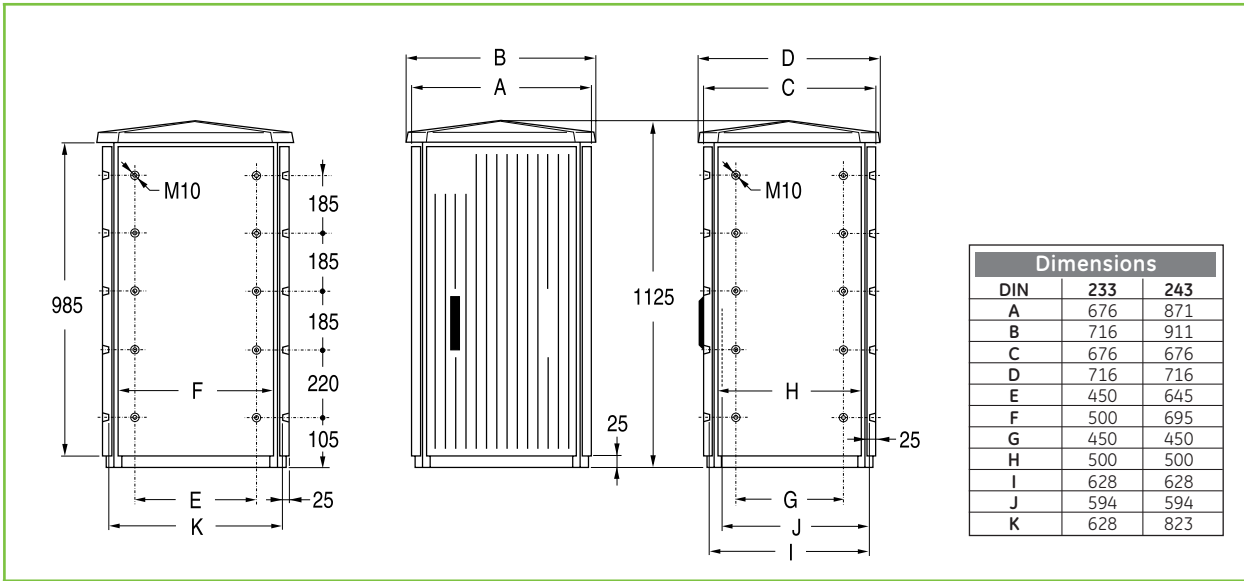
H

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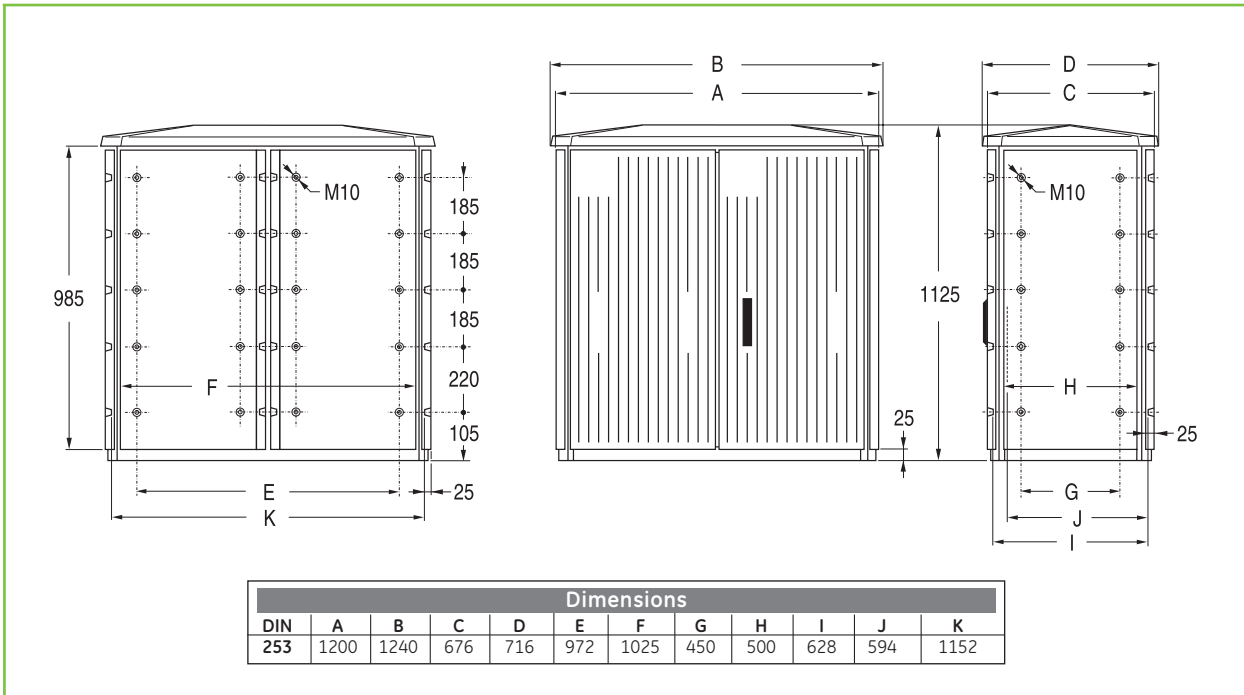
J/X



EH3/GD-AP 233 - EH3/GD-AP 243



EH3/GD-AP 253



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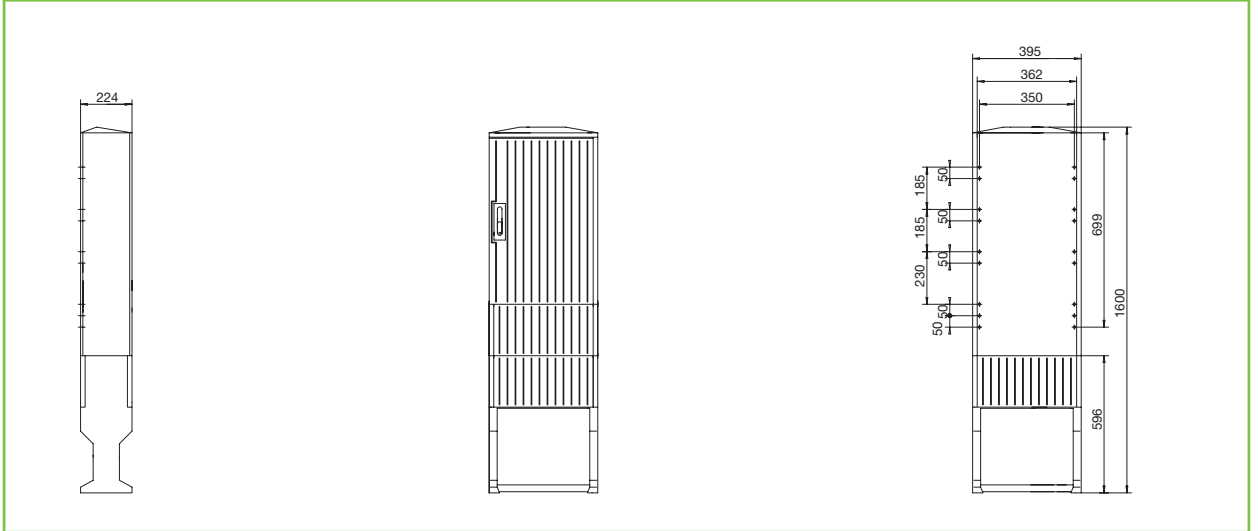
H

I

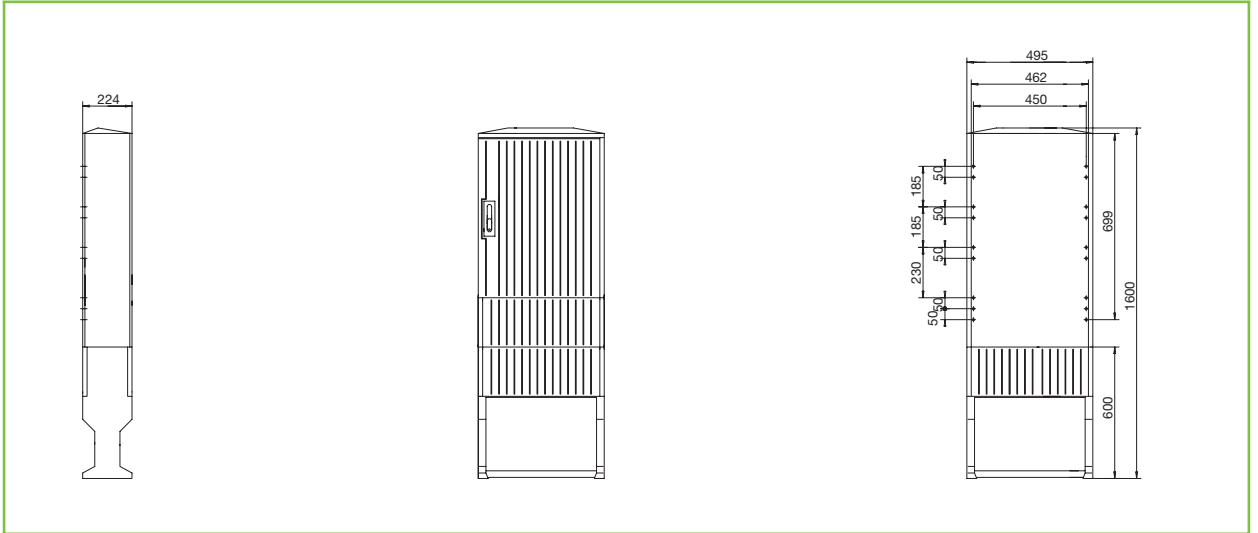
J/X



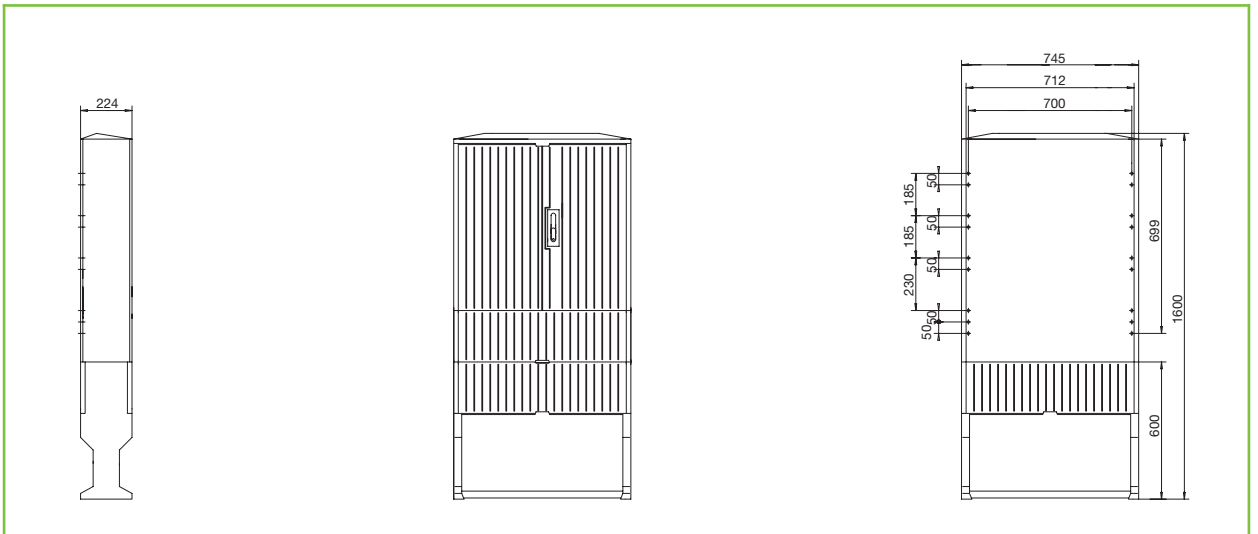
EH4 - 00



EH4 - 0



EH4 - 1



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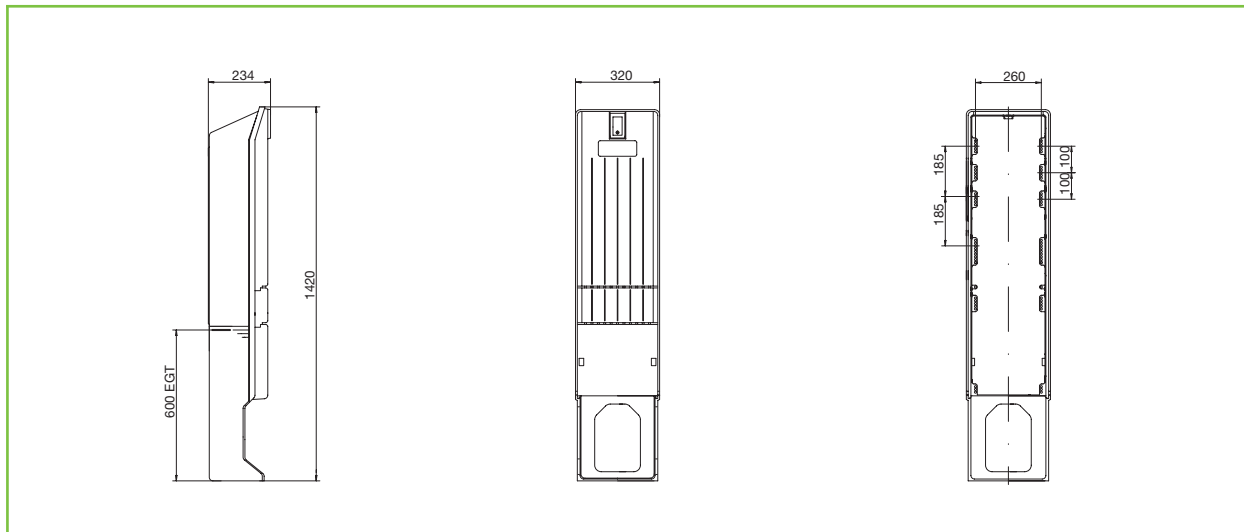
H

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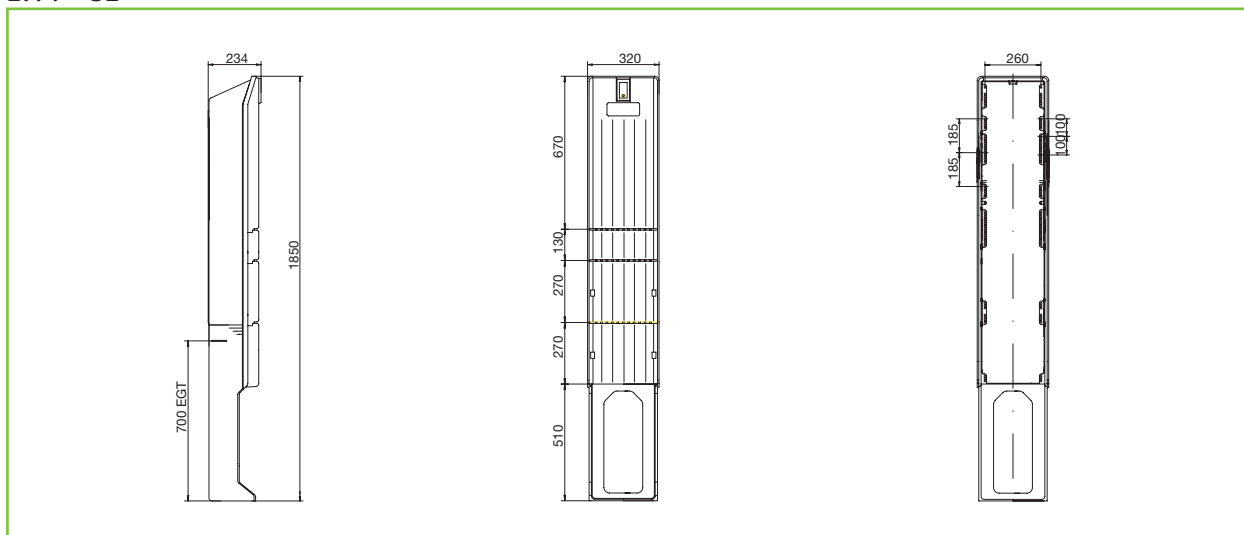
J/X



EH4 - S1

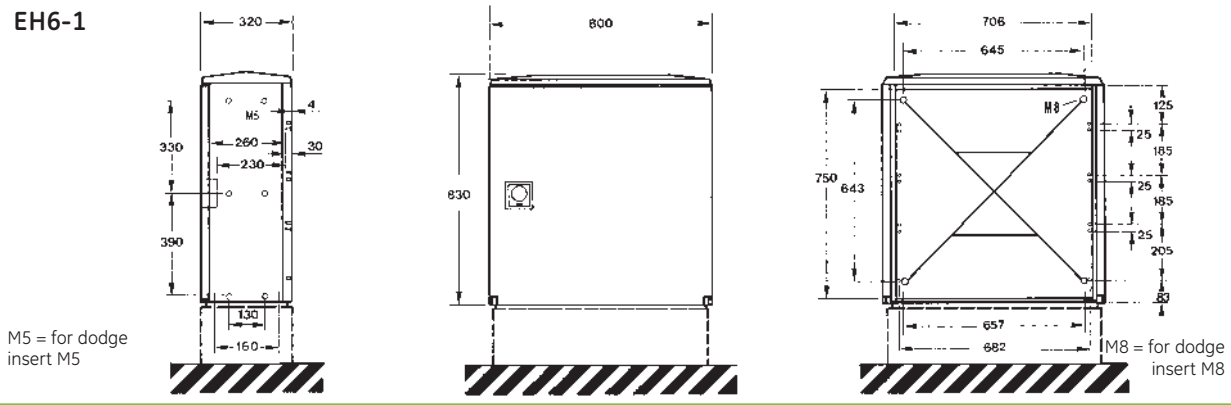
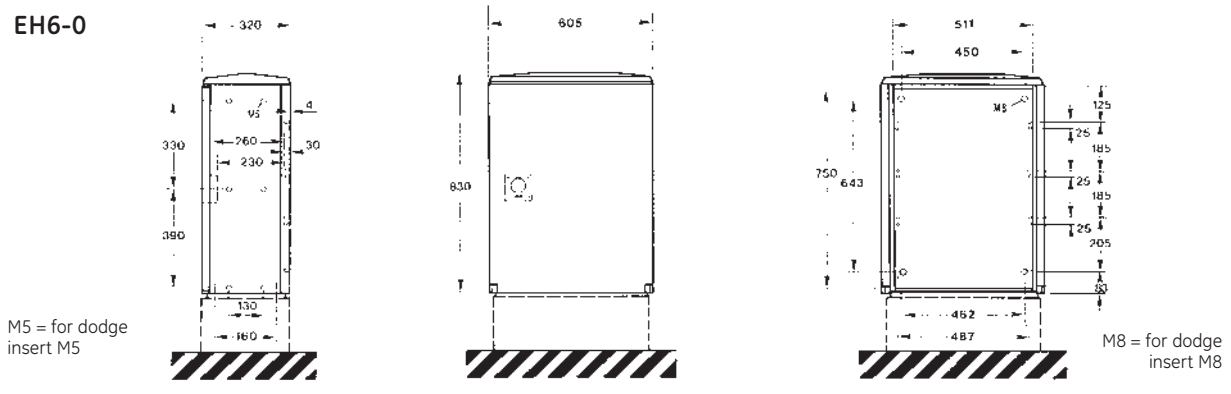
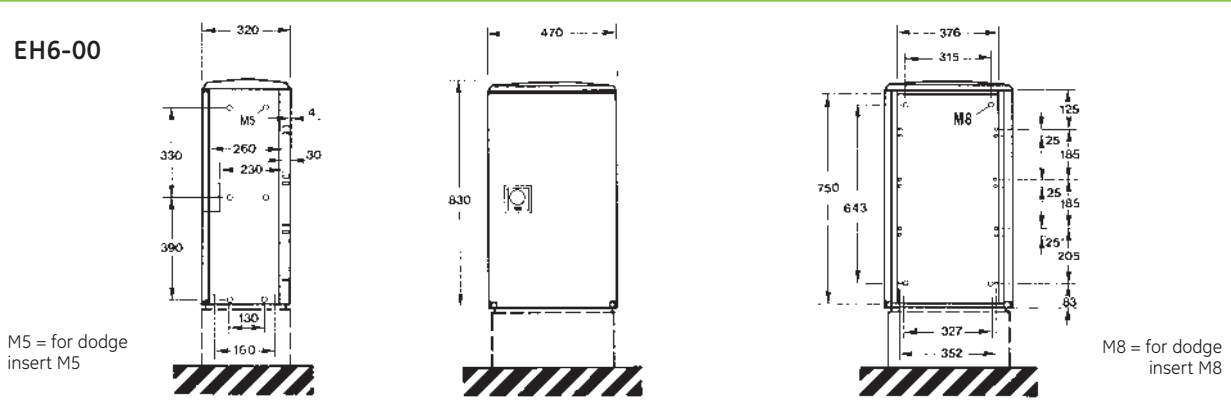


EH4 - S2

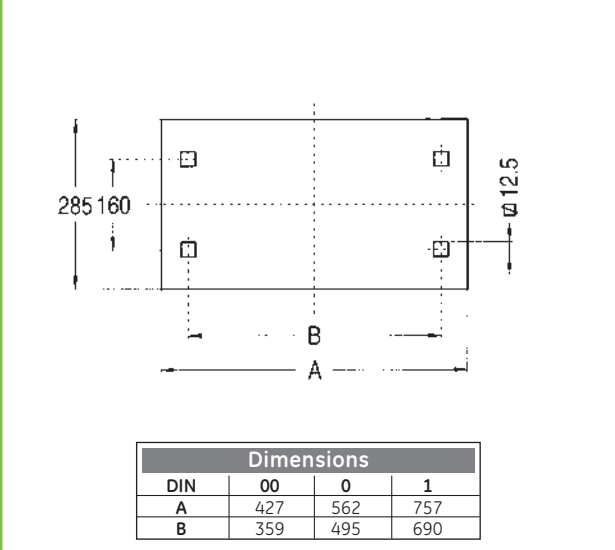


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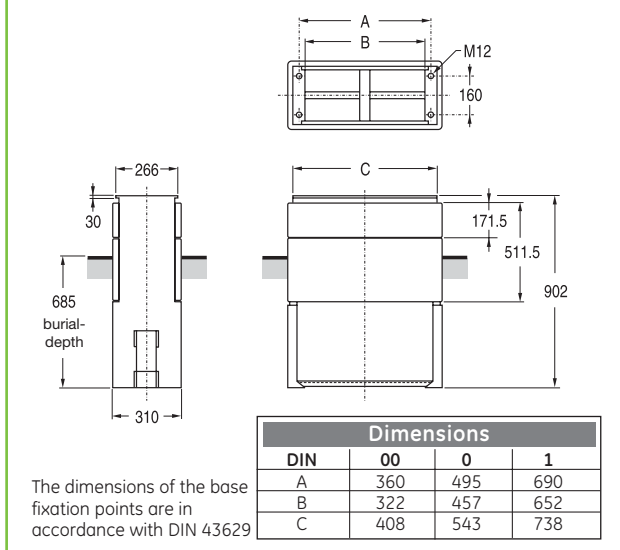




Bottom plate



Polyester base



Notes

Grid area for notes.

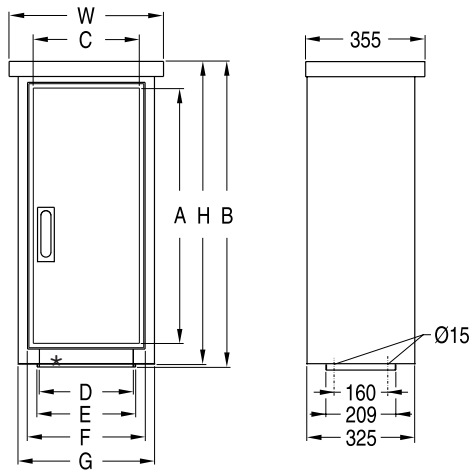
Dimensional drawings

- A
- B
- C
- D
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- F
- G
- H
- I

J/X



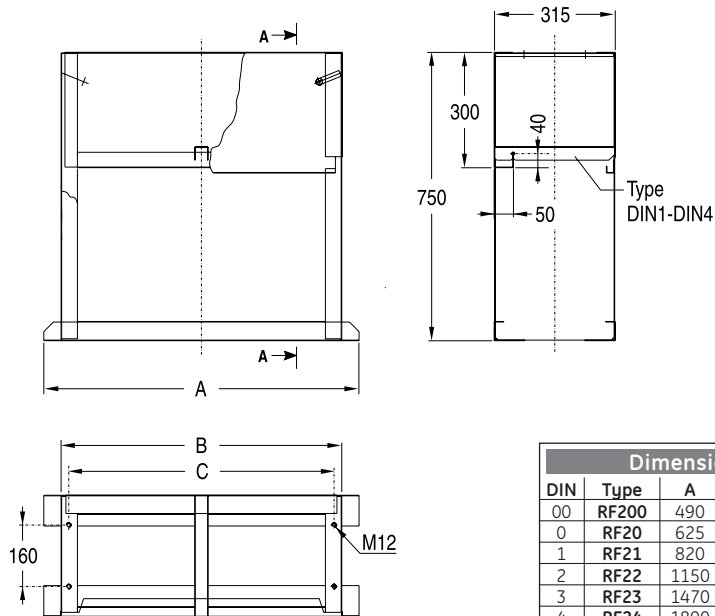
Pedestals with single door



*Pedestals with removable sill profile

Dimensions										
DIN	Type	H	W	A	B	C	D	E	F	G
00	RVL 300	652	460	540	669	316	240	294	360	410
00	RVN 300	902	460	790	919	316	240	294	360	410
0	RVL 30	652	595	540	669	451	375	429	495	545
0	RVN 30	902	595	790	919	451	375	429	495	545
0	RVD 30	1002	595	890	1019	451	375	429	495	545
1	RVL 31	652	790	540	669	646	570	624	690	740
1	RVN 31	902	790	790	919	646	570	624	690	740
1	RVD 31	1002	790	890	1019	646	570	624	690	740
1	RVH 31	1152	790	1040	1169	646	570	624	690	740

Base

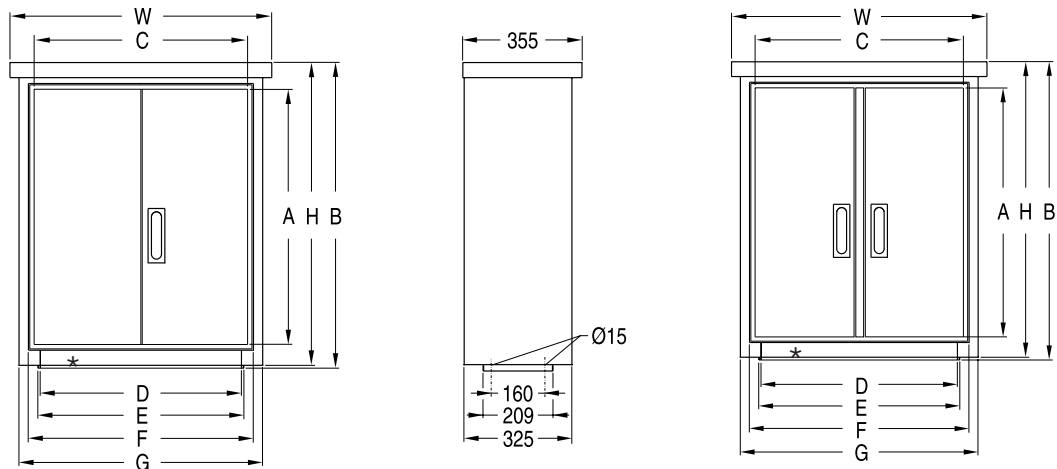


Dimensions				
DIN	Type	A	B	C
00	RF200	490	400	360
0	RF20	625	535	495
1	RF21	820	730	690
2	RF22	1150	1060	1020
3	RF23	1470	1390	1350
4	RF24	1800	1720	1680



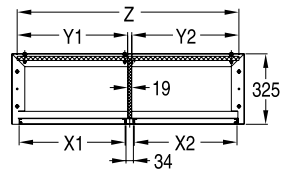
Pedestals with double door

Two compartments



*Pedestals with removable sill profile

Cross section



Dimensions										
DIN	Type	H	W	A	B	C	D	E	F	G
2	RVL 32	652	1120	540	669	976	900	954	1020	1070
2	RVN 32	902	1120	790	919	976	900	954	1020	1070
2	RVD 32	1002	1120	890	1019	976	900	954	1020	1070
2	RVH 32	1152	1120	1040	1169	976	900	954	1020	1070
3	RVN 33	902	1450	790	919	1306	1230	1284	1350	1400
3	RVD 33	1002	1450	890	1019	1306	1230	1284	1350	1400
3	RVH 33	1152	1450	1040	1169	1306	1230	1284	1350	1400
3	RVS 33	1352	1450	1240	1369	1306	1230	1284	1350	1400
4	RVN 34	902	1780	790	919	1636	1560	1614	1680	1730
4	RVD 34	1002	1780	890	1019	1636	1560	1614	1680	1730
4	RVH 34	1152	1780	1040	1169	1636	1560	1614	1680	1730
4	RVS 34	1352	1780	1240	1369	1636	1560	1614	1680	1730

Dimensions					
Type	X1	X2	Y1	Y2	Z
RVL 32 S1 ZZ	480	480	500	500	1020
RVN 32 S1 ZZ	480	480	500	500	1020
RVN 32 S2 ZZ	315	645	335	665	1020
RVN 32 S3 ZZ	645	315	665	335	1020
RVH 32 S1 ZZ	480	480	500	500	1020
RVH 32 S2 ZZ	315	645	335	665	1020
RVH 32 S3 ZZ	645	315	665	335	1020
RVN 33 S1 ZZ	645	645	665	665	1350
RVN 33 S2 ZZ	480	810	500	830	1350
RVN 33 S3 ZZ	810	480	830	500	1350
RVH 33 S1 ZZ	645	645	665	665	1350
RVH 33 S2 ZZ	480	810	500	830	1350
RVH 33 S3 ZZ	810	480	830	500	1350

Remark: other dimensions identical to RVL 32 / RVN 32 / RVN 33 / RVH 32 / RVH 33

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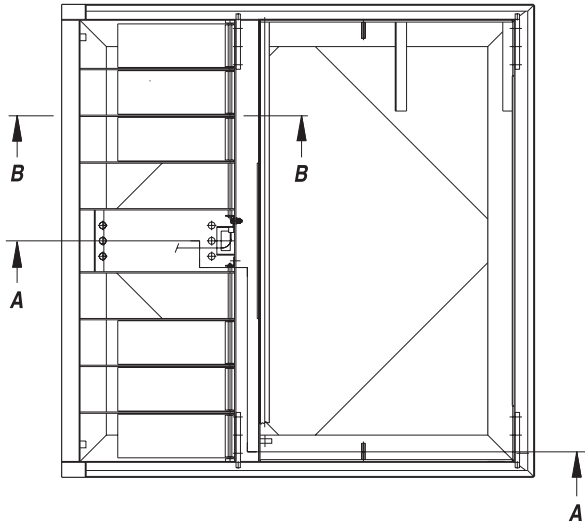
J/X



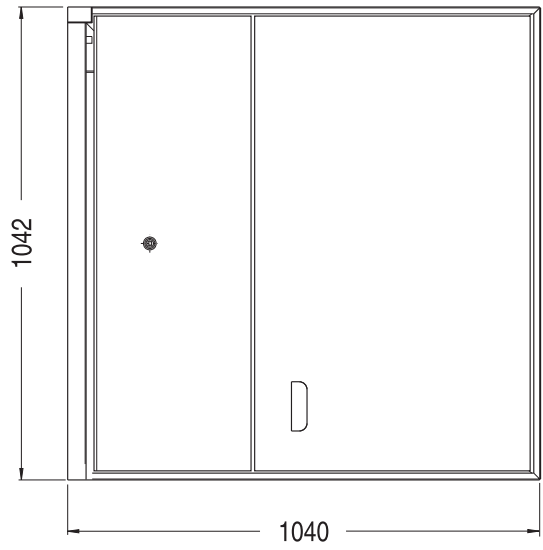
Type "Market"

Dimensional drawings

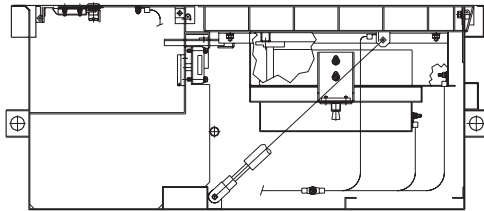
View from above
(without cover)



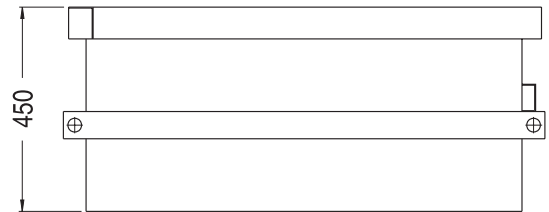
View from above
(with cover)



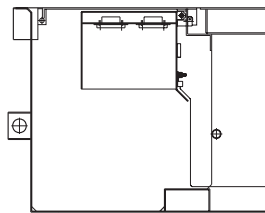
Cross-section A - A



Side view



Cross-section B - B



A

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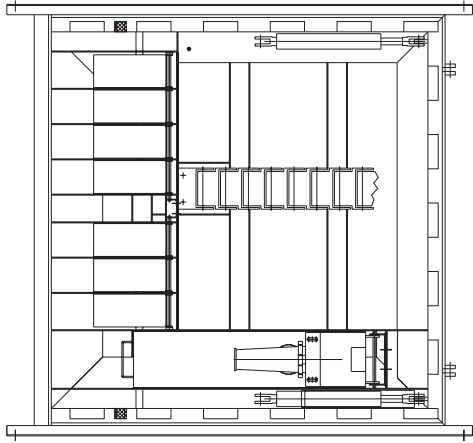
I

J/X

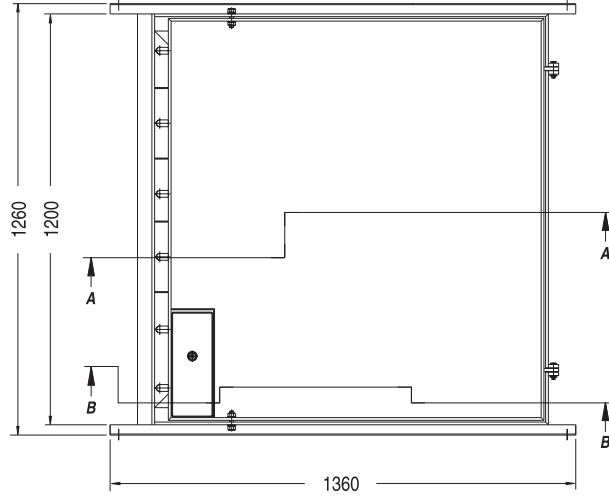


Type "Event"

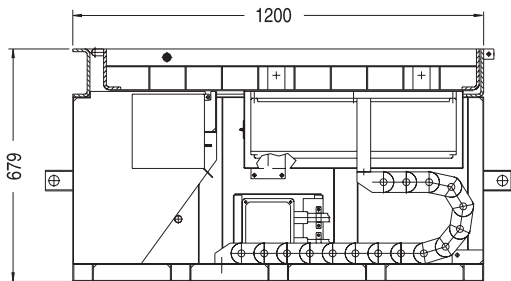
View from above
(without cover)



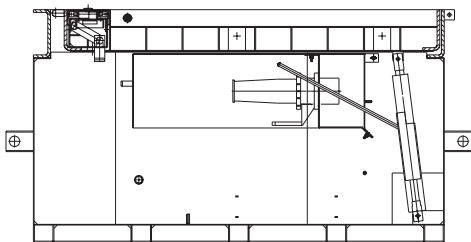
View from above
(with cover)



Cross-section A - A



Cross-section B - B



A

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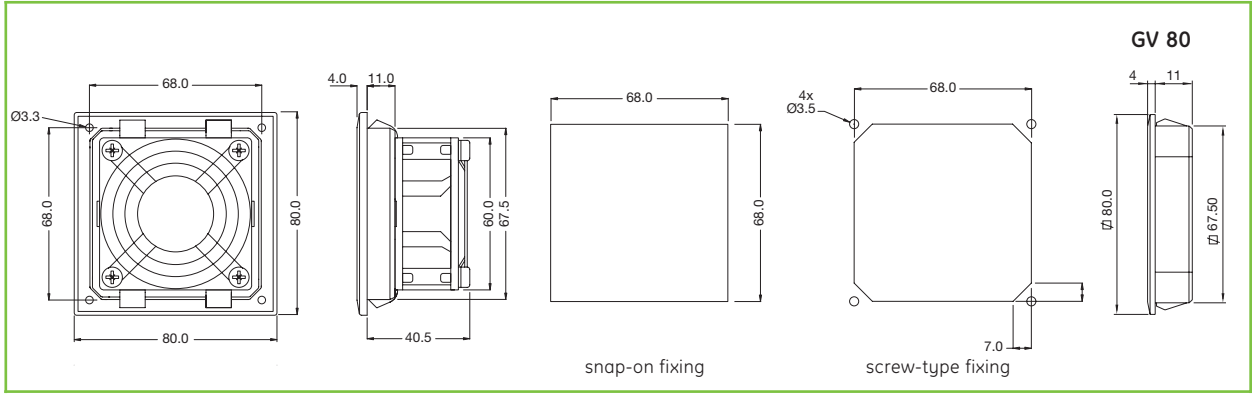
H

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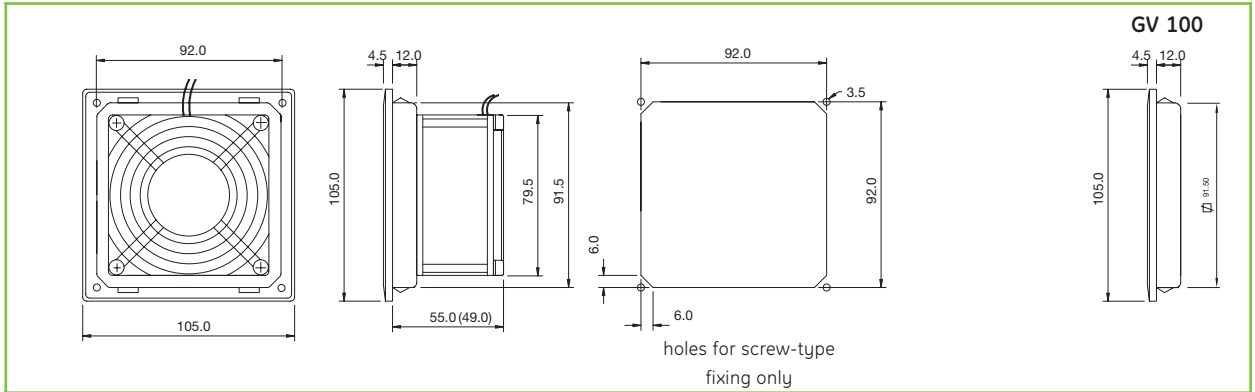
J/X



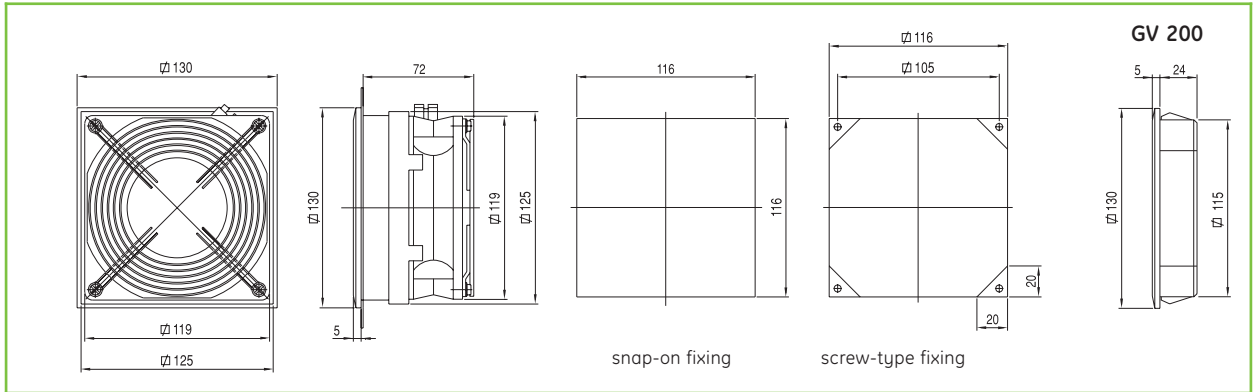
Filter fan LV 80 and LV 85



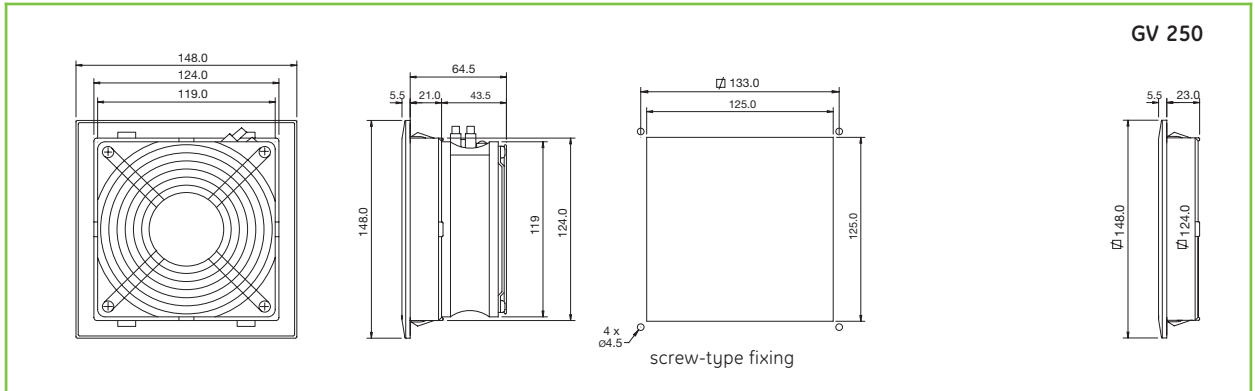
Filter fan LV 100



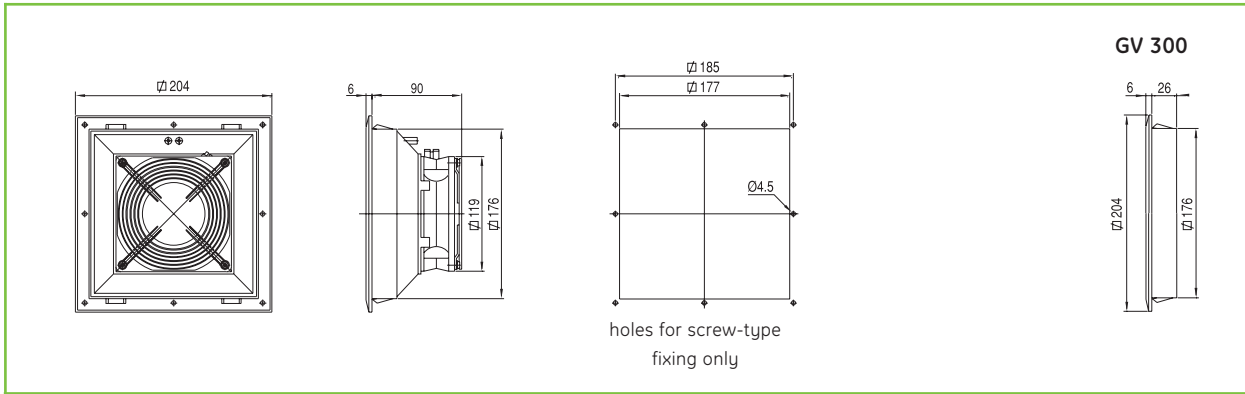
Filter fan LV 200



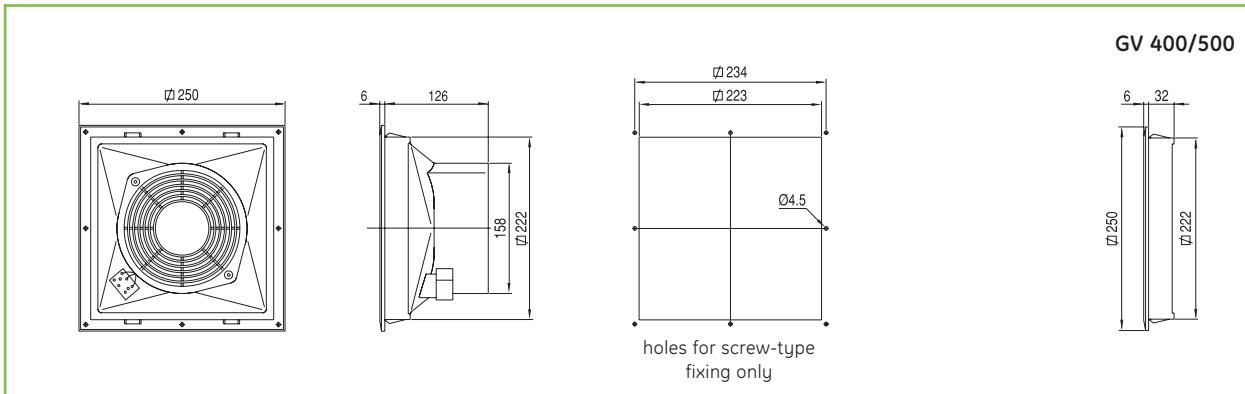
Filter fan LV 250



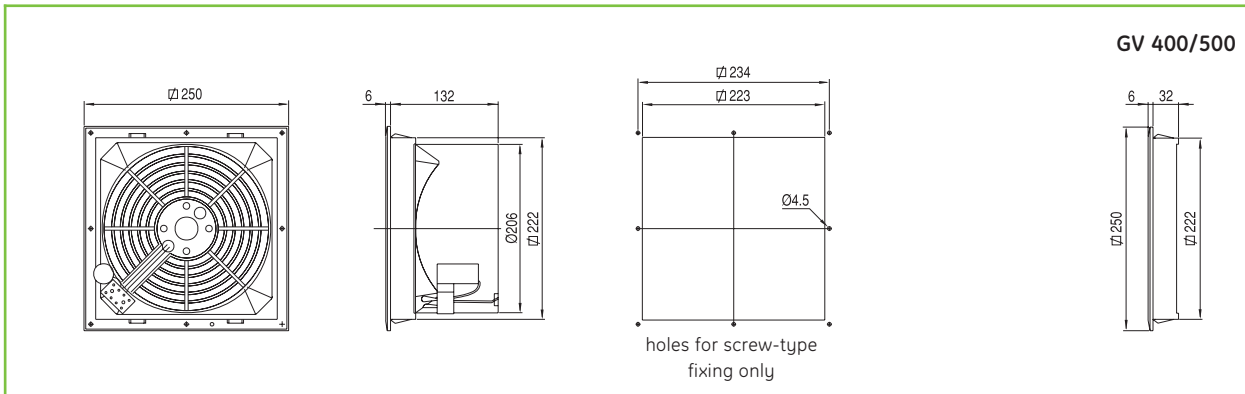
Filter fan LV 300



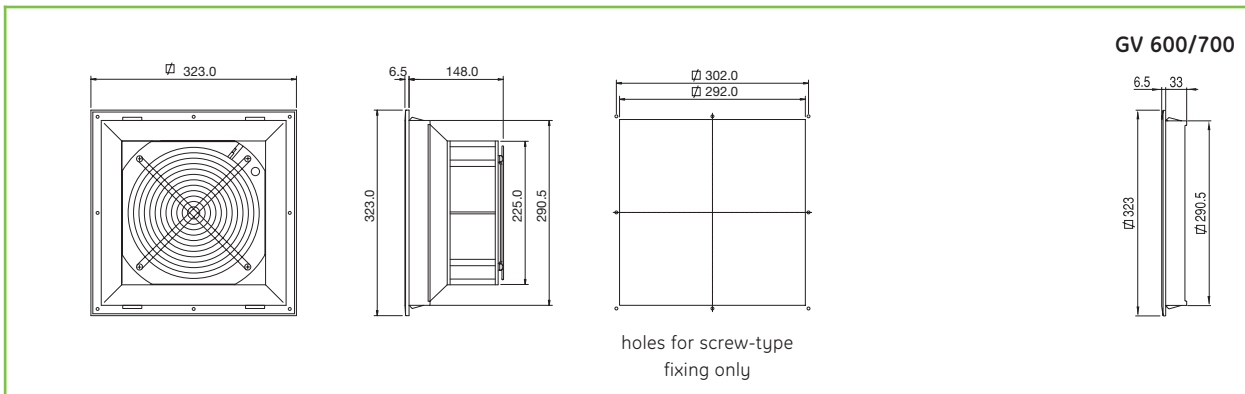
Filter fan LV 400



Filter fan LV 500



Filter fan LV 600



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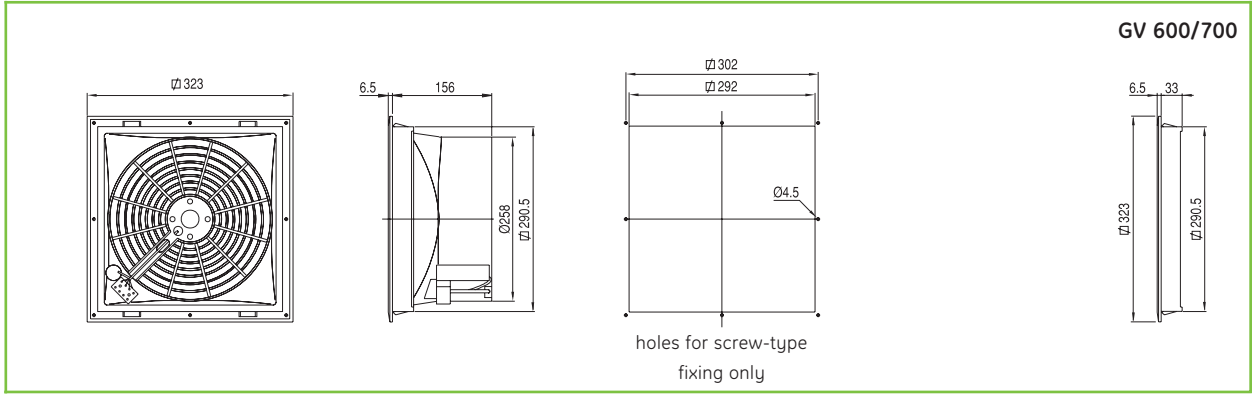
H

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J/X



Filter fan LV 700



Dimensional drawings

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J/X



Notes

A large grid of small dots for taking notes, covering most of the page.

Dimensional drawings

A

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MultiBox



Small multipurpose boxes

- The range comprises 13 different basic box sizes, from 50 x 52 mm up to 361 x 254 mm, with up to 4 different cover depths and two designs:
 - with grey lid
 - with transparent lid.
- They are suitable for applications that require light weight and durability.
- The base is manufactured from glass-fibre reinforced polycarbonate (type PC) or polystyrene (type PS), both dyed in mass RAL 7035 (light grey).
- Glass-fibre reinforced polycarbonate bases (type PC) come with smooth side walls (only one Metric entry) or with several Metric knock-outs.
- Polystyrene bases (type PS) come with smooth side walls or with several Metric knock-outs.
- The lid is manufactured from transparent or opaque grey polycarbonate or grey polystyrene.
- The lid is fixed to the base by means of cover screws in polyamide.
- Polycarbonate boxes can withstand temperatures from -35° to +120°C, the polystyrene boxes temperatures between -40° and +70°C.
- The box offers maximum protection to the user and the equipment by means of total insulation \square and a protection degree as per IEC 60529 and also complies with the impact-resistance standard as per EN 62262 and IEC 62262.

This protection covers the total volume of the enclosure according to EN 62208 and IEC 62208.

 - boxes type PC, IP66-IK08
 - boxes type PS, IP66-IK07
- Boxes are corrosion-resistant and do not require any maintenance.
- Materials are halogen-free.
- Both types (PC and PS) are self-extinguishing according UL94-V2.
- Boxes offer high resistance to chemical and aggressive influences.
- The box is secured to the wall by screws directly through the base, direct through the four corner shafts of the base (under the cover screws) or by using external mounting brackets.
- Boxes may be fitted with external hinges and/or padlocking as a protection against unauthorised access.
- Boxes can be combined in height and in width by means of a combi set.
- It is possible to mount DIN profiles (15x5x1 and 35x7.5x1) as well as mounting plates.
- Boxes type PC bear the cUL approval.
- Tailor-made boxes are available upon request: coloured, painted, overprinted, machine finished, EMC shielded.

VJ-box



Polyester NEMA sized boxes

- Boxes are designed in accordance with the "Joint Industrial Council" (JIC) - USA.
- The range consists of seven different sizes ranging from 186 x 186 mm (6 x 6 inch) to 491 x 440 mm (18 x 16 inch) in three designs:
 - with screwed lid
 - with stainless steel hinges
 - with plastic hinges.
- The base and the lid are made of self-extinguishing, glass-fibre-reinforced and halogen-free polyester, dyed in mass RAL 7036 (dark grey).
The glass-fibre content is a minimum of 20%.
The base also comes with four threaded inserts M4 for securing a mounting plate.
- Boxes can withstand an ambient temperature of -50° to +150°C.
- The box offers maximum protection to the user and equipment thanks to the total insulation \square and the IP67/IP66 protection degree as per IEC 60529. It also complies with impact resistance degree IK10 as per EN 62262 and IEC 62262.
This protection covers the total volume, protected space, of the box according to EN 62208 and IEC 62208.
- Boxes are corrosion-resistant and do not require any maintenance.
- The base is fitted with moulded-in mounting brackets suitable for external mounting.
- Boxes have the UL certification mark, as per UL standard 508 types 3, 3R, 3S, 4, 4X, 6, 12 and 13. They also comply with CSA certification mark as per C22.2 no. 94 types 3, 3R, 3S, 4, 4X, 6, 12 and 13.
- Boxes also bear the following certification mark:
AS Australian Standards 3132-1991.

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APO



Modular polyester boxes

- The range consists of nine types with module 150/185 mm, with dimensions ranging from 185 x 150 mm to 600 x 600 mm in five different designs:
 - with screwed polyester lid
 - with screwed polycarbonate lid
 - with screwed flap lid
 - with hinged polyester lid
 - ventilated with hinged polyester lid and lock.
- The base is made from self-extinguishing, glass-fibre-reinforced and halogen-free polyester, dyed in mass RAL 7036 (dark grey).
The glass-fibre content is a minimum of 20%.
The base also comes with a minimum of four M4 threaded inserts for mounting metal, perforated metal and pertinax (insulated) mounting plates, and also mounting frames for modular equipment.
The base also has space for four M6 threaded inserts.
- The lid is manufactured:
 - either from self-extinguishing, glass-fibre-reinforced and halogen-free polyester, dyed in mass RAL 7036 (dark grey)
 - or from transparent polycarbonate.
- The design as flap lid: frame in self-extinguishing, glass-fibre-reinforced and halogen-free polyester, dyed in mass RAL 7036 (dark grey), the window in transparent polycarbonate.
- The box can withstand temperatures from -50° to +150°C (peak).
(-35° to +120°C for the box with polycarbonate lid).
- The useful mounting depth of the box can be expanded by means of depth extension frames without affecting the original protection degrees.
- The box offers maximum protection for user and equipment thanks to the total insulation \square and the protection degree as per IEC 60529 and also complies with the impact-resistance standard EN 62262 and IEC 62262.
This protection covers the total volume of the enclosure according to EN 62208 and IEC 62208.
- box with screwed polyester lid, IP67-IK10
- box with screwed polycarbonate lid, IP66-IK10
- box with screwed flap lid, IP67-IK10
- box with hinged polyester lid, IP55-IK10
- ventilated box with hinged polyester lid and lock, IP44-IK10.
- Boxes are suitable for external mounting.
- Boxes are corrosion-resistant and do not require any maintenance.
- There are various ways of securing the box to the wall:
 - using screws in the four corner holes
 - using fixing lugs secured through the four corner holes
 - using stainless steel fixing clamps, fitted directly to the rear of the base in the reinforcements provided.
- In all these cases, the IP values and total insulation are guaranteed.
- All boxes have the same depth and can be assembled by means of coupling frames.
- Boxes have the UL certification mark, in accordance with UL standard 508 and also comply with the CSA certification mark as per C22.2 no. 94.
 - boxes with polyester lid, types 3, 3R, 4, 4X, 6, 6P, 12 and 13
 - boxes with polycarbonate lid, types 3, 3R, 4, 4X, 12 and 13
 - boxes with flap lid, types 3, 3R, 4, 4X, 6, 12 and 13.
- Boxes also bear the following certification marks:
 - AS Australian Standards 3131-1991
 - EexE II. NIEB 88B.102.698 U
 - Lloyd's Register of Shipping
 - KEMA KEUR
 - BASEEFA.

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ARIA



Universal polyester cabinets

- The range comprises seven different sizes ranging from 300 x 200 mm to 1000 x 800 mm in two different designs:
 - cabinet with plain door
 - cabinet with glazed door.
- The cabinet is manufactured from self-extinguishing, glass-fibre-reinforced and halogen-free polyester, dyed in mass RAL 7035 (light grey). The glass fibre content is a minimum of 20%. The cabinet is fitted with four threaded pins and four nuts to secure perforated metal, Sendzimir zinc coated sheet steel or pertinax (insulated) mounting plates and mounting frames.
- The cabinet consists of two parts: the base and the door. The removable door is secured to the base by two hinges and the opening angle is a maximum of 180°. In a closed position, the hinges are invisible. Closure is controlled by a three-point locking mechanism operated by a single central operating grip or handle (single-point closure for cabinets 300 x 200 mm and 400 x 300 mm), two-point closing for cabinets 500 x 400 mm, 600 x 400 mm and 700 x 500 mm as an alternative. The door is fitted with a seamless seal and the total concept is such that stagnating water on the seal is avoided. A doorlifter (for bigger dimensions) ensures the door takes its center position during closing. The four angles in the base are double-walled. Ventilation against condensation can be done without the ventilation grids being visible when the cabinet is closed.
- The mounting frame or the mounting plate can be equipped and wired outside the cabinet. They are placed subsequently in the cabinet:
 - either on the securing points in the rear of the base provided for this purpose, without any further arrangement being necessary
 - or on special mounting supports which slide into the moulded-on C-profiles in the angles of the cabinet.
- The equipment is protected by a single-piece cover plate, manufactured from self-extinguishing, glass-fibre-reinforced and halogen-free polyester, dyed in mass RAL 7035. The cover plate is secured with snap-on fixing screws, which can be easily removed by the use

of tools. This guarantees the protection degree of IP20 as for IEC 60529.

If required, the cover plate can be fitted with hinges.

- Protection of the modular devices can also be obtained by using individual modular cover plates (h = 150 mm) in PVC material, also offering IP20. These individual modular cover plates can be plain or with cut-out for DIN-rail equipment.
- The cabinets can withstand temperatures from -50° to +150°C (peak).
- The cabinet offers maximum protection to user and equipment thanks to the total insulation \square and protection degree IP66 as per IEC 60529 and also complies with the impact-resistance standard EN 62262 and IEC 62262.
 - IP66-IK10 cabinets with plain door.
 - IP66-IK07 cabinets with glazed door.
- This protection covers the total volume of the enclosure according to EN 62208 and IEC 62208.
- The cabinets are suitable for outdoor use.
- The cabinets are corrosion-resistant and do not require any maintenance.
- The cabinets are secured to the wall by:
 - either four 304 stainless steel or polyamid mounting brackets, screwed along the back of the cabinet using stainless steel bolts which do not penetrate the back
 - or directly by means of screws in the double-walled corners
 - or directly through the base by means of four screws, sealed by a non removable sealing cap.
- In these cases the IP value and the overall total insulation remain guaranteed.
- The cabinets have the UL approval in accordance with UL standard 508 types 3, 3R, 3S, 4, 4X, 12 and 13.
- They also comply with the CSA certification mark as per C22.2 no. 94 types 3, 3R, 3S, 4, 4X, 12 and 13.
- The cabinets also bear the certification mark: AS Australian Standards 3132-1991.

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PolySafe



Multipurpose polyester cabinets

- The range consists out of fourteen types with module 250 mm, with dimensions ranging from 500x500 mm up to 1250x1000 mm, in one depth 320 mm and two different designs :
 - cabinet in-factory assembled with plain door
 - cabinet in-factory assembled with glazed door
 Four stainless steel wall mounting brackets are also supplied.
- The cabinet is manufactured from self-extinguishing, hot moulded, glass fibre reinforced and halogen-free polyester, dyed in mass RAL 7035 (light grey). The glass-fibre content is a minimum of 25%.
- The cabinet exists out of a back panel, two side panels, a top panel, a base panel and a flush-mounted door.
- The door is secured to the main structure of the cabinet by means of hinges, each step of 250mm, and its angle of opening is a maximum of 100°. The hinges are not visible when the door is in closed position.
- Closure is effected by a five-point locking mechanism (three-point for widths 500 mm) controlled by a single central operating handle.
- The operating handle is suitable for all types of profile half cylinder locks (standard depth 40 mm, alternative depth 45 mm).
- A doorlifter (for bigger dimensions) ensure the door takes its center position during closing.
- The standard depth of the cabinet is 320 mm, but can be increased to 640 mm by using a 320 mm extension kit.
- The cabinets can be coupled in height and in width by means of a coupling kit.
- The mounting plate (in pertinax, in Sendzimir zinc coated sheet steel or in perforated metal) can be set up and wired outside the cabinet. It is placed subsequently in the cabinet.
The mounting plate is secured directly to the securing points provided on the back panel of the cabinet or mounted on four depth adjustment brackets (steps of 12.5 mm).
- The modular mounting frame for DIN-rail equipment is completed with modular functions height 150 mm, plain or with cut-outs, or modular plain functions height 300 mm. They guarantee a protection degree of IP20 with open doors.
- The addition of a rainhood allows for natural ventilation (IP44/IP54) in the cabinet.
- The cabinets are designed for wall mounting, floor standing and pole fixing.
- The cabinets are resistant to temperatures of -50° up to +150°C (peak).
- The cabinet offers maximum protection to user and equipment thanks to the total insulation \square and the high protection degree IP65 (IP55 for cabinets with glazed door) according to IEC 60529, EN 60529. It also complies with the impact-resistance degree IK10 (IK07 for cabinets with glazed door) according to EN 62262 and IEC 62262.
This protection covers the total volume, protected space, of the cabinet according to EN 62208 and IEC 62208.
- The cabinets are suitable for indoor as well as outdoor use.
- The cabinets are corrosion-resistant and do not require any maintenance.
- The cabinets are secured to the wall by means of stainless steel mounting brackets which are clinged and fixed on the back without using any screws. These wall mounting brackets can be mounted vertical or horizontal.
The cabinets with rain hood are secured to the wall by means of four special similar brackets.
- A cabinet can be placed on the ground by using a floor mounting frame which is anchored to the ground together with the cabinet.
All cabinets width 750 and 1000 mm can be mounted on a DIN-base by means of a DIN adaptor frame. In all these cases the IP degree as well as the total insulation are guaranteed.
- The cabinets have following approvals: UL and CSA
 - cabinets with single door: types 3, 3R, 3S, 4, 4X, 12, 12K and 13.
 - cabinets with double door: types 3, 3R, 3S, 4, 4X, 12, 12K and 13.
 - coupled cabinets: types 3, 3R, 3S, 12, 12K and 13.
- Standards: IEC 60529, EN 60529, EN 62262, IEC 62262, EN 62208, IEC 62208, IEC 60439-5



Superpolyrel 400



Multipurpose polyester cabinets in kit-form

- The range consists of nine types with module 250 mm, with dimensions ranging from 500x750 mm to 1250x1000 mm, in one depth 400 mm, and two different designs:
 - cabinet in kit-form with plain door
 - cabinet in kit-form with glazed door
 Four stainless steel mounting brackets are also supplied.
- The assembly package is manufactured from self-extinguishing, glass fibre reinforced and halogen-free polyester, dyed in mass RAL 7036 (dark grey). The glass-fibre content is a minimum of 20%.
- The assembly package comprises:
 - a back panel
 - two side panels
 - a top panel
 - base panel
 - a frame with inset door.
- The door is secured to the frame by means of hinges and its angle of opening is a maximum of 100°. The hinges are not visible when the door is in closed position.
- Closure is effected by a five-point lock controlled by a single central operating handle.
- The standard depth of the cabinet is 400 mm, but can be increased to 800 mm by using a 400 mm extension kit.
- The mounting frame or the mounting plate can be set up and wired outside the cabinet. They are placed subsequently in the cabinet. The mounting frame is fitted on four depth adjustment brackets. The mounting plate is secured to the fixing points provided in the rear of the cabinet, without any further arrangement being required.
- The addition of a rainhood allows for natural ventilation in the cabinet.
- The cabinets are suitable for wall mounting or free-standing.
- The cabinets are resistant to temperatures of -50° to +150°C (peak).
- The cabinet offers maximum protection to user and equipment thanks to the total insulation \square and protection degree IP44 as per IEC 60529. An additional gasket provides protection degree of IP55. It also complies with the impact-resistance degree IK10 (IK07 for the cabinet with glazed door) as per EN 62262 and IEC 62262. This protection covers the total volume of the cabinet according to EN 62208 and IEC 62208.
- The cabinets are suitable for outdoor use.
- The cabinets are corrosion-resistant and do not require any maintenance.
- The cabinets are secured to the wall by means of stainless steel fixing brackets screwed on the back using stainless steel bolts which do not penetrate the back. The cabinets with rain hood are secured to the wall by means of profile supports which are screwed along the back of the cabinet by means of stainless steel bolts which do not penetrate the back. A cabinet can be placed on the ground by using a floor mounting frame which is anchored to the ground together with the cabinet. In these cases the IP degree as well as the total insulation \square are guaranteed.
- The cabinets have the UL approval, as per UL standard 508 and also comply with CSA certification mark as per C22.2 no.94:
 - cabinets with single door, types 3, 3R, 3S, 4, 4X and 12
 - cabinets with double door, types 3, 3R, 3S and 12.

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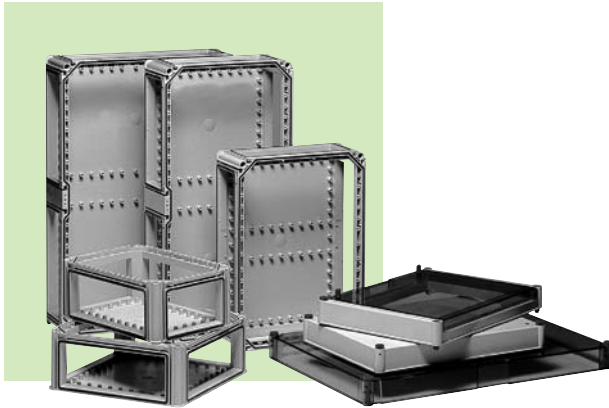
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VMS



Modular enclosures system

- The range consists of five types with module 100 mm, with dimensions ranging from 320 x 220 mm to 640 x 440 mm.
- The bases are manufactured from self-extinguishing, glass-fibre-reinforced and halogen-free polycarbonate, dyed in mass RAL 7035 (light grey). The glass fibre content is at least 20%.
- Securing points are fitted in the base to secure metal and pertinax mounting plates, mounting frames, busbars, etc., by means of self-tapping screws. These securing points form rows parallel to the box edge and figure both in the base and top edge with a step between them of 25 mm.
- The bases, with four open walls, can be linked without screws using dowels. The open side walls are closed by means of click-in end-plates which are locked by keys.
- The lid is manufactured:
 - either from self-extinguishing, halogen-free polycarbonate, dyed in mass RAL 7035 (light grey)
 - or from self-extinguishing, transparent polycarbonate. The design as flap lid: the frame dyed in mass RAL 7035, the window transparent, both in self-extinguishing polycarbonate.
- The useful mounting depth of the box, 157 mm, can be expanded using depth extension frames.
- The end-plates are manufactured from self-extinguishing, glass-fibre-reinforced and halogen-free polycarbonate, dyed in mass RAL 7035 (light grey) and available in three designs:
 - as a blind end-plate
 - as a combi end-plate with PG or Metric knockouts
 - as a cable entry end-plate for cable input up to \varnothing 75 mm.
- The boxes can withstand temperatures from -20° to $+80^{\circ}$ C.
- The box offers maximum protection for user and equipment thanks to the total insulation \square and the protection degree as per IEC 60529 and also complies with the impact-resistance standard EN 62262 and IEC 62262. This protection covers the total volume of the enclosure according to EN 62208 and IEC 62208.
 - individual, IP65-IK07
 - coupled, IP65-IK07
 - box with one depth extension frame, IP65-IK07
 - box with multiple extension frames, IP45-IK07
 - coupled with coupling set 2x220, IP44-IK07
 - box with cable entry, IP43-IK07
 - box with bridge, IP55-IK07.
- The boxes are corrosion-resistant and do not require any maintenance.
- The box can be secured to the wall in various ways:
 - using screws in the four corner holes
 - using stainless steel mounting lugs through the four corner holes
 - using a supporting frame, consisting of at least two horizontal and two vertical C-profiles.

If the assembly entails more than five boxes, a supporting frame is needed.
- A busbar system up to 1250A can be integrated by means of glass-fibre-reinforced polycarbonate busbar supports, with centre to centre distance between them of 320 mm, with a horizontal arrangement of the busbars (125A-250A) or parallel arrangement of two busbars per phase (250A-1250A). These guarantee a thermal short-circuit resistance between the phase rails with a maximum of 30kA (0,3 sec) and a dynamic short-circuit resistance between the phase rails of a maximum of 65kA peak.
- The boxes have the UL approval, in accordance with UL standard 508 and also comply with CSA certification mark as per C22.2 no. 94:
 - individual arrangement, types 2, 3, 3R, 3S, 5, 12 and 12K
 - coupled, types 2, 3, 3R, 3S, 5, 12 and 12K
 - coupled with coupling set 2 x 220, types 2 and 3R
 - box with hinged cover, types 2, 5, 12 and 12K
 - box with external hinges, type 2.
- The boxes also bear the KEMA KEUR and comply with following standards:
 - IEC 60439-1
 - EN 60439-1
 - BS5486 Part 1
 - DIN VDE 0660-Part 500.



Fix-o-Rail Senior



Type tested distribution enclosure conform to EN 60439-1

- Manufactured using sheet steel for the outer enclosure, and protected inside with insulated, self-extinguishing and halogen-free profiles.
 - The sheet metal parts are pre-treated with iron phosphate and protected with epoxy polyester powder paint RAL 7035 giving smooth finish.
 - The range consists of 5 different sizes:
 - two widths: 300 & 550 mm
 - three heights: 650 – 800 – 950 mm
 - one depth: 210 mm
 - For modular devices from 48 modules up to 144 modules per enclosure, with 12 or 24 modules per row.
 - Standard equipped with
 - a removable DIN rail frame in sendzimir zinc plated steel
 - polyester cover plates, self-extinguish and halogen-free, with the necessary cut outs for the modular devices.
- The center distance between two DIN profiles is 137.5 mm
- The maximum depth for the modular devices is 92.5 mm with a wiring space of 75 mm behind the components
- Top and bottom of the enclosure are, for easy cable entry without any tool, equipped with a flexible cable entry per module width of 250 mm.
 - The capacity of the top cable entry is
 - 2 x 32.5 mm
 - 5 x 19 mm
 - 38 x 13.5 mm
 - The capacity of the bottom cable entry is
 - 1 x 50.5 mm
 - 2 x 32.5 mm
 - 2 x 19 mm
 - 28 x 13.5 mm
 - 2 x 11.5 mm

- In the back of the enclosure knockouts are available for easy cable entry from the backside.
 - The door is, by one hand, easy removable and adjustable without any tool. The opening is reversible without any mechanical reworking. The door may be
 - plain
 - or transparent if a visual control function is required.
- Standard closing
- with a handle without insert
 - with one or three point closing mechanism depending on the height of the enclosure
- The standard handle is replaceable by other inserts and /or handles with or without key.
- The wall-mounting fixation may be
 - outside the enclosure with a set of 4 brackets
 - or inside with screws going trough the backside, protected with plastic covers.
 - The enclosure offers maximum protection to the user and equipment thanks to the total insulation \square and the protection degree IP41 IK08, according to IEC 60529, EN 60529 and EN 62262 and IEC 62262.
 - The system enclosures comply with the standards EN 60439-1 and IEC 60439-1.
 - The enclosures have the KEMA and CEBEC approvals.

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Modula 630K



Type tested distribution boards according to EN 60439-1

- The cabinet is a "flat pack" sheet steel wall mounting enclosure for indoor use.
- Manufactured using sheet steel with 1 mm thickness for the doors, top and side panels and 2 mm thickness for the cable entry plate on top & bottom.
- The rear panel, on the same time mounting plate is manufactured using sendzimir zinc plated steel with 2 mm thickness.
- The sheet metal parts are pre-treated with iron phosphate and protected with epoxy polyester powder paint RAL 7035 giving smooth finish.
- The range consists of 12 different sizes:
 - in two widths: 600 & 900 mm
 - six heights: external dimensions from 545 up to 1295 mm
 - Useful: Each functional unit with a multiple step of 50 mm in the height. Standard from 3 rows of 150 mm up to 8 rows of 150 mm
 - one depth: 220 mm without door, 250 mm with door
- The rear panel allows the direct mounting and wiring of the functional units and provides access to the equipment, terminals and busbar system from all sides.
- Functional units, based on the dimension of a module of 50 x 500 mm, are available for
 - modular devices from 81 modules up to 216 modules per enclosure, with 27 modules per row
 - molded case circuit breakers, load break switches, terminals, and bus bars up to 630 A
 Functional units for cable / bus bar compartment are also available
- A vertical / horizontal separation screen allow the execution as a form 2 type tested assembly.
- The standard wall mounting enclosure offers also coupling facilities in width and height up to 12 rows with maximum 1910 mm in the height. Those coupled enclosures can be placed on a base of 100 or 200 mm
- The door is easy removable and the opening is

- reversible without any mechanical reworking. Standard closing with one or two single point closing mechanism depending on the height of the enclosure. Plain or transparent doors are equipped with a cylindrical lock with key 2432 E. The standard lock with key 2432 E is replaceable by a handle with or without key.
- The wall-mounting fixation may be
 - outside the enclosure with a set of 4 brackets
 - or inside with screws going trough the backside.
- The enclosure offers maximum protection to the user and equipment thanks the protection degree IP41 IK 08, according to IEC 60529, EN 60529 and EN 62262 and IEC 62262 Enclosures with transparent door obtain the protection IP41 IK 07.
- The type tested system enclosures comply with the standards EN 60439-1 and IEC 60439-1
- The enclosures have the LOVAG approval.



Notes

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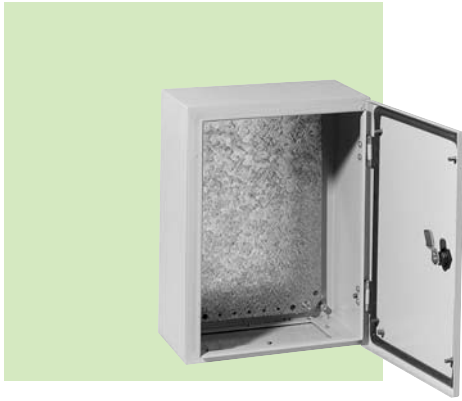
Specifications for tender documents

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OPTIMAL WM



Sheet steel wall mounting enclosures

- Sturdy body folded from a cold pressed sheet steel, 1.2/1.5 mm thickness.
The enclosure edge is folded in the shape of a channel to avoid water stagnating on the seal.
The door is made out of 1.5/2.0 mm sheet steel and is fitted with galvanised rails in the door above 600 mm, procuring cable tracks, profiles, etc., a cable entry plate and a M8 threaded stud for earthing to base, door and mounting plate. Cable entry is reached by a maximum gland opening, which is placed in the most far back position of the enclosure frame.
To allow for air circulation around the rear and for wall fixing, 4 off 20,4 mm diameter x 2 mm deep depressions are pressed out with an 8.5 mm diameter hole.
All parts are pre-treated with iron phosphate, demineralised and protected with a Polyester powder paint RAL 7035 with structured finish.
- The enclosure consists of two parts: the base and the door. The door is secured to the base by means of two or three hinges and its angle of opening is at least 130°.
- The hinges are not visible in closed position and are fitted with a captive hinge pin. The direction of turn of the door is left-right and is reversible. The single doors are closed by one, two or three point locking system, the double doors by means of three point espagnolet system. Double grips on the lock housing makes easy opening of the door possible.
The door also has a seamless polyurethane gasket.
- Standard closing with a 3 mm double bit insert.
- The mounting plate can be set up and wired outside the enclosure. It is placed subsequently in the enclosure: either against the rear wall of the enclosure or using a mounting kit, which is adjustable in depth.
- Furthermore the mounting plate is equipped with side markings every 10 mm for easy mounting of the equipment on the mounting plate and holes in top and bottom have been applied for cable fixing.
- To comply with EMC guidelines, the mounting plate is manufactured from zendimir zinc-plated sheet steel 2.5 mm thick. This plate provides an equipotential mass connection between all devices on the enclosure.
- The enclosure offers maximum protection to the user and equipment by a protection degree IP66-IK10 as per IEC 60529 and NBN G20-001 (IP55-IK10 for enclosures with double door and enclosures with glazed door).
When using an interior door or modular framework or 19" swing frame, protection degree IP20 is guaranteed within the enclosure.

- The enclosure is secured to the wall using: bolts, directly through the rear wall and protected inside with plastic washers or with wall mounting brackets, along the rear screwed to the enclosure.
In both cases the IP/NEMA degrees are guaranteed.
- A sun/rain roof made of sheet steel is provided for external mounting.
- The enclosures have the UL approval, as per UL standard 508 and also comply with the CSA certification mark, as per C22.2 no. 94

Optimal AISI

- The stainless steel boxes are manufactured using the same cruciform construction and productive concepts of the sheet steel range but without cable entry plate and fixing holes. Centre points on the outside indicate drilling positions.
- Enclosures bodies are manufactured out of 1.5 mm and doors out of 2.0 mm pre-grained AISI 304 stainless steel (AISI 316 on request) with M8 earth connection on the body and the door.
- The door is secured to the base by means of two hinges and its angle of opening is at least 130°.
- Possibility for integrated sloping and overhanging roof is one of the standard options specially design for harsh environments.
- Standard components are also in stainless steel including the hinge parts.
- Mounting plate is manufactured from sendzimir zinc-plated sheet steel 2.5 mm, with folded edges.
- The chrome plated 3 mm double bit lock with and 90-degree movement can be interchanged with other inserts. The single doors are closed by one, two or three point locking system, the double doors by means of three point espagnolet system.
- The enclosure has external a clean satin finish, which gives the product an aesthetically and highly professional appearance.
- Finish of the outer door and body 180 grit (0.8-1.2 microns), which makes it extremely suitable for the food industries (HACCP).
- The cabinets have the UL 508 approval and also comply with the CSA C22.2 certification mark.
- The cabinet offers maximum protection to the user and equipment by a protection degree IP66-IK10 as per IEC 60529 and NBN G20-001(IP55-IK10 for enclosures with double door and enclosures with glazed door).
Complying with NEMA 4X, 12 and 13.

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OPTIMAL FS



Sheet steel floor standing enclosures

- The OPTIMAL FS range of floor standing enclosures comprises:
 - OPTIMAL FS Mono as an individual enclosure completely closed on both sides
 - OPTIMAL FS Modular as a coupling enclosure with open sides
- Dimensions ranging from 1600 x 600 x 400 mm up to 2200 x 1200 x 600 mm

Technical information

- The frame is manufactured using 1.5 mm sheet steel, continuously laser-welded from top to bottom and on the joints. The edges determine the degree of protection, as they do not have sharp edges in contact with the seals.
- The manufacturing concept gives the frame a high rigidity and makes the enclosure particularly strong with a great resistance to warping.
- The required rigidity is assured by a 60 degree angle in the profile which is eight times folded of which two times double bended and assures strength in all directions.
- The frame is perforated with a reticule of round (diameter 4.3 mm) and square (10 x 14 mm) holes, alternated with a pitch of 25 mm allowing fast time saving installation of accessories. These hole pattern are situated both on the inside and outside to generate a high flexibility.
- The open frame generates the possibility to mount cables and accessories inside it without interfering with the aperture.
- The door is manufactured using 2.0 mm sheet steel. Inside the door there is a 25mm pitch drilled door frame mounted. This frame, easy removable for any reworking, makes the door stronger and allows an easy attachment of any type of application.
- Four, from the exterior invisible hinges allow the door to be opened to 130° and four self-positioning locking points assure an even pressure on the seal.
- The hinges are equipped with captive hinge pins which leaves the pin fixed in the hinge even after removal of the door.
- A special continuous polyurethane seal assures the IP55/IP56/IP66 NEMA 4,12 and 13 degree of protection.
- The standard fitted lock is a 3 mm double bit insert which closes the door, moves a four point espagnolet bar on the single and double door versions. The opening on the single door versions is reversible without any mechanical reworking.
- The rear panel is manufactured using 1.5 mm sheet steel and can be replaced by a plain or transparent door. Easy one man fitting is part of the integrated system.
- The removable side panel for the Modular enclosure is manufactured using 1.5 mm sheet steel. Easy one man fitting is part of the integrated system.
- The bottom of the enclosure is designed with a large opening and covered with three removable and interchangeable cable entry plates, made of sendzimir zinc-plated 1.5 mm sheet steel.
- All parts are pre-treated with iron phosphate and demineralised. After that protected with Polyester powder paint RAL 7035 with structured finish.
- To comply with EMC guidelines, the mounting plate is manufactured from sendzimir zinc-plated sheet steel 3.0 mm thick. This plate provides an equipotential mass connection between all the devices on the enclosure.
- All panels are directly earthed to the enclosure frame by their fittings or an extra fitting clip.
- The mounting plate is delivered outside of the packaging for easy access with unpacking the full enclosure. Fitted with slides and rests direct onto the enclosure frame for maximum weight support. The slides allow an easy installation and depth adjustment but do not interfere with the bottom cable entry space. The position of the mounting plate in far rear position is standard and the use of two opposite mounting plates is always possible. The same mounting plate can also be mounted in the side by adding only four brackets.
- There is full compatibility of the accessories and the use of the same components such as doors, rear panels, mounting plates, bases and all common accessories for both ranges Mono and Modular versions.
- The enclosure offers maximum protection to the user and equipment thanks to the high protection degree IP55/IP56/IP66 - IK 10 according to IEC 60529, EN60529 & EN 50298
- When using an inner door, modular framework or 19" swing frame, the protection degree IP20 is guaranteed within the enclosure. Upgrade of this protection to IP 55 can be reached by the use of a glazed door.
- The enclosures carry the UL, GSA and KEMA approvals.

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Pedestals



- Polyester floor standing enclosures offer reliable housing for switching, distributing and protective equipment used in underground low voltage and communication networks as well as various kind of outdoor industrial applications.
- The bases are partly buried into the ground, guaranteeing a stable support for the equipped enclosure, and allowing easy and safe cable entry into the enclosure.
- The pedestals feature high protection degrees to protect both equipment and people.
- The enclosures have very high mechanical impact strength for increased safety during many years.
- The design offers natural ventilation to prevent accumulation of condensation humidity inside the enclosure.
- The polyester has a low thermal conductivity, resulting in reduced temperature variations within the enclosure.

The pedestals comply with following standards:

- IEC 60529: IP protection degree against ingress of foreign bodies
- EN 62262 and IEC 62262: IK protection degree against mechanical impact
- IEC 60439-5: Cable distribution cabinets in power networks

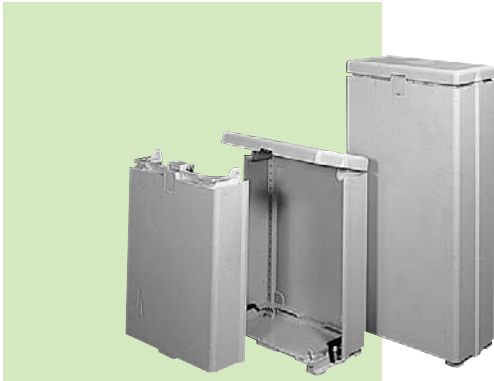
EH1



Small pedestal

- Small pedestal: 752 x 385 x 270 mm
- Light weight and easy to install by one person: 4.5 kg
- Sturdy base in HDPE, colour RAL 9005, and rainhood in RAL 7036.
- The rainhood is secured onto the base with two vandal proof zamac screws.
- The base resists ground temperatures as low as -50°C
- Arrow indicators injected on the base front indicate burial depth and correct positioning.
- A mounting plate is integrated with the base, provided with 3 slots for mounting of devices.
- The ventilated, thermoplastic hood guarantees a protection degree IP23.
- Alternatively, the base with polyester hood guarantees IP43 and increased thermal stability in tropical temperatures.
- Protection degree IK10 against external mechanical impacts according to EN 62262 and IEC 62262
- Particularly suited for cable television networks.

EH2-S



Small pedestals without base

- Small pedestals without base:
 - 590 x 425 x 240 mm
 - 860 x 425 x 240 mm
- The bottom is closed with a bottom plate in glassfibre reinforced polyester, allowing for floor mounting, wall mounting or pole mounting.
- Enclosure made of hot moulded, glass fibre reinforced polyester in RAL 7035 light grey. Corrosion resistant, UV stabilized for outdoor applications, suitable for use in environments from - 35°C to + 125°C. Temporary exceeding temperatures will not be harmful.
- A labyrinth design guarantees natural ventilation whilst maintaining a good protection degree. The rainhood shape prevents water stagnation on the roof. This guarantees a protection degree IP43 according to IEC 60529.
- The cabinets offer maximum protection to user and equipment: protection degree IK10 against external impacts according to EN 62262 and IEC 62262
- Fully integrated locking clamp, suitable for operation by a half profile cylindric lock. The cylindric lock can be fitted in a recessed lock box, protected by a vandal proof plastic cap.
- Once unlocked, the enclosure can be accessed without tools by removing the frontal lift-off segments, which are not hinged.
- Fixing holes for threaded inserts M6 are provided in the rear panel allowing direct mounting of busbars, a frame, a mounting plate or components.
- Particularly suitable for outdoor housing of electricity meters, switchgear, etc.

EH2



Column cabinets

- Column cabinets with integrated base:
 - 1097 x 433 x 240 mm
 - 1347 x 433 x 240 mm
 - 1622 x 433 x 240 mm
 - 1896 x 433 x 240 mm
- The base and the rear panel of the column are molded as one part. The base allows for stable installation of the column.
- Enclosure made of hot moulded, glass fibre reinforced polyester in RAL 7035 light grey. Corrosion resistant, UV stabilized for outdoor applications, suitable for use in environments from - 35°C to + 125°C. Temporary exceeding temperatures will not be harmful.
- A labyrinth design guarantees natural ventilation whilst maintaining a good protection degree. The rainhood shape prevents water stagnation on the roof. This guarantees a protection degree IP44 according to IEC 60529.
- The cabinets offer maximum protection to user and equipment: protection degree IK10 against external impacts according to EN 62262 and IEC 62262
- Fully integrated locking clamp, suitable for operation by a half profile cylindric lock. The cylindric lock can be fitted in a recessed lock box, protected by a vandal proof plastic cap.
- Once unlocked, the enclosure can be accessed without tools by removing the frontal lift-off segments completely (not hinged).
- For easy access the roof can be opened, offering an opening angle of 90°.
- Fixing holes for threaded inserts M6 are provided in the rear panel allowing direct mounting of busbars, a frame, a mounting plate or components.
- Particularly suitable for outdoor installation of fused switchgear, 4-pole busbars, etc.

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EH3/DC



Pedestals with two separate compartments

- Cabinets for DIN-base mounting:
 - 875 x 785 x 320 mm • DIN size 1
 - 875 x 1115 x 320 mm • DIN size 2
- Door and rear with flat surface.
- Internal separation in two compartments. The compartments are individually accessible and feature independent doors and locking systems.
- Supplied with open bottom for cable entry. To be mounted on a basement according to DIN 43629 standard dimensions between the fixation points.
- Both side panels are bolted to the roof and to the rear. The roof is bolted to the rear and the side panels. Horizontal bottom profiles are bolted onto the side panels, guaranteeing a structure with high resistance to torsional and bending forces, according to IEC 60439-5.
- Enclosure made of hot moulded, glass fibre reinforced polyester in RAL 7035 light grey. Corrosion resistant, UV stabilized for outdoor applications, suitable for use in environments from - 35°C to + 125°C. Temporary exceeding temperatures will not be harmful.
- A labyrinth design guarantees natural ventilation whilst maintaining a good protection degree. The rainhood shape prevents water stagnation on the roof. This guarantees a protection degree IP44 according to IEC 60529.
- The cabinets offer maximum protection to user and equipment: protection degree IK10 against external impacts according to EN 62262 and IEC 62262
- Three point locking mechanism on each door, operated by a recessed, integrated handle. The handles are designed to receive half profile cylindrical locks.
- The open doors can be manually unhinged to allow free access for maintenance. The hinges are made of glassfibre reinforced PA, guaranteeing excellent corrosion resistance.
- Threaded inserts for bolts M10 are molded in the rear panel, allowing for direct mounting of busbars, a frame or a mounting plate for components.
- Particularly designed for outdoor installation of power supply metering units in one compartment, and end user devices in the other compartment.

EH3/F & EH3/AP



DIN-size pedestals

- Cabinets for DIN-base mounting:
 - 875 x 590 x 320 mm - 1125 x 590 x 320 mm • DIN-size 0
 - 875 x 785 x 320 mm - 1125 x 785 x 320 mm • DIN-size 1
 - 875 x 1115 x 320 mm - 1125 x 1115 x 320 mm • DIN-size 2
 - 875 x 1445 x 320 mm - 1125 x 1445 x 320 mm • DIN-size 3
- Door and rear available with flat surface (Type EH3/F) or with profiled surface (Type EH3/AP anti poster).
- Doors with profiled surface offer a labeling space on the top left corner.
- Supplied with open bottom for cable entry. To be mounted on a basement according to DIN 43629 standard dimensions between the fixation points.
- Both side panels are bolted to the roof and to the rear. The roof is bolted to the rear and the side panels. Horizontal bottom profiles are connected onto the side panels, guaranteeing a structure with high resistance to torsional and bending forces, according to IEC 60439-5.
- For easy cable entry the bottom profile can be easily removed by means of two sliding latches.
- The larger enclosures have two doors and two rear panels. The two rear panels are cross-linked with a middle beam. The left door has a doorpost, acting as a blocking profile to the right door.
- Enclosure made of hot moulded, glass fibre reinforced polyester in RAL 7035 light grey. Corrosion resistant, UV stabilized for outdoor applications, suitable for use in environments from - 35°C to + 125°C. Temporary exceeding temperatures will not be harmful.
- A labyrinth design guarantees natural ventilation whilst maintaining a good protection degree. The rainhood shape prevents water stagnation on the roof. This guarantees a protection degree IP44 according to IEC 60529.
- The cabinets offer maximum protection to user and equipment: protection degree IK10 against external impacts according to EN 62262 and IEC 62262.
- Three point locking mechanism, operated by a swing handle designed to receive a half profile cylindrical lock.
- The door opening angle exceeds 180°.
- The open door can be manually unhinged to allow free access for maintenance. The hinges are made of glassfibre reinforced PA, guaranteeing excellent corrosion resistance.
- Threaded inserts for bolts M8 can be mounted in the rear panel, allowing for direct mounting of busbars, a frame or a mounting plate for components.
- Additional fixation possibilities are foreseen in the side panel to mount horizontal busbars. Thus the usable width on the busbar is maximised.
- Cabinets can be coupled together side to side or double deep.
- For EH3/AP pedestals the profiled door and rear panels make poster sticking difficult and cause poster to drop off.
- Particularly designed for outdoor installation of fused switch-gear, 4-pole busbars, telecom jumper frames, etc.

EH3/AP-GD



Pedestals with increased depth

- Cabinets with greater depth for base mounting:
 - 875 x 676 x 424 mm
 - 1125 x 676 x 676 mm
 - 875 x 871 x 424 mm
 - 1125 x 871 x 676 mm
 - 875 x 1200 x 424 mm
 - 1125 x 1200 x 676 mm
- Provided with 4 fixing points for floor or base mounting.
- Door and rear profiled surface (anti poster).
The sides height 875 mm are profiled, whereas the sides height 1125 mm are flat, allowing installation of outgoing power plugs or connectors.
- Supplied with open bottom for cable entry.
- Both side panels are bolted to the roof and to the rear.
The roof is bolted to the rear and the side panels. Horizontal bottom profiles are bolted onto the side panels, guaranteeing a structure with high resistance to torsional and bending forces, according to IEC 60439-5.
- The larger enclosures have two doors and two rear panels.
The two rear panels are cross-liked with a middle beam. The left door has a doorpost, acting as a blocking profile to the right door.
- Possibility of pivoting door on side or back.
- Enclosure made of hot moulded, glass fibre reinforced polyester in RAL 7035 light grey. Corrosion resistant, UV stabilized for outdoor applications, suitable for use in environments from - 35°C to + 125°C. Temporary exceeding temperatures will not be harmful.
- Rainhood made of hand lay up glass fibre reinforced polyester with RAL 7035 topcoat.
- A labyrinth design guarantees natural ventilation whilst maintaining a good protection degree. The rainhood shape prevents water stagnation on the roof. This guarantees a protection degree IP23 according to IEC 60529.
- The cabinets offer maximum protection to user and equipment: protection degree IK10 against external impacts according to EN 62262 and IEC 62262
- Three point locking mechanism, operated by a solid, industrial handle. The handle is designed to receive a half profile cylindrical lock.
- The open door can be manually unhinged to allow free access for maintenance. The hinges are made of glassfibre reinforced PA, guaranteeing excellent corrosion resistance.
- Particularly designed for all kind of outdoor industrial application, e.g. pump control or waste water treatment.

EH4



Column cabinets

- Column cabinets type EH4 with integrated base:
- 1600 x 395 x 224 mm
 - 1600 x 495 x 224 mm
 - 1600 x 745 x 224 mm
 - The base and the rear panel of the column are separate items, but are delivered assembled together
 - Enclosure made of hot moulded, glass fibre reinforced polyester in RAL 7035 light grey. Corrosion resistant, UV stabilized for outdoor applications, suitable for use in environments from -35°C to +125°C.
Temporary exceeding temperatures will not be harmful.
 - A labyrinth design guarantees natural ventilation whilst maintaining a good protection degree. The rainhood shape prevents water stagnation on the roof.
This guarantees a protection degree IP43 according to IEC 60529.
 - The pedestals guarantee Total Insulation
 - The cabinets offer maximum protection to user and equipment: protection degree IK10 against external impacts according to EN 62262 and IEC 62262
 - A swing handle, suitable for operation by a half profile cylindrical lock.
 - Door opening angle of 180° is provided
 - Fixing holes for threaded inserts M6 are provided in the rear panel allowing direct mounting of busbars, a frame, a mounting plate or components.
 - Particularly suitable for outdoor installation of fused switchgear, 4-pole busbars, etc.

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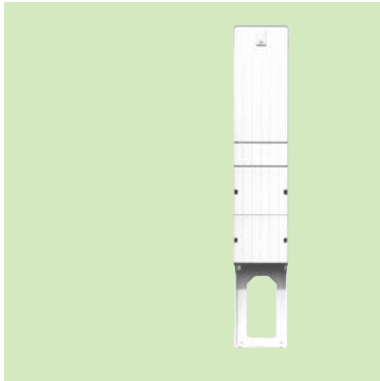
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EH4-S



Column cabinets

Column cabinets **EH4-S** with integrated base:

- 1420 x 320 x 234 mm
- 1850 x 320 x 234 mm
- The base and the rear panel of the column are moulded as one part. The base allows for stable installation of the column.
- Enclosure made of hot moulded, glass fibre reinforced polyester in RAL 7035 light grey. Corrosion resistant, UV stabilized for outdoor applications, suitable for use in environments from -35°C to +125°C. Temporary exceeding temperatures will not be harmful.
- A labyrinth design guarantees natural ventilation whilst maintaining a good protection degree. The rainhood shape prevents water stagnation on the roof. This guarantees a protection degree IP44 according to IEC 60529.
- The cabinets offer maximum protection to user and equipment: protection degree IK10 against external impacts according to EN 62262 and IEC 62262
- Fully integrated locking clamp, suitable for operation by a half profile cylindric lock. The cylindric lock can be fitted in a recessed lock box, protected by a vandal proof plastic cap.
- Once unlocked, the enclosure can be accessed without tools by removing the frontal lift-off segments completely (not hinged).
- The pedestals guarantee total insulation
- Fixing holes for threaded inserts M6 are provided in the rear panel allowing direct mounting of busbars, a frame, a mounting plate or components.
- Particularly suitable for outdoor installation of fused switchgear, 4-pole busbars, etc.

EH6



Pedestals IP44/54

- Cabinets for base mounting:
 - 830 x 470 x 320 mm • DIN size 00
 - 830 x 590 x 320 mm • DIN size 0
 - 880 x 785 x 320 mm • DIN size 1
- Supplied with open bottom for cable entry. To be mounted on a basement according to DIN 43629 standard dimensions between the fixation points.
- Both side panels are bolted to the roof. The side panels are bolted to the rear. Horizontal bottom profiles cross-link the side panels.
- Enclosure made of hot moulded, glass fibre reinforced polyester in RAL 7035 light grey. Corrosion resistant, UV stabilized for outdoor applications, suitable for use in environments from - 35°C to + 125°C. Temporary exceeding temperatures will not be harmful.
- A labyrinth design guarantees natural ventilation whilst maintaining a good protection degree. The rainhood shape prevents water stagnation on the roof. This guarantees a protection degree IP44 according to IEC 60529.
- The cabinets offer maximum protection to user and equipment: protection degree IK10 against external impacts according to EN 62262 and IEC 62262
- Three point locking mechanism, operated by a recessed, integrated handle. The handle is designed to receive a half profile cylindric lock.
- The open door can be manually unhinged to allow free access for maintenance. The hinges are made of nickled brass, guaranteeing excellent corrosion resistance. The door opening angle exceeds 180°
- Fixation points for self tapping Hilo screws 7,2 x 26 mm are moulded in the rear panel, allowing for direct mounting of busbars, a frame or a mounting plate for components.
- Cabinets can be coupled together side to side or double deep.
- Particularly designed as low cost solution for outdoor installation of fused switchgear, 4-pole busbars, etc.

RVS



Pedestals in stainless steel DIN 00 – DIN 3 according to EN 60439-5

- Stainless steel cabinets for outdoor use with a very high and reliable protection level for switchgear, distributors and safety equipment in energy networks, recreation grounds, markets, public events and telecommunications.
- Bases are partially sunken to provide a solid foundation for fitted-out cabinets and to ensure a safe and easy cable input via the removable front plate and sill profile.
- The pedestals meet high safety standards to protect both personnel and equipment.
- The cabinets have very good mechanical properties and a high torsion resistance to ensure many years of optimum protection.
- The cabinets are maintenance-free.

The range of stainless steel pedestals consists of

- Cabinets for base mounting:
 - Height 650, 900, 1000, 1150 and 1350 mm
 - Depth 355 mm
 - Width 460 up to 1780 mm in fixed increments.
- Two compartment designs in different sizes.
- Special dimensions available in consultation.
- Supplied with an open base for cable entry. Must be mounted on a base with standard centre-to-centre measurements according to DIN 43629 or made suitable for wall mounting by wall brackets and baseplate.
- The cabinets are fully welded. This guarantees a structure that is highly resistant to mechanical loads such as torsion and bending according to IEC 60439-5.
- Small cabinets have one door, larger cabinets have a double door with lock on the right-hand door.
- The housing is made of stainless steel AISI 304 according to EN 1.4452 and equipped with polyester surface treatment, standard in RAL 7034. The cabinet is suitable for use in extreme temperatures.

- The design guarantees natural ventilation without infringing the protection value IP43 according to IEC 60529. A polystyrene plate inside the roof panel ensures that moisture is automatically discharged along the vertical sides of the cabinet. The unique base design ensures automatic condensation evacuation.
- Upright and two-door cabinets fitted with a 3-point rod closing mechanism operated by a handle suitable for a profile half-cylinder lock.
- Opened door can be easily removed from the cabinet with a stainless steel hinged rod.
- Guaranteed earthing, independent of corrosion-sensitive transitional surfaces.
- Easy and cheap to recycle.

The enclosure offers maximum protection to the user and equipment thanks to the protection degree IP43 IK 10, according to IEC 60529, EN 60529 and EN 62262 and IEC 62262

The pedestals comply with the standards EN 60439-5 and IEC 60439-5

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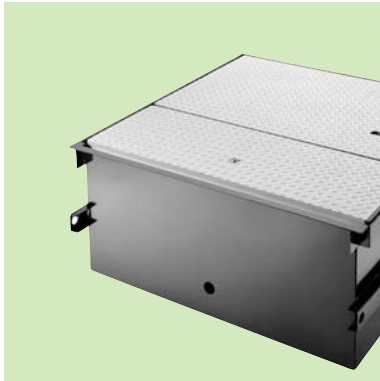
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UTS



Subterranean enclosures

- Stainless steel enclosures for underground use, with a very high and reliable protection. Suitable for the switching, distribution and safety apparatus used in energy networks, market and event applications and telecommunications.
- The enclosure is sunken integrally. The covers - of cast iron, bulb plate or suitable for paving - can be opened by manpower, without tools.
- The UTS enclosures meet high safety standards to protect both personnel and equipment.
- The enclosures have excellent mechanical properties, can be used in public areas and offer many years of optimum protection.
- The patented air clock or diving bell principle ensures that components are protected.

The subterranean enclosures comply with following standards:

- IEC 60529: Degrees of protection provided by enclosures (IP code).
- IEC 60439-5: Cable distribution enclosures for power distribution in networks.
- EN 1.4452: Material number
- EN 124: Gully tops and cover tops for vehicular and pedestrian areas

- Enclosures for underground applications.
- One- and two-compartment designs in various sizes.
- Special sizes available on request.
- The enclosures are fully welded: this guarantees a structure that is very resistant to mechanical loads, such as torsion and bending according to IEC 60439-5.
- The case is made of AISI 304 stainless steel according to EN 1.4452 and is equipped as standard with a surface treatment of polyester paint in a colour of your choice. The enclosure is suitable for use in extreme temperatures.
- The cover can be loaded, depending on the design, with 12.5 tons according to EN 124 B125 or 25 tons according to EN 124 C250.
- The protection of the equipment is based on the use of the so-called air clock or diving bell principle (Boyle's law). The protection degree is IP43 according to IEC 60529 for the closed steel structure and IP65 when used in combination with an APO box.
- Locking mechanism suitable for a profile half-cylinder lock.
- Guaranteed earthing, independent of corrosion-sensitive transitional surfaces.

Power dissipation values

According to EN 62208, IEC 62208 and IEC 60890

For each enclosures range

- The 4 or 5 different matrix tables contain all the enclosure **dimensions**.
- The tables are created according to the **positioning** of the enclosure.
- **Two different values** of temperature rise are given depending on the measuring point in the cabinet: **half way** or **on top**.

What is acceptable according to EN 62208, IEC 62208 and IEC 60890

- For common electrical applications, a **temperature rise of 50K** is generally accepted. If the rise is above 50K, a larger enclosure should be chosen. More volume results in a decrease of the temperature rise.
- The **absolute** temperature in °C in the enclosure is the **sum** of the **ambient** temperature in °C and the **temperature rise** in K. According to the standards, the absolute temperature is **max. 70°C**

How to use a matrix?

First choose the right matrix according to the position and the size of the enclosure.

Second calculate the effective power loss in Watt (left column). Add 10-20% to the total effective power loss of the components in order to compensate the small wiring and connections.

Third read in the matrix the temperature rise in the cabinet due to the thermal power dissipation.

Example of an individual enclosure PolySafe 452

(see page J.90)

Enclosure: height = 1000 mm,
width = 1250 mm, depth = 320 mm.
Placed against the wall.

The calculated effective power loss of the components: 600W

Components are placed in the centre of the cabinet. In the table 'Rear against wall' (see below) read for **600W** and column **'Half: 40K'** temperature rise.

With an ambient temperature of 20°C, the absolute temperature around the components will be approximately 20 + 40 = 60°C

If the temperature is too high for the components, then choose a larger cabinet to allow air ventilation.

Example of coupled enclosures PolySafe 452

Enclosure on the **left side**: height 1000, width 1250 mm, depth 320 mm

Enclosure **in the middle**: height 1000, width 1250 mm, depth 320 mm

Enclosure on the **right side**: height 1000, width 1250 mm, depth 320 mm

Placed against the wall

Do the same calculation as above for each individual enclosure.

Find the temperature rise for the **left and right side** enclosure in the table '**Front, left and upperside free**', see page J.92 and find **'Half: 42K'**

Find the temperature rise for the **middle** enclosure in the table '**Frontside and upperside free**', see page J.93 and find **'Half: 44K'**

Rear against wall (wall mounting)

Temperature rise [Kelvin]

DISSIPATION	PS 220 500x500		PS 230 500x750		PS 320 750x500		PS 330 750x750		PS 340 750x1000		PS 352 750x1250		PS 420 1000x500		PS 430 1000x750		PS 440/442 1000x1000		PS 452 1000x1250		PS 530 1250x750		PS 542/546 1250x1000				
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top		
10	4	5	4	4	4	5																					
20	8	9	7	7	6	8	5	6	4	5			5	7													
30	11	13																									
40	13	16	11	13	11	14	9	11	7	9	6	7	9	13	7	9	5	7	5	6	5	8					
50	16	19																									
60	19	22	16	18	16	19	12	16	10	12	8	10	12	18	10	13	7	10	6	8	8	11	6	8			
70	21	25																									
80	23	28	20	23	20	24	15	20	12	16	10	12	16	22	12	16											
90	26	31																									
100	28	33	24	27	23	29	18	23	15	19	12	14	19	27	14	19	11	14	9	12	11	16	9	13			
120	32	38	28	31	27	33	21	27					22	31	17	23											
140	37	44	31	35	31	38	24	31	19	24	15	19	25	35	19	26	15	19	12	16	15	21	12	16			
160	41	48	35	39	34	42	27	34					27	39	21	28											
180	45	53	38	43	38	46	29	38	24	30	19	23	30	43	23	31	18	23	15	19	18	25	15	20			
200	49	58	42	47	41	51	32	41					33	47	25	34											
220	53	63	45	51	44	55	34	44	28	35	22	27	35	50	27	37	21	27	18	23	21	30	18	24			
240			48	55	47	58	37	47					38	54	29	39											
260			52	58	51	62	39	51	32	40	25	31	40	58	31	42	24	31	20	26	24	34	20	27			
280							42	54					43	61	33	45											
300							44	57	36	45	28	35	45	65	35	47	27	35	23	29	27	38	23	30			
350							50	64	40	51	32	40	51	73	40	53	30	39	26	33	31	43	25	34			
400									45	57	36	44			44	59	34	44	29	37	34	48	28	38			
450									49	62	39	48			48	65	37	48	32	40	38	53	31	42			
500													43	53		53	71	40	53	34	44	41	58	34	46		
550													46	57				44	57	37	47	45	63	37	49		
600													49	61				47	61	40	51	48	67	39	53		
650													53	65				50	65	42	54	51	72	42	57		
700																			45	57				45	60		
750																			48	61				47	63		
800																			50	64				50	67		



Rear against wall

Temperature rise [Kelvin]

DISSIPATION	VJ 66		VJ 86		VJ 108		VJ 108		VJ 1210		VJ 1210		VJ 1412		VJ 1412		VJ 1614		VJ 1614		VJ1816	
	186x186x126	236x186x126	236x186x126	287x236x138	287x236x138	287x236x176	287x236x176	338x287x142	338x287x142	338x287x180	338x287x180	389x338x170	389x338x170	389x338x208	389x338x208	440x389x170	440x389x170	440x389x208	440x389x208	491x440x243	491x440x243	
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	
5	11	13	9	11	7	9	7	8	6	7	5	6										
10	19	22	16	20	13	15	12	14	10	13	9	11	8	10	8	9	7	8	6	8	5	6
15	26	31	22	27	17	21	16	20	15	18												
20	33	39	28	34	22	27	20	25	18	22	16	19	14	17	13	16	12	15	11	14	9	11
25	39	46	34	41	26	32	24	29	22	26												
30	45	54	39	48	30	37	28	34	25	31	22	29	20	24	18	22	17	21	16	19	13	15
35			44	54	35	42	32	39	29	35												
40			49	60	38	47	35	43	32	39	28	34	25	30	23	28	21	26	20	24	16	19
45					42	51	39	47	35	42												
50						42	41	38	46	34	41	30	36	27	33	26	31	24	29	19	23	
55								41	50													
60										39	47	34	41	32	38	30	36	27	33	22	27	
65										41	50											
70										44	53	39	47	36	43	34	41	31	37	25	30	
75												41	50									
80															40	48	38	45	35	42	28	34
85															42	51						
90																	41	50	38	46	31	37
95																						
100																			41	50	34	40
105																						
110																					36	44
115																						
120																					39	47
125																						
130																					42	50
135																						
140																					44	53

Front, left and upperside free

Temperature rise [Kelvin]

DISSIPATION	VJ 66		VJ 86		VJ 108		VJ 108		VJ 1210		VJ 1210		VJ 1412		VJ 1412		VJ 1614		VJ 1614		VJ1816	
	186x186x126	236x186x126	236x186x126	287x236x138	287x236x138	287x236x176	287x236x176	338x287x142	338x287x142	338x287x180	338x287x180	389x338x170	389x338x170	389x338x208	389x338x208	440x389x170	440x389x170	440x389x208	440x389x208	491x440x243	491x440x243	
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	
5	11	13	10	12																		
10	20	24	17	21	13	16	12	15	11	13	10	12	9	10	8	10	7	9	7	8	6	7
15	27	33	24	29																		
20	35	41	30	37	23	28	21	26	19	24	17	21	15	18	14	17	13	16	12	14	10	12
25	41	49	36	44																		
30	48	57	42	51	32	39	30	36	27	33	24	29	21	25	19	23	18	22	17	20	14	16
35																						
40					40	49	37	45	34	41	30	36	26	31	24	29	23	27	21	25	17	21
45					44	54	41	50														
50						45	54	41	49	36	44	31	38	29	35	27	33	25	30	20	25	
55								44	53													
60										42	50	36	44	34	41	31	38	29	35	24	28	
65																						
70													41	49	38	46	35	43	33	40	27	32
75													43	52	40	49						
80															42	51	39	48	37	44	30	36
85																	41	50				
90																			40	49	33	39
95																			42	51		
100																					36	43
105																						
110																					39	46
115																						
120																					41	50
125																						
130																					44	53

Power dissipation values

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Frontside and upperside free

Temperature rise [Kelvin]

DISSIPATION	VJ 66		VJ 86		VJ 108		VJ 108		VJ 1210		VJ 1210		VJ 1412		VJ 1412		VJ 1614		VJ 1614		VJ1816		
	186x186x126	236x186x126	287x236x138	287x236x176	338x287x142	338x287x180	389x338x170	389x338x208	440x389x170	440x389x208	491x440x243												
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
5	12	14	11	13	8	10																	
10	21	25	19	23	14	17	13	16	12	14	11	13	9	11	8	10	8	9	7	9	6	7	
15	29	35	26	31	19	23																	
20	37	44	32	39	24	30	23	27	20	25	19	23	16	19	15	18	14	16	13	15	10	13	
25	44	53	39	47	29	35																	
30			45	55	34	41	31	38	28	34	26	32	22	26	20	25	19	23	18	21	14	17	
35					38	46																	
40					43	52	39	48	36	43	33	40	27	33	26	31	24	29	22	27	18	22	
45							43	52	39	47													
50									43	52	40	48	33	39	31	37	28	34	27	32	22	26	
55											43	52											
60													38	46	36	43	33	40	31	37	25	30	
65													40	49									
70													43	52	40	49	37	45	35	42	29	34	
75															43	51							
80																	42	50	39	47	32	38	
85																			41	49			
90																			43	52	35	42	
95																							
100																						38	46
105																							
110																						41	50

Power dissipation values

Frontside free, upper side not free

Temperature rise [Kelvin]

DISSIPATION	VJ 66		VJ 86		VJ 108		VJ 108		VJ 1210		VJ 1210		VJ 1412		VJ 1412		VJ 1614		VJ 1614		VJ1816		
	186x186x126	236x186x126	287x236x138	287x236x176	338x287x142	338x287x180	389x338x170	389x338x208	440x389x170	440x389x208	491x440x243												
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
5	14	16	12	14	9	11	8	10															
10	24	28	21	25	15	19	14	17	13	15	12	14	10	12	9	11	8	10	8	10	7	8	
15	33	39	29	35	21	26	20	24															
20	42	50	36	44	27	33	25	30	22	27	21	25	17	21	16	19	15	18	14	17	12	14	
25			43	53	32	39	30	36															
30					37	45	35	42	30	37	29	35	24	29	22	27	21	25	20	24	16	20	
35					42	51	39	47															
40							43	53	38	46	36	44	31	37	28	34	26	31	25	30	20	25	
45									53	42	51	40	48										
50											44	53	37	44	34	41	31	37	29	36	24	29	
55													39	48									
60													42	51	39	47	36	43	34	41	28	34	
65															42	50							
70															44	53	41	42	39	47	32	39	
75																	43	52	41	49			
80																			43	52	36	43	
85																							
90																						39	47
95																						41	49
100																						43	51

A
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C
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J/X



Rear against wall

Temperature rise [Kelvin]

DISSIPATION	APO 1 185x150x130		APO 31 300x185x175		APO 41 300x300x175		APO 71 370x300x175		APO 51 485x300x175		APO 81 555x300x175		APO 61 600x300x175		APO 11 600x370x175		APO 12 600x600x175		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
5	12	14	7	9	6	7	5	6	4	5	4	5	4	5	3	4	3	3	3
10	20	25	12	15	10	12	9	11	8	9	7	9	7	8	6	7	4	5	5
15	28	34	17	21	14	16	12	15	10	13	10	12	9	11	8	10	6	7	7
20	36	43	22	27	17	20	15	19	13	16	12	15	11	14	10	13	8	9	9
25	43	52	26	32	21	24	18	22	16	19	14	18	14	17	12	15	9	11	11
30			30	37	24	28	21	26	18	22	17	21	16	20	14	17	11	13	13
40			38	47	30	36	27	32	23	28	21	26	20	25	18	22	14	16	16
50			45	56	36	43	32	39	27	34	25	31	24	30	21	26	16	19	19
60					42	49	37	45	32	39	29	36	28	34	25	30	19	22	22
70							42	51	36	44	33	41	31	39	28	34	21	25	25
80									40	49	37	46	35	43	31	38	24	28	28
90											40	50	38	48	34	42	26	31	31
100													42	52	37	46	28	34	34
110															40	50	31	36	36
120															43	53	33	39	39
130																	35	42	42
140																	37	44	44
150																	39	47	47
160																	41	49	49
170																	45	53	53

Front, left and upperside free

Temperature rise [Kelvin]

DISSIPATION	APO 1 185x150x130		APO 31 300x185x175		APO 41 300x300x175		APO 71 370x300x175		APO 51 485x300x175		APO 81 555x300x175		APO 61 600x300x175		APO 11 600x370x175		APO 12 600x600x175			
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	
5	13	15	8	9	6	7	5	6	5	6	4	5	4	5	4	4	3	3	3	
10	22	27	13	16	11	13	9	11	8	10	7	9	7	9	6	8	5	5	5	
15	30	37	18	23	15	18	13	15	11	14	10	13	10	12	9	11	6	8	8	
20	38	46	23	28	19	22	16	19	14	17	13	16	12	15	11	13	8	10	10	
25	46	56	28	34	22	27	19	23	17	21	15	19	15	18	13	16	10	11	11	
30			32	39	26	31	22	27	19	24	18	22	17	21	15	19	11	13	13	
40			40	50	33	39	28	34	24	30	22	28	19	24	19	23	14	17	17	
50					39	46	33	41	29	36	27	33	25	32	23	28	17	20	20	
60					45	54	39	47	34	42	31	39	29	37	26	32	19	23	23	
70							44	53	38	47	35	44	33	42	30	37	22	26	26	
80									42	52	39	49	37	46	33	41	25	29	29	
90											43	53	41	51	36	45	27	32	32	
100															39	49	29	35	35	
110															43	53	32	38	38	
120																	34	40	40	
130																	36	43	43	
140																	39	46	46	
150																	41	48	48	
160																	43	51	51	
170																				

Power dissipation values

A

B

C

D

E

F

G

H

I

J/X



Frontside and upperside free

Temperature rise [Kelvin]

DISSIPATION	APO 1 185x150x130		APO 31 300x185x175		APO 41 300x300x175		APO 71 370x300x175		APO 51 485x300x175		APO 81 555x300x175		APO 61 600x300x175		APO 11 600x370x175		APO 12 600x600x175			
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	
5	13	16	8	10	7	8	6	7	5	6	5	6	4	5	4	5	3	3		
10	24	29	14	18	11	14	10	12	8	10	8	10	7	9	7	8	5	6		
15	33	40	20	24	16	19	14	17	12	15	11	14	10	13	9	11	7	8		
20	41	50	25	31	20	24	17	21	15	18	14	17	13	16	12	14	8	10		
25			30	37	24	28	21	25	18	22	16	20	16	20	14	17	10	12		
30			34	42	28	33	24	29	20	25	19	24	18	23	16	20	12	14		
40			43	54	35	41	30	37	26	32	24	30	23	29	20	25	15	17		
50					42	49	36	44	31	38	29	36	27	34	24	30	17	21		
60					48	57	42	51	36	44	33	41	32	39	28	35	20	24		
70									40	50	38	47	36	45	32	39	23	27		
80											42	52	40	50	35	44	26	30		
90															39	48	28	33		
100															42	52	31	36		
110																	33	39		
120																	35	42		
130																	38	45		
140																	40	48		
150																	42	50		
160																				
170																				

Power dissipation values

Frontside free, upper side not free

Temperature rise [Kelvin]

DISSIPATION	APO 1 185x150x130		APO 31 300x185x175		APO 41 300x300x175		APO 71 370x300x175		APO 51 485x300x175		APO 81 555x300x175		APO 61 600x300x175		APO 11 600x370x175		APO 12 600x600x175			
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	
5	15	18	9	11	7	8	6	8	5	6	5	6	5	6	4	5	3	4		
10	25	31	16	19	12	15	11	14	9	11	8	10	8	10	7	9	5	6		
15	35	43	22	27	17	21	16	19	13	16	12	14	11	14	10	12	7	9		
20	44	54	27	34	22	26	20	24	16	20	15	18	14	17	12	15	9	11		
25			33	41	26	31	23	29	19	23	18	22	17	21	15	18	11	13		
30			38	47	30	36	27	33	22	27	20	25	19	24	17	21	13	15		
40			48	59	38	45	34	42	28	34	26	32	24	30	22	27	16	19		
50					46	54	41	50	33	41	31	38	29	36	26	32	19	22		
60									38	47	35	44	34	42	30	37	22	26		
70									43	54	40	50	38	48	34	42	25	29		
80													43	53	38	47	28	33		
90															42	51	30	36		
100																	33	39		
110																	36	42		
120																	38	45		
130																	41	48		
140																	43	51		
150																				
160																				
170																				

A

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C

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E

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G

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J/X



Rear against wall

Temperature rise [Kelvin]

DISSIPATION	ARIA 32 300x200x170		ARIA 43 400x300x170		ARIA 54 500x400x230		ARIA 64 600x400x230		ARIA 75 700x500x270		ARIA 86 800x600x300		ARIA 108 1000x800x300	
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	
10	12	15	8	10	6	7	5	6	4	5	3	4	2	3
20	21	26	15	18	10	12	9	11	7	9	6	7	4	5
30	30	36	20	25	14	17	12	15	10	12	8	10	5	7
40	37	46	26	32	17	21	15	19	12	15	10	13	7	9
50	45	55	31	38	21	25	18	22	15	18	12	15	8	11
60			36	44	24	29	21	26	17	21	13	18	9	13
70			41	49	27	33	24	29	19	24	15	20	11	14
80			45	55	30	36	27	33	21	26	17	23	12	16
90					33	40	29	36	23	29	18	25	13	18
100					36	44	32	39	26	31	20	27	14	19
110					39	47	34	42	28	34	22	29	15	21
120					42	50	37	45	30	36	23	31	16	22
130							39	49	32	39	25	33	17	24
140							42	51	33	41	26	35	19	25
150									35	43	28	37	20	26
160									37	46	29	39	21	28
170									39	48	31	41	22	29
180									41	50	32	43	23	31
190											34	45	24	32
200											35	47	25	33
210											37	49	26	35
220											38	51	27	36
230													28	37
240													29	39
250													30	40
260													31	41
270													31	42
280													32	44
290													33	45
300													34	46
310													35	47
320													36	49
330													37	50
340														

Front, left and upperside free

Temperature rise [Kelvin]

DISSIPATION	ARIA 32 300x200x170		ARIA 43 400x300x170		ARIA 54 500x400x230		ARIA 64 600x400x230		ARIA 75 700x500x270		ARIA 86 800x600x300		ARIA 108 1000x800x300	
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	
10	13	16	9	11	6	7	5	7	4	5	3	4	2	3
20	23	28	16	19	10	13	9	11	7	9	6	8	4	6
30	31	38	22	26	15	18	13	16	10	12	8	11	6	8
40	39	49	27	33	18	22	16	20	13	16	10	13	7	10
50	47	58	32	40	22	27	19	24	15	19	12	16	9	12
60			38	46	25	31	23	28	18	22	14	19	10	13
70			43	52	29	35	26	31	20	24	16	21	11	15
80					32	39	28	35	22	27	18	23	13	17
90					35	43	31	38	24	30	19	26	14	19
100					38	46	34	42	27	33	21	28	15	20
110					41	50	37	45	29	35	23	30	16	22
120							39	48	31	38	24	32	18	23
130							42	52	33	40	26	35	19	25
140									35	43	28	37	20	26
150									37	45	29	39	21	28
160									39	48	31	41	22	29
170									41	50	32	43	23	31
180									43	52	34	45	24	32
190											35	47	26	34
200											37	49	27	35
210											38	51	28	37
220													29	38
230													30	39
240													31	41
250													32	42
260													33	44
270													34	45
280													35	46
290													36	48
300													37	49
310													38	50
320														
330														
340														

Power dissipation values

A

B

C

D

E

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H

J/X



Frontside and upperside free

Temperature rise [Kelvin]

DISSIPATION	ARIA 32 300x200x170		ARIA 43 400x300x170		ARIA 54 500x400x230		ARIA 64 600x400x230		ARIA 75 700x500x270		ARIA 86 800x600x300		ARIA 108 1000x800x300	
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half
10	14	17	9	11	6	8	6	7	4	5	4	5	3	3
20	24	30	16	20	11	14	10	12	8	9	7	8	4	6
30	33	41	23	28	16	19	14	17	11	13	9	11	6	8
40	42	52	29	35	20	24	17	22	13	16	11	14	8	10
50			34	42	23	29	21	26	16	20	14	17	9	12
60			40	48	27	33	24	30	18	23	16	19	11	14
70			45	55	31	37	27	34	21	26	18	22	12	16
80					34	42	31	38	23	29	20	24	14	18
90					38	46	34	41	26	31	22	27	15	19
100					41	50	36	45	28	34	24	29	16	21
110							39	49	30	37	26	31	18	23
120							42	52	32	40	27	34	19	24
130									34	42	29	36	20	26
140									37	45	31	38	21	27
150									39	47	33	40	23	29
160									41	50	35	42	24	31
170											36	44	25	32
180											38	47	26	34
190											40	49	27	35
200											41	51	29	37
210													30	38
220													31	40
230													32	41
240													33	42
250													34	44
260													35	45
270													36	47
280													37	48
290													39	49
300													40	51
310														
320														
330														
340														

Power dissipation values

Frontside free, upper side not free

Temperature rise [Kelvin]

DISSIPATION	ARIA 32 300x200x170		ARIA 43 400x300x170		ARIA 54 500x400x230		ARIA 64 600x400x230		ARIA 75 700x500x270		ARIA 86 800x600x300		ARIA 108 1000x800x300	
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half
10	15	19	11	13	7	9	6	8	5	6	4	5	3	4
20	27	33	19	23	12	15	11	14	8	10	7	8	5	6
30	37	46	26	32	17	21	15	19	11	14	10	12	7	9
40	47	57	33	40	22	26	19	24	14	18	12	15	9	11
50			39	48	26	32	23	28	17	21	14	18	10	14
60			45	56	30	37	27	33	20	24	17	21	12	16
70					34	41	30	37	23	28	19	23	13	18
80					38	46	33	41	25	31	21	26	15	20
90					42	51	37	45	28	34	23	28	16	22
100							40	49	30	37	25	31	18	24
110									32	40	27	33	19	26
120									35	43	29	36	21	27
130									37	45	31	38	22	29
140									39	48	33	41	23	31
150									42	51	35	43	25	33
160											37	45	26	35
170											39	47	27	36
180											41	50	29	38
190													30	40
200													31	41
210													32	43
220													34	45
230													35	46
240													36	48
250													37	49
260													39	51
270														
280														
290														
300														
310														
320														
330														
340														

A
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J/X



Rear against wall (wall mounting)

Temperature rise [Kelvin]

DISSIPATION	PS 220 500x500		PS 230 500x750		PS 320 750x500		PS 330 750x750		PS 340 750x1000		PS 352 750x1250		PS 420 1000x500		PS 430 1000x750		PS 440/442 1000x1000		PS 452 1000x1250		PS 530 1250x750		PS 542/546 1250x1000	
	Watt	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top
10	4	5	4	4	4	5																		
20	8	9	7	7	6	8	5	6	4	5			5	7										
30	11	13																						
40	13	16	11	13	11	14	9	11	7	9	6	7	9	13	7	9	5	7	5	6	5	8		
50	16	19																						
60	19	22	16	18	16	19	12	16	10	12	8	10	12	18	10	13	7	10	6	8	8	11	6	8
70	21	25																						
80	23	28	20	23	20	24	15	20	12	16	10	12	16	22	12	16								
90	26	31																						
100	28	33	24	27	23	29	18	23	15	19	12	14	19	27	14	19	11	14	9	12	11	16	9	13
120	32	38	28	31	27	33	21	27					22	31	17	23								
140	37	44	31	35	31	38	24	31	19	24	15	19	25	35	19	26	15	19	12	16	15	21	12	16
160	41	48	35	39	34	42	27	34					27	39	21	28								
180	45	53	38	43	38	46	29	38	24	30	19	23	30	43	23	31	18	23	15	19	18	25	15	20
200	49	58	42	47	41	51	32	41					33	47	25	34								
220	53	63	45	51	44	55	34	44	28	35	22	27	35	50	27	37	21	27	18	23	21	30	18	24
240			48	55	47	58	37	47					38	54	29	39								
260			52	58	51	62	39	51	32	40	25	31	40	58	31	42	24	31	20	26	24	34	20	27
280							42	54					43	61	33	45								
300							44	57	36	45	28	35	45	65	35	47	27	35	23	29	27	38	23	30
350							50	64	40	51	32	40	51	73	40	53	30	39	26	33	31	43	25	34
400							45	57	36	44			44	59	34	44	34	44	29	37	34	48	28	38
450							49	62	39	48			48	65	37	48	37	48	32	40	38	53	31	42
500									43	53			53	71			40	53	34	44	41	58	34	46
550									46	57							44	57	37	47	45	63	37	49
600									49	61							47	61	40	51	48	67	39	53
650									53	65							50	65	42	54	51	72	42	57
700																			45	57			45	60
750																			48	61			47	63
800																			50	64			50	67

Front, left and upperside free

Temperature rise [Kelvin]

DISSIPATION	PS 220 500x500		PS 230 500x750		PS 320 750x500		PS 330 750x750		PS 340 750x1000		PS 352 750x1250		PS 420 1000x500		PS 430 1000x750		PS 440/442 1000x1000		PS 452 1000x1250		PS 530 1250x750		PS 542/546 1250x1000	
	Watt	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top
10	4	5	4	4	4	5																		
20	8	10	7	8	7	8	5	7	4	5			5	8	4	6								
30	11	13	9	11	9	12																		
40	14	17	12	13	12	15	9	12	7	9	6	7	10	13	7	10	6	7	5	6	6	8	5	6
50	17	20	14	16	14	17																		
60	19	23	16	19	16	20	13	16	10	13	8	10	13	19	10	14	8	10	7	8	8	11	7	9
70	22	26	19	21	19	23																		
80	25	29	21	23	21	25	16	20	13	16	10	13	17	23	13	17	10	13	8	10	10	14	8	11
90	27	32	23	26	23	28																		
100	29	35	25	28	25	30	19	24	16	19	12	15	20	28	16	21	12	15	10	12	12	17	10	13
120	34	40	29	32	29	35	22	28	18	22			23	32	18	24								
140	39	46	32	37	32	40	25	32	20	25	16	20	26	37	20	27	15	20	13	16	16	22	13	17
160	43	51	36	41	36	44	28	35	23	28			29	41	23	30								
180	47	56	40	45	40	49	31	39	25	31	20	24	32	45	25	33	19	24	16	20	20	27	16	21
200	51	61	43	49	43	53	33	42	27	34			35	49	27	36								
220			47	53	47	57	36	46	29	36	23	28	38	53	29	39	22	28	19	23	23	32	19	25
240			50	56	50	62	39	49	32	39			40	57	32	42								
260							41	52	34	42	27	32	43	60	34	45	25	32	21	27	27	37	21	28
280							44	55	36	44			46	64	36	47								
300							46	58	38	47	30	36	48	68	38	50	28	36	24	30	30	41	24	32
350							52	66	43	53	34	41	55	77	43	57	32	41	27	34	34	47	27	36
400							48	59	38	46			48	63	36	46	30	38	30	38	38	52	30	40
450							52	65	41	50			52	69	39	50	33	41	33	41	41	57	33	44
500									45	55					43	55	36	45	45	62	45	62	36	48
550									49	59					46	59	39	49	49	67	49	67	39	52
600									52	63					50	63	42	52	52	72	42	52	42	55
650																			45	56			45	59
700																			47	59			47	63
750																			50	62			50	66

Power dissipation values

A

B

C

D

E

F

G

H

I

J/X



Frontside and upperside free

Temperature rise [Kelvin]

DISSIPATION	PS 220 500x500		PS 230 500x750		PS 320 750x500		PS 330 750x750		PS 340 750x1000		PS 352 750x1250		PS 420 1000x500		PS 430 1000x750		PS 440/442 1000x1000		PS 452 1000x1250		PS 530 1250x750		PS 542/546 1250x1000		
	Watt	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top
10	5	6	4	5	4	5																			
20	9	10	7	8	7	9	5	7	5	5			6	8	5	6									
30	12	14	10	11	10	12																			
40	15	18	12	14	12	15	10	12	8	9	6	7	11	13	8	10	6	7	5	6	7	9	5	6	
50	18	21	15	17	15	18																			
60	21	25	17	19	17	21	13	16	11	13	9	10	15	19	11	14	8	10	7	8	9	12	7	9	
70	23	28	19	22	19	24																			
80	26	31	21	24	22	27	17	20	14	16	11	13	19	23	14	18	11	13	9	11	11	15	9	11	
90	29	34	23	26	24	29																			
100	31	37	26	29	26	32	20	25	17	20	13	15	23	28	17	22	13	16	10	13	14	18	11	14	
120	36	43	30	33	30	37	23	28	19	23			26	33	19	25	15	18							
140	41	49	33	38	34	42	26	32	22	26	17	20	30	37	22	28	17	21	14	16	18	24	14	18	
160	46	54	37	42	38	47	29	36	24	29			33	41	25	31	18	23							
180	50	59	41	46	42	51	32	39	27	32	21	25	36	45	27	35	20	25	17	20	22	29	17	22	
200			45	50	45	56	35	43	29	34			39	49	29	38	22	27							
220			48	54	49	60	38	46	31	37	25	29	42	53	32	41	24	29	20	24	26	35	20	26	
240			52	58	52	65	41	50	33	40			46	57											
260							43	53	36	42	28	33	49	61	36	46	27	34	22	27	29	40	23	29	
280							46	56	38	45			52	64											
300							48	59	40	48	32	37			41	52	31	38	25	30	33	44	24	33	
350							55	67	45	54	36	42			46	59	35	43	28	34	37	50	26	37	
400									50	60	40	47			51	66	39	48	32	38	42	56	29	41	
450											44	52					42	52	35	42	46	61	32	45	
500											48	56					46	57	38	46	50	67	38	49	
550											52	61					50	62	41	50			42	53	
600																			44	53			45	57	
650																			47	57			47	61	
700																			50	60			50	65	

Frontside free, upperside not free

Temperature rise [Kelvin]

DISSIPATION	PS 220 500x500		PS 230 500x750		PS 320 750x500		PS 330 750x750		PS 340 750x1000		PS 352 750x1250		PS 420 1000x500		PS 430 1000x750		PS 440/442 1000x1000		PS 452 1000x1250		PS 530 1250x750		PS 542/546 1250x1000		
	Watt	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top
10	6	7	4	5	4	5							4	5											
20	10	12	8	9	8	9	6	8	5	6	4	5	7	8	5	7						4	6		
30	14	16	11	12	11	13							9	11											
40	17	20	13	15	13	16	11	13	9	11	7	9	12	14	9	12	7	9	5	7	7	10	5	7	
50	20	24	16	18	16	20							14	17											
60	24	28	19	21	18	23	15	18	12	15	10	13	16	20	12	16	10	12	8	9	10	14	7	10	
70	27	32	21	24	21	26																			
80	30	35	24	27	23	28	19	23	16	19	13	16	20	25	15	20	12	16	10	12	13	18	9	13	
90	33	39	26	29	25	31																			
100	36	42	28	32	28	34	23	28	19	23	16	19	24	30	18	24	15	19	11	14	15	21	11	15	
120	41	49	33	37	32	39	27	32	22	27	18	22	28	35	21	28					18	24			
140	47	55	37	42	36	45	31	36	24	30	21	25	32	39	24	32	19	25	15	19	20	28	15	20	
160	52	62	41	46	40	50	34	40	27	33	23	28	35	44	27	35					22	31			
180			45	51	44	55	37	44	30	37	25	30	39	48	29	39	23	30	18	23	24	34	18	24	
200			49	55	48	60	41	48	32	40	27	33	42	53	32	42									
220			53	60	52	64	44	52	35	43	30	36	46	57	35	46	28	35	22	27	29	40	21	28	
240							47	56	38	46	32	38	49	61	37	49									
260							50	60	40	49	34	41	52	65	40	52	32	40	25	31	33	45	24	32	
280									43	52	36	43			42	56									
300									45	55	38	46			44	59	35	45	28	34	37	51	27	36	
350									51	63	43	52			50	66	40	51	31	39	42	58	31	41	
400											48	58					45	57	35	43	46	64	34	46	
450											52	64					49	63	38	48	51	70	38	50	
500																	53	68	42	52			41	55	
550																			45	56			44	59	
600																			48	60			48	63	
650																			51	64			51	67	

Stand alone

Temperature rise [Kelvin]

DISSIPATION	PS 220 500x500		PS 230 500x750		PS 320 750x500		PS 330 750x750		PS 340 750x1000		PS 352 750x1250		PS 420 1000x500		PS 430 1000x750		PS 440/442 1000x1000		PS 452 1000x1250		PS 530 1250x750		PS 542/546 1250x1000		
	Watt	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top
20	7	9	6	7	6	8	4	6					5	7											
40	13	15	10	13	10	13	8	10	6	8	5	6	8	12	6	8	5	6	4	5	5	7			
60	17	21	14	17	14	19	11	14					11	16	8	11									
80	22	26	17	22	17	23	13	18	10	13	9	11	14	21	10	14	8	11	7	9	8	12	7	9	
100	26	31	21	26	20	28	16	21					17	25	12	16									
120	30	36	24	30	24	33	19	25	14	18	12	15	20	28	14	19	11	15	9	12	12	17	9	13	
140	34	41	27	34	27	37	21	28					22	32	16	22									
160	38	46	30	38	30	41	24	31	18	23	15	19	25	36	17	24	14	19	12	15	15	21	12	16	
180	42	50	33	42	33	45	26	34					27	39	19	26									
200	46	55	36	46	36	49	28	37	21	27	18	23	29	43	21	29	17	22	14	18	17	25	14	19	
220	50	59	39	50	38	53	30	40					32	46	23	31									
250			43	55	43	59	34	45	25	33	21	27	35	51	25	34	20	27	17	22	21	30	17	23	
300			50	64	49	68	39	52	29	38	25	31	41	59	29	40	23	31	19	25	24	34	19	27	
350																									

Superpolyrel 400

Rear against wall

Temperature rise [Kelvin]

DISSIPATION	SP 230 500x750x400			SP 320 750x500x400			SP 330 750x750x400			SP 340 750x1000x400			SP 430 1000x750x400			SP 440 1000x1000x400			SP 530 1250x750x400			SP 452 1000x1250x400			SP 546 1250x1000x400		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
25	7	8	7	9	5	7	4	5	4	5	3	4	3	5	3	4	3	4	3	4	3	4	3	4	3	4	
50	12	14	12	15	9	12	7	9	7	9	6	7	6	8	5	6	5	6	5	6	5	6	5	6	5	6	
75	16	20	16	21	13	16	10	13	10	13	8	10	8	11	7	8	7	8	7	8	7	8	7	8	7	8	
100	21	25	20	27	16	21	13	16	12	16	10	13	10	14	9	11	8	11	9	11	8	11	8	11	9	11	
125	25	30	24	32	20	25	15	19	15	20	12	16	12	17	10	13	10	13	10	13	10	13	10	13	10	13	
150	29	35	28	37	23	29	18	22	17	23	14	18	14	20	12	15	12	15	12	15	12	15	12	15	12	15	
175	32	40	32	42	26	33	20	25	20	26	16	20	16	22	13	17	13	17	13	17	13	17	13	17	13	17	
200	36	44	35	46	29	36	22	28	22	29	18	23	18	25	15	19	15	19	15	19	15	19	15	19	15	19	
225	40	48	39	51	32	40	25	30	24	31	20	25	20	27	16	21	16	21	16	21	16	21	16	21	16	21	
250	43	53			34	43	27	33	26	34	21	27	22	30	18	22	18	22	18	22	18	22	18	22	18	22	
275					37	47	29	36	28	37	23	29	23	32	19	24	19	24	19	24	19	24	19	24	19	24	
300					40	50	31	38	30	40	25	31	25	34	21	26	20	27	20	27	20	27	20	27	20	27	
325							33	41	32	42	26	34	27	36	22	28	22	29	22	29	22	29	22	29	22	29	
350							35	43	34	45	28	36	28	39	23	29	23	30	23	30	23	30	23	30	23	30	
375							37	46	36	47	30	38	30	41	25	31	24	32	25	31	24	32	25	31	24	32	
400							39	48	38	50	31	40	32	43	26	33	26	34	26	34	26	34	26	34	26	34	
425							41	51			33	42	33	45	27	34	27	35	27	35	27	35	27	35	27	35	
450											34	44	35	47	29	36	28	37	29	36	28	37	29	36	28	37	
475											36	46	36	49	30	37	30	39	30	39	30	39	30	39	30	39	
500											37	47	38	52	31	39	31	40	31	40	31	40	31	40	31	40	
525											39	49			32	41	32	42	32	42	32	42	32	42	32	42	
550											40	51			34	42	33	44	34	43	33	44	34	43	33	44	
575															35	44	34	45	35	44	34	45	35	44	34	45	
600															36	45	36	47	36	45	36	47	36	45	36	47	
625															37	47	37	48	37	47	37	48	37	47	37	48	
650															38	48	38	50	38	48	38	50	38	48	38	50	
675															40	50			40	50			40	50			

Front, left and upperside free

Temperature rise [Kelvin]

DISSIPATION	SP 230 500x750x400			SP 320 750x500x400			SP 330 750x750x400			SP 340 750x1000x400			SP 430 1000x750x400			SP 440 1000x1000x400			SP 530 1250x750x400			SP 452 1000x1250x400			SP 546 1250x1000x400		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
25	7	8	7	9	6	7	5	6	5	6	4	4	4	5	3	4	3	4	3	4	3	4	3	4	3	4	
50	13	15	13	16	10	12	8	10	8	10	6	8	6	8	5	6	5	6	5	6	5	6	5	6	5	6	
75	18	20	18	22	14	17	11	13	11	14	9	11	9	12	7	9	7	9	7	9	7	9	7	9	7	9	
100	23	26	23	28	18	22	14	17	14	18	11	14	11	15	9	11	9	11	9	11	9	11	9	11	9	11	
125	27	31	27	34	21	26	17	20	17	21	13	16	13	18	11	13	11	13	11	13	11	13	11	13	11	13	
150	32	36	32	39	24	30	19	23	19	25	15	19	15	20	12	15	12	15	12	15	12	15	12	15	12	15	
175	36	40	36	44	27	34	22	26	22	28	17	21	17	23	14	17	14	17	14	17	14	17	14	17	14	17	
200	40	45	40	49	31	38	24	29	24	31	19	24	19	26	16	19	16	19	16	19	16	19	16	19	16	19	
225	44	49	44	54	34	42	27	32	27	34	21	26	21	28	17	21	17	21	17	21	17	21	17	21	17	21	
250	48	54			37	45	29	35	29	37	23	28	23	31	19	23	19	23	19	23	19	23	19	23	19	23	
275					40	49	31	38	31	40	25	31	25	33	20	25	20	25	20	25	20	25	20	25	20	25	
300					42	53	33	41	33	43	26	33	27	36	22	27	22	27	22	27	22	27	22	27	22	27	
325							36	43	36	46	28	35	29	38	23	29	23	29	23	29	23	29	23	29	23	29	
350							38	46	38	49	30	37	30	40	25	30	25	30	25	30	25	30	25	30	25	30	
375							40	49	40	52	32	39	32	43	26	32	26	32	26	32	26	32	26	32	26	32	
400							42	51			33	41	34	45	27	34	27	35	27	35	27	35	27	35	27	35	
425											35	44	35	47	29	35	29	37	29	37	29	37	29	37	29	37	
450											36	46	37	50	30	37	30	39	30	39	30	39	30	39	30	39	
475											38	48			32	39	32	41	32	39	32	41	32	39	32	41	
500											40	50			33	40	33	42	33	40	33	42	33	40	33	42	
525															34	42	34	44	34	42	34	44	34	42	34	44	
550															35	44	35	46	35	44	35	46	35	44	35	46	
575															37	45	37	47	37	45	37	47	37	45	37	47	
600															38	47	38	49	38	47	38	49	38	47	38	49	
625															39	48	39	51	39	48	39	51	39	48	39	51	
650															41	50			41	50			41	50			

Frontside free, upper side not free

Temperature rise [Kelvin]

DISSIPATION	SP 230 500x750x400			SP 320 750x500x400			SP 330 750x750x400			SP 340 750x1000x400			SP 430 1000x750x400			SP 440 1000x1000x400			SP 530 1250x750x400			SP 452 1000x1250x400			SP 546 1250x1000x400		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
25	9	10	9	11	7	8	6	7	6	7	4	5	4	5	3	4	3	4	3	4	3	4	3	4	3	4	
50	15	17	15	19	12	15	10	12	10	13	8	10	8	11	6	8	6	8	6	8	6	8	6	8	6	8	
75	21	24	21	26	16	20	14	17	14	18	11	13	11	15	9	11	9	11	9	11	9	11	9	11	9	11	
100	27	30	26	32	21	26	18	21	17	22	13	17	14	19	11	13	11	13	11	13	11	13	11	13	11	13	
125	32	36	31	39	25	31	21	25	21	27	16	20	17	22	13	16	13	16	13	16	13	16	13	16	13	16	
150	37	42	36	45	29	36	24	29	24	31	19	23	19	26	15	19	15	19	15	19	15	19	15	19	15	19	
175	42	47	41	51	33	40	27	33	27	35	21	26	22	29	17	21	17	21	17	21	17	21	17	21	17	21	
200	47	53			36	45	31	37	30	39																	

Frontside and upperside free

Temperature rise [Kelvin]

DISSIPATION	SP 230 500x750x400			SP 320 750x500x400			SP 330 750x750x400			SP 340 750x1000x400			SP 430 1000x750x400			SP 440 1000x1000x400			SP 530 1250x750x400			SP 452 1000x1250x400			SP 546 1250x1000x400		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top		
25	8	9	8	10	6	7	5	6	5	6	4	5	4	5	3	4	3	4	3	4	3	4	3	4			
50	14	16	14	17	11	13	9	10	9	11	7	8	7	9	5	6	6	7	6	7	6	7	6	7			
75	19	21	19	24	15	18	12	14	12	15	9	11	10	12	8	9	8	10	8	10	8	10	8	10			
100	24	27	24	30	19	22	15	18	15	19	11	14	12	16	10	11	10	12	10	11	10	12	10	12			
125	29	32	29	36	22	27	18	21	18	23	14	16	15	19	11	14	12	16	11	14	12	16	11	14			
150	33	38	34	42	26	31	21	24	21	26	16	19	17	22	13	16	13	16	13	16	13	16	13	16			
175	38	42	38	47	29	35	23	27	24	30	18	22	19	25	15	18	15	18	15	18	15	18	15	18			
200	42	47	43	53	33	39	26	31	27	33	20	24	21	28	17	20	17	20	17	20	17	20	17	21			
225	46	52			36	43	29	34	29	37	22	26	23	30	18	22	19	23	18	22	19	23	18	23			
250					39	47	31	37	32	40	24	29	25	33	20	24	20	25	20	24	20	25	20	25			
275					40	50	34	40	35	43	26	31	27	36	22	26	22	27	22	26	22	27	22	27			
300							36	42	37	46	27	33	29	38	23	27	23	29	23	27	23	29	23	29			
325							39	45	39	49	29	35	31	41	25	29	25	31	25	29	25	31	25	31			
350							41	48	42	52	31	38	33	43	26	31	27	33	26	31	27	33	26	33			
375							43	51			33	40	35	46	28	33	28	35	28	33	28	35	28	35			
400											35	42	37	48	29	35	30	37	29	35	30	37	29	37			
425											36	44	39	50	31	36	31	39	31	36	31	39	31	39			
450											38	46			32	38	32	41	32	38	32	41	32	41			
475											40	48			33	40	35	42	33	40	35	42	35	42			
500											41	50			35	41	35	44	35	41	35	44	35	44			
525														36	43	37	46	36	43	37	46	37	46				
550														38	45	38	48	38	45	38	48	38	48				
575														39	46	40	49	39	46	40	49	40	49				
600														40	48	41	51	40	48	41	51	41	51				
625														42	49			42	49			42	49				
650														43	51			43	51			43	51				
675																											

Stand-alone

Temperature rise [Kelvin]

DISSIPATION	SP 230 500x750x400			SP 320 750x500x400			SP 330 750x750x400			SP 340 750x1000x400			SP 430 1000x750x400			SP 440 1000x1000x400			SP 530 1250x750x400			SP 452 1000x1250x400			SP 546 1250x1000x400		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top		
20	5	7	5	7	5	7	4	5	4	5	4	5	4	5	4	5	4	5	4	5	4	5	4	5	4	5	
30	7	9	7	10	5	7	5	7	4	6	4	6	4	6	4	6	4	6	4	6	4	6	4	6	4	6	
40	9	11	9	12	7	9	6	8	5	7	4	6	4	6	4	6	4	6	4	6	4	6	4	6	4	6	
50	11	14	11	14	8	11	7	9	6	8	5	7	5	7	4	6	4	6	4	6	4	6	4	6	4	6	
60	13	16	12	17	10	12	8	10	7	10	6	8	6	8	5	6	5	6	5	6	5	6	5	6	5	6	
70	14	18	14	19	11	14	9	12	8	11	7	9	7	9	6	7	6	7	6	7	6	7	6	7	6	7	
80	16	20	16	21	12	16	10	13	9	12	7	10	8	10	6	8	6	8	6	8	6	8	6	8	6	8	
90	18	22	17	23	13	17	11	14	10	13	8	11	8	12	7	9	7	9	7	9	7	9	7	9	7	9	
100	19	24	19	25	14	19	13	16	11	15	9	11	9	13	8	10	8	10	8	10	8	10	8	10	8	10	
120	22	28	22	29	17	22	14	18	13	17	10	13	10	15	9	11	9	11	9	11	9	11	9	11	9	11	
140	25	31	25	33	19	24	16	20	14	19	12	15	12	16	10	13	10	13	10	13	10	13	10	13	10	13	
160	28	35	27	37	21	27	18	22	16	21	13	17	13	18	11	14	11	14	11	14	11	14	11	14	11	14	
180	31	38	30	40	23	30	19	24	18	24	14	18	14	20	12	16	12	16	12	16	12	16	12	16	12	16	
200	33	42	33	44	25	33	21	26	19	26	15	20	16	22	13	17	13	17	13	17	13	17	13	17	13	17	
220	36	45	35	48	27	35	22	28	21	28	17	22	17	24	14	18	14	18	14	18	14	18	14	18	14	18	
240	39	49	38	51	29	38	24	30	22	30	18	23	18	25	15	20	15	20	15	20	15	20	15	20	15	20	
260	41	52	40	54	31	40	25	32	24	32	19	25	19	27	16	21	16	21	16	21	16	21	16	21	16	21	
280	44	55	43	57	33	43	27	34	25	34	20	26	21	29	17	22	17	22	17	22	17	22	17	22	17	22	
300	46	57	45	60	35	45	30	38	26	35	21	28	22	30	18	23	18	23	18	23	18	23	18	23	18	23	
350	52		51		39	51	34	43	30	40	24	31	25	34	21	27	21	27	21	27	21	27	21	27	21	27	
400					44	57	37	47	33	45	27	35	27	38	23	30	23	30	23	30	23	30	23	30	23	30	
450					48		40	51	37	49	29	39	30	42	25	33	25	33	25	33	25	33	25	33	25	33	
500					52		43	55	43		35	45	36	49	30	38	30	38	30	38	30	38	30	38	30	38	
600							46		46		37	49	38	53	32	41	32	41	32	41	32	41	32	41	32	41	
650							50		49		40	52	41	56	34	44	34	44	34	44	34	44	34	44	34	44	
700							53		52		42	55	43		36	46	36	46	36	46	36	46	36	46	36	46	
750							56		55		44		46		38	49	38	49	38	49	38	49	38	49	38	49	
800											47		48		40	52	40	52	40	52	40	52	40	52	40	52	
850											49		50		42	54	42	54	42	54	42	54	42	54	42	54	
900											51		53		44	57	44	57	44	57	44	57	44	57	44	57	
950											54		55		46		46		46		46		46		46		46
1000											56				48		48		48		48		48		48		48
1100															52		52		52		52		52		52		52
1200															56		56		56		56		56		56		56

Power dissipation values

A

B

C

D

E

F

G

H

I

J/X



Rear against wall (wall mounting)

Temperature rise [Kelvin]

DISSIPATION	VMS 32 320x220x180			VMS 32 320x220x255			VMS 33 320x320x180			VMS 33 320x320x255			VMS 43 440x320x180		VMS 43 440x320x255		VMS 63 640x320x180		VMS 63 640x320x255		VMS 64 640x440x180		VMS 64 640x440x255	
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	
10	11	14	9	11	9	11	8	9	8	9	7	8	6	7	5	6	5	6	5	6	4	5		
20	20	24	16	20	16	19	14	16	13	16	11	14	10	13	9	11	9	11	8	10	8	10		
30	27	33	22	27	22	26	19	23	18	23	16	19	14	18	12	15	12	15	11	13	11	13		
40	34	42	28	34	28	33	24	28	23	28	20	24	18	23	16	19	15	19	14	17	14	17		
50	41	50	33	41	33	39	29	34	28	34	24	29	22	27	19	23	18	22	16	20	16	20		
60	47		38	47	38	45	33	39	32	39	28	34	25	31	22	27	21	26	19	23	19	23		
70	54		43	53	43	51	38	45	36	45	31	38	28	36	24	30	24	29	21	26	21	26		
80			48		48		42	50	41	50	35	43	32	40	27	34	27	33	24	29	24	29		
90			53		53		46	55	45	55	38	47	35	43	30	37	29	36	26	32	26	32		
100							50		49		42	51	38	47	33	41	32	39	28	35	28	35		
120								56		56	48	55	44	55	38	47	37	45	33	40	33	40		
140											55			50	43	53	42	51	37	46	37	46		
160													55		47			41	51	41	51	41	51	
180															52			51		45	45	56		
200															57			56		49				
220																				53				

Front, right and upperside free

Temperature rise [Kelvin]

DISSIPATION	VMS 32 320x220x180			VMS 32 320x220x255			VMS 33 320x320x180			VMS 33 320x320x255			VMS 43 440x320x180		VMS 43 440x320x255		VMS 63 640x320x180		VMS 63 640x320x255		VMS 64 640x440x180		VMS 64 640x440x255	
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	
10	12	15	10	12	9	11	8	10	8	10	7	9	6	8	6	7	5	6	5	6	5	6		
20	21	26	17	21	16	20	15	17	14	17	12	15	11	14	10	12	9	11	8	10	8	10		
30	29	35	24	30	23	27	20	24	20	24	17	21	15	19	13	17	13	16	11	14	11	14		
40	36	45	30	37	29	34	25	30	25	30	21	26	19	24	17	21	16	20	14	18	14	18		
50	43	53	36	45	34	41	30	36	29	36	26	31	23	29	20	25	19	24	17	21	17	21		
60	50		42	52	40	47	35	42	34	42	30	36	27	34	23	29	22	27	20	24	20	24		
70	57		48		45	54	40	47	39	47	34	41	31	38	26	33	25	31	22	28	22	28		
80			53		50		44	53	43	53	37	46	34	42	29	37	28	35	25	31	25	31		
90					55		49		47		41	50	37	47	32	40	31	38	27	34	27	34		
100							53		51		45	55	41	51	35	44	34	41	30	37	30	37		
120											52			47	41	51	39	48	35	43	35	43		
140													53		46		44	54	39	48	39	48		
160															51		49		44	54	44	54		
180															57		54				48			
200																					52			
220																					56			

Frontside and upperside free

Temperature rise [Kelvin]

DISSIPATION	VMS 32 320x220x180			VMS 32 320x220x255			VMS 33 320x320x180			VMS 33 320x320x255			VMS 43 440x320x180		VMS 43 440x320x255		VMS 63 640x320x180		VMS 63 640x320x255		VMS 64 640x440x180		VMS 64 640x440x255	
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	
10	13	16	11	14	10	12	9	10	9	10	8	9	7	9	6	8	6	7	5	6	5	6		
20	22	27	20	24	18	22	15	18	15	18	13	16	12	15	11	13	10	12	9	11	8	10		
30	31	37	27	33	25	30	21	25	21	25	18	22	17	21	15	18	14	17	12	15	11	14		
40	38	47	34	42	32	38	27	32	26	32	23	28	21	26	18	23	17	21	15	19	14	18		
50	46	57	41	50	38	45	32	38	31	38	28	34	25	31	22	28	20	25	18	22	17	21		
60	53		47		44	52	37	44	36	44	32	39	29	36	26	32	24	29	21	26	21	26		
70			53		50		42	50	41	50	36	44	33	41	29	36	27	33	24	29	24	29		
80					55		47	56	46	56	40	49	37	46	32	40	30	37	27	33	27	33		
90							52		50		44	54	40	50	35	44	33	40	29	36	29	36		
100							56		54		48		44	55	39	48	36	44	32	39	32	39		
120											56			51	45	56	41	51	37	45	37	45		
140															51		47		42	51	42	51		
160															56		52		46		46			
180																					51			

Frontside free, upperside not free

Temperature rise [Kelvin]

DISSIPATION	VMS 32 320x220x180			VMS 32 320x220x255			VMS 33 320x320x180			VMS 33 320x320x255			VMS 43 440x320x180		VMS 43 440x320x255		VMS 63 640x320x180		VMS 63 640x320x255		VMS 64 640x440x180		VMS 64 640x440x255	
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	
10	14	17	12	15	12	14	10	12	9	11	8	10	7	9	7	8	6	7	5	7	5	7		
20	24	30	22	27	20	24	18	22	16	20	15	18	13	16	12	14	11	13	10	12	10	12		
30	33	41	30	37	28	34	25	30	22	27	20	25	18	22	16	20	15	18	13	16	13	16		
40	42	52	38	46	36	42	32	38	28	34	26	31	22	28	20	25	18	23	17	21	17	21		
50	50		45	55	43	51	38	45	34	41	31	38	27	33	24	30	22	27	20	25	20	25		
60			52		49		44	52	39	48	35	43	31	39	28	35	26	31	23	28	23	28		
70					56		50		44	54	40	49	35	44	32	39	29	36	26	32	26	32		
80							55		49		45	55	39	49	35	44	32	40	29	36	29	36		
90									54		49		43	54	39	48	35	43	32	39	32	39		
100											54				42	52	39	47	35	43	35	43		
120															49		45	55	40	50	40	50		
140															55		50		46		46			
160																	56		51		51			
180																					56			

Power dissipation values

A

B

C

D

E

F

G

H

I

J/X



Enclosures depth = 210 mm

Rear against wall (wall mounting)

Temperature rise [Kelvin]

DISSIPATION	650 x 300		650 x 550		800 x 300		800 x 550		950 x 550	
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half
25	12	15	9	11	10	13	8	10	7	10
50	21	26	16	19	18	23	14	17	12	18
75	29	36	22	26	25	31	20	24	17	25
100	36	45	27	33	31	39	25	30	21	32
125	43	54	32	39	38	47	30	36	25	38
150	50	>55	38	45	44	55	34	42	29	44
175			43	51	49	>55	39	48	33	49
200			47	>55	55	>55	43	53	37	>55
225			52	>55			48	>55	41	>55
250							52	>55	44	>55
275									48	>55
300									51	>55
325									55	>55

Front, left and top free

Temperature rise [Kelvin]

DISSIPATION	650 x 300		650 x 550		800 x 300		800 x 550		950 x 550	
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half
25	13	16	9	11	11	14	8	10	8	10
50	22	28	16	19	19	24	15	18	14	17
75	31	39	22	27	27	34	20	25	19	23
100	39	49	28	34	34	43	26	31	24	29
125	47	>55	34	41	41	51	31	38	28	35
150	54	>55	39	47	47	>55	35	44	33	41
175			44	53	53	>55	40	49	37	46
200			49	>55			45	55	41	51
225			54	>55			49	>55	45	>55
250							54	>55	49	>55
275									53	>55

Front and top free

Temperature rise [Kelvin]

DISSIPATION	650 x 300		650 x 550		800 x 300		800 x 550		950 x 550	
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half
25	14	16	10	12	12	15	9	11	8	10
50	24	31	17	20	21	27	15	19	14	17
75	34	42	23	28	29	37	21	26	20	24
100	53	53	29	36	37	46	27	33	25	31
125	51	>55	35	43	44	>55	32	39	29	37
150			41	49	51	>55	37	45	34	42
175			46	>55			42	51	39	48
200			51	>55			46	>55	43	53
225							51	>55	47	>55
250									51	>55

Power dissipation values

A

B

C

D

E

F

G

H

I

J/X



Modula 630K

Enclosures depth = 220 mm
width = 600 mm

Rear against wall (wall mounting)

Temperature rise [Kelvin]

DISSIPATION	600x545		600x695		600x845		600x995		600x1145		600x1295		600x1460		600x1610		600x1760		600x1910	
	Watt	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	
50	16	19	14	17	13	16	11	16	10	15	9	14								
75	22	26	20	24	18	22	15	23	14	21	13	20								
100	28	33	25	30	23	28	20	29	18	27	16	25	14	22	12	18	10	16	9	14
125	34	39	30	36	27	33	23	34	21	32	19	30								
150	39	46	35	42	32	39	27	40	25	37	22	34	19	31	16	25	14	23	12	20
200	49	>50	44	>50	40	49	34	50	31	47	28	43	25	39	20	32	18	28	16	25
250			>50	>50	48	>50	41	>50	37	>50	34	>50	29	46	24	38	22	34	19	29
300							47	>50	43	>50	39	>50	34	>50	28	44	25	39	22	34
350											44	>50	38	>50	32	>50	28	45	25	39
400													43	>50	36	>50	32	50	27	43
450															39	>50	35	>50	30	47
500															43	>50	38	>50	33	>50
550																	41	>50	35	>50
600																			38	>50
650																			40	>50
700																				
750																				
800																				

Front, left and top free

Temperature rise [Kelvin]

DISSIPATION	600x545		600x695		600x845		600x995		600x1145		600x1295		600x1460		600x1610		600x1760		600x1910	
	Watt	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	
50	17	20	15	18	14	17	12	17	11	16	10	15								
75	23	27	21	25	19	23	16	23	15	22	14	21								
100	29	34	26	31	24	29	20	29	19	28	17	26	15	23	13	20	11	17	10	15
125	35	41	31	38	29	35	24	35	22	33	20	31								
150	40	47	36	44	33	41	28	41	26	38	24	36	21	33	18	27	15	24	14	21
200	>50	>50	45	>50	42	>50	36	>50	33	48	30	45	27	41	22	35	19	30	17	26
250			54	>50	50	>50	43	>50	39	>50	36	>50	32	49	27	41	23	35	20	31
300									45	>50	41	>50	37	>50	31	48	27	41	24	36
350													42	>50	35	>50	30	46	27	41
400															39	>50	34	>50	30	46
450																	37	>50	33	50
500																	40	>50	36	>50
550																			38	>50
600																			41	>50
650																			44	>50
700																				
750																				
800																				

Front and top free

Temperature rise [Kelvin]

DISSIPATION	600x545		600x695		600x845		600x995		600x1145		600x1295		600x1460		600x1610		600x1760		600x1910	
	Watt	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	
50	17	20	15	19	14	17	13	16	11	16	10	15								
75	24	28	21	26	20	24	18	22	16	23	14	21								
100	30	36	27	32	25	30	23	28	20	28	18	27	16	25	14	22	12	18	11	16
125	36	43	32	39	30	36	27	33	24	34	22	32								
150	42	49	37	45	34	42	31	39	27	39	25	37	23	34	20	30	17	25	15	23
200	>50	>50	47	>50	43	>50	39	49	34	50	32	47	29	43	25	38	21	32	19	29
250					>50	>50	47	>50	41	>50	38	>50	34	>50	30	40	25	38	23	34
300							>50	>50	48	>50	44	>50	40	>50	35	>50	29	44	26	40
350															39	>50	33	50	30	45
400															44	>50	37	>50	33	50
450																	41	>50	37	>50
500																			40	>50
550																				
600																				
650																				
700																				
750																				
800																				

Power dissipation values

A

B

C

D

E

F

G

H

I

J/X



Enclosures depth = 220 mm
width = 900 mm

Rear against wall (wall mounting)

Temperature rise [Kelvin]

DISSIPATION	900x545		900x695		900x845		900x995		900x1145		900x1295		900x1460		900x1610		900x1760		900x1910	
	Watt	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top
50	13	15	11	14	10	13	8	12	7	10	6	9	6	9	5	8	5	8	5	7
75	19	21	15	20	14	18	12	16	10	14	9	13	8	12	7	11	7	10	6	10
100	24	26	19	25	17	23	15	20	13	18	11	16	10	15	9	14	8	13	8	12
125	28	31	23	30	20	27	18	24	15	21	13	19	12	18	11	17	10	16	9	15
150	33	36	27	35	24	32	21	28	17	25	15	22	14	21	13	19	12	18	11	17
200	41	46	34	44	30	40	26	36	22	31	19	28	18	26	16	24	15	23	14	22
250	49	>50	41	>50	36	48	31	43	26	37	23	34	21	32	19	29	18	27	17	26
300			47	>50	41	>50	36	49	31	43	27	39	25	37	22	34	21	32	19	30
350					47	>50	41	>50	35	49	30	44	28	41	25	38	23	36	22	34
400									38	>50	34	49	31	46	28	43	26	40	24	38
450									42	>50	37	>50	34	51	31	47	28	44	27	42
500											40	>50	37	>50	34	51	31	48	29	45
550											44	>50	40	>50	36	55	33	>50	31	49
600													43	>50	39	59	36	>50	33	>50
650																	38	>50	36	>50
700																				
750																				
800																				

Front, left and top free

Temperature rise [Kelvin]

DISSIPATION	900x545		900x695		900x845		900x995		900x1145		900x1295		900x1460		900x1610		900x1760		900x1910	
	Watt	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top
50	14	15	11	15	10	13	9	12	8	11	7	10	6	9	6	8	5	8	5	7
75	19	21	16	20	14	19	12	17	11	15	9	13	8	12	8	12	7	11	7	10
100	24	27	20	26	18	23	16	21	13	19	12	17	11	16	10	15	9	14	8	13
125	29	32	24	31	21	28	19	25	16	22	14	20	13	19	12	17	11	16	10	15
150	33	37	28	35	25	32	22	29	19	26	16	23	15	22	13	20	12	19	11	18
200	42	47	35	45	31	41	27	37	24	33	20	29	19	27	17	25	16	24	14	22
250	50	>50	42	>50	37	49	33	44	28	39	24	35	22	33	20	30	19	28	17	27
300			48	>50	43	>50	38	>50	33	45	28	40	26	38	24	35	22	33	20	31
350					49	>50	43	>50	37	>50	32	46	29	43	27	40	24	37	23	35
400									41	>50	36	>50	33	48	30	44	27	41	25	39
450									45	>50	39	>50	36	>50	33	49	30	45	28	43
500											42	>50	39	>50	35	>50	33	49	30	46
550											46	>50	42	>50	38	>50	35	>50	33	50
600													45	>50	41	>50	38	>50	35	>50
650																	40	>50	37	>50
700																				
750																				
800																				

Front and top free

Temperature rise [Kelvin]

DISSIPATION	900x545		900x695		900x845		900x995		900x1145		900x1295		900x1460		900x1610		900x1760		900x1910	
	Watt	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top	Half Top
50	14	16	12	15	11	13	9	12	8	11	7	10	6	9	6	9	5	8	5	8
75	20	22	16	20	15	19	13	17	11	15	10	14	9	12	8	12	7	11	7	10
100	25	28	21	25	18	24	16	22	14	19	12	17	11	16	10	15	9	14	9	13
125	30	33	25	31	22	28	20	26	17	23	15	21	13	19	12	18	11	17	10	16
150	34	38	29	35	26	33	23	30	20	27	17	24	15	22	14	21	13	19	12	18
200	43	48	36	45	32	41	29	38	25	34	22	30	19	27	18	26	16	24	15	23
250	>50	>50	43	>50	39	49	34	45	30	41	26	36	23	33	21	31	20	29	18	27
300			50	>50	45	>50	40	>50	35	47	30	42	27	38	25	36	23	34	21	32
350					>50	>50	45	>50	39	>50	34	47	30	43	28	41	26	38	24	36
400									44	>50	38	>50	34	48	31	46	29	43	27	40
450									48	>50	42	>50	37	>50	34	50	32	47	29	44
500											45	>50	40	>50	38	>50	34	>50	32	48
550											49	>50	43	>50	40	>50	37	>50	34	>50
600													47	>50	43	>50	40	>50	37	>50
650																	42	>50	39	>50
700																				
750																				
800																				

Power dissipation values

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J/X



Rear against wall Temperature rise [Kelvin]

DISSIPATION	200x200x155		200x300x155		200x400x155		250x200x155		250x250x155		250x400x155		300x250x155		300x250x210	
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half
10	16	18	13	15	11	12	14	17	13	15	10	11	12	14	10	12
20	27	32	22	25	20	22	24	29	22	26	17	19	20	25	17	21
30	38	45	31	35	27	30	33	41	31	36	24	26	28	34	24	29
40	47	56	39	44	34	38	42	51	38	46	30	33	36	43	30	37
50	57	67	47	53	41	45	50	61	46	55	35	40	43	51	36	44
60	66	78	54	61	48	52	58	71	53	63	41	46	49	60	42	51
70	74		61	69	54	59	66		60	72	46	52	56	67	48	58
80			68	77	60	66	73		67	80	52	58	62	75	53	64
90			75		66	73			74		57	64	68		58	70
100					72	79					62	69	74		63	77
120											72					73
140																
160																
180																
200																
220																
240																

Rear against wall Temperature rise [Kelvin]

DISSIPATION	400x500x300		400x600x210		500x300x210		500x300x260		500x400x155		500x400x210		500x400x260		500x400x300	
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half
10	5	6	5	6	7	8	6	8	7	8	6	7	5	6	5	6
20	9	10	9	10	12	15	11	13	12	14	10	12	9	11	9	11
30	12	14	13	14	16	20	15	18	16	19	14	17	13	16	12	15
40	15	18	16	18	21	26	19	23	20	24	18	22	16	20	15	18
50	18	21	19	22	25	31	22	28	24	29	21	26	19	24	18	22
60	21	25	22	25	29	36	26	32	28	34	25	30	22	27	21	26
70	24	28	25	29	33	40	29	36	32	38	28	34	25	31	24	29
80	27	31	28	32	36	45	33	41	35	43	31	38	28	34	27	32
90	30	34	31	35	40	49	36	45	39	47	34	42	31	38	29	35
100	32	37	34	38	43	54	39	48	42	51	37	45	34	41	32	39
120	37	43	39	44	50	62	45	56	49	59	43	53	39	48	37	45
140	42	49	44	50	57	70	51	64	55	67	49	59	44	54	42	51
160	47	54	49	56	63	78	57	71	61	75	54	66	49	60	46	56
180	52	60	54	61	70		63	78	68		60	73	54	66	51	62
200	56	65	59	67	76		68		74		65	79	59	72	55	67
220	61	70	64	72			74		79		70		64	78	60	73
240	65	75	68	77			79				75		69		64	78
260	69		73										73		68	
280	74		77										78		73	
300	78														77	
350																

Rear against wall Temperature rise [Kelvin]

DISSIPATION	600x500x260		600x500x300		600x600x210		600x600x300		600x600x400		600x800x300		700x500x210		700x500x260			
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	
10	4	5	4	5	4	5		5		5	7	5	7	7	5	7	5	
20	8	9	7	9	7	9	7	9	7	8	5	7	5	7	7	8	7	8
30	10	13	10	12	10	12	9	11	7	10	7	9	10	12	9	11		11
40	13	16	13	15	13	15	12	14	9	12	9	11	12	15	12	14		14
50	16	19	15	18	16	18	14	17	11	14	11	14	14	18	14	17		17
60	18	22	18	21	18	21	16	20	13	17	12	16	17	21	16	20		20
70	21	25	20	24	20	24	19	22	15	19	14	18	19	23	18	22		22
80	23	28	22	27	23	27	21	25	16	21	15	20	21	26	20	25		25
90	25	31	24	29	25	30	23	27	18	23	17	22	23	28	22	27		27
100	28	33	26	32	27	32	25	29	20	25	18	24	25	31	24	29		29
120	32	39	31	37	31	37	29	34	23	29	21	28	29	36	28	34		34
140	36	44	35	42	36	42	32	39	26	33	24	31	33	41	32	39		39
160	40	49	39	47	40	47	36	43	28	37	27	35	37	45	35	43		43
180	44	54	42	51	44	52	40	47	31	40	30	38	41	50	39	47		47
200	48	58	46	56	47	56	43	51	34	44	32	42	44	54	42	51		51
220	52	63	50	60	51	61	47	56	37	47	35	45	48	58	45	56		56
240	56	68	53	65	55	65	50	60	39	51	37	48	51	63	49	60		60
260	59	72	57	69	59	70	53	64	42	54	40	51	54	67	52	64		64
280	63	76	60	73	62	74	57	67	45	58	42	55	58	71	55	67		67
300	67		64	77	66	78	60	71	47	61	45	58	61	75	58	71		71
350	76		72		74		68		53	69	51	65	69		66			
400							76		59	77	56	73	77		73			
450									65		62	80						
500									71		67							
550									77		73							
600											78							
650																		
700																		
750																		
800																		

Power dissipation values

A

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J/X



Rear against wall

Temperature rise [Kelvin]

300x300x155		300x300x210		300x500x155		350x250x155		400x300x155		400x300x210		400x400x210		400x500x210		DISSIPATION
Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Watt
11	13	9	11	8	9	11	13	9	11	8	10	7	8	6	7	10
19	22	16	19	14	15	19	23	15	19	14	17	12	14	10	12	20
26	31	22	26	19	21	26	32	21	26	19	23	16	19	14	17	30
32	39	28	33	24	27	33	40	27	33	24	29	21	24	18	21	40
39	46	33	39	29	32	39	48	32	39	28	35	25	29	22	25	50
45	53	38	45	33	37	45	55	37	45	33	40	29	34	25	29	60
51	60	43	51	38	42	51	63	42	51	37	46	32	38	28	33	70
57	67	48	57	42	47	57	70	47	57	42	51	36	43	32	36	80
62	74	53	63	46	51	62	77	51	63	46	56	40	47	35	40	90
68		57	68	50	56	68		56	68	50	61	43	51	38	44	100
79		67	79	58	65	79		64	79	58	70	50	59	44	51	120
		75		66	73			73		65	80	56	67	50	57	140
				73						73		63	75	55	64	160
										80		69		61	70	180
												75		66	76	200
														71		220
														76		240

Rear against wall

Temperature rise [Kelvin]

500x500x210		500x500x300		600x400x155		600x400x210		600x400x260		600x400x300		600x500x155		600x500x210		DISSIPATION
Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Watt
5	6	4	5	6	7	5	6	5	6	5	6	5	6	5	6	10
9	11	8	9	10	13	9	11	8	10	8	10	9	11	8	10	20
12	15	11	13	14	17	13	15	12	14	11	13	12	15	11	14	30
16	19	14	16	18	22	16	20	15	18	14	17	16	19	14	17	40
19	22	16	19	21	26	19	23	17	21	16	20	19	23	17	20	50
22	26	19	23	25	30	22	27	20	25	19	23	22	26	20	24	60
25	29	22	26	28	34	25	31	23	28	22	27	24	30	22	27	70
27	33	24	28	31	38	28	34	25	31	24	30	27	33	25	30	80
30	36	26	31	34	42	30	37	28	34	26	32	30	36	27	33	90
33	39	29	34	37	46	33	41	30	37	29	35	33	39	30	36	100
38	45	33	39	43	53	38	47	35	43	33	41	38	46	34	41	120
43	51	38	45	49	60	43	53	40	49	38	46	43	52	39	47	140
48	57	42	50	54	67	48	59	44	55	42	52	47	57	43	52	160
53	63	46	55	60	73	53	65	49	60	46	57	52	63	47	57	180
57	68	50	59	65	80	58	71	53	65	50	62	57	69	52	62	200
62	74	54	64	70		62	77	57	70	54	67	61	74	56	67	220
66	79	58	69	75		67		61	76	58	71	66	80	60	72	240
71		62	73			71		65		62	76	70		64	77	260
75		66	78			76		69		66		74		68		280
80		69						73		69		79		71		300
		78								79						350

Rear against wall

Temperature rise [Kelvin]

800x400x300		800x600x210		800x600x260		800x600x300		800x600x400		800x800x210		800x800x300		800x800x400		DISSIPATION
Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Watt
	5		5		5		4		4		4		4		4	10
7	9	7	8	6	8	6	7	5	6	5	7	5	6	4	5	20
10	12	9	11	8	11	8	10	7	9	7	10	7	8	6	7	30
12	15	11	14	10	14	10	13	9	11	9	13	8	11	7	9	40
14	18	14	17	12	17	12	15	10	13	11	15	10	13	9	11	50
17	21	16	19	14	19	13	18	12	15	13	17	11	15	10	12	60
19	24	18	22	16	22	15	20	13	18	15	20	13	17	11	14	70
21	26	20	24	18	24	17	23	15	19	16	22	14	19	12	16	80
23	29	22	27	19	27	18	25	16	21	18	24	16	21	14	17	90
25	31	24	29	21	29	20	27	18	23	19	26	17	22	15	19	100
29	36	28	34	24	33	23	31	21	27	22	30	20	26	17	22	120
33	41	31	38	28	38	26	35	23	31	25	34	23	29	19	25	140
37	46	35	43	31	42	29	39	26	34	28	38	25	33	22	27	160
40	50	38	47	34	46	32	43	29	37	31	42	28	36	24	30	180
44	55	42	51	37	50	35	47	31	41	34	46	30	39	26	33	200
47	59	45	55	40	54	38	51	34	44	36	49	32	42	28	35	220
51	63	48	59	43	58	41	55	36	47	39	53	35	45	30	38	240
54	68	52	63	45	62	43	58	39	50	42	57	37	48	32	41	260
58	72	55	67	48	66	46	62	41	53	44	60	39	51	34	43	280
61	76	58	71	51	70	49	65	43	56	47	63	42	54	36	45	300
69		65	80	58	79	55	74	49	64	53	72	47	61	41	51	350
77		73		64		61		55	71	59	80	52	68	45	57	400
				71		67		60	78	65		58	75	50	63	450
				77		73		65		71		63		54	69	500
						79		71		76		68		58	74	550
												73		63	79	600
												77		67		650
														71		700
														75		750
														79		800

Continued on J.96

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J/X



Rear against wall Temperature rise [Kelvin]

DISSIPATION	800x1200x300		800x1200x400		1000x600x260		1000x600x300		1000x800x260		1000x800x300		1000x800x400		1000x1000x300		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
10																	
20			4				4										
30	4		6				7										
40	6		7	4	5	7	10	7	9	6	8	5	7	4	6	4	6
50	7		8	5	6	9	13	8	12	7	10	7	9	6	7	5	7
60	8		10	6	7	11	15	10	14	9	12	8	11	7	9	7	9
70	9		11	7	9	12	18	12	16	10	14	9	13	8	10	8	10
80	10		12	8	10	14	20	13	18	11	16	11	14	9	12	9	11
90	11		14	9	11	15	22	15	20	13	17	12	16	10	13	9	12
100	12		15	10	12	17	24	16	23	14	19	13	18	11	14	10	14
120	14		17	11	13	18	26	17	25	15	21	14	19	12	15	11	15
140	15		19	12	15	21	31	20	28	18	24	16	22	14	18	13	17
160	17		22	14	17	24	35	23	32	20	27	19	25	15	20	15	20
180	19		24	15	19	27	39	26	36	22	30	21	28	17	22	17	22
200	21		26	17	21	30	42	28	39	24	34	23	31	19	25	18	24
220	22		28	18	23	32	46	31	43	27	36	25	33	21	27	20	26
240	24		30	20	25	35	50	33	46	29	39	27	36	22	29	21	28
260	25		32	21	26	37	53	35	50	31	42	29	39	24	31	23	30
280	27		34	22	28	40	57	38	53	33	45	31	41	25	33	24	32
300	29		36	23	30	42	60	40	56	35	48	32	44	27	35	26	34
350	32		41	24	31	45	64	42	59	37	51	34	46	28	37	27	36
400	36		45	25	33	51	72	48	67	42	57	39	52	32	42	31	41
450	40		50	26	34	56		53	75	46	64	43	58	36	47	35	45
500	43		54	27	35	62		59		51	70	47	64	39	51	38	50
550	47		58	28	36	67		64		56	76	52	69	43	56	41	54
600	50		63	29	37	73		69		60		56	75	46	60	45	59
650	53		67	30	38	78		74		64		60		50	65	48	63
700	57		71	31	39			79		69		64		53	69	51	67
750	60		75	32	40					73		68		56	73	54	71
800	63		79	33	41					77		71		59	77	57	75
850	66			34	42							75		63		60	79
900	69			35	43									66		63	
950	72			36	44									69		66	
1000	75			37	45									72		69	
1100				38	46									75		72	
1200				39	47											78	
1300																	
1400																	
1500																	
1600																	
1700																	
1800																	
1900																	

Front, left and top free Temperature rise [Kelvin]

DISSIPATION	200x200x155		200x300x155		200x400x155		250x200x155		250x250x155		250x400x155		300x250x155		300x250x210		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
10	17		20	13	15	12	13	15	18	13	16	10	12	12	15	11	13
20	29		34	23	26	20	22	26	31	23	27	18	20	21	26	19	23
30	40		48	32	36	28	31	35	43	32	38	25	28	30	36	26	32
40	51		60	41	46	36	39	45	54	40	48	32	36	37	45	33	40
50	61		72	49	55	43	47	54	65	48	57	38	43	44	54	40	48
60	70			56	64	49	54	62	75	56	66	44	49	52	62	46	56
70	79			64	72	56	61	70		63	75	50	56	58	71	52	63
80				71		62	68	78		70		55	62	65	79	58	70
90				78		68	75			77		61	68	71	64	64	77
100						74						66	74	78		70	
120												77					
140																	
160																	
180																	
200																	
220																	

Front, left and top free Temperature rise [Kelvin]

DISSIPATION	400x500x300		400x600x210		500x300x210		500x300x260		500x400x155		500x400x210		500x400x260		500x400x300		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
10	5		6	6	6	7	9	7	8	7	8	6	8	6	7	5	6
20	9		11	10	11	13	16	12	14	12	15	11	13	10	12	9	11
30	13		15	13	15	18	22	16	20	17	20	15	18	14	17	13	16
40	16		19	17	19	22	28	20	25	21	26	19	23	17	21	16	20
50	19		22	20	23	27	33	24	30	25	31	23	28	21	25	19	24
60	23		26	23	26	31	38	28	35	29	36	26	32	24	29	23	27
70	26		29	26	30	35	43	32	39	33	40	30	36	27	33	26	31
80	28		33	29	33	39	48	35	44	37	45	33	40	30	37	28	35
90	31		36	32	37	43	53	39	48	41	49	36	44	33	40	31	38
100	34		39	35	40	47	58	42	53	44	54	40	48	36	44	34	41
120	39		45	41	46	54	67	49	61	51	62	46	56	42	51	39	48
140	45		51	46	52	61	76	56	69	58	71	52	63	48	58	45	54
160	50		57	51	58	68		62	77	65	79	58	70	53	64	50	60
180	55		63	56	64	75		68		71		64	77	58	71	55	66
200	59		69	61	69			74		77		69		63	77	59	72
220	64		74	66	75							75		68		64	78
240	69		79	71										73		69	
260	73			76										78		73	
280	78															78	
300																	

Power dissipation values

A

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J/X



Rear against wall

Temperature rise [Kelvin]



1200x600x300		1200x800x300		1200x800x400		1200x1000x300		1200x1200x300		1200x1200x400		1400x1000x300		DISSIPATION
Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Watt
4	6		4											10
6	8		6		5		5						5	20
7	10	4	8		7	5	7		5		5	4	6	30
9	12	6	9	5	8	6	8	4	6	4	5	5	7	40
10	14	7	10	6	9	7	9	5	7	5	6	6	8	50
11	16	8	11	7	10	8	10	6	8	5	7	6	9	60
12	18	9	12	8	11	9	11	6	8	6	8	7	10	70
14	20	10	13	9	12	10	12	7	9	7	9	8	11	80
15	22	11	14	10	13	11	13	7	10	7	10	9	12	90
17	25	12	15	11	14	12	14	8	11	8	11	10	14	100
20	29	13	16	12	15	13	16	9	12	8	11	10	14	120
22	32	14	17	13	16	14	17	10	13	10	13	11	16	140
24	35	15	18	14	17	15	18	11	14	11	14	13	18	160
26	38	16	19	15	18	16	19	12	15	12	15	14	19	180
28	41	17	20	16	19	17	20	13	16	13	16	15	21	200
30	44	18	21	17	20	18	21	14	17	14	17	16	23	220
32	47	19	22	18	21	19	22	15	18	15	18	17	24	240
34	50	20	23	19	22	20	23	16	19	16	19	18	26	260
36	53	21	24	20	23	21	24	17	20	17	20	19	27	280
41	60	22	25	21	24	22	25	18	21	18	21	20	29	300
46	66	23	26	22	25	23	26	19	22	19	22	21	31	350
50	73	24	27	23	26	24	27	20	23	20	23	22	33	400
55	79	25	28	24	27	25	28	21	24	21	24	23	34	450
59		26	29	25	28	26	29	22	25	22	25	24	35	500
63		27	30	26	29	27	30	23	26	23	26	25	36	550
67		28	31	27	30	28	31	24	27	24	27	26	37	600
71		29	32	28	31	29	32	25	28	25	28	27	38	650
76		30	33	29	32	30	33	26	29	26	29	28	39	700
80		31	34	30	33	31	34	27	30	27	30	29	40	750
		32	35	31	34	32	35	28	31	28	31	30	41	800
		33	36	32	35	33	36	29	32	29	32	31	42	850
		34	37	33	36	34	37	30	33	30	33	32	43	900
		35	38	34	37	35	38	31	34	31	34	33	44	950
		36	39	35	38	36	39	32	35	32	35	34	45	1000
		37	40	36	39	37	40	33	36	33	36	35	46	1100
		38	41	37	40	38	41	34	37	34	37	36	47	1200
		39	42	38	41	39	42	35	38	35	38	37	48	1300
		40	43	39	42	40	43	36	39	36	39	38	49	1400
		41	44	40	43	41	44	37	40	37	40	39	50	1500
		42	45	41	44	42	45	38	41	38	41	40	51	1600
		43	46	42	45	43	46	39	42	39	42	41	52	1700
		44	47	43	46	44	47	40	43	40	43	42	53	1800
		45	48	44	47	45	48	41	44	41	44	43	54	1900
		46	49	45	48	46	49	42	45	42	45	44	55	
		47	50	46	49	47	50	43	46	43	46	45	56	
		48	51	47	50	48	51	44	47	44	47	46	57	
		49	52	48	51	49	52	45	48	45	48	47	58	
		50	53	49	52	50	53	46	49	46	49	48	59	
		51	54	50	53	51	54	47	50	47	50	49	60	
		52	55	51	54	52	55	48	51	48	51	50	61	
		53	56	52	55	53	56	49	52	49	52	51	62	
		54	57	53	56	54	57	50	53	50	53	52	63	
		55	58	54	57	55	58	51	54	51	54	53	64	
		56	59	55	58	56	59	52	55	52	55	54	65	
		57	60	56	59	57	60	53	56	53	56	55	66	
		58	61	57	60	58	61	54	57	54	57	56	67	
		59	62	58	61	59	62	55	58	55	58	57	68	
		60	63	59	62	60	63	56	59	56	59	58	69	
		61	64	60	63	61	64	57	60	57	60	59	70	
		62	65	61	64	62	65	58	61	58	61	60	71	
		63	66	62	65	63	66	59	62	59	62	61	72	
		64	67	63	66	64	67	60	63	60	63	62	73	
		65	68	64	67	65	68	61	64	61	64	63	74	
		66	69	65	68	66	69	62	65	62	65	64	75	
		67	70	66	69	67	70	63	66	63	66	65	76	
		68	71	67	70	68	71	64	67	64	67	66	77	
		69	72	68	71	69	72	65	68	65	68	67	78	
		70	73	69	72	70	73	66	69	66	69	68	79	
		71	74	70	73	71	74	67	70	67	70	69	80	
		72	75	71	74	72	75	68	71	68	71	70	81	
		73	76	72	75	73	76	69	72	69	72	71	82	
		74	77	73	76	74	77	70	73	70	73	72	83	
		75	78	74	77	75	78	71	74	71	74	73	84	
		76	79	75	78	76	79	72	75	72	75	74	85	
		77	80	76	79	77	80	73	76	73	76	75	86	
		78	81	77	80	78	81	74	77	74	77	76	87	
		79	82	78	81	79	82	75	78	75	78	77	88	
		80	83	79	82	80	83	76	79	76	79	78	89	
		81	84	80	83	81	84	77	80	77	80	79	90	
		82	85	81	84	82	85	78	81	78	81	80	91	
		83	86	82	85	83	86	79	82	79	82	81	92	
		84	87	83	86	84	87	80	83	80	83	82	93	
		85	88	84	87	85	88	81	84	81	84	83	94	
		86	89	85	88	86	89	82	85	82	85	84	95	
		87	90	86	89	87	90	83	86	83	86	85	96	
		88	91	87	90	88	91	84	87	84	87	86	97	
		89	92	88	91	89	92	85	88	85	88	87	98	
		90	93	89	92	90	93	86	89	86	89	88	99	
		91	94	90	93	91	94	87	90	87	90	89	100	
		92	95	91	94	92	95	88	91	88	91	90	101	
		93	96	92	95	93	96	89	92	89	92	91	102	
		94	97	93	96	94	97	90	93	90	93	92	103	
		95	98	94	97	95	98	91	94	91	94	93	104	
		96	99	95	98	96	99	92	95	92	95	94	105	
		97	100	96	99	97	100	93	96	93	96	95	106	
		98	101	97	100	98	101	94	97	94	97	96	107	
		99	102	98	101	99	102	95	98	95	98	97	108	
		100	103	99	102	100	103	96	99	96	99	98	109	
		101	104	100	103	101	104	97	100	97	100	99	110	
		102	105	101	104	102	105	98	101	98	101	100	111	
		103	106	102	105	103	106	99	102	99	102	101	112	
		104	107	103	106	104	107	100	103	100	103	102	113	
		105	108	104	107	105	108	101	104	101	104	103	114	
		106	109	105	108	106	109	102	105	102	105	104	115	
		107	110	106	109	107	110	103	106	103	106	105	116	
		108	111	107	110	108	111	104	107	104	107	106	117	
		109	112	108	111	109	112	105	108	105	108	107	118	
		110	113	109	112	110	113	106	109	106	109	108	119	
		111	114	110	113	111	114	107	110	107	110	109	120	
		112	115	111	114	112	115	108	111	108	111	110	121	
		113	116	112	115	113	116	109	112	109	112	111	122	
		114	117	113	116	114	117	110	113	110	113	112	123	
		115	118	114	117	115	118	111	114	111	114	113	124	
		116	119	115	118	116	1							

Front, left and top free

Temperature rise [Kelvin]

DISSIPATION	600x500x260		600x500x300		600x600x210		600x600x300		600x600x400		600x800x300		700x500x210		700x500x260		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
10	5	5	4	5	4	5	4	5	4	4	4	4	5	4	5	4	5
20	8	10	8	9	8	9	7	8	6	8	6	7	8	10	7	9	9
30	11	13	10	13	11	13	10	12	9	11	8	10	11	13	10	12	12
40	14	17	13	16	13	16	12	15	11	13	10	12	14	17	13	16	16
50	17	20	16	19	16	19	15	17	13	16	12	15	16	20	15	19	19
60	19	23	18	22	19	22	17	20	16	19	14	17	19	23	18	22	22
70	22	26	21	25	21	25	19	23	18	21	16	20	21	26	20	25	25
80	24	29	23	28	23	28	21	26	20	23	18	22	24	29	22	27	27
90	27	32	25	31	26	31	24	28	22	26	19	24	26	32	25	30	30
100	29	35	28	33	28	33	26	31	24	28	21	26	28	35	27	33	33
120	33	40	32	39	33	39	30	35	27	32	24	30	33	40	31	38	38
140	38	46	36	44	37	44	34	40	31	37	28	34	37	46	35	43	43
160	42	51	40	49	41	49	37	45	34	41	31	38	41	51	39	48	48
180	46	56	44	54	45	54	41	49	38	45	34	42	46	56	43	53	53
200	50	61	48	58	49	58	45	53	41	49	37	46	50	61	47	57	57
220	54	66	52	63	53	63	48	58	44	53	40	49	53	66	51	62	62
240	58	71	56	68	57	67	52	62	48	57	43	53	57	70	54	67	67
260	62	75	59	72	61	72	55	66	51	60	46	56	61	75	58	71	71
280	66	80	63	76	64	76	59	70	54	64	48	60	65	80	61	75	75
300	70		67		68		62	74	57	68	51	63	69		65	80	
350	79		76		77		70		65	77	58	71	78		73		
400							78		72		64	79					
450									79		71						
500											77						
550																	
600																	
650																	
700																	

Front, left and top free

Temperature rise [Kelvin]

DISSIPATION	800x1200x300		800x1200x400		1000x600x260		1000x600x300		1000x800x260		1000x800x300		1000x800x400		1000x1000x300		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
10						4			4								
20			4			5	8	5	7	4	6	4	6	5	5	5	4
30	5	6	4	5	7	10	7	10	6	8	6	8	5	6	5	6	6
40	6	7	5	6	9	13	9	12	8	10	7	10	6	8	6	7	7
50	7	9	6	8	11	16	11	15	9	13	9	12	7	10	7	9	9
60	8	10	7	9	13	18	12	17	11	14	10	13	9	11	8	10	10
70	9	12	8	10	15	21	14	19	12	16	11	15	10	12	9	12	12
80	10	13	9	11	16	23	16	21	14	18	13	17	11	14	10	13	13
90	12	14	10	12	18	25	17	24	15	20	14	19	12	15	11	14	14
100	13	15	11	13	19	27	19	26	16	22	15	20	13	17	12	16	16
120	15	18	13	15	23	32	22	30	19	25	18	23	15	19	14	18	18
140	16	20	14	17	25	36	24	34	21	29	20	26	17	22	16	20	20
160	18	22	16	19	28	40	27	37	24	32	22	29	19	24	18	23	23
180	20	25	18	21	31	44	30	41	26	35	24	32	21	27	19	25	25
200	22	27	19	23	34	48	32	45	28	38	27	35	23	29	21	27	27
220	24	29	21	25	37	52	35	48	31	41	29	38	24	31	23	29	29
240	25	31	22	27	39	55	38	52	33	44	31	41	26	34	24	31	31
260	27	33	24	29	42	59	40	55	35	47	33	44	28	36	26	34	34
280	29	35	25	30	45	63	43	59	37	50	35	46	30	38	28	36	36
300	30	37	27	32	47	66	45	62	39	53	37	49	31	40	29	38	38
350	34	42	30	36	53	75	51	70	44	60	42	55	36	45	33	43	43
400	38	47	33	40	59		57	78	49	67	46	62	40	51	37	47	47
450	42	52	37	44	65		62		54	73	51	68	44	56	41	52	52
500	46	56	40	48	71		68		59	80	56	74	47	61	44	57	57
550	49	61	43	52	77		73		64		60	79	51	65	48	61	61
600	53	65	46	56			79		68		64		55	70	51	66	66
650	56	69	49	60					73		69		58	75	55	70	70
700	60	74	52	63					77		73		62	79	58	74	74
750	63	78	55	67							77		66		61	79	79
800	67		58	70									69		64		
850	70		61	74									73		68		
900	73		64	77									76		71		
950	77		67										79		74		
1000	80		70												77		
1100			75														
1200																	
1300																	
1400																	

Power dissipation values

A

B

C

D

E

F

G

H

I

J/X



Front, left and top free

Temperature rise [Kelvin]

800x400x300		800x600x210		800x600x260		800x600x300		800x600x400		800x800x210		800x800x300		800x800x400		DISSIPATION
Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Watt
4	5		5		5		4		5		4		5		4	10
7	9	7	8	6	8	6	8	5	7	5	7	5	6	4	5	20
10	13	9	11	9	11	8	11	7	9	8	10	7	9	6	8	30
13	16	12	14	11	14	10	13	9	12	10	13	9	11	8	10	40
15	19	14	17	13	16	12	16	11	14	11	15	10	13	9	11	50
18	22	16	20	16	19	14	19	13	16	13	18	12	15	11	13	60
20	25	19	23	18	22	16	21	14	18	15	20	14	17	12	15	70
22	28	21	25	20	24	18	23	16	20	17	22	15	19	13	17	80
24	30	23	28	22	26	19	26	18	22	18	25	17	21	15	18	90
26	33	25	30	23	29	21	28	19	24	20	27	18	23	16	20	100
31	38	29	35	27	33	24	32	22	28	23	31	21	27	19	23	120
35	43	32	40	31	38	28	37	25	32	26	35	24	30	21	26	140
39	48	36	44	34	42	31	41	28	36	29	39	26	34	23	29	160
42	53	40	49	38	46	34	45	31	39	32	43	29	37	26	32	180
46	58	43	53	41	50	37	49	33	43	35	47	32	40	28	35	200
50	62	47	57	44	54	40	53	36	46	38	50	34	43	30	38	220
53	67	50	61	47	58	43	56	39	49	40	54	37	47	32	40	240
57	71	53	65	51	62	46	60	41	53	43	57	39	50	35	43	260
61	75	57	69	54	66	48	64	44	56	46	61	41	53	37	46	280
64	80	60	73	57	69	51	68	46	59	48	65	44	56	39	48	300
		68		64	79	58	77	52	67	55	73	49	63	44	54	350
		75		72		64		58	74	61		55	70	49	61	400
				79		71		64		67		61	77	54	67	450
						77		70		73		66		58	73	500
								75		79		71		63	78	550
												76		68		600
														72		650
														77		700

Front, left and top free

Temperature rise [Kelvin]

1200x600x300		1200x800x300		1200x800x400		1200x1000x300		1200x1200x300		1200x1200x400		1400x1000x300		DISSIPATION
Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Watt
4	6		5											10
6	9	5	7	4	5	5	5	5	5	4	5	4	5	20
8	11	6	8	5	7	5	7	5	7	5	6	4	6	30
9	13	7	10	6	8	6	8	6	8	5	7	5	7	40
11	15	8	11	7	10	7	9	7	9	6	8	6	8	50
12	17	9	13	8	11	8	10	8	10	7	9	7	9	60
14	19	10	14	9	12	9	12	9	12	8	10	8	10	70
15	21	12	16	10	13	10	13	10	13	9	11	8	11	80
16	23	13	17	11	14	11	14	11	14	9	12	9	12	90
19	27	15	20	13	17	12	16	12	16	11	14	11	14	100
21	31	16	22	14	19	14	18	14	18	12	16	12	16	120
24	34	18	25	16	21	15	20	15	20	14	17	13	18	140
26	37	20	28	18	23	17	22	17	22	15	19	15	20	160
28	41	22	30	19	25	18	24	18	24	16	21	16	22	180
31	44	24	32	21	27	20	26	20	26	18	23	17	24	200
33	47	25	35	22	29	21	28	21	28	19	24	18	25	220
35	50	27	37	24	31	23	30	23	30	20	26	20	27	240
37	53	29	39	25	33	24	32	24	32	21	27	21	29	260
39	56	30	41	27	35	25	34	25	34	23	29	22	30	280
45	64	34	47	30	40	29	38	29	38	26	33	25	34	300
50	71	38	52	33	44	32	43	32	43	28	36	28	38	350
55	78	42	57	37	48	35	47	35	47	31	40	31	42	400
59		46	63	40	53	38	51	38	51	34	44	33	46	450
64		49	68	43	57	41	55	41	55	37	47	36	49	500
69		53	72	46	61	44	59	44	59	39	51	39	53	550
73		56	77	49	65	47	63	47	63	42	54	41	56	600
78		60		52	69	50	67	50	67	45	57	44	60	650
		63		55	73	53	71	53	71	47	60	46	63	700
		67		58	77	56	74	56	74	50	64	49	67	750
		70		61		59	78	59	78	52	67	51	70	800
		73		64		62		62		55	70	54	73	850
		77		67		64		64		57	73	56	76	900
		80		70		67		67		59	76	58	80	950
				75		72		72		64		63		1000
						78		78		69		67		1100
										73		72		1200
										78		76		1300
														1400

Continued on J.100

Power dissipation values

A

B

C

D

E

F

G

H

I

J/X



Front and top free Temperature rise [Kelvin]

DISSIPATION	200x200x155		200x300x155		200x400x155		250x200x155		250x250x155		250x400x155		300x250x155		300x250x210	
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half
10	18	21	14	16	12	13	16	19	14	17	11	12	13	16	12	14
20	31	37	24	27	21	23	28	34	24	29	19	21	22	27	20	25
30	43	51	34	38	29	32	38	46	34	40	27	30	31	38	28	34
40	54	65	43	48	37	40	48	59	42	50	33	37	39	47	36	43
50	65	77	51	57	44	48	58	70	51	60	40	45	47	57	43	52
60	75		59	67	51	56	67		59	70	46	52	54	66	49	60
70			67	75	58	63	75		67	79	52	59	61	74	56	68
80			74		64	70			74		58	65	68		62	75
90					70	77					64	72	75		68	
100					77						70	78			74	
120																
140																
160																
180																
200																
220																

Front and top free Temperature rise [Kelvin]

DISSIPATION	400x500x300		400x600x210		500x300x210		500x300x260		500x400x155		500x400x210		500x400x260		500x400x300	
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half
10	6	7	6	7	8	10	7	9	7	9	7	8	6	7	6	7
20	10	11	10	11	14	17	13	16	13	16	12	14	11	13	10	12
30	14	16	14	16	19	24	18	22	18	22	16	20	15	18	14	17
40	17	20	18	20	24	30	22	27	22	27	20	25	19	23	18	21
50	21	24	21	24	29	36	26	33	27	32	24	29	22	27	21	26
60	24	28	24	28	33	41	31	38	31	38	28	34	26	31	24	30
70	27	31	28	31	38	47	35	43	35	43	32	39	29	36	28	34
80	30	35	31	35	42	52	39	48	39	47	35	43	33	40	31	37
90	33	38	34	38	46	57	42	53	43	52	39	47	36	44	34	41
100	36	42	37	42	50	62	46	57	47	57	42	51	39	47	37	45
120	42	48	43	48	58	72	54	66	54	66	49	60	45	55	43	52
140	47	55	48	54	66		61	75	61	74	56	67	51	62	48	59
160	53	61	54	61	73		67		68		62	75	57	69	54	65
180	58	67	59	67			74		75		68		63	76	59	72
200	63	73	64	73							74		68		64	78
220	68	79	69	78							80		74		69	
240	73		74										79		74	
260	78		79												79	
280																
300																

Front and top free Temperature rise [Kelvin]

DISSIPATION	600x500x260		600x500x300		600x600x210		600x600x300		600x600x400		600x800x300		700x500x210		700x500x260	
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half
10	5	6	5	6	5	5	4	5	5	5	4	5	5	6	4	5
20	8	10	8	10	8	10	7	9	7	9	6	7	8	10	8	9
30	12	14	11	13	11	13	10	12	9	11	9	10	11	14	11	13
40	15	18	14	17	14	17	13	15	12	14	11	13	14	17	13	17
50	17	21	17	20	17	20	15	18	14	17	13	15	17	21	16	20
60	20	24	19	23	19	23	18	21	16	20	16	18	20	24	19	23
70	23	28	22	26	22	26	20	24	19	22	18	20	22	27	21	26
80	25	31	24	29	24	29	22	27	21	25	20	22	25	30	24	29
90	28	34	27	32	27	32	25	29	23	27	21	25	27	34	26	32
100	30	37	29	35	29	35	27	32	25	29	23	27	30	36	28	34
120	35	43	34	41	34	40	31	37	29	34	27	31	34	42	33	40
140	40	48	38	46	38	45	35	42	32	39	31	35	39	48	37	45
160	44	54	42	51	43	51	39	46	36	43	34	39	43	53	41	50
180	49	59	47	57	47	56	43	51	40	47	38	43	48	59	45	55
200	53	64	51	62	51	61	47	55	43	51	41	47	52	64	49	60
220	57	70	55	66	55	65	50	60	47	56	44	50	56	69	53	65
240	62	75	59	71	59	70	54	64	50	60	47	54	60	74	57	70
260	66	80	63	76	63	75	58	68	53	64	50	58	64	79	61	74
280	70		67		67	79	61	73	57	67	54	61	68		64	79
300	74		70		71		65	77	60	71	57	65	72		68	
350																
400			80		80		73		68		64		73		77	
450									76		71		78			
500																
550																
600																
650																

Power dissipation values

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J/X



Front and top free

Temperature rise [Kelvin]



300x300x155		300x300x210		300x500x155		350x250x155		400x300x155		400x300x210		400x400x210		400x500x210		DISSIPATION
Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Watt
12	14	11	13	8	9	12	15	10	12	9	11	8	9	7	8	10
21	24	18	22	15	16	21	26	17	21	15	19	13	16	11	13	20
29	34	26	30	20	23	29	36	24	29	21	26	18	22	16	18	30
36	43	32	38	26	29	37	45	30	36	27	33	23	27	20	23	40
43	51	39	46	31	34	44	54	36	44	32	39	28	33	24	28	50
50	59	45	53	36	40	51	62	41	51	37	45	32	38	28	32	60
56	67	50	60	40	45	57	70	47	57	42	51	36	43	31	36	70
63	75	56	67	45	50	64	78	52	64	47	57	40	48	35	40	80
69		62	73	49	55	70		57	70	52	63	44	53	38	44	90
75		67	80	54	60	76		62	76	56	69	48	57	42	48	100
				62	69			72		65	79	56	66	48	56	120
				70	78					74		63	75	55	63	140
				78								70		61	70	160
												77		67	77	180
														73		200
														79		220

Front and top free

Temperature rise [Kelvin]



500x500x210		500x500x300		600x400x155		600x400x210		600x400x260		600x400x300		600x500x155		600x500x210		DISSIPATION
Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Watt
6	7	5	6	7	8	6	7	5	7	5	6	6	7	5	6	10
10	12	9	10	11	14	10	13	10	12	9	11	10	12	9	11	20
14	16	12	14	16	19	14	18	13	16	13	15	14	16	12	15	30
17	21	15	18	20	24	18	22	17	21	16	19	17	21	16	19	40
21	25	18	22	24	29	22	27	20	25	19	23	20	25	19	23	50
24	29	21	25	28	34	25	31	23	28	22	27	24	29	22	26	60
27	33	24	29	31	38	28	35	26	32	25	30	27	32	24	30	70
31	36	27	32	35	43	32	39	29	36	28	34	30	36	27	33	80
34	40	29	35	38	47	35	43	32	39	30	37	33	40	30	36	90
37	43	32	38	41	51	38	46	35	43	33	41	36	43	33	39	100
42	50	37	44	48	59	44	54	40	50	38	47	41	50	38	46	120
48	57	42	50	54	67	49	61	46	56	43	53	47	56	43	52	140
53	63	47	55	61	75	55	68	51	63	48	59	52	63	48	58	160
59	70	51	61	67		60	74	56	69	53	65	57	69	52	63	180
64	76	56	66	72		66		61	75	58	71	62	75	57	69	200
69		60	72	78		71		66		62	76	67		61	74	220
74		65	77			76		70		67		72		66	80	240
69		69						75		71		77		70		260
79		73						80		75		80		75		280
		77								80				79		300

Front and top free

Temperature rise [Kelvin]



800x400x300		800x600x210		800x600x260		800x600x300		800x600x400		800x800x210		800x800x300		800x800x400		DISSIPATION
Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Watt
4	6	4	5		5		5		5		4		4		4	10
8	10	7	9	7	8	7	8	6	7	6	7	5	6	5	6	20
11	13	10	12	9	11	9	11	8	10	8	10	7	9	7	8	30
13	17	12	15	12	14	11	14	10	12	10	13	9	11	8	10	40
16	20	15	18	14	17	14	17	12	14	12	15	11	13	10	12	50
19	23	17	21	16	20	16	19	14	17	14	18	13	16	11	14	60
21	26	19	23	18	23	18	22	15	19	16	20	14	18	13	15	70
23	29	21	26	21	25	20	24	17	21	17	22	16	20	14	17	80
26	32	24	29	23	28	22	27	19	23	19	25	17	22	16	19	90
28	35	26	31	25	30	24	29	20	25	21	27	19	23	17	21	100
33	41	30	36	28	35	27	34	24	29	24	31	22	27	20	24	120
37	46	34	41	32	39	31	38	27	33	27	35	25	31	23	27	140
41	51	37	46	36	44	35	42	30	37	30	39	28	34	25	30	160
45	56	41	50	39	48	38	47	33	40	33	43	30	38	28	33	180
49	61	45	55	43	52	41	51	36	44	36	47	33	41	30	36	200
53	66	48	59	46	57	45	55	38	47	39	50	36	44	32	39	220
57	71	52	63	50	61	48	59	41	51	42	54	38	47	35	42	240
61	76	55	67	53	65	51	63	44	54	45	58	41	50	37	45	260
64		59	72	56	69	54	66	47	58	47	61	43	54	39	47	280
68		62	76	59	73	57	70	49	61	50	65	46	57	42	50	300
77		70		67		65	79	56	69	57	73	52	64	47	57	350
				78		72		62	77	63		58	71	52	63	400
						80		68		69		64	78	58	69	450
								74		76		69		63	75	500
												75		68		550
														73		600
														77		650

Continued on J.102

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J/X



Front and top free Temperature rise [Kelvin]

DISSIPATION	800x1200x300		800x1200x400		1000x600x260		1000x600x300		1000x800x260		1000x800x300		1000x800x400		1000x1000x300		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
10						4		4									
20			4			6	8	5	7	5	6	4	6	5	5		4
30	5	6	6	4	5	8	11	8	10	7	9	6	8	5	7	5	6
40	6	8	8	5	6	10	13	9	13	8	11	8	10	7	9	6	8
50	8	9	9	7	8	12	16	11	15	10	13	9	12	8	10	7	9
60	9	11	11	8	9	14	19	13	18	11	15	11	14	10	12	9	11
70	10	12	12	9	10	15	21	15	20	13	17	12	16	11	13	10	12
80	11	13	13	10	11	17	23	17	22	14	19	14	18	12	15	11	14
90	12	15	15	11	12	19	26	18	24	16	21	15	19	13	16	12	15
100	13	16	16	11	13	21	28	20	26	17	22	16	21	14	18	13	16
120	15	18	18	13	16	24	32	23	31	20	26	19	24	17	21	15	19
140	17	21	21	15	18	27	37	26	35	22	29	21	27	19	23	17	21
160	19	23	23	17	20	30	41	29	39	25	33	24	31	21	26	19	24
180	21	25	25	18	21	33	45	32	42	27	36	26	34	23	29	21	26
200	23	28	28	20	23	36	49	34	46	30	39	29	37	25	31	23	28
220	25	30	30	22	25	39	53	37	50	32	42	31	40	27	34	25	31
240	27	32	32	23	27	41	57	40	53	35	45	33	42	29	36	26	33
260	29	34	34	25	29	44	60	43	57	37	48	35	45	31	38	28	35
280	30	36	36	26	31	47	64	45	60	39	51	37	48	33	41	30	37
300	32	38	38	28	32	50	68	48	64	41	54	40	51	35	43	32	39
350	36	43	43	31	37	56	77	54	72	47	61	45	57	39	49	36	45
400	41	48	48	35	41	63		60		52	68	50	64	44	54	40	50
450	45	53	53	38	45	69		66		57	75	55	70	48	60	44	54
500	49	58	58	42	49	75		72		62		60	76	53	65	48	59
550	52	62	62	45	53			78		67		64		57	70	51	64
600	56	67	67	48	57					72		69		61	75	55	69
650	60	71	71	52	60					77		74		65		59	73
700	64	76	76	55	64							78		69		62	78
750	67			58	68									73		66	
800	71			61	71									77		69	
850	74			64	75											73	
900	78			67	78											76	
950				70												80	
1000				73													
1100				79													
1200																	
1300																	
1400																	
1500																	
1600																	

Stand alone Temperature rise [Kelvin]

DISSIPATION	200x200x155		200x300x155		200x400x155		250x200x155		250x250x155		250x400x155		300x250x155		300x250x210	
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half
10	14	17	12	14	10	11	13	16	12	14	9	10	11	13	9	11
20	25	30	21	24	18	19	23	27	21	25	15	17	19	23	16	19
30	35	42	29	33	25	27	31	38	29	34	21	24	26	31	22	27
40	44	52	37	42	31	34	39	48	36	43	27	30	33	40	28	34
50	53	63	44	50	37	41	47	57	43	51	32	36	39	47	33	40
60	61	73	51	58	43	47	55	66	50	59	37	42	45	55	39	47
70	69		58	65	49	53	62	75	57	67	42	48	51	62	44	53
80	77		64	72	54	59	69		63	75	47	53	57	69	49	59
90			71	80	60	65	76		69		52	58	63	76	53	65
100			77		65	71			75		57	63	68		58	70
120					75						65	73	79		67	
140											74				76	
160																
180																
200																
220																
240																
260																
280																

Stand alone Temperature rise [Kelvin]

DISSIPATION	400x500x300		400x600x210		500x300x210		500x300x260		500x400x155		500x400x210		500x400x260		500x400x300	
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half
10	5	5	5	5	6	8	6	7	6	7	5	6	5	6	5	6
20	8	9	8	9	11	13	10	12	10	12	9	11	9	10	8	10
30	11	13	12	13	15	19	14	17	14	17	13	16	12	14	11	14
40	14	16	15	16	19	23	17	21	18	22	16	20	15	18	14	17
50	17	20	17	20	23	28	21	26	21	26	19	23	18	22	17	20
60	20	23	20	23	26	32	24	30	25	30	22	27	21	25	19	24
70	22	26	23	26	30	37	27	33	28	34	25	31	23	28	22	27
80	25	29	25	29	33	41	30	37	31	38	28	34	26	32	25	30
90	27	32	28	32	36	45	33	41	34	42	31	38	29	35	27	33
100	30	34	30	34	40	49	36	45	37	45	34	41	31	38	29	36
120	34	40	35	40	46	57	42	52	43	53	39	47	36	44	34	41
140	39	45	40	45	52	64	47	58	49	59	44	54	41	49	39	47
160	43	50	44	50	58	71	53	65	54	66	49	60	45	55	43	52
180	48	55	49	55	63	78	58	71	60	73	54	66	50	61	47	57
200	52	60	53	60	69		63	78	65	79	59	71	54	66	51	62
220	56	65	57	65	75		68		70		63	77	58	71	55	67
240	60	69	62	69	80		73		75		68		63	76	59	72
260	64	74	66	74			78				72		67		63	77
280	68	79	70	79							77		71		67	
300	72		74										75		71	
350																

Power dissipation values

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J/X



Front and top free

Temperature rise [Kelvin]



1200x600x300		1200x800x300		1200x800x400		1200x1000x300		1200x1200x300		1200x1200x400		1400x1000x300		DISSIPATION
Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Watt
5	7		5		4									10
7	9		7		6		4		5		5		5	20
8	12	5	7	5	6	4	5	5	6	4	5	5	6	30
10	14	7	9	6	7	5	7	5	8	5	6	6	7	40
12	16	8	10	7	8	6	8	6	9	6	7	7	8	50
13	18	9	12	8	10	7	9	6	10	7	8	8	9	60
15	20	10	14	9	11	8	11	7	11	8	9	9	10	70
16	22	11	15	10	13	9	12	8	12	9	10	10	11	80
18	24	12	16	11	14	10	13	9	13	10	11	11	12	90
20	28	13	17	11	14	10	13	9	14	11	12	12	13	100
23	32	14	18	12	15	11	14	10	15	12	13	13	14	120
26	36	15	19	13	16	12	15	11	16	13	14	14	15	140
28	39	16	21	14	18	13	16	12	17	14	15	15	16	160
31	43	17	22	14	18	13	16	12	18	15	16	16	17	180
33	46	18	24	15	20	14	18	13	19	16	17	17	18	200
36	49	19	25	15	20	14	18	13	20	17	18	18	19	220
38	53	20	27	16	22	15	21	14	21	18	19	19	20	240
40	56	21	28	16	22	15	21	14	22	19	20	20	21	260
43	59	22	29	17	23	16	22	15	23	20	21	21	22	280
48	67	23	31	18	24	17	24	16	24	21	22	22	23	300
54	75	24	32	18	24	17	24	16	25	22	23	23	24	350
59		25	33	19	25	18	25	17	26	23	24	24	25	400
64		26	34	19	25	18	25	17	27	24	25	25	26	450
69		27	35	20	26	19	26	18	28	25	26	26	27	500
74		28	36	20	26	19	26	18	29	26	27	27	28	550
79		29	37	21	27	20	27	19	30	27	28	28	29	600
		30	38	21	27	20	27	19	31	28	29	29	30	650
		31	39	22	28	21	28	20	32	29	30	30	31	700
		32	40	22	28	21	28	20	33	30	31	31	32	750
		33	41	23	29	22	29	21	34	31	32	32	33	800
		34	42	23	29	22	29	21	35	32	33	33	34	850
		35	43	24	30	23	30	22	36	33	34	34	35	900
		36	44	24	30	23	30	22	37	34	35	35	36	950
		37	45	25	31	24	31	23	38	35	36	36	37	1000
		38	46	25	31	24	31	23	39	36	37	37	38	1100
		39	47	26	32	25	32	24	40	37	38	38	39	1200
		40	48	26	32	25	32	24	41	38	39	39	40	1300
		41	49	27	33	26	33	25	42	39	40	40	41	1400
		42	50	27	33	26	33	25	43	40	41	41	42	1500
		43	51	28	34	27	34	26	44	41	42	42	43	1600
		44	52	28	34	27	34	26	45	42	43	43	44	
		45	53	29	35	28	35	27	46	43	44	44	45	
		46	54	29	35	28	35	27	47	44	45	45	46	
		47	55	30	36	29	36	28	48	45	46	46	47	
		48	56	30	36	29	36	28	49	46	47	47	48	
		49	57	31	37	30	37	29	50	47	48	48	49	
		50	58	31	37	30	37	29	51	48	49	49	50	
		51	59	32	38	31	38	30	52	49	50	50	51	
		52	60	32	38	31	38	30	53	50	51	51	52	
		53	61	33	39	32	39	31	54	51	52	52	53	
		54	62	33	39	32	39	31	55	52	53	53	54	
		55	63	34	40	33	40	32	56	53	54	54	55	
		56	64	34	40	33	40	32	57	54	55	55	56	
		57	65	35	41	34	41	33	58	55	56	56	57	
		58	66	35	41	34	41	33	59	56	57	57	58	
		59	67	36	42	35	42	34	60	57	58	58	59	
		60	68	36	42	35	42	34	61	58	59	59	60	
		61	69	37	43	36	43	35	62	59	60	60	61	
		62	70	37	43	36	43	35	63	60	61	61	62	
		63	71	38	44	37	44	36	64	61	62	62	63	
		64	72	38	44	37	44	36	65	62	63	63	64	
		65	73	39	45	38	45	37	66	63	64	64	65	
		66	74	39	45	38	45	37	67	64	65	65	66	
		67	75	40	46	39	46	38	68	65	66	66	67	
		68	76	40	46	39	46	38	69	66	67	67	68	
		69	77	41	47	40	47	39	70	67	68	68	69	
		70	78	41	47	40	47	39	71	68	69	69	70	
		71	79	42	48	41	48	40	72	69	70	70	71	
		72	80	42	48	41	48	40	73	70	71	71	72	
		73	81	43	49	42	49	41	74	71	72	72	73	
		74	82	43	49	42	49	41	75	72	73	73	74	
		75	83	44	50	43	50	42	76	73	74	74	75	
		76	84	44	50	43	50	42	77	74	75	75	76	
		77	85	45	51	44	51	43	78	75	76	76	77	
		78	86	45	51	44	51	43	79	76	77	77	78	
		79	87	46	52	45	52	44	80	77	78	78	79	
		80	88	46	52	45	52	44	81	78	79	79	80	
		81	89	47	53	46	53	45	82	79	80	80	81	
		82	90	47	53	46	53	45	83	80	81	81	82	
		83	91	48	54	47	54	46	84	81	82	82	83	
		84	92	48	54	47	54	46	85	82	83	83	84	
		85	93	49	55	48	55	47	86	83	84	84	85	
		86	94	49	55	48	55	47	87	84	85	85	86	
		87	95	50	56	49	56	48	88	85	86	86	87	
		88	96	50	56	49	56	48	89	86	87	87	88	
		89	97	51	57	50	57	49	90	87	88	88	89	
		90	98	51	57	50	57	49	91	88	89	89	90	
		91	99	52	58	51	58	50	92	89	90	90	91	
		92	100	52	58	51	58	50	93	90	91	91	92	
		93	101	53	59	52	59	51	94	91	92	92	93	
		94	102	53	59	52	59	51	95	92	93	93	94	
		95	103	54	60	53	60	52	96	93	94	94	95	
		96	104	54	60	53	60	52	97	94	95	95	96	
		97	105	55	61	54	61	53	98	95	96	96	97	
		98	106	55	61	54	61	53	99	96	97	97	98	
		99	107	56	62	55	62	54	100	97	98	98	99	
		100	108	56	62	55	62	54	101	98	99	99	100	
		101	109	57	63	56	63	55	102	99	100	100	101	
		102	110	57	63	56	63	55	103	100	101	101	102	
		103	111	58	64	57	64	56	104	101	102	102	103	
		104	112	58	64	57	64	56	105	102	103	103	104	
		105	113	59	65	58	65	57	106	103	104	104	105	
		106	114	59	65	58	65	57	107	104	105	105	106	
		107	115	60	66	59	66	58	108	105	106	106	107	
		108	116	60	66	59	66	58	109	106	107	107	108	
		109	117	61	67	60	67	59	110	107	108	108	109	
		110	118	61	67	60	67	59	111	108	109	109	110	
		111	119	62	68	61	68	60	112	109	110	110	111	
		112	120	62	68	61	68	60	113	110	111	111	112	
		113	121	63	69	62	69	61	114	111	112	112	113	
		114	122	63	69	62	69	61	115	112	113	113	114	
		115	123	64	70	63	70	62	116	113	114	114	115	
		116	124	64	70	63	70	62	117	114	115	115	116	
		117	125	65	71	64	71	63	118	115	116	116	117	
		118	126	6										

Stand alone

Temperature rise [Kelvin]



DISSIPATION	600x500x260		600x500x300		600x600x210		600x600x300		600x600x400		600x800x300		700x500x210		700x500x260		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
10	4		5		5		5		4		5		7		5		5
20	7		9		7		8		7		7		7		8		8
30	10		12		9		11		10		10		9		10		11
40	12		15		12		14		12		13		9		11		12
50	15		18		14		17		14		16		11		14		14
60	17		21		16		20		17		18		13		17		16
70	19		23		19		23		19		20		15		19		18
80	22		26		21		25		21		23		16		21		20
90	24		29		23		28		23		25		18		23		22
100	26		31		25		30		25		27		20		25		24
120	30		36		29		35		29		31		23		29		28
140	34		41		33		39		33		36		26		33		32
160	38		46		36		44		37		40		28		37		36
180	41		50		40		48		40		44		31		40		39
200	45		54		43		53		44		47		34		44		42
220	49		59		47		57		47		51		37		47		45
240	52		63		50		61		51		55		39		51		49
260	56		67		54		65		54		59		42		54		52
280	59		71		57		69		58		62		45		58		55
300	62		75		60		73		61		66		47		61		58
350	71				68				69		74		53		69		66
400	79				76				77				59		77		73
450													65				
500													71				
550													77				
600																	
650																	
700																	
750																	
800																	
850																	
900																	
950																	

Stand alone

Temperature rise [Kelvin]



DISSIPATION	800x1200x300		800x1200x400		1000x600x260		1000x600x300		1000x800x260		1000x800x300		1000x800x400		1000x1000x300		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
20					4		7		4		5		4				
30			5		4		9		6		8		6		5		5
40	5		6		6		8		11		7		10		6		6
50	6		8		5		7		9		13		7		10		8
60	7		9		6		8		11		16		10		15		9
70	8		10		7		9		12		18		11		16		10
80	9		11		8		10		14		20		13		18		11
90	9		12		8		11		15		22		14		20		12
100	10		13		9		12		16		24		15		22		13
120	12		15		11		13		19		27		18		25		15
140	13		17		12		15		21		31		20		29		17
160	15		19		13		17		24		35		22		32		19
180	16		21		15		18		26		38		25		35		21
200	18		23		16		20		28		41		27		38		23
220	19		25		17		22		31		45		29		41		25
240	21		27		18		23		33		48		31		44		27
260	22		28		20		25		35		51		33		47		29
280	23		30		21		26		37		54		35		50		30
300	25		32		22		28		39		57		37		53		32
350	28		36		25		32		45		65		42		60		36
400	31		40		28		35		50		72		47		67		40
450	34		44		31		39		54		80		51		73		44
500	37		48		33		42		59				56		80		48
550	40		52		36		45		64				60				52
600	43		56		39		49		69				65				56
650	46		60		41		52		73				69				60
700	49		63		44		55		78				73				63
750	52		67		46		58						77				67
800	55		70		49		61						80				71
850	57		74		51		64						83				74
900	60		77		53		67						86				78
950	63				56		70						89				
1000	65				58		73						92				
1100	71				63		79						98				
1200	76				67								103				
1300					72								108				
1400					76								113				
1500																	
1600																	
1700																	
1800																	
1900																	

Power dissipation values

A

B

C

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E

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J/X



Stand alone

Temperature rise [Kelvin]



800x400x300		800x600x210		800x600x260		800x600x300		800x600x400		800x800x210		800x800x300		800x800x400		DISSIPATION
Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Watt
	5		5		4											10
6	8	6	8	5	7	5	7	4	6	5	6	4	5	5	4	20
9	11	8	11	7	10	7	10	6	8	6	9	6	8	5	6	30
11	14	10	14	9	13	9	12	8	10	8	11	7	9	6	8	40
13	17	12	17	11	15	10	14	9	12	10	13	9	11	7	9	50
16	19	13	19	13	18	12	17	11	14	11	16	10	13	8	11	60
18	22	15	22	14	20	14	19	12	16	13	18	11	15	9	12	70
20	25	17	24	16	22	15	21	14	18	14	20	12	17	11	14	80
22	27	19	27	18	25	17	23	15	20	16	22	14	18	12	15	90
24	29	20	29	19	27	18	25	16	22	17	24	15	20	13	16	100
27	34	23	34	22	31	21	29	19	25	20	27	17	23	15	19	120
31	39	27	38	25	35	24	33	21	28	22	31	19	26	17	21	140
34	43	30	43	28	39	27	37	24	31	25	34	22	29	18	24	160
38	47	32	47	31	43	29	40	26	35	27	38	24	32	20	26	180
41	51	35	51	33	47	32	44	28	38	30	41	26	35	22	29	200
44	55	38	55	36	50	34	47	30	41	32	44	28	37	24	31	220
48	59	41	59	39	54	37	51	33	44	34	48	30	40	25	33	240
51	63	44	63	41	58	39	54	35	46	37	51	32	43	27	35	260
54	67	46	67	44	61	42	57	37	49	39	54	34	45	29	37	280
57	71	49	71	46	65	44	61	39	52	41	57	36	48	30	40	300
65		55	80	52	73	50	69	44	59	46	64	41	54	34	45	350
72		62		58		56	77	49	66	52	72	45	60	38	50	400
79		68		64		61		54	72	57	79	50	66	42	55	450
		74		70		67		59	79	62		54	72	46	60	500
		80		75		72		64		67		58	78	50	64	550
						77		68		72		63		53	69	600
								73		76		67		57	74	650
								77				71		60	78	700
												75		64		750
												79		67		800
														70		850
														74		900
														77		950

Stand alone

Temperature rise [Kelvin]



1200x600x300		1200x800x300		1200x800x400		1200x1000x300		1200x1200x300		1200x1200x400		1400x1000x300		DISSIPATION
Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Watt
	5		5		5		4		4					20
5	7		7		6		6		5				4	30
6	9	5	7	4	6	4	6		5		5		5	40
7	11	6	8	5	7	5	7	4	6	4	5	4	6	50
8	12	7	9	6	8	6	8	5	7	5	6	5	7	60
9	14	8	11	7	9	6	9	6	8	5	7	6	8	70
10	15	8	12	7	10	7	10	6	8	6	8	6	9	80
11	17	9	13	8	11	8	11	7	9	7	9	7	10	90
12	18	10	14	9	12	8	12	7	10	7	10	8	11	100
14	21	12	17	10	14	10	13	9	12	8	11	9	12	120
16	24	13	19	12	16	11	15	10	13	10	13	10	14	140
18	27	15	21	13	18	12	17	11	15	11	14	11	16	160
20	30	16	23	14	20	13	19	12	16	12	15	12	17	180
22	32	18	25	16	21	15	20	13	18	13	17	13	19	200
23	35	19	27	17	23	16	22	14	19	14	18	14	20	220
25	37	20	29	18	25	17	23	15	20	15	19	15	22	240
27	40	22	31	19	26	18	25	16	22	16	21	16	23	260
28	42	23	33	20	28	19	27	17	23	17	22	17	24	280
30	45	24	35	22	30	20	28	18	24	18	23	18	26	300
34	50	28	39	24	33	23	32	20	28	20	26	21	29	350
38	56	31	44	27	37	26	35	23	31	22	29	23	33	400
42	62	34	48	30	41	28	39	25	34	24	32	25	36	450
45	67	37	52	33	45	31	42	27	37	27	35	27	39	500
49	73	40	56	35	48	33	46	29	40	29	38	30	42	550
53	78	43	60	38	52	35	49	32	43	31	40	32	45	600
56		45	65	40	55	38	52	34	46	33	43	34	48	650
59		48	68	43	58	40	55	36	48	35	46	36	51	700
63		51	72	45	62	42	59	38	51	37	48	38	54	750
66		54	76	47	65	45	62	40	54	39	51	40	57	800
69		56		50	68	47	65	42	56	41	53	42	60	850
73		59		52	71	49	68	44	59	43	56	44	63	900
76		62		54	75	51	71	46	62	44	58	46	65	950
79		64		57	78	53	74	48	64	46	61	48	68	1000
		69		61		58	80	51	69	50	66	52	73	1100
		74		66		62		55	74	54	70	56	79	1200
		79		70		66		59	79	57	75	59		1300
				74		70		62		61	80	63		1400
				79		74		66		64		66		1500
						78		69		68		70		1600
								73		71		73		1700
								76		74		77		1800
								80		78				1900

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J/X



Rear against wall Temperature rise [Kelvin]

DISSIPATION	1600x600x400		1600x600x600		1600x800x400		1600x1000x400		1600x1200x400		1600x1200x500		1800x600x400		1800x600x500			
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	
30	5			4		4		5		4		4		5		4		5
40	5	7		5		5		5		5		4		4		6		5
50	6	8		4		6		5		6		5		5		7		6
60	6	9		5		7		5		6		4		6		9		7
70	7	11		6		8		6		8		5		6		10		8
80	8	12		6		9		7		9		6		7		11		9
90	9	13		7		10		7		10		6		8		12		10
100	10	14		8		11		8		10		7		8		13		11
120	11	16		9		12		9		12		8		11		15		13
140	13	19		10		14		11		15		10		12		17		15
160	14	21		11		16		12		17		11		13		19		16
180	15	23		12		17		13		18		12		14		21		18
200	17	25		13		19		14		20		13		15		23		20
220	18	27		14		20		15		21		14		16		25		21
240	19	29		16		22		16		23		15		17		26		23
260	21	31		17		23		17		24		16		18		28		24
280	22	32		18		24		18		25		17		19		30		26
300	23	34		19		26		19		27		18		20		32		27
350	26	39		21		29		22		31		21		23		36		31
400	29	43		23		33		24		35		23		26		40		34
450	32	48		26		36		27		38		26		29		44		38
500	35	52		28		39		29		41		28		31		48		41
550	38	56		30		42		32		45		30		34		51		45
600	41	60		32		45		34		48		32		36		55		48
650	43	64		35		48		36		51		34		39		59		51
700	46	68		37		51		38		54		37		41		62		54
750	49	72		39		54		41		57		39		44		66		57
800	51	76		41		57		43		60		41		46		69		60
850	54	79		43		60		45		63		43		48		73		63
900	56			45		63		47		66		45		50		76		66
950	59			47		65		49		69		47		53		80		69
1000	61			49		68		51		72		49		55		84		72
1100	66			53		73		55		78		53		59		91		78
1200	71			57		79		59		84		57		64		98		84
1300	76			60		83		60		89		54		68		105		90
1400				64		87		64		93		57		72		112		96
1500				68		91		67		97		61		76		119		102
1600				71		95		71		101		64		78		125		108
1700				75		99		75		105		67				132		114
1800				79		103		78		109		70				139		120
1900												73						126

Rear against wall Temperature rise [Kelvin]

DISSIPATION	1800x1600x400		2000x400x600		2000x600x400		2000x600x500		2000x600x600		2000x600x800		2000x700x400		2000x800x400		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
30			5		4		5		4		5		4		4		5
40	4		6		6		6		5		6		4		6		5
50	5		7		4		7		5		7		5		7		6
60	6		8		5		8		5		8		4		8		7
70	7		9		6		9		6		9		5		9		8
80	7		11		6		10		7		10		6		10		9
90	8		12		7		11		7		11		6		11		10
100	9		13		8		12		8		12		7		12		11
120	10		15		9		14		9		14		8		13		12
140	11		17		10		15		10		15		9		14		14
160	13		18		11		17		11		16		10		15		16
180	14		20		12		19		12		18		11		16		17
200	15		22		13		21		13		20		12		17		19
220	16		24		14		22		14		21		13		18		20
240	18		25		15		24		15		23		14		19		22
260	19		27		16		25		16		24		15		20		23
280	20		29		17		27		17		26		16		21		25
300	21		30		18		28		18		27		17		22		26
350	24		35		21		32		21		31		19		24		29
400	27		38		23		36		23		34		21		26		33
450	29		42		26		39		26		38		24		29		36
500	32		46		28		43		29		41		26		32		39
550	34		50		30		46		31		44		28		34		42
600	37		53		32		50		33		48		30		37		45
650	39		57		34		53		36		51		32		39		48
700	42		60		36		56		38		54		34		41		51
750	44		64		39		59		40		57		36		43		54
800	46		67		41		63		42		60		37		45		57
850	49		70		43		66		44		63		39		47		60
900	51		74		45		69		46		66		41		49		63
950	53		77		47		72		48		69		43		51		66
1000	55				49		75		50		72		45		53		69
1100	60				52				52		77		48		56		74
1200	64				56				55				51		59		79
1300	68				60				59				55		63		84
1400	73				64				63				59		67		89
1500	77				67				66				62		70		94
1600					71				70				65		74		99
1700					74				73				69		78		104
1800					78				77				72		82		109
1900													75				114

Power dissipation values

A

B

C

D

E

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J/X



Rear against wall

Temperature rise [Kelvin]

1800x600x600		1800x800x400		1800x800x500		1800x800x600		1800x1000x400		1800x1000x500		1800x1200x400		1800x1200x500		1800x1200x600		DISSIPATION
Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Watt
4		4																30
	5		5		5		4		5		4		4					40
4	6	4	6	4	6		5	4	6		5		5		5		4	50
5	7	5	7	5	7		4	5	7		4	4	5		5		5	60
6	8	6	8	5	8	5	7	5	7	5	7	5	7	5	6	4	6	70
6	9	6	9	6	8	6	8	6	8	5	7	5	7	5	7	5	6	80
7	10	7	10	7	9	6	8	6	9	6	8	6	8	6	7	5	7	90
7	11	8	11	7	10	7	9	7	10	7	9	6	9	6	8	6	7	100
9	12	9	13	8	12	8	11	8	11	8	10	7	10	7	9	7	9	120
10	14	10	15	9	13	9	12	9	13	9	12	8	11	8	10	7	10	140
11	15	11	16	10	15	10	13	10	14	10	13	9	13	9	12	8	11	160
12	17	12	18	12	16	11	15	11	16	11	14	10	14	10	13	9	12	180
13	19	13	19	13	18	12	16	12	17	11	16	11	15	11	14	10	13	200
14	20	14	21	14	19	13	17	13	18	12	17	12	17	11	15	11	14	220
15	21	16	22	15	20	14	19	14	20	13	18	13	18	12	16	12	15	240
16	23	17	24	16	22	15	20	15	21	14	19	14	19	13	17	12	16	260
17	24	18	25	16	23	15	21	16	22	15	20	15	20	14	18	13	17	280
18	26	19	27	17	24	16	22	17	24	16	22	16	21	15	19	14	18	300
20	29	21	30	20	28	18	25	19	27	18	24	18	24	17	22	16	20	350
23	32	23	34	22	31	21	28	21	30	20	27	20	27	18	24	17	23	400
25	36	26	37	24	34	23	31	23	33	22	30	22	29	20	27	19	25	450
27	39	28	41	26	37	25	34	26	36	24	32	23	32	22	29	21	27	500
29	42	30	44	28	40	27	36	28	39	26	35	25	35	24	31	22	29	550
31	45	32	47	30	43	29	39	30	41	28	38	27	37	25	34	24	31	600
34	48	35	50	32	45	30	41	32	44	30	40	29	39	27	36	26	33	650
36	51	37	53	34	48	32	44	33	47	31	43	31	42	29	38	27	35	700
38	54	39	56	36	51	34	47	35	50	33	45	32	44	30	40	29	37	750
40	56	41	59	38	54	36	49	37	52	35	47	34	47	32	43	30	39	800
42	59	43	62	40	56	38	51	39	55	37	50	36	49	34	45	32	41	850
44	62	45	65	42	59	39	54	41	57	38	52	38	51	35	47	33	43	900
46	65	47	68	44	62	41	56	43	60	40	54	39	54	37	49	35	45	950
47	67	49	71	46	64	43	59	45	62	42	57	41	56	38	51	36	47	1000
51	73	53	76	49	69	46	63	48	67	45	61	44	60	41	55	39	51	1100
55	78	57		53	74	50	68	52	72	48	66	47	65	44	59	42	55	1200
59		60		57	79	53	72	55	77	52	70	50	69	47	63	45	58	1300
62		64		60		56	77	58		55	74	54	73	50	67	48	62	1400
66		68		63		60		62		58	78	57	77	53	71	50	65	1500
69		71		67		63		65		61		60		56	74	53	69	1600
73		75		70		66		68		64		63		59	78	56	72	1700
76		78		73		69		72		67		66		62		58	76	1800
80				77		72		75		70		69		64		61	79	1900

Rear against wall

Temperature rise [Kelvin]

2000x800x500		2000x800x600		2000x800x800		2000x1000x400		2000x1000x500		2000x1000x600		2000x1000x800		2000x1200x400		2000x1200x500		DISSIPATION
Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Watt
																		30
	5		4				5		4						4			40
	6		5		4		5		5		4			5		4		50
4	6	4	6		5	4	6	4	6		5		5	4	6		4	60
5	7	5	7	4	6	5	7	5	7	4	6		5	5	6	4	6	70
6	8	6	8	5	7	6	8	5	7	5	7	4	6	6	8	5	6	80
6	9	6	9	6	8	7	9	6	8	5	7	5	6	6	8	5	7	90
7	10	7	10	7	9	8	11	7	10	7	9	6	8	7	10	7	9	100
8	11	8	12	7	10	9	12	8	11	8	10	7	9	8	11	7	10	120
9	13	9	13	8	11	10	14	9	12	8	11	8	10	9	12	8	11	140
10	14	10	14	9	12	11	15	10	14	9	13	8	11	10	13	9	12	160
11	16	11	16	10	13	12	16	11	15	10	14	9	12	11	15	10	13	180
12	17	12	17	11	14	12	18	12	16	11	15	10	14	11	16	11	14	200
13	18	12	17	11	14	12	18	12	16	11	15	10	13	11	16	11	14	220
14	20	13	18	11	15	13	19	12	17	12	16	11	14	12	17	11	15	240
15	21	14	19	12	16	14	20	13	18	13	17	11	15	13	18	12	17	260
16	22	15	20	13	17	15	22	14	20	13	18	12	16	14	19	13	18	280
16	23	15	21	14	18	16	23	15	21	14	19	13	17	15	20	14	19	300
19	27	17	24	16	21	18	26	17	23	16	21	14	19	17	23	16	21	350
21	30	19	27	17	23	20	29	19	26	18	24	16	21	18	26	17	23	400
23	32	21	30	19	25	22	32	21	29	19	26	18	23	20	28	19	26	450
25	35	23	32	21	28	24	34	22	31	21	29	19	25	22	31	21	28	500
27	38	25	35	22	30	26	37	24	34	23	31	21	27	24	33	22	30	550
29	41	27	37	24	32	28	40	26	36	25	33	22	29	25	35	24	32	600
31	44	29	40	26	34	30	42	28	38	26	35	24	31	27	38	26	35	650
32	46	30	42	27	36	32	45	29	41	28	37	25	33	29	40	27	37	700
34	49	32	45	29	38	33	48	31	43	29	40	27	35	30	42	29	39	750
36	52	34	47	30	40	35	50	33	45	31	42	28	37	32	45	30	41	800
38	54	36	49	32	42	37	53	34	48	32	44	29	38	34	47	32	43	850
40	57	37	52	33	44	39	55	36	50	34	46	31	40	35	49	33	45	900
41	59	39	54	35	46	40	58	38	52	35	48	32	42	37	51	35	47	950
43	62	40	56	36	48	42	60	39	54	37	50	34	44	38	53	36	49	1000
47	67	44	61	39	52	45	65	42	59	40	54	36	47	41	58	39	53	1100
50	72	47	65	42	56	49	70	45	63	43	58	39	51	45	62	42	57	1200
53	76	50	70	45	60	52	74	48	67	46	62	41	54	47	66	45	60	1300
57		53	74	47	63	55	79	51	71	48	65	44	57	50	70	47	64	1400
60		56	78	50	67	58		54	75	51	69	46	61	53	74	50	68	1500
63		59		53	71	61		57	79	54	73	49	64	56	78	53	71	1600
66		62		55	74	64		60		57	76	51	67	59		55	75	1700
69		65		58	78	67		63		59		54	70	62		58	78	1800
72		68		60		70		66		62		56	73	64		61	79	1900

Continued on J.108



Rear against wall Temperature rise [Kelvin]

DISSIPATION	2000x1200x600		2000x1200x800		2000x1400x400		2000x1600x400		2000x1600x600		2200x600x600		2200x600x800		2200x800x600			
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	
30									4									4
40									6									6
50			4				4		5		4		5				5	5
60			5				5		7		5		7				7	7
70		4	5				6		8		6		8				8	8
80		5	6		4		7		10		6		9		4		6	10
90		5	7		5		8		11		7		10		5		7	11
100		5	7		6		9		12		7		11		6		8	12
120		6	8		7		10		14		9		12		7		10	14
140		7	9		8		11		15		10		13		8		11	15
160		8	10		9		12		17		11		14		9		12	17
180		9	11		10		13		19		12		16		10		13	19
200		9	12		11		14		21		13		17		11		14	21
220		10	13		12		15		22		14		18		12		15	22
240		11	14		13		16		24		15		19		13		16	24
260		12	15		14		17		25		16		20		14		17	25
280		12	16		15		18		27		17		21		15		18	27
300		13	17		16		19		29		18		22		16		19	29
350		15	19		18		22		32		20		24		18		22	32
400		16	22		19		23		36		23		27		21		25	36
450		18	24		21		26		40		25		30		23		28	40
500		20	26		23		28		43		27		32		25		30	43
550		21	28		25		30		47		29		34		27		32	47
600		23	30		27		32		50		31		36		29		34	50
650		24	32		29		34		53		33		38		31		36	53
700		26	34		31		36		57		35		40		33		38	57
750		27	36		32		38		60		37		42		34		40	60
800		29	38		34		40		63		39		44		35		42	63
850		30	40		36		42		66		41		46		37		44	66
900		32	42		37		44		69		43		48		39		46	69
950		33	44		39		46		72		45		50		41		48	72
1000		34	45		41		48		75		47		52		43		50	75
1100		37	49		44		52		80		51		56		46		54	80
1200		40	53		47		56		85		55		60		49		58	85
1300		42	56		50		60		90		58		64		52		61	90
1400		45	59		53		64		95		62		68		55		65	95
1500		48	63		56		68		100		65		72		58		69	100
1600		50	66		59		71		105		69		76		61		73	105
1700		53	69		62		74		110		72		79		64		76	110
1800		55	73		65		78		115		76		83		67		80	115
1900		58	76		68		81		120		79		86		70		83	120

Front, left and top free Temperature rise [Kelvin]

DISSIPATION	1600x600x400		1600x600x600		1600x800x400		1600x1000x400		1600x1200x400		1600x1200x500		1800x600x400		1800x600x500			
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	
20			4															
30		4	6															
40		5	7		4		4		5				4		5		5	5
50		6	9		5		5		6		4		5		6		6	6
60		7	10		6		6		7		5		6		7		7	7
70		8	12		7		7		8		6		7		8		8	8
80		9	13		8		8		9		7		8		9		9	9
90		10	14		9		9		10		8		9		10		10	10
100		11	15		10		10		11		9		10		11		11	11
120		12	18		11		11		13		10		12		12		12	12
140		14	20		13		13		15		12		14		14		14	14
160		16	23		15		15		17		14		16		16		16	16
180		17	25		16		16		18		15		17		17		17	17
200		19	27		18		18		20		16		18		18		18	18
220		20	29		19		19		21		17		19		19		19	19
240		22	31		20		20		22		18		20		20		20	20
260		23	33		21		21		23		19		21		21		21	21
280		24	35		22		22		24		20		22		22		22	22
300		26	37		23		23		25		21		23		23		23	23
350		29	42		26		26		28		24		26		26		26	26
400		32	47		29		29		31		27		29		29		29	29
450		36	52		32		32		34		30		32		32		32	32
500		39	56		35		35		37		33		35		35		35	35
550		42	61		38		38		40		36		38		38		38	38
600		45	65		41		41		43		39		41		41		41	41
650		48	70		44		44		46		42		44		44		44	44
700		51	74		47		47		49		45		47		47		47	47
750		54	78		50		50		51		48		50		50		50	50
800		57			53		53		54		51		53		53		53	53
850		59			55		55		56		53		55		55		55	55
900		62			58		58		59		56		58		58		58	58
950		65			61		61		62		59		61		61		61	61
1000		68			64		64		65		62		64		64		64	64
1100		73			68		68		70		66		68		68		68	68
1200		78			73		73		75		71		73		73		73	73
1300					78		78		80		76		78		78		78	78
1400																		
1500																		
1600																		
1700																		
1800																		
1900																		

Power dissipation values

A

B

C

D

E

F

G

H

J/X



Rear against wall

Temperature rise [Kelvin]



2200x800x800		2200x800x900		2200x1000x600		2200x1000x800		2200x1200x600		DISSIPATION
Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Watt
										30
										40
	4				4				5	50
	5		5		5		4		5	60
4	6		5	4	6		5		5	70
5	6	4	6	5	6	4	6	4	6	80
5	7	5	6	5	7	5	6	5	6	90
5	7	5	7	6	8	5	7	5	7	100
6	9	6	8	6	9	6	8	6	8	120
7	10	7	9	7	10	7	9	7	9	140
8	11	8	10	8	11	7	10	8	10	160
9	12	8	11	9	12	8	11	8	11	180
9	13	9	12	10	13	9	12	9	12	200
10	14	10	13	10	14	10	13	10	13	220
11	15	10	14	11	15	10	14	10	14	240
12	16	11	15	12	16	11	14	11	15	260
12	17	12	16	13	17	12	15	12	16	280
13	18	13	17	13	18	12	16	12	17	300
15	20	14	19	15	21	14	18	14	19	350
16	22	16	21	17	23	15	20	16	21	400
18	25	17	23	18	25	17	22	17	23	450
20	27	19	25	20	28	18	24	19	25	500
21	29	20	27	22	30	20	26	20	27	550
23	31	22	29	23	32	21	28	22	29	600
24	33	23	31	25	34	23	30	23	31	650
26	35	25	33	26	36	24	32	25	33	700
27	37	26	35	28	38	26	34	26	35	750
29	39	28	37	29	40	27	36	28	37	800
30	41	29	39	31	42	28	37	29	39	850
32	43	30	41	32	44	30	39	30	41	900
33	45	32	42	34	46	31	41	32	42	950
34	47	33	44	35	48	32	43	33	44	1000
37	50	36	48	38	52	35	46	36	48	1100
40	54	38	51	41	56	37	49	38	51	1200
42	58	41	55	43	60	40	53	41	54	1300
45	61	43	58	46	63	42	56	43	58	1400
48	65	46	61	49	67	45	59	46	61	1500
50	68	48	65	51	70	47	62	48	64	1600
53	72	51	68	54	74	49	65	50	68	1700
55	75	53	71	56	77	52	68	53	71	1800
58	78	55	74	59	80	54	72	55	74	1900

Front, left and top free

Temperature rise [Kelvin]



1800x600x600		1800x800x400		1800x800x500		1800x800x600		1800x1000x400		1800x1000x500		1800x1200x400		1800x1200x500		1800x1200x600		DISSIPATION
Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Watt
																		20
																		30
	4		4		5		5		5		4		4		5		4	40
	5		5		6		6		6		5		5		6		5	50
4	6	5	6	4	6	4	6	4	6	5	6	4	6	4	6	4	6	60
5	7	5	7	5	7	5	7	5	7	5	7	5	7	5	7	5	6	70
6	8	6	8	6	8	6	8	6	8	6	8	6	8	6	8	6	8	80
6	9	7	9	6	9	6	8	6	8	6	8	6	8	6	8	6	8	90
7	10	7	10	7	10	7	9	7	9	7	9	7	9	7	9	6	8	100
8	11	8	11	8	10	7	10	7	10	8	11	8	10	7	10	7	9	120
9	13	9	13	9	12	8	11	8	12	9	12	9	12	8	11	8	10	140
10	14	10	15	10	14	9	13	10	13	10	13	10	13	9	12	9	11	160
11	16	11	16	11	15	10	14	11	15	11	15	11	14	10	13	10	12	180
12	17	13	18	12	17	12	15	12	16	12	16	12	16	11	14	10	13	200
14	19	14	20	13	18	13	17	13	18	13	17	13	17	12	15	11	14	220
15	20	15	21	14	20	14	18	14	19	14	19	14	18	13	17	12	15	240
16	22	16	23	15	21	15	19	15	20	15	20	14	19	14	18	13	16	260
17	23	17	24	16	23	15	21	16	22	16	21	15	21	14	19	14	17	280
18	25	18	26	17	24	16	22	17	23	17	22	16	22	15	20	14	18	300
19	26	19	27	18	25	17	23	18	24	19	25	18	25	17	23	16	21	350
21	30	22	31	21	29	20	26	20	28	21	28	20	27	19	25	18	23	400
24	33	24	34	23	32	22	29	22	31	23	31	22	30	21	28	20	26	450
26	36	26	38	25	35	24	32	24	34	25	34	24	33	23	30	22	28	500
28	40	29	41	28	38	26	35	27	37	27	36	26	35	25	32	24	30	550
31	43	31	44	30	41	28	38	29	40	29	39	28	38	27	35	25	32	600
33	46	33	47	32	44	30	41	31	43	31	41	30	40	28	37	27	34	650
35	49	35	50	34	47	32	43	33	45	33	44	32	43	30	39	29	36	700
37	52	38	54	36	50	34	46	35	48	35	47	34	45	32	42	30	39	750
39	55	40	57	38	53	36	49	37	51	37	49	36	48	34	44	32	41	800
41	58	42	60	40	56	38	51	39	54	39	51	37	50	35	46	33	43	850
43	61	44	63	42	58	40	54	41	56	40	54	39	52	37	48	35	45	900
45	64	46	66	44	61	42	56	43	59	42	56	41	55	39	50	37	47	950
47	66	48	68	46	64	44	59	45	62	44	59	43	57	40	52	38	49	1000
49	69	50	71	48	67	46	61	47	64	47	63	46	62	43	57	41	52	1100
53	75	54	77	52	72	49	66	50	69	51	68	49	66	47	61	44	56	1200
57		58		56	77	53	71	54	74	54	72	53	70	50	65	47	60	1300
61		62		60		57	76	57	79	58	77	56	75	53	69	50	64	1400
65		66		63		60		61		61		59		56	73	53	67	1500
69		69		67		63		64		64		62		59	76	56	71	1600
72		73		71		67		68		67		65		62		58	74	1700
76		77		74		70		71		70		68		64		61	78	1800
79				78		73		75		74		71		67		64		1900

Continued on J.110

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Front, left and top free Temperature rise [Kelvin]

DISSIPATION	1800x1600x400		2000x400x600		2000x600x400		2000x600x500		2000x600x600		2000x600x800		2000x700x400		2000x800x400		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
30			5		5		5		4		4		4		4		4
40	5		7		6		6		5		5		4		6		5
50	6		8		7		7		4		6		5		7		6
60	6		9		6		9		5		7		5		6		7
70	7		10		6		10		6		8		5		7		8
80	8		11		7		11		7		9		6		8		9
90	9		13		8		12		7		10		6		9		10
100	10		14		9		13		8		11		7		8		11
120	11		16		10		15		9		13		8		11		13
140	13		18		11		17		10		15		10		12		15
160	14		20		13		19		11		17		11		14		16
180	15		22		14		21		13		18		12		15		18
200	17		24		15		23		14		20		13		16		19
220	18		26		16		25		15		22		14		18		21
240	19		28		17		26		16		23		15		19		22
260	21		30		19		28		17		25		16		20		24
280	22		31		20		30		18		26		17		21		25
300	23		33		21		32		19		28		18		22		27
350	26		38		24		36		21		31		21		25		30
400	29		42		26		40		24		35		23		28		34
450	32		46		29		44		26		38		25		31		37
500	35		50		32		48		29		42		28		34		40
550	38		54		34		51		31		45		30		37		44
600	41		58		36		55		33		48		32		39		47
650	43		62		39		59		35		52		34		42		50
700	46		66		41		62		37		55		36		44		53
750	49		69		44		66		39		58		38		47		56
800	51		73		46		69		42		61		40		49		59
850	54		77		48		73		44		64		42		52		62
900	56				51		76		46		67		44		54		65
950	59				53		80		48		70		46		57		68
1000	61				55				50		73		48		59		71
1100	66				59				54		79		52		64		76
1200	71				64				58				56		69		
1300	76				68				61				59		73		
1400					72				65				63		77		
1500					76				69				67		81		
1600									73				70		83		
1700									76				74		86		
1800									80				77		89		
1900													72				

Front, left and top free Temperature rise [Kelvin]

DISSIPATION	2000x1200x600		2000x1200x800		2000x1400x400		2000x1600x400		2000x1600x600		2200x600x600		2200x600x800		2200x800x600		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
30							5		4		4		4		4		4
40							6		5		5		5		5		5
50			4				7		6		6		6		6		6
60			5		4		8		7		7		7		7		7
70	4		5		5		9		8		8		8		8		8
80	5		6		6		10		9		9		9		9		9
90	5		7		7		11		10		10		10		10		10
100	6		7		8		12		11		11		11		11		11
120	7		8		9		13		12		12		12		12		12
140	7		10		11		15		14		14		14		14		14
160	8		11		12		17		16		16		16		16		16
180	9		12		13		19		18		18		18		18		18
200	10		13		14		21		20		20		20		20		20
220	11		14		15		23		22		22		22		22		22
240	11		15		16		25		24		24		24		24		24
260	12		16		17		27		26		26		26		26		26
280	13		17		18		29		28		28		28		28		28
300	14		18		19		31		30		30		30		30		30
350	15		20		21		35		34		34		34		34		34
400	17		22		23		39		38		38		38		38		38
450	19		25		26		43		42		42		42		42		42
500	21		27		28		47		46		46		46		46		46
550	22		29		30		50		49		49		49		49		49
600	24		31		32		54		53		53		53		53		53
650	25		33		34		57		56		56		56		56		56
700	27		35		36		61		60		60		60		60		60
750	29		37		38		65		64		64		64		64		64
800	30		39		40		68		67		67		67		67		67
850	32		41		42		71		70		70		70		70		70
900	33		43		44		75		74		74		74		74		74
950	35		45		46		78		77		77		77		77		77
1000	36		47		48		81		80		80		80		80		80
1100	39		50		51		85		84		84		84		84		84
1200	42		54		55		90		89		89		89		89		89
1300	44		58		59		95		94		94		94		94		94
1400	47		61		62		100		99		99		99		99		99
1500	50		65		66		105		104		104		104		104		104
1600	53		68		69		110		109		109		109		109		109
1700	55		71		72		115		114		114		114		114		114
1800	58		75		76		120		119		119		119		119		119
1900	60		78		79		125		124		124		124		124		124

Power dissipation values

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Front, left and top free Temperature rise [Kelvin]

2000x800x500		2000x800x600		2000x800x800		2000x1000x400		2000x1000x500		2000x1000x600		2000x1000x800		2000x1200x400		2000x1200x500		DISSIPATION
Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Watt
																		30
	5		4		5		5		4		5		4		4		5	40
4	6		5		6		6		5		6		5		5		6	50
5	7	5	6	4	5	5	6	4	6	4	5	5	6	4	6		5	60
5	8	5	7	5	6	5	7	5	7	5	6	4	5	5	6	4	6	70
6	8	6	8	5	7	6	8	5	7	5	7	5	6	5	7	5	7	80
7	9	6	9	6	7	6	9	6	8	6	7	5	7	6	8	5	7	90
7	10	7	9	6	8	7	10	7	9	6	8	6	7	6	9	5	8	100
8	12	8	11	7	9	8	11	8	10	7	9	6	8	7	10	7	9	120
9	13	9	12	8	11	9	13	9	12	8	11	7	9	8	11	8	10	140
10	15	10	14	9	12	10	14	9	13	9	12	8	10	9	13	9	12	160
12	16	11	15	10	13	11	16	10	14	10	13	9	11	10	14	10	13	180
13	18	12	16	11	14	12	17	11	15	11	14	10	12	11	15	10	14	200
14	19	13	18	12	15	13	18	12	17	12	15	11	13	12	16	11	15	220
15	20	14	19	12	16	14	20	13	18	12	16	11	14	13	17	12	16	240
15	22	15	20	13	17	15	21	14	19	13	18	12	15	14	19	13	17	260
16	23	16	21	14	18	16	22	15	20	14	19	13	16	14	20	14	18	280
17	24	16	22	15	19	17	23	16	21	15	20	14	17	15	21	14	19	300
20	28	19	25	17	22	19	27	18	24	17	22	15	20	17	24	16	22	350
22	31	21	28	19	24	21	30	20	27	19	25	17	22	19	26	18	24	400
24	34	23	31	20	27	23	33	22	30	21	27	19	24	21	29	20	26	450
26	37	25	34	22	29	25	35	24	32	22	30	20	26	23	31	22	29	500
28	40	27	37	24	32	27	38	26	35	24	32	22	28	25	34	23	31	550
30	43	29	39	26	34	29	41	27	37	26	34	24	30	27	36	25	33	600
32	46	31	42	28	36	31	44	29	40	28	37	25	32	28	39	27	36	650
34	48	32	44	29	38	33	46	31	42	29	39	27	34	30	41	28	38	700
36	51	34	47	31	41	35	49	33	45	31	41	28	36	32	43	30	40	750
38	54	36	49	33	43	37	52	35	47	33	43	30	38	33	46	32	42	800
40	57	38	52	34	45	39	54	36	49	34	46	31	40	35	48	33	44	850
42	59	40	54	36	47	40	57	38	52	36	48	33	42	37	50	35	46	900
44	62	41	57	37	49	42	59	40	54	38	50	34	44	38	53	36	48	950
46	64	43	59	39	51	44	62	41	56	39	52	36	46	40	55	38	50	1000
49	70	47	64	42	55	47	67	45	61	42	56	38	49	43	59	41	54	1100
53	75	50	69	45	59	51	72	48	65	45	60	41	53	46	63	44	58	1200
57	80	53	73	48	63	54	76	51	70	48	64	44	56	49	68	47	62	1300
60		57	78	51	67	58		54	74	51	68	47	60	52	72	50	66	1400
63		60		54	71	61		57	78	54	72	49	63	55	76	52	70	1500
67		63		57	75	64		60		57	76	52	66	58	80	55	73	1600
70		66		60	78	67		63		60	80	54	70	61	88	58	77	1700
73		69		62		70		66		63		57	73	64		61		1800
77		72		65		74		69		66		60	76	67		63		1900

Power dissipation values

Front, left and top free Temperature rise [Kelvin]

2200x800x800		2200x800x900		2200x1000x600		2200x1000x800		2200x1200x600		DISSIPATION
Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Watt
										30
	4		4		5		5		4	40
	5		5		6		6		5	50
4	6	4	5	4	6	4	5	4	5	60
5	6	5	6	5	7	5	6	5	6	70
5	7	5	7	5	7	5	6	5	7	80
6	8	6	7	6	8	5	7	5	7	90
7	9	6	8	7	9	6	8	6	8	100
8	10	7	10	8	10	7	9	7	9	120
8	11	8	11	9	11	8	10	8	10	140
9	12	9	12	9	13	9	11	9	11	160
10	14	10	13	10	14	9	12	9	12	180
11	15	10	14	11	15	10	13	10	13	200
12	16	11	15	12	16	11	14	11	14	220
12	17	12	16	13	17	11	15	12	15	240
13	18	13	17	13	18	12	16	12	16	260
14	19	13	18	14	19	13	17	13	17	280
16	21	15	20	16	22	15	19	15	19	300
18	24	17	22	18	24	16	21	16	22	350
19	26	19	24	20	26	18	23	18	24	400
21	28	20	27	21	29	19	25	20	26	450
23	31	22	29	23	31	21	27	21	28	500
24	33	23	31	25	33	23	29	23	30	550
26	35	25	33	26	35	24	31	24	32	600
28	37	26	35	28	38	25	33	26	34	650
29	39	28	37	29	40	27	35	27	36	700
31	41	29	39	31	42	28	37	29	38	750
32	43	31	41	33	44	30	39	30	40	800
34	45	32	43	34	46	31	41	31	41	850
35	47	34	45	36	48	33	42	33	43	900
37	49	35	46	37	50	34	44	34	45	950
40	53	38	50	40	54	37	48	37	49	1000
43	57	41	54	43	58	39	51	40	52	1100
46	61	44	57	46	62	42	55	42	56	1200
48	65	46	61	49	66	45	58	45	59	1300
51	68	49	64	51	69	47	61	47	63	1400
54	72	51	68	54	73	50	64	50	66	1500
56	76	54	71	57	77	52	68	53	69	1600
59	79	57	75	60		54	71	55	72	1700
62		59	78	62		57	74	57	76	1800
										1900

Continued on J.112

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Front and top free Temperature rise [Kelvin]

DISSIPATION	1600x600x400		1600x600x600		1600x800x400		1600x1000x400		1600x1200x400		1600x1200x500		1800x600x400		1800x600x500		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
20			4														
30			6														
40		4	6		5		5		5				4		4		5
50		7	9		6		7		6		4		5		6		8
60		8	11		6		9		6		5		6		7		10
70		9	12		7		10		7		6		7		8		12
80		10	14		8		11		8		7		8		9		13
90		11	15		9		12		9		8		9		10		14
100		12	16		10		13		10		9		10		11		15
120		13	19		11		15		12		11		12		13		18
140		15	21		13		17		14		12		14		15		20
160		17	24		14		19		15		14		16		17		23
180		19	26		16		21		17		15		18		19		25
200		20	29		17		22		18		16		19		20		27
220		22	31		18		24		19		17		20		21		29
240		23	33		20		26		21		19		22		23		31
260		25	35		21		28		22		20		24		25		33
280		26	37		22		29		23		21		25		26		35
300		28	40		23		31		24		22		27		28		37
350		32	45		27		35		28		26		31		32		42
400		35	50		30		39		32		29		34		35		47
450		39	55		33		43		35		32		37		38		52
500		42	60		35		47		38		34		40		41		56
550		46	64		38		51		41		37		43		44		61
600		49	69		41		54		44		40		46		47		65
650		52	74		44		58		47		43		49		50		69
700		55	78		46		61		49		45		51		52		74
750		58			49		65		52		48		54		55		78
800		62			52		68		55		50		57		58		82
850		65			54		72		58		53		60		61		86
900		68			57		75		60		55		63		64		90
950		71			59		79		63		58		66		67		94
1000		74			62		82		66		60		69		70		98
1100		80			67		88		71		65		73		74		104
1200					72		93		76		69		77		78		110
1300					76		97		80		73		81		82		116
1400							79				76		84		85		122
1500									70		65		77		78		128
1600									74		69		81		82		134
1700									77		72		84		85		140
1800											76		83		84		146
1900											79		86		87		152

Front and top free Temperature rise [Kelvin]

DISSIPATION	1800x1600x400		2000x400x600		2000x600x400		2000x600x500		2000x600x600		2000x600x800		2000x700x400		2000x800x400		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
20					4												
30					6												
40		5	6		5		5		4		5		4		5		4
50		6	8		6		7		5		6		5		6		5
60		6	9		7		10		6		8		6		8		7
70		7	10		8		11		7		9		7		9		8
80		8	11		9		13		8		12		8		10		9
90		9	12		9		14		9		13		9		11		10
100		10	13		10		15		10		14		10		12		11
120		11	15		12		18		11		17		11		14		13
140		13	17		13		20		13		19		13		16		15
160		14	19		15		22		14		21		14		18		16
180		15	21		17		24		16		23		16		20		18
200		17	23		18		27		17		25		17		22		19
220		18	25		19		29		18		27		18		23		21
240		19	27		21		31		20		29		19		25		22
260		21	29		22		33		21		31		20		27		24
280		22	31		24		35		22		33		21		28		25
300		23	32		25		37		23		35		22		29		27
350		26	37		28		42		26		39		24		34		30
400		29	41		31		46		29		43		27		38		34
450		32	45		35		51		32		48		29		42		37
500		35	49		38		55		35		52		32		45		40
550		38	53		41		60		38		56		34		49		44
600		41	56		43		64		41		60		37		53		47
650		43	60		46		68		44		64		39		56		50
700		46	64		49		73		46		68		42		59		53
750		49	67		52		77		49		72		44		63		56
800		51	71		55		81		51		76		46		66		59
850		54	75		58		85		54		80		48		69		62
900		56	78		60		88		56		83		50		73		65
950		59			63		92		59		87		52		76		68
1000		61			66		96		61		91		54		79		71
1100		66			71		102		66		97		58		84		76
1200		71			76		108		71		103		62		89		81
1300							76				69				63		82
1400											73				67		86
1500									77						71		90
1600											75				69		94
1700											78				73		98
1800															76		102
1900															80		106

Power dissipation values

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Front and top free Temperature rise [Kelvin]

DISSIPATION	2000x1200x600		2000x1200x800		2000x1400x400		2000x1600x400		2000x1600x600		2200x600x600		2200x600x800		2200x800x600		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
30								5					4				
40							4	6					5			5	4
50			4				5	7	4	6	4	6	4	6	5	6	5
60			5		4		5	8	5	7	5	7	5	6	5	6	5
70	4	6	4	5	5	6	7	9	6	8	6	8	5	7	5	7	6
80	5	6	5	6	6	7	8	10	7	9	6	9	6	8	6	8	7
90	5	7	5	6	6	7	8	11	7	10	7	10	7	9	6	9	8
100	6	7	6	7	7	8	9	12	8	11	8	11	7	10	7	9	9
120	7	9	6	8	7	9	10	14	9	12	9	12	8	11	8	11	11
140	8	10	7	9	8	10	12	16	10	14	10	14	9	13	9	12	12
160	9	11	8	10	9	11	13	18	11	15	11	16	10	14	10	14	14
180	10	12	9	11	10	13	14	20	13	17	12	17	11	15	11	15	15
200	10	13	10	12	10	14	15	22	14	18	13	19	12	17	12	16	16
220	11	14	10	13	11	15	17	23	15	20	14	20	13	18	13	18	18
240	12	15	11	14	12	16	18	25	16	21	15	22	14	19	14	19	19
260	13	16	12	14	13	17	19	27	17	22	16	23	15	21	15	20	20
280	14	17	13	15	14	18	20	28	18	24	17	25	16	22	16	21	21
300	14	18	13	16	15	19	21	30	19	25	18	26	17	23	17	23	23
350	16	20	15	18	16	21	24	34	21	28	21	29	19	26	19	26	26
400	18	23	17	20	18	24	27	38	24	32	23	33	22	29	21	29	29
450	20	25	18	22	20	26	29	42	26	35	25	36	24	32	23	31	31
500	22	27	20	24	22	28	32	45	28	38	28	39	26	35	25	34	34
550	23	29	22	26	24	31	35	49	31	41	30	42	28	38	27	37	37
600	25	32	23	28	25	33	37	52	33	44	32	45	30	41	29	40	40
650	27	34	25	30	27	35	40	56	35	47	34	48	32	43	31	42	42
700	29	36	26	32	29	37	42	59	37	49	36	51	34	46	33	45	45
750	30	38	28	34	30	39	44	63	39	52	38	54	36	49	35	47	47
800	32	40	29	36	32	42	47	66	41	55	40	57	38	51	37	50	50
850	33	42	31	37	34	44	49	69	44	58	42	60	40	54	39	52	52
900	35	44	32	39	35	46	51	73	46	61	44	63	42	56	41	55	55
950	36	46	34	41	37	48	54	76	48	63	46	65	43	59	42	57	57
1000	38	48	35	43	38	50	56	79	50	66	48	68	45	61	44	60	60
1100	41	51	38	46	41	54	60		54	71	52	74	49	66	48	64	64
1200	44	55	41	49	44	58	65		57	76	56	79	52	71	51	69	69
1300	47	59	43	53	47	61	69		61		59		56	76	54	74	74
1400	50	62	46	56	50	65	73		65		63		59		58	78	78
1500	53	66	49	59	53	69	77		69		67		63		61		
1600	55	70	51	62	56	72			72		70		66		64		
1700	58	73	54	65	59	76			76		74		69		68		
1800	61	76	56	68	61	80			80		77		73		71		
1900	64	80	59	71	64								76		74		

Stand alone Temperature rise [Kelvin]

DISSIPATION	1600x600x400		1600x600x600		1600x800x400		1600x1000x400		1600x1200x400		1600x1200x500		1800x600x400		1800x600x500		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
30			5		4		4						4		4		4
40	4	6	6		5		5		5	4			4		6		5
50	5	7	7	4	6	4	6		6	5		4	4	7	4	6	6
60	6	8	8	5	7	5	7	5	6	4	6		5	8	5	7	7
70	6	10	6	6	8	6	8	5	6	5	6	4	6	6	6	8	8
80	7	11	6	6	9	6	9	6	7	5	7	5	7	6	10	6	9
90	8	12	7	7	10	7	10	6	8	6	8	5	7	7	11	7	10
100	8	13	7	7	11	8	11	7	9	6	8	6	8	8	12	7	11
120	10	15	9	9	12	9	13	8	11	7	10	7	9	9	14	9	13
140	11	17	10	10	14	10	14	9	12	8	11	8	10	10	16	10	15
160	12	19	11	11	15	11	16	10	14	9	12	9	11	11	17	11	16
180	14	20	12	12	17	12	17	11	15	10	14	9	13	12	19	12	18
200	15	22	13	13	18	13	19	12	17	11	15	10	14	13	21	13	19
220	16	24	14	14	20	14	20	13	18	12	16	11	15	14	22	14	21
240	17	26	15	15	21	15	22	14	19	12	17	12	16	16	24	15	22
260	18	27	16	16	23	16	23	15	20	13	18	13	17	17	26	16	24
280	19	29	17	17	24	17	25	16	22	14	19	13	18	18	27	17	25
300	20	31	18	18	26	18	26	16	23	15	20	14	19	19	29	18	27
350	23	35	20	20	29	21	30	19	26	17	23	16	21	21	32	20	30
400	26	39	23	23	32	23	33	21	29	19	26	18	24	23	36	23	34
450	28	42	25	25	35	25	36	23	32	21	28	20	26	26	40	25	37
500	31	46	27	27	39	27	40	25	35	23	31	21	28	28	43	27	40
550	33	50	29	29	42	30	43	27	37	24	33	23	31	30	47	29	44
600	36	54	31	31	45	32	46	29	40	26	36	25	33	32	50	31	47
650	38	57	34	34	48	34	49	31	43	28	38	26	35	35	53	33	50
700	40	61	36	36	51	36	52	32	45	30	40	28	37	37	57	35	53
750	43	64	38	38	53	38	55	34	48	31	43	30	39	39	60	38	56
800	45	67	40	40	56	40	58	36	51	33	45	31	42	41	63	40	59
850	47	71	42	42	59	42	61	38	53	35	47	33	44	43	66	41	62
900	49	74	44	44	62	44	63	40	56	36	49	34	46	45	69	43	65
950	51	77	46	46	65	46	66	41	58	38	52	36	48	47	72	45	68
1000	54		47	47	67	48	69	43	60	39	54	37	50	49	75	47	71
1100	58		51	51	73	52	75	47	65	43	58	40	54	53	81	51	76
1200	62		55	55	78	55	80	50	70	46	62	43	58	57	87	55	81
1300	66		59	59	83	59	85	53	75	49	66	46	61	60	93	59	86
1400	70		62	62	88	63	90	57	79	52	71	49	65	64	99	63	91
1500	74		66	66	93	66	95	60	83	55	75	52	69	68	105	67	96
1600	78		69	69	98	70	100	63	87	57	79	54	73	71	111	71	101
1700			73	73	103	73	105	66	91	60	83	57	76	75	117	75	106
1800			76	76	108	76	110	69	95	63	87	60	80	79	123	79	111
1900			80	80	113	80	115	72	99	66	91	62	84	83	129	83	116

Power dissipation values

A

B

C

D

E

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J/X



Front and top free

Temperature rise [Kelvin]



2200x800x800		2200x800x900		2200x1000x600		2200x1000x800		2200x1200x600		DISSIPATION
Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Watt
										30
										40
										50
										60
4	5									70
5	6									80
5	7									90
6	8									100
6	8									120
7	9									140
8	11									160
9	12									180
10	13									200
11	14									220
12	15									240
13	17									260
14	18									280
14	19									300
15	20									350
17	22									400
19	25									450
21	27									500
23	30									550
25	32									600
27	35									650
28	37									700
30	39									750
32	41									800
34	44									850
35	46									900
37	48									950
39	50									1000
40	52									1100
43	56									1200
47	60									1300
50	64									1400
53	68									1500
56	72									1600
59	76									1700
62	80									1800
64										1800
67										1900

Stand alone

Temperature rise [Kelvin]



1800x600x600		1800x800x400		1800x800x500		1800x800x600		1800x1000x400		1800x1000x500		1800x1200x400		1800x1200x500		1800x1200x600		DISSIPATION
Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Watt
																		30
																		40
																		50
																		60
																		70
4	5																	80
5	6																	90
5	7																	100
6	8																	120
6	8																	140
7	10																	160
8	12																	180
9	13																	200
10	15																	220
11	16																	240
12	18																	260
13	19																	280
14	21																	300
15	22																	350
16	23																	400
17	25																	450
19	28																	500
21	31																	550
23	34																	600
25	37																	650
28	40																	700
30	43																	750
31	46																	800
33	48																	850
35	51																	900
37	54																	950
39	57																	1000
41	59																	1100
43	62																	1200
45	65																	1300
48	70																	1400
52	75																	1500
55	80																	1600
58																		1700
62																		1800
65																		1800
68																		1900
71																		1900
75																		1900

Continued on J.116

Power dissipation values

A

B

C

D

E

F

G

H

I

J/X



Stand alone

Temperature rise [Kelvin]



DISSIPATION	1800x1600x400		2000x400x600		2000x600x400		2000x600x500		2000x600x600		2000x600x800		2000x700x400		2000x800x400		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
30			4		4		4		4					4			
40			5		6		6		5					5			5
50	4		6	4	7	4	7	4	6			5		6	4		6
60	5		7	5	8	5	8	5	7	4		6	4	7	5	4	7
70	6		8	6	9	6	9	5	8	5	7	4	6	5	8	5	7
80	6		9	6	10	6	10	6	9	5	8	5	7	6	9	6	8
90	7		10	7	11	7	11	6	10	6	9	5	8	6	10	6	9
100	8		11	7	12	7	12	7	11	7	10	6	8	7	11	7	10
120	9		13	9	14	9	14	8	12	8	11	7	10	8	13	8	12
140	10		15	10	15	10	15	9	14	9	13	8	11	9	14	9	13
160	11		16	11	17	11	17	10	16	10	14	9	12	10	16	10	15
180	12		18	12	19	12	19	11	17	11	16	9	13	11	17	11	16
200	13		19	13	20	13	20	12	19	11	17	10	15	12	19	12	17
220	14		21	14	22	14	22	13	20	12	18	11	16	13	20	12	19
240	15		23	15	24	15	24	14	22	13	20	12	17	14	22	13	20
260	16		24	16	25	16	25	15	23	14	21	13	18	15	23	14	22
280	17		25	17	27	17	27	16	24	15	22	13	19	16	25	15	23
300	18		27	18	28	18	28	17	26	16	24	14	20	17	26	16	24
350	21		30	20	32	20	32	19	29	18	27	16	23	19	30	18	27
400	23		34	23	36	23	36	21	32	20	30	18	25	21	33	20	30
450	25		37	25	39	25	39	23	36	22	33	20	28	24	36	22	33
500	27		41	27	43	27	43	26	39	24	36	21	30	26	39	24	36
550	30		44	29	46	29	46	28	42	26	38	23	33	28	43	26	39
600	32		47	32	50	32	50	30	45	28	41	25	35	30	46	28	42
650	34		50	34	53	34	53	32	48	30	44	26	38	32	49	30	45
700	36		53	36	56	36	56	33	51	31	47	28	40	34	52	32	48
750	38		56	38	59	38	59	35	54	33	49	30	42	36	55	33	50
800	40		59	40	62	40	62	37	57	35	52	31	44	37	58	35	53
850	42		62	42	66	42	66	39	60	37	54	33	47	39	60	37	56
900	44		65	44	69	44	69	41	62	38	57	34	49	41	63	39	58
950	46		68	46	72	46	72	43	65	40	60	36	51	43	66	40	61
1000	48		71	48	75	48	75	45	68	42	62	37	53	45	69	42	64
1100	52		77	51	81	51	81	48	73	45	67	40	57	48	74	46	69
1200	56			55	55	55	55	52	79	48	72	43	61	52	80	49	74
1300	59			59	59	59	59	55		52	77	46	66	55		52	79
1400	63			62	62	62	62	58		55		49	70	59		55	
1500	67			66	66	66	66	62		58		52	74	62		58	
1600	70			70	70	70	70	65		61		54	77	65		62	
1700	74			73	73	73	73	68		64		57		69		65	
1800	77			76	76	76	76	72		67		60		72		68	
1900				80		80		75		70		63		75		71	

Stand alone

Temperature rise [Kelvin]



DISSIPATION	2000x1200x600		2000x1200x800		2000x1400x400		2000x1600x400		2000x1600x600		2200x600x600		2200x600x800		2200x800x600		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
30								4									
40								5				4					
50							4	6		5		5		5		5	
60			4		4		5	7	4	6	4	6	4	5	4	5	5
70			5		5		6	8	5	7	5	7	4	6	4	6	6
80	4		6		6	4	7	9	6	8	5	8	5	7	5	7	7
90	5		6	4	6	5	7	10	6	9	6	9	5	7	5	7	8
100	5		7	5	7	5	7	11	7	10	6	9	6	8	6	8	8
120	6		8	5	7	6	8	13	8	11	7	11	6	9	6	9	9
140	7		9	6	8	7	9	15	9	13	8	12	7	11	7	11	11
160	7		10	7	9	7	10	16	10	14	9	14	8	12	8	12	12
180	8		11	7	10	8	11	18	11	15	10	15	9	13	9	13	13
200	9		12	8	11	9	12	19	12	17	11	16	10	14	10	14	14
220	9		13	9	11	10	13	21	13	18	12	18	10	15	10	15	15
240	10		14	9	12	10	14	22	14	19	13	19	11	16	11	16	16
260	11		15	10	13	11	15	24	15	21	13	20	12	17	12	17	17
280	11		16	11	14	12	16	25	15	22	14	21	13	18	13	18	18
300	12		16	11	15	12	17	27	16	23	15	23	13	19	13	19	19
350	14		19	13	17	14	19	30	18	26	17	26	15	22	15	22	22
400	15		21	14	19	16	22	34	21	29	19	29	17	25	17	25	25
450	17		23	16	20	17	24	37	23	32	21	31	19	27	19	27	27
500	18		25	17	22	19	26	40	25	35	23	34	20	29	20	29	29
550	20		27	18	24	20	28	44	27	38	24	37	22	32	22	32	32
600	21		29	20	26	22	30	47	29	41	26	40	23	34	23	34	34
650	23		31	21	27	23	32	50	30	43	28	42	25	36	25	36	36
700	24		32	22	29	24	34	53	32	46	30	45	27	38	27	38	38
750	25		34	23	31	26	36	56	34	48	31	47	28	41	28	41	41
800	27		36	25	32	27	38	59	36	51	33	50	30	43	30	43	43
850	28		38	26	34	29	40	62	38	54	35	52	31	45	31	45	45
900	29		40	27	36	30	42	65	39	56	36	55	32	47	32	47	47
950	31		41	28	37	31	43	68	41	59	38	57	34	49	34	49	49
1000	32		43	30	39	32	45	71	43	61	39	60	35	51	35	51	51
1100	35		47	32	42	35	49	76	46	66	43	64	38	55	38	55	55
1200	37		50	34	45	38	52	81	50	71	46	69	41	59	41	59	59
1300	39		53	36	48	40	56	87	53	75	49	74	44	63	44	63	63
1400	42		57	39	51	43	59	93	56	81	52	78	46	67	46	67	67
1500	44		60	41	54	45	63	100	60	87	55	84	49	71	49	71	71
1600	47		63	43	57	47	66	107	63	93	58	90	52	75	52	75	75
1700	49		66	45	59	50	69	114	66	100	61	97	54	78	54	78	78
1800	51		69	47	62	52	73	121	69	107	63	104	57	81	57	81	81
1900	54		72	49	65	54	76	128	72	114	66	109	59	84	59	84	84

Power dissipation values

A

B

C

D

E

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J/X



Stand alone

Temperature rise [Kelvin]



2000x800x500		2000x800x600		2000x800x800		2000x1000x400		2000x1000x500		2000x1000x600		2000x1000x800		2000x1200x400		2000x1200x500		DISSIPATION Watt
Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	
																		30
																		40
																		50
																		60
																		70
																		80
																		90
																		100
																		120
																		140
																		160
																		180
																		200
																		220
																		240
																		260
																		280
																		300
																		350
																		400
																		450
																		500
																		550
																		600
																		650
																		700
																		750
																		800
																		850
																		900
																		950
																		1000
																		1100
																		1200
																		1300
																		1400
																		1500
																		1600
																		1700
																		1800
																		1900

Stand alone

Temperature rise [Kelvin]



2200x800x800		2200x800x900		2200x1000x600		2200x1000x800		2200x1200x600		DISSIPATION Watt
Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	
										30
										40
										50
										60
										70
										80
										90
										100
										120
										140
										160
										180
										200
										220
										240
										260
										280
										300
										350
										400
										450
										500
										550
										600
										650
										700
										750
										800
										850
										900
										950
										1000
										1100
										1200
										1300
										1400
										1500
										1600
										1700
										1800
										1900

A

B

C

D

E

F

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J/X



EH1 - EH2 - EH4

Stand alone

Temperature rise [Kelvin]



DISSIPATION	EH1 752x385x270		EH2-S2 590x425x240		EH2-S3 860x425x240		EH2-NA 256x433x240		EH2-NB 516x433x240		EH2-NC 791x433x240		EH2-ND 1066x433x240		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
10		5	4	5		5	7	8	5	6		5		5	
20	7	9	8	9	6	8	13	14	8	10	7	8	5	8	
30	10	12	11	13	9	11	17	19	11	14	9	12	7	11	
40	12	15	14	17	11	14	22	24	14	17	12	15	9	14	
50	15	18	16	20	14	17	26	29	17	21	14	17	11	17	
60	17	21	19	23	16	20	30	34	20	24	16	20	13	20	
70	19	24	21	26	18	22	34	38	23	27	18	23	14	23	
80	21	26	24	29	20	25	38	43	25	30	20	25	16	25	
90	23	29	26	32	22	27	42	47	28	33	23	28	18	28	
100	25	32	28	35	24	29	46	51	30	36	25	30	19	30	
120	29	37	33	40	27	34	53		35	42	28	35	22	35	
140	33	41	37	45	31	39			39	48	32	40	25	40	
160	37	46	41	50	34	43			44	53	36	44	28	44	
180	41	51	45	56	38	47			48		39	49	31	49	
200	44	55	49		41	51			53		43	53	34	53	
220	48		53		45	56			57		46		36	57	
240	51				48						50		39		
260	55				51						53		42		
280					54						56		44		
300													47		
350													53		

Stand alone

Temperature rise [Kelvin]



DISSIPATION	EH4-00 1004x395x224		EH4-0 1004x495x224		EH4-1 1004x745x224		EH4-S1 820x320x234		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top
10		4	5				4	5	
20	6	8	5	8			6	7	9
30	9	11	7	11	5	8	10	13	
40	11	14	9	14	7	10	13	16	
50	13	16	11	17	8	12	15	19	
60	15	19	13	20	9	14	18	22	
70	17	21	14	22	11	15	20	25	
80	19	24	16	25	12	17	22	28	
90	21	26	18	27	13	19	25	31	
100	23	28	19	29	14	21	27	34	
120	26	33	22	34	16	24	31	39	
140	30	37	25	39	19	27	35	44	
160	33	41	28	43	21	30	39	49	
180	36	45	31	47	23	33	43	54	
200	39	49	33	51	25	36	47	59	
220	42	53	36	55	27	39	51	64	
240	46	57	39	59	29	42	54	68	
260	49	61	41	63	31	44	58	73	
280	52	65	44	67	33	47	62	77	
300	55	68	46	71	34	50	65		
350	62	77	52		39	56	74		
400	69		58		43	63			
450	76		64		48	69			
500			70		52	75			
550			75		56				
600					60				
650					64				
700					68				
750					72				
800					76				
850					80				

Power dissipation values

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J/X



Stand alone

Temperature rise [Kelvin]



DISSIPATION	EH3/F-0 EH3/AP-0 875x590x320		EH3/F-1 EH3/AP-1 875x785x320		EH3/F-2 EH3/AP-2 875x1115x320		EH3/F-3 EH3/AP-3 875x1445x320		EH3/AP-20 1125x590x320		EH3/AP-21 1125x785x320		EH3/AP-22 1125x1115x320		EH3/AP23 1125x1445x320		EH6-00 830x470x320		EH6-0 830x605x320		EH6-1 830x800x320		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
10																							
20		5	6		5				5		4					5	8	4	5	7		5	
30		6	9		5	7		5	5	7	4	6		4		8	11	7	9		5	7	
40		8	11	6	9	5	6	5	6	9	5	7		5	4	9	13	8	11	7	9	7	
50		10	13	8	10	6	7	5	6	8	11	6	8	5	6	4	5	11	16	10	14	8	11
60		11	16	9	12	7	9	5	7	9	13	7	10	5	7	5	6	13	19	11	16	9	12
70		13	18	10	13	7	10	6	8	10	14	8	11	6	8	5	7	15	21	13	18	10	14
80		14	20	11	15	8	11	7	8	11	16	9	12	7	9	6	8	17	23	14	20	12	15
90		16	22	12	16	9	12	7	9	12	18	10	14	7	10	7	9	18	26	16	22	13	17
100		17	23	13	18	10	13	8	10	13	19	11	15	8	11	7	9	20	28	17	24	14	18
120		20	27	15	21	11	15	9	12	15	22	12	17	9	12	8	11	23	32	20	27	16	21
140		22	31	17	23	13	17	10	13	17	25	14	19	10	14	9	12	26	37	23	31	18	24
160		25	34	19	26	14	19	12	15	19	28	15	22	12	16	10	14	29	41	25	35	20	27
180		27	38	21	29	16	21	13	16	21	31	17	24	13	17	11	15	32	45	28	38	22	29
200		29	41	23	31	17	22	14	18	23	33	18	26	14	19	13	16	34	49	30	41	24	32
220		32	44	25	34	19	24	15	19	25	36	20	28	15	20	14	18	37	53	33	45	26	35
240		34	47	27	36	20	26	16	21	27	39	21	30	16	22	14	19	40	57	35	48	28	37
260		36	51	29	38	21	28	17	22	28	41	23	32	17	23	15	20	43		37	51	30	40
280		39	54	30	41	23	29	18	23	30	44	24	34	18	25	16	21	45		40	54	32	42
300		41	57	32	43	24	31	19	25	32	46	26	36	19	26	17	23	48		42		33	44
350		46		36	49	27	35	22	28	36	52	29	40	22	29	20	26	54		47		38	50
400		51		41	54	30	39	24	31	40		32	45	24	33	22	29			53		42	56
450		57		45		33	43	27	34	44		35	50	27	36	24	31					46	
500				48		36	47	29	37	48		39	54	29	39	26	34					50	
550				52		39	51	31	40	52		42		31	42	28	37					54	
600				56		42	54	34	43	56		45		34	45	30	40						
650						45		36	46			48		36	48	32	42						
700						47		38	49			51		38	51	34	45						
750						50		40	51			53		40	54	36	47						
800						53		42	54			56		43		38	50						
850						55		44	57					45		40	52						
900								47						47		42	55						
950								49						49		44							
1000								51						51		46							
1100								55						55		49							
1200																53							
1300																	56						

Power dissipation values

A

Stand alone

Temperature rise [Kelvin]



DISSIPATION	EH3/DC-1 875x785x320		EH3/DC-2 875x1115x320		EH3/GD-AP - 031 875x676x424		EH3/GD-AP - 041 875x871x424		EH3/GD-AP - 051 875x1200x424		EH3/GD-AP - 233 1125x676x676		EH3/GD-AP - 243 1125x871x676		EH3/GD-AP - 253 1125x1200x676		
	Watt	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top	Half	Top
10																	
20				5			5										
30		5	7		5	5	7	4	5				4				
40		6	9		5	6	8	5	7			5		5			
50		8	10	6	7	7	10	6	8	5	6	5	6	4	5	5	
60		9	12	7	9	9	11	7	9	5	7	5	7	5	6	4	5
70		10	13	7	10	10	13	8	10	6	8	6	8	6	7	5	6
80		11	15	8	11	11	14	9	12	7	9	7	9	6	8	5	7
90		12	16	9	12	12	16	10	13	8	10	7	10	7	9	6	7
100		13	18	10	13	13	17	11	14	8	11	8	11	7	10	6	8
120		15	21	11	15	15	20	12	16	10	12	9	12	9	11	7	9
140		17	23	13	17	17	22	14	18	11	14	11	14	10	13	8	11
160		19	26	14	19	19	25	16	20	12	15	12	15	11	14	9	12
180		21	29	16	21	21	27	17	22	13	17	13	17	12	15	10	13
200		23	31	17	22	23	30	19	24	14	18	14	18	13	17	11	14
220		25	34	19	24	24	32	20	26	16	20	15	20	14	18	12	15
240		27	36	20	26	26	35	22	28	17	21	16	21	15	19	13	16
260		29	38	21	28	28	37	23	30	18	23	17	23	16	21	14	18
280		30	41	23	29	30	39	25	32	19	24	18	24	17	22	15	19
300		32	43	24	31	31	41	26	34	20	25	19	26	18	23	16	20
350		36	49	27	35	35	47	29	38	23	29	22	29	20	26	18	22
400		41	54	30	39	39	52	33	42	25	32	25	32	23	29	20	25
450		45		33	43	43		36	47	28	35	27	35	25	32	22	27
500		48		36	47	47		39	51	30	38	29	38	27	35	24	30
550		52		39	51	51		42	55	33	41	32	42	29	38	25	32
600		56		42	54	55		45		35	44	34	45	31	40	27	34
650				45				48		37	47	36	47	34	43	29	37
700				47				51		40	50	38	50	36	46	31	39
750				50				54		42	53	41	53	38	48	33	41
800				53						44	56	43	56	40	51	34	43
850					55					46		45		42	54	36	46
900								49		49		47		44	56	38	48
950								51		51		49		46		40	50
1000									53		51		51		47		52
1100											55		55		51		56
1200														55			48
1300																	51
1400																	54

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422841	420RVL300	F.26	610017	F/012901-050	C.43	811339	E/075025-023	I.11	813157	E/087000-024	D.14
422842	420RVL30	F.26	610017	F/012901-050	I.7	811340	E/075025-024	B.22	813158	E/087000-025	D.14
422843	420RVL31	F.26	610018	F/012901-087	I.7	811340	E/075025-024	I.11	813159	E/087000-026	D.14
422844	420RVL32	F.26	610020	F/012901-099	C.25	811341	E/075025-025	B.22	813160	E/087000-027	D.14
422845	—	F.26	610020	F/012901-099	C.43	811341	E/075025-025	I.11	813161	E/087000-028	D.14
422846	420B283994	F.26	610020	F/012901-099	I.7	811342	E/075025-061	B.22	813162	E/087000-029	D.14
422847	420C283994	F.26	610021	F/012901-100	C.25	811342	E/075025-061	I.11	813168	E/087000-032	D.14
422848	420A284004	F.26	610021	F/012901-100	C.43	811343	E/075025-062	B.22	815...		
422849	336 29A	F.26	610021	F/012901-100	I.7	811343	E/075025-062	I.11	815092	E/089000-003	C.25
422850	336 29B	F.26	610022	F/012901-199	C.25	811363	E/194502-050	D.15	815092	E/089000-003	C.46
422851	420RVN300	F.26	610022	F/012901-199	C.43	811363	E/194502-050	I.13	815093	E/089000-004	C.25
422852	420RVN30	F.26	610022	F/012901-199	I.7	811365	E/194504-050	D.15	815093	E/089000-004	C.46
422853	420RVN31	F.26	610065	F/018000-121	I.7	811365	E/194504-050	I.13	815094	E/089000-005	C.25
422854	420RVN32	F.26	610130	F/020543-004	I.6	811417	E/000002-000	B.21	815094	E/089000-005	C.46
422855	420RVN33	F.26	610132	F/020544-004	I.6	811417	E/000002-000	I.12	815105	E/089000-016	C.25
422856	420RVN34	F.26	610133	F/020545-004	I.6	811421	E/000010-010	B.21	818...		
422857	420D283994	F.26	610142	F/029000-072	B.7	811421	E/000010-010	I.12	818078	E/000412-000	I.10
422858	420E283994	F.26	610142	F/029000-072	C.47	811435	E/000011-260	B.21	818079	E/001100-000	H.5
422859	420F283994	F.26	610142	F/029000-072	I.9	811435	E/000011-260	I.13	818080	E/001140-000	H.5
422860	420E284004	F.26	610185	F/029200-030	B.7	811438	E/000012-040	B.21	818081	E/001141-000	H.5
422861	420G284004	F.26	610185	F/029200-030	I.7	811438	E/000012-040	I.13	818083	E/001200-000	H.6
422862	420H284004	F.26	610186	F/029200-035	B.7	811442	E/000012-060	B.21	818091	E/003000-000	H.4
422863	420RVD30	F.26	610186	F/029200-035	I.7	811442	E/000012-060	I.13	818092	E/004000-000	H.3
422864	420RVD31	F.26	610187	F/029200-040	B.7	811443	—	B.22	818093	E/004001-000	H.3
422865	420RVD32	F.26	610187	F/029200-040	I.7	811443	—	I.13	818094	E/004003-000	H.3
422866	420RVD33	F.26	610232	F/029650-115	C.25	811446	E/000013-060	B.21	818097	E/004005-000	H.3
422867	420RVD34	F.26	610232	F/029650-115	C.47	811446	E/000013-060	I.13	818098	E/004006-000	H.3
422868	420B292634	F.26	610233	F/029650-116	C.25	811447	E/000013-080	B.21	818099	E/004007-000	H.3
422869	420C292634	F.26	610233	F/029650-116	C.47	811447	E/000013-080	I.13	818102	E/004008-000	H.3
422870	420A292644	F.26	610239	F/029650-412	C.24	811451	E/000020-020	B.21	818103	E/004009-000	H.3
422871	420C292644	F.26	610240	F/029650-424	C.24	811451	E/000020-020	I.12	818104	E/004601-000	H.3
422872	420D292644	F.26	610248	F/029800-512	C.24	811454	E/000021-025	B.22	818105	E/004700-000	H.3
422873	420RVH31	F.26	610249	F/029800-524	C.24	811454	E/000021-025	I.11	818106	E/004701-000	H.3
422874	420RVH32	F.26	610257	F/029950-624	C.24	811455	E/000021-035	B.22	818107	E/004702-000	H.3
422875	420RVH33	F.26	610312	F/049300-006	I.13	811455	E/000021-035	I.11	818112	E/225011-000	I.9
422876	420RVH34	F.26	610328	F/027650-412	C.24	811456	E/000021-045	B.22	818140	E/004600-220	H.10
422877	420J283994	F.26	610329	F/027650-424	C.24	811456	E/000021-045	I.11	818141	E/001300-220	H.10
422878	420M284004	F.26	610330	F/027800-512	C.24	811457	E/000021-055	B.22	818142	E/001400-220	H.10
422879	420P284004	F.26	610331	F/027800-524	C.24	811457	E/000021-055	I.11	818143	E/001500-220	H.10
422880	420K284004	F.26	610332	F/027950-624	C.24	811458	E/000021-065	B.22	818144	E/001200-001	H.10
422881	420RV533	F.26	610484	—	B.7	811458	E/000021-065	I.11	818145	E/001300-001	H.10
422882	420RV534	F.26	616915	—	I.4	811460	E/000021-080	B.22	818146	E/001400-001	H.10
422883	420V284004	F.26	616916	—	I.4	811460	E/000021-080	I.11	818162	E/003000-001	H.4
422884	420X284004	F.26	616917	—	I.4	811461	E/000021-100	B.22	818163	E/003000-002	H.4
422892	420RF200	F.26	616918	—	I.4	811461	E/000021-100	I.11	818164	E/003000-001	H.4
422893	420RF20	F.26	616919	—	I.4	811462	E/000022-000	B.21	818165	E/003005-002	H.4
422894	420RF21	F.26	616920	—	I.4	811463	E/000023-001	B.21	818166	E/000200-001	H.11
422895	420RF22	F.26	617992	—	C.25	811477	E/000050-025	B.22	818167	E/000300-003	H.11
422895	420RF22	F.27	617992	—	I.7	811477	E/000050-025	I.12	818168	E/000400-003	H.11
422896	420RF23	F.26	779...			811478	E/000050-040	B.22	818169	E/000700-001	H.11
422896	420RF23	F.27	779201	E/011430-122	I.8	811478	E/000050-040	I.12	818170	E/000300-002	H.11
422897	420RF24	F.26	779202	E/011430-123	I.8	811479	E/000050-080	B.22	818171	E/000400-005	H.11
422898	336 191	F.26	779203	E/011430-125	I.8	811479	E/000050-080	I.12	818172	E/000700-002	H.11
422901	420 REPAIR	F.26	779204	E/011430-153	I.8	811480	E/000050-120	B.22	818173	E/000300-003	H.11
422906	420RVL32S1Z2	F.27	779205	E/011430-163	I.8	811480	E/000050-120	I.12	818174	E/000300-004	H.11
422907	420RVN32S1Z2	F.27	779212	E/030431-118	I.8	811483	E/000051-000	B.21	818175	E/000400-007	H.11
422908	420RVN32S2Z2	F.27	779213	E/030431-119	I.8	811483	E/000051-000	I.12	818176	E/000700-003	H.11
422909	420RVN32S3Z2	F.27	779214	E/030431-120	I.8	811501	E/000158-000	B.21	818177	E/003000-003	H.4
422910	420RVN33S1Z2	F.27	779215	E/030431-121	I.8	811501	E/000158-000	I.12	818178	E/003000-004	H.4
422911	420RVN33S2Z2	F.27	779216	E/030431-125	I.8	811502	E/000162-000	B.21	818179	E/003005-003	H.4
422912	420RVN33S3Z2	F.27	779217	E/040099-001	I.7	811502	E/000162-000	I.12	818180	E/003005-004	H.4
422913	420RVH32S1Z2	F.27	779218	E/040099-002	I.7	811516	E/001021-020	B.18	818181	E/001700-220	H.10
422914	420RVH32S2Z2	F.27	779219	E/040099-003	I.7	811516	E/001021-020	B.28	818182	E/001700-001	H.10
422915	420RVH32S3Z2	F.27	779220	E/040099-021	I.7	811516	E/001021-020	B.7	818190	E/121200-000	H.6
422916	420RVH33S1Z2	F.27	779221	E/040099-022	I.7	811516	E/001021-020	C.25	818191	E/225010-000	I.9
422917	420RVH33S2Z2	F.27	779222	E/040099-023	I.7	811516	E/001021-020	C.47	818192	E/225012-000	I.9
422918	420RVH33S3Z2	F.27	779223	E/040099-040	I.7	811516	E/001021-020	D.13	818193	E/002705-000	H.4
600...			779224	E/040099-042	I.7	811516	E/001021-020	E.23	818195	—	H.10
600346	—	I.5	783148	—	B.18	811516	E/001021-020	F.12	818196	—	H.10
600501	F/030274-000	I.4	811...			811516	E/001021-020	F.16	818197	—	H.10
600502	F/030276-000	I.4	811096	E/001097-950	I.15	811516	E/001021-020	F.18	818198		

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821201	—	E.12	821257	—	E.5	821342	—	E.14	821417	—	E.13
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821202	—	E.12	821258	—	E.5	821343	—	E.14	821418	—	E.13
821202	—	E.3	821259	—	E.12	821344	—	E.12	821418	—	E.16
821203	—	E.12	821259	—	E.5	821344	—	E.14	821419	—	E.16
821203	—	E.3	821260	—	E.12	821345	—	E.12	821420	—	E.17
821204	—	E.12	821260	—	E.5	821345	—	E.14	821421	—	E.17
821204	—	E.3	821261	—	E.12	821346	—	E.14	821422	—	E.17
821205	—	E.12	821261	—	E.5	821347	—	E.14	821423	—	E.17
821205	—	E.3	821263	—	E.12	821348	—	E.14	821424	—	E.17
821206	—	E.12	821263	—	E.5	821349	—	E.12	821425	—	E.17
821206	—	E.3	821265	—	E.12	821349	—	E.14	821426	—	E.17
821207	—	E.12	821265	—	E.5	821351	—	E.12	821427	—	E.17
821207	—	E.3	821267	—	E.12	821351	—	E.14	821428	—	E.17
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821208	—	E.3	821269	—	E.5	821353	—	E.14	821430	—	E.17
821209	—	E.12	821270	—	E.5	821354	—	E.12	821431	—	E.17
821209	—	E.3	821271	—	E.5	821354	—	E.14	821432	—	E.13
821210	—	E.12	821272	—	E.5	821355	—	E.12	821432	—	E.16
821210	—	E.3	821273	—	E.5	821355	—	E.14	821433	—	E.13
821211	—	E.12	821274	—	E.5	821357	—	E.14	821433	—	E.16
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821212	—	E.12	821276	—	E.5	821360	—	E.14	821434	—	E.16
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821213	—	E.12	821278	—	E.5	821363	—	E.14	821435	—	E.16
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822429	—	D.4	822477	—	D.4	822582	—	D.11	822653	—	D.9
822429	—	D.8	822477	—	D.8	822582	—	D.8	822654	—	D.12
822431	—	D.4	822478	—	D.4	822583	—	D.11	822655	—	D.12
822431	—	D.8	822478	—	D.8	822583	—	D.8	822656	—	D.12
822432	—	D.4	822479	—	D.4	822584	—	D.11	822656	—	D.9
822432	—	D.8	822479	—	D.8	822584	—	D.8	822657	—	D.12
822433	—	D.4	822480	—	D.4	822585	—	D.11	822657	—	D.9
822433	—	D.8	822480	—	D.8	822585	—	D.8	822658	—	D.12
822434	—	D.4	822481	—	D.7	822586	—	D.11	822658	—	D.9
822434	—	D.8	822481	—	D.8	822586	—	D.8	822659	—	D.12
822436	—	D.4	822482	—	D.7	822587	—	D.11	822659	—	D.9
822436	—	D.8	822482	—	D.8	822587	—	D.8	822660	—	D.12
822437	—	D.4	822484	—	D.7	822588	—	D.11	822661	—	D.12
822437	—	D.8	822484	—	D.8	822588	—	D.8	822661	—	D.9
822438	—	D.4	822485	—	D.7	822589	—	D.11	822662	—	D.12
822438	—	D.8	822485	—	D.8	822589	—	D.8	822662	—	D.9
822439	—	D.4	822486	—	D.7	822590	—	D.11	822663	—	D.12
822439	—	D.8	822486	—	D.8	822590	—	D.8	822663	—	D.9
822440	—	D.4	822487	—	D.7	822591	—	D.11	822664	—	D.12
822440	—	D.8	822487	—	D.8	822591	—	D.8	822664	—	D.9
822442	—	D.4	822488	—	D.7	822591	—	D.8	822665	—	D.12
822442	—	D.8	822488	—	D.8	822592	—	D.11	822665	—	D.9
822443	—	D.4	822489	—	D.7	822592	—	D.8	822666	—	D.12
822443	—	D.8	822489	—	D.8	822593	—	D.11	822666	—	D.9
822445	—	D.4	822490	—	D.7	822593	—	D.8	822667	—	D.12
822445	—	D.8	822490	—	D.8	822594	—	D.11	822667	—	D.9
822446	—	D.4	822492	—	D.7	822594	—	D.8	822668	—	D.12
822446	—	D.8	822492	—	D.8	822595	—	D.11	822668	—	D.9
822447	—	D.4	822493	—	D.7	822595	—	D.8	822669	—	D.12
822447	—	D.8	822493	—	D.8	822596	—	D.11	822669	—	D.9
822448	—	D.4	822494	—	D.7	822596	—	D.8	822670	—	D.12
822448	—	D.8	822494	—	D.8	822597	—	D.11	822670	—	D.9
822449	—	D.4	822495	—	D.7	822597	—	D.8	822675	—	D.13
822449	—	D.8	822495	—	D.8	822598	—	D.11	822675	—	D.8
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822450	—	D.8	822496	—	D.8	822599	—	D.11	822676	—	D.8
822451	—	D.4	822519	—	D.10	822599	—	D.8	822677	—	D.13
822451	—	D.8	822520	—	D.10	822600	—	D.11	822677	—	D.8
822452	—	D.4	822521	—	D.10	822600	—	D.8	822678	—	D.13
822452	—	D.8	822522	—	D.10	822601	—	D.11	822678	—	D.8
822453	—	D.4	822523	—	D.10	822601	—	D.8	822679	—	D.13
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822454	—	D.4	822525	—	D.10	822602	—	D.8	822680	—	D.8
822454	—	D.8	822526	—	D.10	822603	—	D.11	822681	—	D.13
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822456	—	D.4	822530	—	D.10	822604	—	D.8	822682	—	D.8
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822457	—	D.4	822532	—	D.10	822622	—	D.12	822683	—	D.8
822457	—	D.8	822533	—	D.10	822623	—	D.12	822684	—	D.13
822458	—	D.4	822534	—	D.10	822624	—	D.12	822684	—	D.8
822458	—	D.8	822535	—	D.10	822625	—	D.12	822685	—	D.13
822459	—	D.4	822536	—	D.10	822626	—	D.12	822685	—	D.8
822459	—	D.8	822537	—	D.10	822627	—	D.11	822686	—	D.13
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822460	—	D.8	822549	—	D.10	822629	—	D.11	822687	—	D.13
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822802	—	D.15	828063	E/042390-330	B.15	831328	E/054000-101	C.40	832030	E/070000-525	I.12
822802	—	D.9	828064	E/042390-331	B.15	831328	E/054000-101	I.13	832031	E/070000-526	B.18
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832474	E/073440-010	B.27	833385	—	B.27	833558	E/079214-132	B.20	842084	E/311300-290	F.8
832475	E/073530-010	B.27	833386	—	B.13	833559	E/079214-133	B.20	842085	E/311400-290	F.8
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832478	E/073230-015	B.26	833387	—	B.27	833566	E/073020-000	B.12	842099	E/410160-100	F.23
832479	E/073320-015	B.26	833500	E/079013-122	B.12	833566	E/073020-000	B.13	842100	E/410161-100	B.12
832480	E/073330-015	B.26	833501	E/079013-132	B.12	833568	E/073030-000	B.12	842100	E/410161-100	B.13
832481	E/073340-015	B.27	833501	E/079013-132	B.26	833568	E/073030-000	B.13	842100	E/410161-100	F.11
832482	E/073430-015	B.27	833502	E/079013-133	B.12	833570	E/073040-000	B.12	842100	E/410161-100	F.15
832483	E/073440-015	B.27	833502	E/079013-133	B.26	833570	E/073040-000	B.13	842100	E/410161-100	F.23
832484	E/073530-015	B.27	833503	E/079013-142	B.13	833572	E/073050-000	B.13	842101	E/410162-100	B.12
832485	E/073452-015	B.27	833504	E/079013-143	B.12	833574	E/073020-060	B.12	842101	E/410162-100	B.13
832486	E/073546-015	B.27	833504	E/079013-143	B.13	833574	E/073020-060	B.13	842101	E/410162-100	F.11
832487	E/070008-132	B.26	833504	E/079013-143	B.27	833575	E/073030-060	B.12	842101	E/410162-100	F.15
832488	E/070008-133	B.26	833505	E/079013-144	B.13	833575	E/073030-060	B.13			
832489	E/070008-143	B.27	833505	E/079013-144	B.27	833576	E/073040-060	B.12	843...		
832490	E/070008-144	B.27	833506	E/079013-153	B.13	833576	E/073040-060	B.13	843001	E/070000-325	F.12
832491	E/070008-153	B.27	833506	E/079013-153	B.27	833577	E/073050-060	B.13	843001	E/070000-325	F.16
832492	E/070008-145	B.27	833507	E/079013-145	B.13	833582	E/073130-060	B.12	843001	E/070000-325	F.20
832493	E/070012-110	B.26	833507	E/079013-145	B.27	833582	E/073130-060	B.13	843001	E/070000-325	F.22
832494	E/070013-100	B.26	833508	E/079014-122	B.12	833583	E/073140-060	B.12	843001	E/070000-325	F.8
832494	E/070013-100	B.27	833509	E/079014-132	B.12	833583	E/073140-060	B.13	843001	E/070000-325	F.9
832495	E/070014-100	B.27	833509	E/079014-132	B.26	833584	E/070220-000	B.12	843002	E/070000-327	F.12
832496	E/070015-100	B.27	833510	E/079014-133	B.12	833585	E/070230-000	B.12	843002	E/070000-327	F.16
832498	E/070320-360	B.26	833510	E/079014-133	B.26	833586	E/070320-000	B.12	843002	E/070000-327	F.18
832499	E/070330-360	B.26	833511	E/079014-142	B.13	833587	E/070330-000	B.12	843002	E/070000-327	F.22
832500	E/070430-360	B.27	833512	E/079014-143	B.12	833588	E/070340-000	B.12	843002	E/070000-327	F.7
832501	E/070440-360	B.27	833512	E/079014-143	B.13	833589	E/070350-000	B.13	843002	E/070000-327	F.9
832502	E/070530-360	B.27	833512	E/079014-143	B.27	833590	E/070420-000	B.13	843003	E/070000-329	F.12
832503	E/070540-360	B.27	833513	E/079014-144	B.13	833591	E/070430-000	B.13	843003	E/070000-329	F.16
832504	E/070082-100	B.28	833513	E/079014-144	B.27	833592	E/070440-000	B.13	843003	E/070000-329	F.18
832505	E/070083-100	B.28	833514	E/079014-153	B.13	833593	E/070450-000	B.13	843003	E/070000-329	F.22
832506	E/070084-100	B.28	833514	E/079014-153	B.27	833594	E/070530-000	B.13	843003	E/070000-329	F.7
832507	E/070085-100	B.28	833515	E/079014-145	B.13	833595	E/070540-000	B.13	843003	E/070000-329	F.9
832555	E/033020-010	B.26	833515	E/079014-145	B.27	833608	E/070200-000	B.19	843010	E/400000-103	F.13
832556	E/033030-010	B.26	833516	E/079015-122	B.12	833610	E/070300-000	B.19	843011	E/400000-104	F.13
832556	E/033030-010	B.27	833517	E/079015-123	B.12	833612	E/070400-000	B.19	843024	E/400000-140	F.11
832557	E/033040-010	B.27	833517	E/079015-123	B.26	833614	E/070500-000	B.19	843024	E/400000-140	F.19
832558	E/033050-010	B.27	833518	E/079015-132	B.12	833624	E/079100-001	B.18	843031	E/400000-155	F.13
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832744	E/070000-362	L.10	833519	E/079015-133	B.12	833626	E/079009-103	B.19	843043	E/400001-103	F.13
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833001	E/579220-005	B.12	833520	E/079015-134	B.27	833640	E/079115-122	B.19	843049	E/400001-169	F.13
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833005	E/579230-005	B.12	833522	E/079015-142	B.13	833642	E/079115-133	B.19	843057	E/400002-140	F.11
833008	E/579320-000	B.12	833523	E/079015-143	B.13	833643	E/079115-142	B.19	843057	E/400002-140	F.19
833008	E/579320-000	B.16	833523	E/079015-143	B.27	833644	E/079115-143	B.19	843063	E/400002-169	F.13
833009	E/579320-005	B.12	833524	E/079015-144	B.13	833645	E/079115-144	B.19	843066	E/400003-103	F.13
833012	E/579330-000	B.12	833524	E/079015-144	B.27	833646	E/079115-153	B.19	843067	E/400003-140	F.11
833013	E/579330-005	B.12	833525	E/079015-145	B.13	833647	E/079115-154	B.19	843069	E/400003-169	F.13
833016	E/579340-000	B.12	833525	E/079015-145	B.27	833648	E/079114-142	B.19	843070	E/400020-140	F.11
833017	E/579340-005	B.12	833526	E/079015-153	B.13	833649	E/079100-100	B.18	843070	E/400020-140	F.19
833020	E/579352-000	B.13	833526	E/079015-153	B.27	833650	E/079100-110	B.18	843071	E/400021-140	F.11
833021	E/579352-005	B.13	833527	E/079015-154	B.13	833651	E/079100-002	B.18	843071	E/400021-140	F.19
833024	E/579420-000	B.13	833527	E/079015-154	B.27	833653	E/079100-003	B.19	843072	E/400022-140	F.11
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833032	E/579440-000	B.13	833530	E/079300-000	B.13	833680	E/079230-020	B.20	843101	E/400310-189	F.13
833036	E/579442-000	B.13	833531	E/079400-000	B.13	833681	E/079330-020	B.20	843104	E/400311-189	F.13
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420F283994	422859	F.26	D/041600-011	890842	I.14	E/001021-020	811516	F.16	E/010031-105	852050	A.16
420G284004	422861	F.26	D/046050-094	890843	I.14	E/001021-020	811516	F.18	E/010035-094	852059	A.16
420H284004	422862	F.26	D/046050-095	890844	I.14	E/001021-020	811516	F.23	E/010035-095	852060	A.16
420J283994	422877	F.26	D/119406-050	890845	F.12	E/001021-020	811516	F.26	E/010035-099	852061	A.16
420K284004	422880	F.26	D/119406-050	890845	F.16	E/001021-020	811516	I.9	E/010035-100	852062	A.14
420M284004	422878	F.26	D/119406-050	890845	F.22	E/001021-020	832000	B.18	E/010035-135	852063	A.14
420P284004	422879	F.26	D/119407-050	890846	F.7	E/001021-020	832000	B.28	E/010035-200	852841	A.23
420RF20	422893	F.26	D/119407-050	890846	F.9	E/001021-020	832000	B.7	E/010035-201	852836	A.24
420RF200	422892	F.26	D/124008-010	890847	D.15	E/001021-020	832000	C.25	E/010041-016	852070	A.16
420RF21	422894	F.26	D/124008-010	890847	I.13	E/001021-020	832000	C.47	E/010041-035	852071	A.16
420RF22	422895	F.26	D/124009-010	890848	D.15	E/001021-020	832000	D.13	E/010041-105	852072	A.16
420RF22	422895	F.27	D/124009-010	890848	I.13	E/001021-020	832000	E.23	E/010045-094	852080	A.16
420RF23	422896	F.26	D/125144-052	890849	I.14	E/001021-020	832000	F.12	E/010045-095	852081	A.16
420RF23	422896	F.27	D/126512-062	890850	I.14	E/001021-020	832000	F.16	E/010045-099	852082	A.16
420RF24	422897	F.26	D/199887-100	890851	F.22	E/001021-020	832000	F.18	E/010045-100	852083	A.14
420RVD30	422863	F.26	E/00...			E/001021-020	832000	F.23	E/010045-200	852838	A.23
420RVD31	422864	F.26	E/000002-000	811417	B.21	E/001021-020	832000	F.26	E/010045-201	852837	A.23
420RVD32	422865	F.26	E/000002-000	811417	I.12	E/001021-020	832000	I.9	E/010051-035	852089	A.17
420RVD33	422866	F.26	E/000010-002	890800	I.11	E/001081-300	811263	I.13	E/010051-070	852091	A.17
420RVD34	422867	F.26	E/000010-010	811421	B.21	E/001097-950	811096	I.15	E/010051-084	852092	A.17
420RVH31	422873	F.26	E/000010-010	811421	I.12	E/001100-000	818079	H.5	E/010051-105	852093	A.17
420RVH32	422874	F.26	E/000011-260	811435	B.21	E/001140-000	818080	H.5	E/010051-170	852095	A.17
420RVH32S1Z2	422913	F.27	E/000011-260	811435	I.13	E/001141-000	818081	H.5	E/010051-270	852878	A.17
420RVH32S2Z2	422914	F.27	E/000012-040	811438	B.21	E/001200-000	818083	H.6	E/010055-093	852098	A.17
420RVH32S3Z2	422915	F.27	E/000012-040	811438	I.13	E/001200-001	818144	H.10	E/010055-095	852099	A.17
420RVH33	422875	F.26	E/000012-060	811442	B.21	E/001200-220	818140	H.10	E/010055-099	852100	A.17
420RVH33S1Z2	422916	F.27	E/000012-060	811442	I.13	E/001300-001	818145	H.10	E/010055-100	852101	A.15
420RVH33S2Z2	422917	F.27	E/000013-060	811446	B.21	E/001300-220	818141	H.10	E/010055-135	852102	A.15
420RVH33S3Z2	422918	F.27	E/000013-060	811446	I.13	E/001400-001	818146	H.10	E/010061-016	852106	A.17
420RVH34	422876	F.26	E/000013-080	811447	B.21	E/001400-220	818142	H.10	E/010061-035	852107	A.17
420RVL30	422842	F.26	E/000013-080	811447	I.13	E/001500-220	818143	H.10	E/010065-093	852118	A.17
420RVL300	422841	F.26	E/000015-002	890801	I.11	E/001700-001	818182	H.10	E/010065-095	852119	A.17
420RVL31	422843	F.26	E/000020-002	890802	I.11	E/001700-220	818181	H.10	E/010065-099	852120	A.17
420RVL32	422844	F.26	E/000020-020	811451	B.21	E/002705-000	818193	H.4	E/010065-100	852121	A.15
420RVL32S1Z2	422906	F.27	E/000020-020	811451	I.12	E/003000-000	818091	H.4	E/010065-135	852122	A.15
420RVN30	422852	F.26	E/000021-025	811454	B.22	E/003000-001	818162	H.4	E/010065-200	852835	A.24
420RVN300	422851	F.26	E/000021-025	811454	I.11	E/003000-002	818163	H.4	E/010071-016	852126	A.16
420RVN31	422853	F.26	E/000021-035	811455	B.22	E/003000-003	818177	H.4	E/010071-035	852127	A.16
420RVN32	422854	F.26	E/000021-035	811455	I.11	E/003000-004	818178	H.4	E/010071-105	852128	A.16
420RVN32S1Z2	422907	F.27	E/000021-045	811456	B.22	E/003005-000	811542	H.4	E/010075-093	852137	A.16
420RVN32S2Z2	422908	F.27	E/000021-045	811456	I.11	E/003005-001	818164	H.4	E/010075-095	852138	A.16
420RVN32S3Z2	422909	F.27	E/000021-055	811457	B.22	E/003005-002	818165	H.4	E/010075-099	852139	A.16
420RVN33	422855	F.26	E/000021-055	811457	I.11	E/003005-003	818179	H.4	E/010075-100	852140	A.14
420RVN33S1Z2	422910	F.27	E/000021-065	811458	B.22	E/003005-004	818180	H.4	E/010075-135	852141	A.14
420RVN33S2Z2	422911	F.27	E/000021-065	811458	I.11	E/004000-000	818092	H.3	E/010075-200	852840	A.23
420RVN33S3Z2	422912	F.27	E/000021-080	811460	B.22	E/004001-000	818093	H.3	E/010075-201	852985	A.23
420RVN34	422856	F.26	E/000021-080	811460	I.11	E/004003-000	818094	H.3	E/010081-016	852147	A.17
420RVS33	422881	F.26	E/000021-100	811461	B.22	E/004005-000	818097	H.3	E/010081-105	852148	A.17
420RVS34	422882	F.26	E/000021-100	811461	I.11	E/004006-000	818098	H.3	E/010085-093	852152	A.17
420V284004	422883	F.26	E/000022-000	811462	B.21	E/004007-000	818099	H.3	E/010085-095	852153	A.17
420X284004	422884	F.26	E/000023-001	811463	B.21	E/004008-000	818102	H.3	E/010085-099	852154	A.17
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E/013901-014	851027	A.21	E/025103-010	853082	C.9	E/025430-141	853166	C.18	E/041519-155	851255	A.21
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E/014900-010	861399	I.10	E/025103-016	855036	C.9	E/025460-150	853878	C.16	E/041523-000	851262	A.21
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E/653165-000	861533	A.7	F/012901-099	610020	I.7			
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April 2005
GE Consumer & Industrial



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Grid area for notes.

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Notes

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