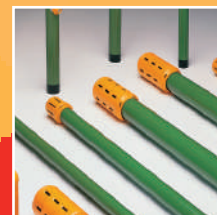




# General Catalogue 2018





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# Switch to Grafi

**The new range of reliable, modular and customizable roadside enclosures!**

*Grafi* is the new range of roadside enclosures for installations intended for electricity, telephone, water/gas distribution networks, traffic light systems and in general for all management systems designed for outdoor installation.

Grafi enclosures integrate the traditional and well-established Conchiglia line of products, reaffirming the high level of quality, reliability and safety we have always guaranteed while introducing new concepts of maximum "modularity" and "multi-functionality".

They are 'tailor-made' and can therefore meet the most varied needs of customization, offering maximum freedom in composing the individual compartments, electrical reliability, mechanical performance and aesthetics for greater integration in public or private urban contexts.

The individual components have been created to be integrated and develop in a wide, functional and competitive range. It is possible to equip the interior spaces with customized solutions to meet every installation need and requirement.



## Characteristics:

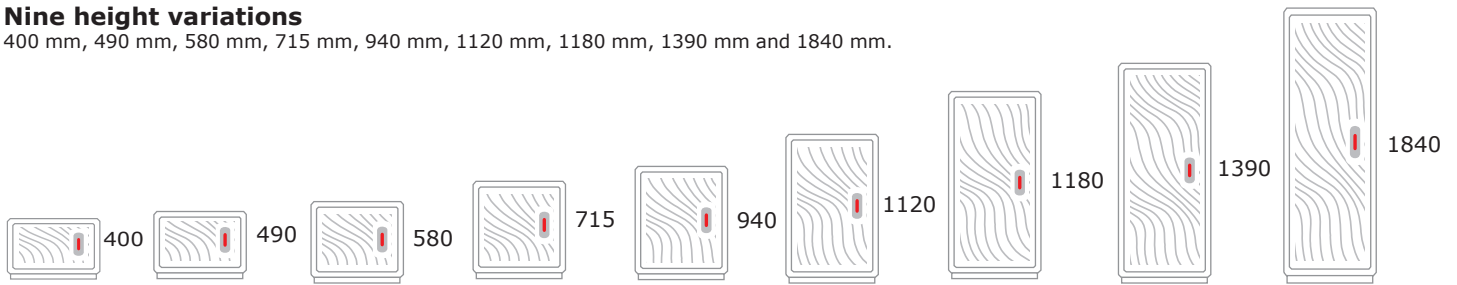
- Made from fibreglass, RAL 7035 color
- Availability, across the entire range of system protection rating IP44 and IP55 in accordance with CEI EN 60529
- IMQ Certification in accordance with CEI EN 62208
- Suitable for creating equipment in class II
- Maximum system modularity
- Over 500 versions available in standard executions
- Possibility of rearranging the partitioning of compartments, even in site (leaving door clearance unchanged)
- Wide range of accessories available to best meet equipment needs in the various sectors of use
- Availability of painted units for greater integration in historical urban contexts.



## Range

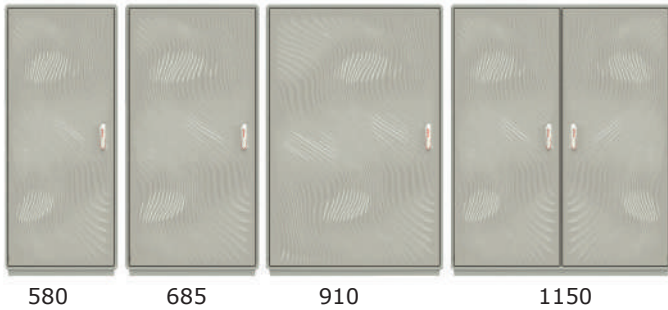
### Nine height variations

400 mm, 490 mm, 580 mm, 715 mm, 940 mm, 1120 mm, 1180 mm, 1390 mm and 1840 mm.



### Four width variations

580 mm (internal useful 562 mm), 685 mm (internal useful 667 mm), 910 mm (internal useful 892 mm), 1150 mm (internal useful 1132 mm)



### Two depths

330 and 460 mm



The range is complete with top units, plinths and internal accessories that can be used to create panels in over 500 versions that can be obtained with the two series.

## Two degrees of IP protection and IMQ certification



### IP44

In the IP44 versions, the seal is installed along the whole perimeter of the bottom wall and the upper part of the door.



### IP55

In the IP55 versions both the doors and the bottom walls of the enclosures are fitted with EPDM foam seals. A closing bottom plates with conical membranes and a seal guarantees effective protection in the cable entry area.

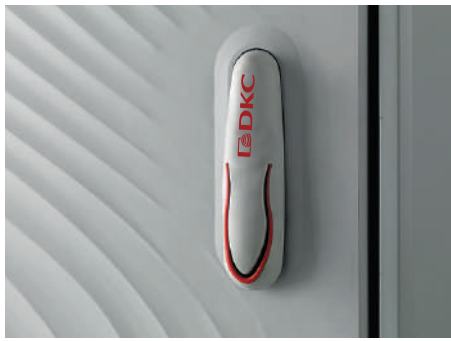
Thanks to the construction characteristics and the special snap-fit profile used as a seal, an IP44 enclosure can easily be converted into an IP55 version by fitting the seal into the relative housings. Vice versa, an IP55 enclosure can be converted into an IP44 version by removing the door seal if the internal equipment requires extra ventilation and especially if such a conversion is permitted by the project specifications and installation conditions.

The Grafi enclosures are designed for the implementation of CLASS II equipment according to CEI 64-8/4

IMQ certification according to CEI EN 62208 standard



## Advantages



New handles with gasket for protection against dust and vandalism.



Stainless steel door hinges.



Availability of accessories for realization of panels with modular equipment



Internal bakelite dividers to create partitions of different heights.



The optimized structure of the Grafi enclosures has allowed the bottom walls and the door to be the same component. Possibility of double-sided access to the compartments.



Monobloc side panels also used in versions with multiple compartments. High electrical and mechanical reliability.

## Customizing

When the new GRAFI series of enclosures was created, particular attention has been paid to customizing the structure of the rooms, especially the versions with multiple compartments of different sizes.

New installation methods often oblige design engineers to allow for different functions (power, operation, electronic devices, telecommunications) requiring dedicated compartments of different sizes, which sometimes need to be interconnected.

The structure of the new enclosures has therefore been designed in such a way that it can be subdivided without further processing of the maximum available light, delimited by side panels of different heights, in a number of compartments also of different sizes simply moving the crosspieces that partition off the compartments themselves. Thanks to the patented Dotper® system, enclosures of the same height can be divided into various configurations with the use of 3 doors of different sizes, as shown in the examples below.

In this way, without prejudice to the provision initially envisaged for the compartments, the same can be modified in operation according to varied needs for installation and/or components used.

The doors can be opened on either side and this allows the enclosures to be customized to a further extent. The door opening side can even be reversed on the individual compartments of multiple versions. This is done by applying an upright to support the hinges, corresponding to the overall height of the enclosure (to be ordered separately).

The basic compositions in the range can be diversified yet again by using the available top units.



## Modularity

Besides the versions that can be created by dividing enclosures from the basic range into compartments of different sizes, the total absence of projections from its external profile allows the structure of the GRAFI enclosure to provide a high degree of modularity belonging to different series. (Grafi5 - Grafi7 - Grafi9 - Grafi12 only for side-by-side couplings).

### Vertical modularity

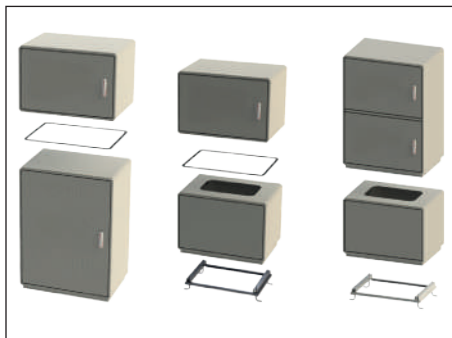
This is achieved by stacking a top unit, belonging to the same series, on top of a basic enclosure when the compartment combination is not one of the standard versions. Compositions can be created by just stacking top units if total separation between the two compartments is required. The plinth component can be used for vertical compositions when not included in the integrated version.

### Horizontal modularity

Height and depth measurements being equal, the enclosure can be arranged side by side even when they are of different widths. These versions and the holes or slots required for routing cables between the enclosures, can be provided on request.

### Depth modularity

In this case, the enclosure must be of the same height and width, but not necessarily the same depth. The versions can be provided with access from the two fronts of the joined compartments or with just one front access. This sort of composition can also be used to obtain deeper compartments than those available in the standard versions (Ex 330+330 mm; 330+460 mm; 460+460 mm).



Vertical Modularity



Horizontal modularity



Modularity in depth

## Functional Design

A "Grafi" fits into any context with the utmost ease. In a classic or modern, historic or futuristic, public or private urban landscape. It can be considered a simple, necessary object, but it's certainly decorative and highly technological.

A style that allows design engineers to customize the systems thanks to the shape and integrated modularity of the line.

The relief pattern on the front door and back wall of the enclosure is not merely to make it look more attractive. Besides providing the part more liable to impact with greater mechanical strength, it also attenuates the degree to which the surfaces are exposed to sunlight to a sensible extent.



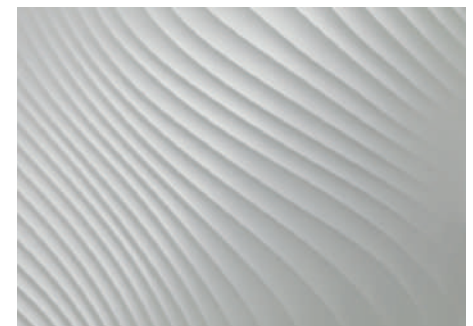
### Suitable for any environment

Ideal for classic or modern, historical or avant-garde urban settings, public or private relevance.



### Easily customizable

Grafi offers designers the chance to customize systems, thanks to the aesthetics of the form and the integrated modular system of the line.



### Raised surface

Guarantees greater impact resistance and reduces UV exposure.

## Applications



External environments where design and functionality are sought.



Electrical distribution



Telephone derivation and control systems in water and gas distribution systems

## Grafi enclosures configurator

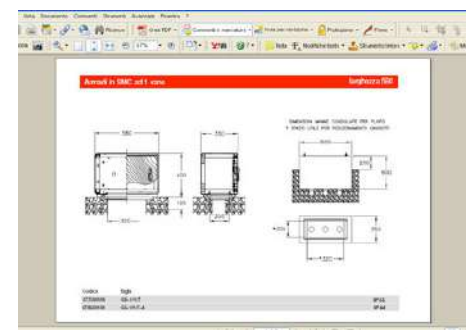
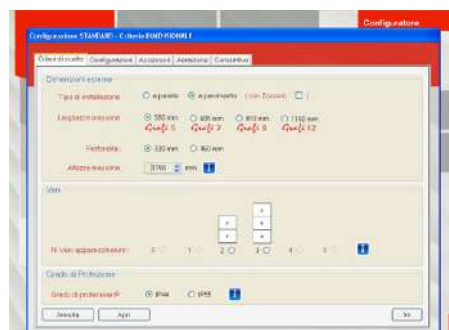


The new Grafi enclosures configurator allows you to identify the enclosures corresponding to your needs, download the pdf drawing of your chosen enclosures and to export the technical data sheet in Word format.

A tool which facilitates customization of the compartments in the selected enclosures with different accessories (mounting plates - accessories for modular equipment - racks with aggregated mounting plate - ventilation units - forced ventilation fan).

Thanks to automatic data updating and the option to save the project, the configurator becomes an essential tool for quickly identifying the Grafi you need without error.

**It is possible to download the configurator from the site [www.conchiglia.com](http://www.conchiglia.com)**





## Reliability

GRAFI roadside enclosures confirm the high level of safety and reliability that has always been guaranteed by Conchiglia products, thanks to a design which is strictly based on observing the international standards governing the sector.

### CEI EN 62208 standard

Type tests prescribed by the standard to be performed on enclosures

Art.	Test	Standards requirements	Notes
9.3	Static loads	CEI EN 62208	Testing carried out at a temperature of 70 °C. For 1 hour apply a weight equal to 1.25 times the declared maximum permitted load on the partition and supports.
9.6	Check on the degree of resistance against external mechanical impact (IK Rating)	CEI EN 62208 CEI EN 62262	IK 10 = subject each surface to 3/5 impacts using a 5-Kg steel testing hammer dropped from a height of 40 cm (impact energy = 20 J).
9.7	Testing of the degree of protection (IP) - access to live parts - ingress of solid foreign bodies - ingress of water - access to hazardous parts	CEI EN 62208 CEI EN 60529 § 12.1 - § 12.2 § 13.4 - § 13.5 § 14.1 - § 14.2 § 15	IP 54 = a testing probe, diameter 1mm, thrust with a force of 1 N, must not enter any part of the enclosure. Any talc getting into the protected space must not exceed 1 g/m <sup>2</sup> . No water ingress in the protected space after water spraying from all directions for 5' with a water flow rate of 10 litres/minute. The testing probe must not touch the surface of the protected space.
9.8.1	Thermal stability test	CEI EN 62208 IEC 60068-2-2	Testing to be performed in a climatic chamber at a temperature of 70° ±2 °C for 168 hours and subsequently at ambient temperature with humidity levels at between 45% and 55% for 96 hours.
9.8.2	Heat resistance testing	CEI EN 62208	Testing to be performed in a climatic chamber at a temperature of 70° ±2 °C for 1 hour with a steel ball with a diameter of 5 mm pressed with a force of 20 N.
9.8.3	Checking resistance to abnormal heat and fire	CEI EN 62208 EN 60695-2-10 EN 60695-2-11	Testing using a glow-wire at a temperature of 650° ±15 °C applied for 30 ±1 s.
9.9	Dielectric sealing test	CEI EN 62208 EN 60439-1 § 8.2.2.2	Permanence in a climatic chamber for 48 hours with humidity levels of between 91% and 95% and a temperature of 40° ±2 °C and subsequent application of a voltage of 3750 V.
9.11	Weather resistance testing	CEI EN 62208 ISO 4892-2- A method ISO 178 ISO 179	UV testing with Xenon lamp with cycles for a total period of 500 hours with subsequent mechanical verification of resistance to bending and Charpy impact test.
9.12	Corrosion resistance testing	CEI EN 62208 IEC 60068-2-30 IEC 60068-2-11 ISO 4628-3	Internal metal parts Humid heat = 6 24-hour cycles at 40 °C and 95% relative humidity Salt fog = 2 24-hour cycles at 35° ± 2° C External metal parts Humid heat = 12 24-hour cycles at 40 °C and 95% relative humidity Salt fog = 14 24-hour cycles at 35° ± 2° C



# Grabi 5

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**Width 580 mm**



**Characteristics**

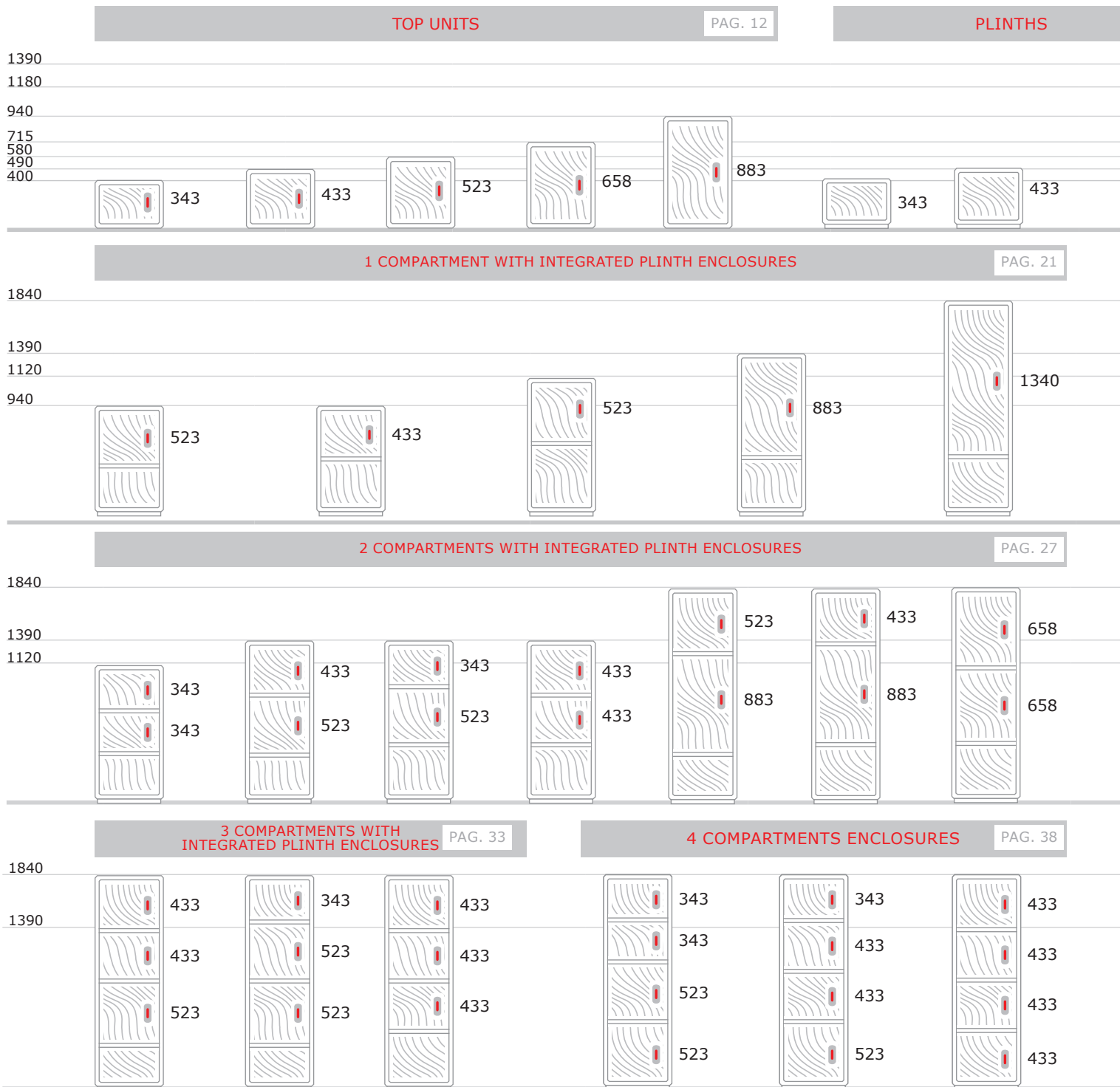
The Grafi5 series is characterized by an external width of 580 mm (usable interior width = 562 mm). 9 different overall heights available, from 400 mm to 1840 mm. All versions are available in two depths: 330 mm and 460 mm. Rated insulation voltage = Ui 690V.

IMQ certification in accordance with CEI EN 62208.

**Production prospectus**

The values on the left of the drawing indicate the overall height. The figures for the individual compartments indicate their usable height, essential when selecting dedicated accessories.

Grafi 5




**Materials**

Made in fiberglass (SMC) in RAL 7035 color. Thermoplastic resin handle, operating tenon in galvanized steel, internal rods and posts in steel with GEOMET 321 treatment.  
Hinges in stainless steel. Anchor frame in galvanized and painted steel.  
Seals made of expanded EPDM.

**Level of protection**

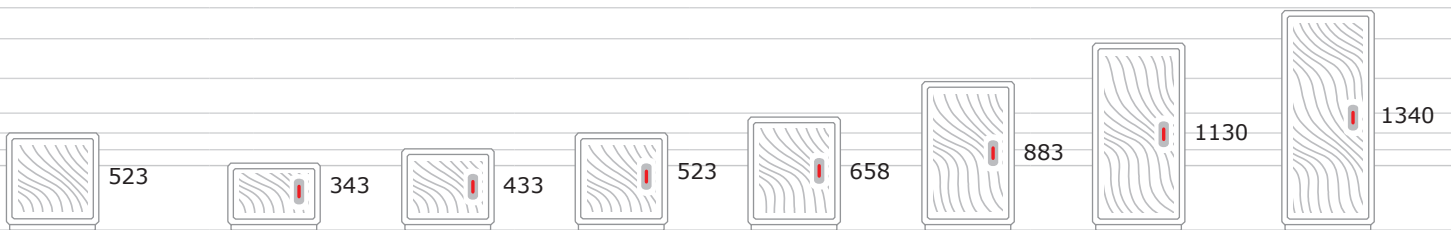
Available with IP44 - IP55 protection class according to CEI EN 60529, IK10 according to CEI EN 62262.

Prepared for execution of CLASS II equipment according to CEI 64-8/4. 

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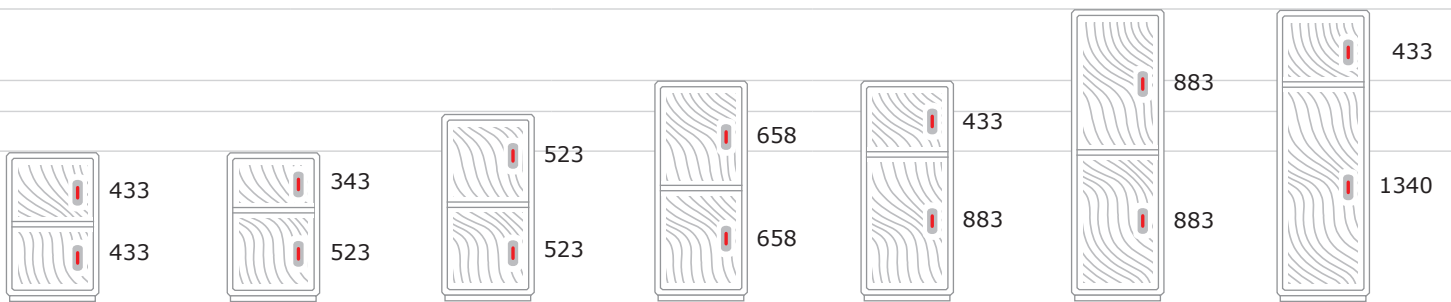
1 COMPARTMENT ENCLOSURES

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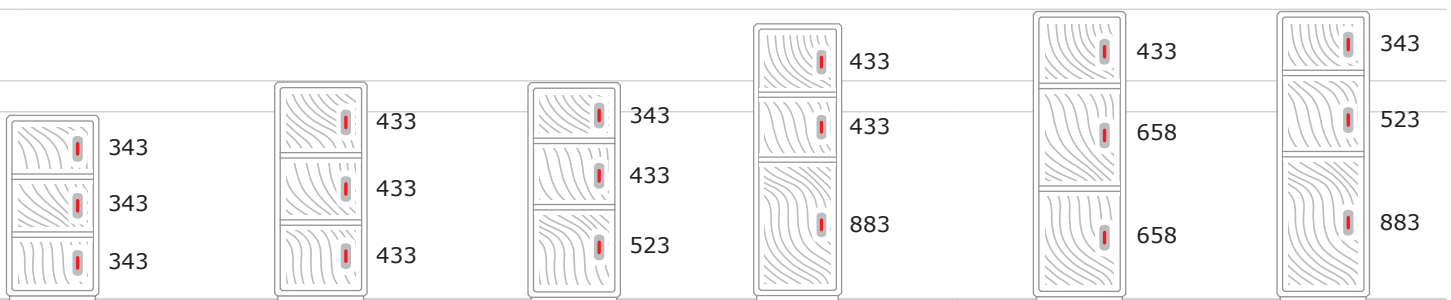
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## Top units



### Characteristics

Overall height sizes available: 370mm - 460mm - 550mm - 685mm - 910mm - for two depths: 330mm - 460mm. Rated insulation voltage Ui 690V. Completely intact structure without slots or holes for cable passage to be realized by the customer or on request.

Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder - customized cipher on request). Door opening side can be changed on site (for detailed information consult the accessories selection). Can be equipped with bottom plates and dedicated accessories for creating panels. Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.

### Materials

Made of fiberglass RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4

	External dimensions, mm			Internal dimensions, mm			Door dimension mm	IP	Model	Code
	Height	Width	Depth	Height	Width	Depth				
a	370	580	330	a= 343	562	298	284x490	IP55	G5-1/1/S	077501906
								IP44	G5-1/1/S-4	078501905
a	460	580	330	a= 433	562	298	374x490	IP55	G5-2/2/S	077502904
								IP44	G5-2/2/S-4	078502903
		580	460	a= 433	562	428	374x490	IP55	GH5-2/2/S	077512903
								IP44	GH5-2/2/S-4	078512902
a	550	580	330	a= 523	562	298	464x490	IP55	G5-3/3/S	077503902
								IP44	G5-3/3/S-4	078503901
		580	460	a= 523	562	428	464x490	IP55	GH5-3/3/S	077513901
								IP44	GH5-3/3/S-4	078513900
a	685	580	330	a= 658	562	298	599x490	IP55	G5-4/4/S	077504900
								IP44	G5-4/4/S-4	078504909
		580	460	a= 658	562	428	599x490	IP55	GH5-4/4/S	077514909
								IP44	GH5-4/4/S-4	078514908
a	910	580	330	a= 883	562	298	824x490	IP55	G5-5/5/S	077505907
								IP44	G5-5/5/S-4	078505906
		580	460	a= 883	562	428	824x490	IP55	GH5-5/5/S	077515906
								IP44	GH5-5/5/S-4	078515905

### Warnings

Usable for installation in enclosures of the same series and depth to achieve non-standard compositions in the integrated units or for extending enclosures already in use. Can be used to make single compartment enclosures for floor installation, together with dedicated plinths.

Holes for fastening systems and cable opening to be made in site or executable in the factory on request. Wall-mounted version also available.



## Plinth


**Characteristics**

Overall height sizes available: 400mm - 490mm - 580mm - for two depths: 330mm - 460mm. Prepared for installation on a concrete base using an anchor frame (not included). To be used in combination with cabinets of the series 5 same depths not available in the version with "integrated plinth". They allow the realization of cabinets for floor installation combined with top units.

**Materials**

Made in fiberglass-reinforced plastic RAL 7035 color. Seals in foamed EPDM.

**Standards**

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4 .

External dimensions, mm			Useful height	IP	Model	Code
Height	Width	Depth				
400	580	330	z= 343	IP55	G5-1/ZT	077501955
490	580	330	z= 433	IP55	G5-2/ZT	077502953
	580	460	z= 433	IP55	GH5-2/ZT	077512952
580	580	330	z= 523	IP55	G5-3/ZT	077503951
	580	460	z= 523	IP55	GH5-3/ZT	077513950

z

## Closing bottom plate for plinths



### Characteristics

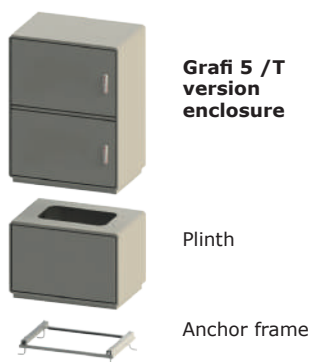
Made of 3 mm thick bakelite it is installed in the lower part of the enclosures to provide additional protection for the compartment where the cable input channels are situated. Available in the blank version so that the required holes can be made during installation or complete with 3 conical fairleads (max. diam. 76)

Enclosures depth mm	Blank plate		Plate with conical fairleads	
	Model	Code	Model	Code
330	G5/SIC	095775409	G5/SIM	095775425
460	GH5/SIC	095775458	GH5/SIM	095775474

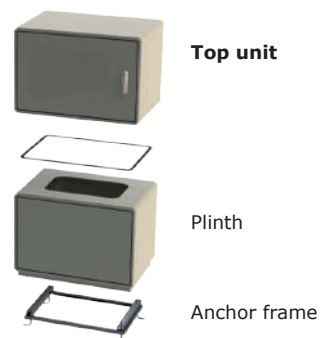
## Installation method

The plinths can be fitted with closing bottom plate (blank or with conical fairleads), positioned between the fixing frame and plinth, to provide additional protection in the cable input area.

Use of an additional plinth on /T version enclosures



Use of plinth with top unit



## Anchor frame



### Characteristics

Screws in AISI 304 stainless steel to guarantee access over time. Complete with brackets for fixing onto a concrete base.

### Materials

Made of steel with black color 18/24 cataphotetic coating treatment.

Enclosure depth, mm	Model	Code
330	G5/TA	095775300
460	GH5/TA	095775359

## Mounting plates



### Characteristics

Can be applied to the mounting plate of the cabinet using special threaded inserts with M6x20 stud bolts or in conjunction with switchgear risers or enclosure using the dedicated fixing brackets. Available in: Pre-galvanized steel - thickness 2 mm; bakelite - thickness 5 mm; PVC - thickness 5 mm. Must be chosen to suit the size of the compartment in question.

Useful height mm	Plate dimensions mm	Steel (2 mm thick)		Bakelite (5 mm thick)		PVC (5 mm thick)	
		Model	Code	Model	Code	Model	Code
343	455x265	G5/1/PA	095775011	G5/1/PB	095775110	G5/1/PP	095775219
433	455x355	G5/2/PA	095775029	G5/2/PB	095775128	G5/2/PP	095775227
523	455x445	G5/3/PA	095775037	G5/3/PB	095775136	G5/3/PP	095775235
658	455x580	G5/4/PA	095775045	G5/4/PB	095775144	G5/4/PP	095775243
883	455x805	G5/5/PA	095775052	G5/5/PB	095775151	G5/5/PP	095775250

## Brackets for fixing to a wall



### Characteristics

The top unit can be used as single compartments that can be installed on the wall using special brackets, using wall plugs or another fixing element depending on the type of wall.

Drilling holes for cable entry by the customer with cable / cable glands. The brackets are available in loose execution (with assembly by the customer) or in applied execution performed directly in the factory.

Description	Model	Code
Brackets for fixing to a wall (loose version)	G/SFP	095770939
Version on brackets for fixing to a wall	G-EA/SFP	097770028

## Brackets kit for supporting mounting plates on uprights



### Characteristics

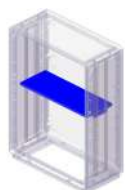
Made from steel. To be used together with an uprights kit and brackets kit for installing the depth-adjustable plate.

If uprights and brackets kits are envisaged for supporting modular equipment, a further uprights kit without the upright support brackets kit is required.

Suitable for all types of plate. For plates provided in 2 parts, 2 bracket kits are required.

Description	Model	Code
Brackets kit for support plates on uprights (4 pcs)	G/SP/MT	095770921

## Pre-galvanized sheet metal equipment holding shelves



### Characteristics

To be installed using 2 upright kits G-../MT (selected based on the overall height) and 1 brackets kit G/SM or GH/SM.

These are complete with 2 brackets for application of shelves. To be selected based on enclosures depth.

Top unit depth, mm	Overall dimension of shelves, mm			Shelves	
	Height	Width	Depth	Model	Code
330	225	485	17	G5/RP	095775631
460	355	485	17	GH5/RP	095775649

## Accessories for creating modular equipment panels

For creating panels inside enclosures, you must order:

- Uprights kit + brackets kit for the realization of modular equipment panels
- Frame/framework for supporting modular equipment panels
- Modular equipment support rack
- Blank and slotted panels
- Mounting plate/brackets kit for arranging the modular equipment support racks (Optional)

Graf: 5

### Uprights kit + brackets kit for the realization of modular equipment panels



#### Characteristics

Steel uprights set up with holes for fastening modular panel frames, equipment holding racks, mounting plates. Brackets for upright supports made from steel. The kit must be selected based on the depth and overall height of the enclosure regardless of the number and layout of compartments.

Overall height top unit mm	Uprights (2 pieces)		Uprights support brackets (4 pieces)			
	Model	Code	Depth 330 mm		Depth 460 mm	
			Model	Code	Model	Code
400	G-1/MT	095770012	G/SM	095770905	GH/SM	095770913
490	G-2/MT	095770020	N.B. The support brackets can be used on all heights of upright kits and up to an overall number of three kits.			
580	G-3/MT	095770038				
715	G-4/MT	095770046				
940	G-5/MT	095770053				

### Frame/framework for supporting modular equipment panels



#### Characteristics

Made from self-extinguishing thermoplastic material, grey color RAL 7035. Designed to be fastened onto the uprights kit.

To be selected based on the usable height of the individual compartment. In the case of multiple compartments, the individual compartments can also be fitted out.

Useful height compartment mm	No. Installable panels (Blank or slotted)	Max. No. DIN modules available	Frame/framework	
			Model	Code
343	1	24	G5/1/TPM	095775706
433	2	48	G5/2/TPM	095775714
523	3	72	G5/3/TPM	095775722
658	3	72	G5/4/TPM	095775730
883	4	96	G5/5/TPM	095775748

## Modular equipments support rack



### Characteristics

Made from steel, can be removed from the enclosure to facilitate execution of the panel; assembly and wiring of the various equipment can be carried out on a work bench. Designed to be fastened onto the uprights kit.

Complete with DIN 46 277/3 profiles.

To be selected in combination with the relative panels support frame/framework.

Useful height compartment mm	Modular equipment support rack		no. pieces installable	In combination with frame/framework	
	Model	Code		Model	Code
343	G5/1/CST	095775805	1	G5/1/TPM	095775706
433	G5/2-5/CST	095775813	1	G5/2/TPM	095775714
523	G5/3-7/CST	095775821	1	G5/3/TPM	095775722
658	G5/4-8/CST	095775839	1	G5/4/TPM	095775730
883	G5/2-5/CST	095775813	2	G5/5/TPM	095775748

## Blank or slotted panels

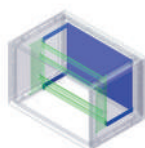


### Characteristics

Made from thermoplastic material. Suitable for Grafi5 enclosures. To be applied on the modular equipments support rack.

Panels	Description	Model	Code
Blank		G5/PC	095775607
Slotted	24 DIN modules (17,5mm) for each panel	G5/PM24	095775623

## Mounting plate/brackets kit for arranging the modular equipment support racks



### Characteristics

Kit made up of 4 brackets and 1 mounting plate. Brackets and plate made from steel. Plate thickness 2mm. To be used together with the modular equipments support racks for fixing any non-modular components on the back of the panel.

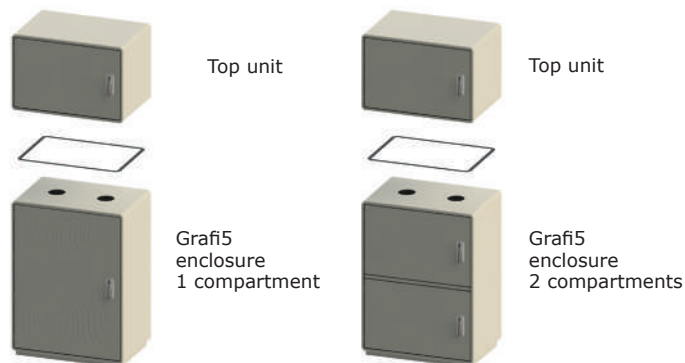
To be selected based on the equipment support rack and enclosure depth (330 - 460 mm).

Modular equipment support rack		Enclosure depth mm	Rack/plate distance	Bracket/plate Kit	
Model	Code			Model	Code
G5/1/CST	095775805	330	85	G5/1/PACST	095775854
G5/2-5/CST	095775813	330	85	G5/2-5/PACST	095775862
		460	215	GH5/2-5/PACST	095775904
G5/3-7/CST	095775821	330	85	G5/3-7/PACST	095775870
		460	215	GH5/3-7/PACST	095775912
G5/4-8/CST	095775839	330	85	G5/4-8/PACST	095775888
		460	215	GH5/4-8/PACST	095775920



## Installation methods for top units

The top units can be installed on any type of enclosure of the corresponding series (Grafi5) and of the same depth. Installation is carried out easily by making holes in the fixing points already arranged on the enclosures and with the insertion of special seals to guarantee the necessary protection rating. Any passages between the bottom compartment and top unit must be made in site as required. The arrangement for the installation of the top unit may be carried out directly in the factory on request. It is suitable for both IP44 and IP55 enclosures and is valid for all depths (330 - 460 mm).



### Execution of top unit installation arrangement with 2 holes

#### Bottom compartment:

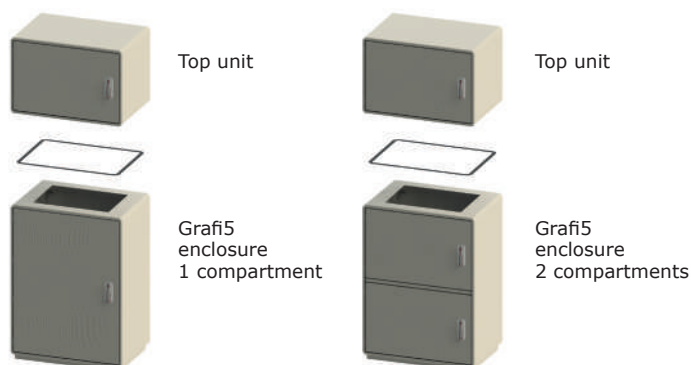
- 4 fastening holes
- 2 holes (Ø 85) for cable passage

#### Top compartment (top unit):

- 4 fastening holes
- 2 holes (Ø 76) for securing the conical membrane

**Provided:** Compartment fastening screws/seal/2 conical membranes.

Model	Code	Description
G-EA/MS/I	097770002	Execution of drilling for application on enclosure
G-EA/MS/S	097770010	Execution of drilling top unit for application on enclosure



### Execution of preparation for installation of top unit with maximum clearance

Application envisages the realization of enclosures with fully open slots and realization of the corresponding slot on the top unit which will be installed above.

#### Bottom compartment:

- 4 fastening holes
- 1 single slot for cable passage

#### Top compartment (top unit):

- 4 fastening holes
- 1 single slot

**Provided:** Compartment fastening screws / seal

Model	Code	Slot size Depth 330 mm	Slot size Depth 460 mm	Description
G-EA/MSA/I	097770044	320x205	320x305	Execution of slotted roof for installing top unit
G-EA/MSA/S	097770051	355x240	355x340	Execution of slotted top unit for installation on lower compartment



### Warning

Separation partitions can also be requested with or without cable passage to integrate execution, to be selected from the normal envisaged accessories. G5/SIC or GH5/SIC (blank plate) - G5/SIM OR GH5/SIM (partition with conical membranes).

The top units may be installed on the floor using the relative plinth envisaged in the series and of the same depth. The fixing frame must be requested separately. Also in this case it is possible to request arrangement in the factory of hole drilling and for cable passage into the top units (G-EA/MS/S or G-EA/MSA/S)

**Standard order kit for making panels with modular equipment accessories**

For quick composition of accessories for making panels it is necessary to request: **1 uprights/brackets kit + 1 Frame/Panels/Rack kit**

REFERENCE TOP UNIT				Uprights/Brackets Kit	Frame/Panels/Rack Kit
IP55		IP44			compartment "a" 
Model	Code	Model	Code	Code	Code
<b>Depth mm 330</b>					
G5-1/1/S	077501906	G5-1/1/S-4	078501905	095773313	095775193
G5-2/2/S	077502904	G5-2/2/S-4	078502903	095773321	095775292
G5-3/3/S	077503902	G5-3/3/S-4	078503901	095773339	095775391
G5-4/4/S	077504900	G5-4/4/S-4	078504909	095773347	095775490
G5-5/5/S	077505907	G5-5/5/S-4	078505906	095773354	095775599
<b>Depth mm 460</b>					
GH5-2/2/S	077512903	GH5-2/2/S-4	078512902	095774626	095775292
GH5-3/3/S	077513901	GH5-3/3/S-4	078513900	095774634	095775391
GH5-4/4/S	077514909	GH5-4/4/S-4	078514908	095774642	095775490
GH5-5/5/S	077515906	GH5-5/5/S-4	078515905	095774659	095775599

**How to order**

To order the kits for making panels you need simply to know the code of the top unit and select the codes of the order kits corresponding to the reference top unit code. Example: top unit code 077504900

Corresponding kits:

- Uprights/Brackets Kit: Code 095773347
- Frame/Panels/Racks kit for compartment "a" Code 095775490

**N.B. All panels provided in the Frame/Panels/Rack kit are slotted. Any requests for blank panels must be integrated separately.**

For further details on the composition of internal accessories for the realization of panels, consult the dedicated section.

**Maximum load applicable on the mounting plate/Usable protected space for equipments/Thermal energy dissipation page 50**

Accessories and spare parts common to the whole Graf5 series:

**Ventilation units page 190**

## Enclosure 1 compartment

### Characteristics

Overall height sizes available: 400mm - 490mm - 580mm - 715mm - 940mm - 1180mm - 1390mm  
- for two depths: 330mm - 460mm.

Rated insulation voltage  $U_i$  690V.

Complete with fixing frame for installation on a concrete base.

Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder - customized cipher on request). Door opening side can be changed on site (for detailed information consult the accessories selection). Can be equipped with bottom plates and dedicated accessories for creating panels. Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories. Lower closing partition with conical fairleads and seal (only IP55 versions).

### Materials

Made of berglass-reinforced plastic RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262.

Pre-engineered for apparatus in class II according to CEI 64-8/4



	External dimensions, mm			Internal dimensions compartment, mm			Door dimension mm	IP	Model	Code
	Height	Width	Depth	Height	Width	Depth				
	*400	580	330	a= 343	562	298	284x490	IP55	G5-1/1/T	077500106
								IP44	G5-1/1/T-4	078500105
	*490	580	330	a= 433	562	298	374x490	IP55	G5-2/2/T	077502102
								IP44	G5-2/2/T-4	078502101
		580	460	a= 433	562	428	374x490	IP55	GH5-2/2/T	077512101
								IP44	GH5-2/2/T-4	078512100
	*580	580	330	a= 523	562	298	464x490	IP55	G5-3/3/T	077503100
								IP44	G5-3/3/T-4	078503109
		580	460	a= 523	562	428	464x490	IP55	GH5-3/3/T	077513109
								IP44	GH5-3/3/T-4	078513109
	*715	580	330	a= 658	562	298	599x490	IP55	G5-4/4/T	077504108
								IP44	G5-4/4/T-4	078504107
		580	460	a= 658	562	428	599x490	IP55	GH5-4/4/T	077514107
								IP44	GH5-4/4/T-4	078514106
	*940	580	330	a= 883	562	298	824x490	IP55	G5-5/5/T	077505105
								IP44	G5-5/5/T-4	078505104
		580	460	a= 883	562	428	824x490	IP55	GH5-5/5/T	077515104
								IP44	GH5-5/5/T-4	078515103
	1180	580	330	a= 1130	562	298	1064x490	IP55	G5-7/7/T	077507101
								IP44	G5-7/7/T-4	078507100
		580	460	a= 1130	562	428	1064x490	IP55	GH5-7/7/T	077517100
								IP44	GH5-7/7/T-4	078517109
	1390	580	330	a= 1340	562	298	1274x490	IP55	G5-8/8/T	077508109
								IP44	G5-8/8/T-4	078508108
		580	460	a= 1340	562	428	1274x490	IP55	GH5-8/8/T	077518108
								IP44	GH5-8/8/T-4	078518107

\* Models that can also be made in the wall version see Accessories section on page 177

## Enclosure 1 compartment with integrated plinth

**Characteristics**

Made with 1 equipment compartment + bottom plinth integrated in a single support structure. Overall height sizes available: 940mm - 1120mm - 1390mm - 1840mm for two depths: 330mm - 460mm.

Rated insulation voltage  $U_i$  690V.

Complete with fixing frame for installation on a concrete base.


Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder - customized cipher on request). Door opening side can be changed on site (for detailed information consult the accessories selection). Can be equipped with bottom plates and dedicated accessories for creating panels. Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories. Lower closing partition with conical fairleads and seal (only IP55 versions).

**Materials**

Made of berglass-reinforced plastic RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

**Standards**

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262.

Pre-engineered for apparatus in class II according to CEI 64-8/4 .

	External dimensions, mm			Internal dimensions compartment, mm			Plinth height mm	Door dimension mm	IP	Model	Code
	Height	Width	Depth	Height	Width	Depth					
a plinth	940	580	330	a= 523	562	298	400	464x490	IP55	G5-5/13/ZT	077505196
		580	460	a= 523	562	428			IP44	G5-5/13/ZT-4	078505195
a plinth	940	580	330	a= 433	562	298	490	374x490	IP55	GH5-5/13/ZT	077515195
		580	460	a= 433	562	428			IP44	GH5-5/13/ZT-4	078515194
a plinth	1120	580	330	a= 523	562	298	580	464x490	IP55	G5-5/22/ZT	077505188
		580	460	a= 523	562	428			IP44	G5-5/22/ZT-4	078505187
a plinth	1390	580	330	a= 883	562	298	490	824x490	IP55	GH5-5/22/ZT	077515187
		580	460	a= 433	562	428			IP44	GH5-5/22/ZT-4	078515186
a plinth	1840	580	330	a= 523	562	298	580	464x490	IP55	G5-6/33/ZT	077506194
		580	460	a= 523	562	428			IP44	G5-6/33/ZT-4	078506193
a plinth	1390	580	330	a= 883	562	298	490	824x490	IP55	GH5-6/33/ZT	077516193
		580	460	a= 883	562	428			IP44	GH5-6/33/ZT-4	078516193
a plinth	1840	580	330	a= 883	562	298	490	824x490	IP55	G5-8/25/ZT	077508190
		580	460	a= 883	562	428			IP44	G5-8/25/ZT-4	078508199
a plinth	1840	580	330	a= 1340	562	298	490	1274x490	IP55	GH5-8/25/ZT	077518199
		580	460	a= 1340	562	428			IP44	GH5-8/25/ZT-4	078518198
a plinth	1840	580	330	a= 1340	562	298	490	1274x490	IP55	G5-9/28/ZT	077509198
		580	460	a= 1340	562	428			IP44	G5-9/28/ZT-4	078509197
a plinth	1840	580	330	a= 1340	562	298	490	1274x490	IP55	GH5-9/28/ZT	077519197
		580	460	a= 1340	562	428			IP44	GH5-9/28/ZT-4	078519196

## Mounting plates



### Characteristics

Can be applied to the bottom of the enclosure using special threaded inserts with M6x20 stud bolts or in combination with equipment uprights. Available in: Pre-galvanized steel - thickness 2 mm; bakelite - thickness 5 mm; PVC - thickness 5 mm. To be chosen according to the useful height of the single compartment.

Useful height mm	Plate dimensions mm	Steel (2mm thick)		Bakelite (5 mm thick)		PVC (5 mm thick)	
		Model	Code	Model	Code	Model	Code
343	455x265	G5/1/PA	095775011	G5/1/PB	095775110	G5/1/PP	095775219
433	455x355	G5/2/PA	095775029	G5/2/PB	095775128	G5/2/PP	095775227
523	455x445	G5/3/PA	095775037	G5/3/PB	095775136	G5/3/PP	095775235
658	455x580	G5/4/PA	095775045	G5/4/PB	095775144	G5/4/PP	095775243
883	455x805	G5/5/PA	095775052	G5/5/PB	095775151	G5/5/PP	095775250
1130	455x1030 (in 2 pieces)	G5/7/PA	095775060	G5/7/PB	095775169	G5/7/PP	095775268
1340	455x1240 (in 2 pieces)	G5/8/PA	095775078	G5/8/PB	095775177	G5/8/PP	095775276

## Closing bottom plates

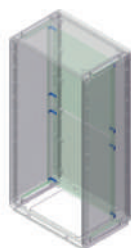


### Characteristics

Made of 3 mm thick bakelite, it is installed in the lower part of the enclosure to provide additional protection for the compartment where the cable input channels are situated. Available in the blank version so that the required holes can be made during installation or complete with 3 conical fairleads max. diam. 76. In the IP55 enclosure the partition is supplied as standard.

Enclosure depth, mm	Blank partition		Partition with conical fairleads	
	Model	Code	Model	Code
330	G5/SIC	095775409	G5/SIM	095775425
460	GH5/SIC	095775458	GH5/SIM	095775474

## Brackets kit for supporting the mounting plates on the uprights



### Characteristics

Made from steel. To be used together with an uprights kit and brackets kit for installing the depth-adjustable plates. If uprights and brackets kits are envisaged for supporting modular equipment, a further uprights kit without the upright support brackets kit is required. Suitable for all types of plates. For plates provided in 2 parts, 2 bracket kits are required.

Description	Model	Code
Brackets kit for support plates on uprights (4 pcs)	G/SP/MT	095770921

## Pre-galvanized sheet metal equipment holding shelves



### Characteristics

To be installed using 2 upright kits G-./MT (selected based on the overall height) and 1 brackets kit G/SM or GH/SM. These are complete with 2 brackets for application of shelves. To be selected based on enclosure depth.

Enclosure depth mm	Overall shelves dimension, mm			Shelves	
	Height	Width	Depth	Model	Code
330	225	485	17	G5/RP	095775631
460	355	485	17	GH5/RP	095775649



## Accessories for creating modular equipment panels

For creating panels inside enclosures, you must order:

- Uprights kit + brackets kit for the realization of modular equipment panels
- Frame/framework for supporting modular equipment panels
- Modular equipment support rack
- Blank and slotted panels
- Mounting plate/brackets kit for arranging the modular equipment support racks (Optional)

### Uprights kit + brackets kit for the realization of modular equipment panels



#### Characteristics

Steel uprights set up with holes for fastening modular panel frames, equipment holding racks, bottom partitions. Brackets for upright supports made from steel. The kit must be selected based on the depth and overall height of the enclosure regardless of the number and layout of compartments.

Overall height enclosure mm	Uprights (2 pieces)		Uprights support brackets (4 pieces)			
	Model	Code	Depth 330 mm		Depth 460 mm	
			Model	Code	Model	Code
400	G-1/MT	095770012	G/SM	095770905	GH/SM	095770913
490	G-2/MT	095770020				
580	G-3/MT	095770038				
715	G-4/MT	095770046				
940	G-5/MT	095770053				
1120	G-6/MT	095770061				
1180	G-7/MT	095770079				
1390	G-8/MT	095770087				
1840	G-9/MT	095770095				
N.B. The support brackets can be used on all heights of upright kits and up to an overall number of three kits.						

### Frame/framework for supporting modular equipment panels



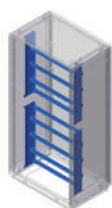
#### Characteristics

Made from self-extinguishing thermoplastic material, grey color RAL 7035. Designed to be fastened onto the uprights kit.

To be selected based on the usable height of the individual compartment. In the case of multiple compartments, the individual compartments can also be fitted out.

Useful height compartment mm	Nr. Installable panels (Blank or slotted)	Max. No. DIN modules available	Frame/framework	
			Model	Code
343	1	24	G5/1/TPM	095775706
433	2	48	G5/2/TPM	095775714
523	3	72	G5/3/TPM	095775722
658	3	72	G5/4/TPM	095775730
883	4	96	G5/5/TPM	095775748
1130	6	144	G5/7/TPM	095775755
1340	6	144	G5/8/TPM	095775763

## Modular equipment support rack



### Characteristics

Made from steel, can be removed from the enclosure to facilitate execution of the panel; assembly and wiring of the various equipment can be carried out on a work bench. Designed to be fastened onto the uprights kit. Complete with DIN 46 277/3 profiles. To be selected in combination with the relative panels support frame/framework.

Useful height compartment mm	Modular equipment support rack		no. pieces installable	In combination with frame/framework	
	Model	Code		Model	Code
343	G5/1/CST	095775805	1	G5/1/TPM	095775706
433	G5/2-5/CST	095775813	1	G5/2/TPM	095775714
523	G5/3-7/CST	095775821	1	G5/3/TPM	095775722
658	G5/4-8/CST	095775839	1	G5/4/TPM	095775730
883	G5/2-5/CST	095775813	2	G5/5/TPM	095775748
1130	G5/3-7/CST	095775821	2	G5/7/TPM	095775755
1340	G5/4-8/CST	095775839	2	G5/8/TPM	095775763

## Blank or slotted panels

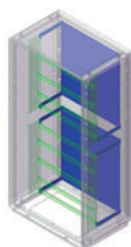


### Characteristics

Made from thermoplastic material. Suitable for Graf5 enclosures. To be applied on the modular equipment support rack.

Panels	Description	Model	Code
Blank		G5/PC	095775607
Slotted	24 DIN modules (17,5mm) for each panel	G5/PM24	095775623

## Mounting plate/brackets kit for arranging the modular equipment support racks



### Characteristics

Kit made up of 4 brackets and 1 mounting plate. Brackets and plate made from steel. Plate thickness 2mm. To be used together with the modular equipment support racks for fixing any non-modular components on the back of the panel. To be selected based on the equipment support rack and enclosure depth (330 - 460 mm).

Modular equipment support rack		Enclosure depth mm	Rack/plate distance	Bracket/plate Kit	
Model	Code			Model	Code
G5/1/CST	095775805	330	85	G5/1/PACST	095775854
G5/2-5/CST	095775813	330	85	G5/2-5/PACST	095775862
		460	215	GH5/2-5/PACST	095775904
G5/3-7/CST	095775821	330	85	G5/3-7/PACST	095775870
		460	215	GH5/3-7/PACST	095775912
G5/4-8/CST	095775839	330	85	G5/4-8/PACST	095775888
		460	215	GH5/4-8/PACST	095775920

## Standard ordering kit for panels realization with modular devices accessories

For a quick composition of the accessories for the realization of panels it is necessary to request: **Upright/bracket kit + Frame/Panels/Rack kit.**

REFERENCE ENCLOSURE				Upright/Bracket kit	Frame/Panels/Rack kit
IP55		IP44			Vano "a" 
Model	Code	Model	Code		
<b>Depth mm 330</b>					
G5-1/1/T	077500106	G5-1/1/T-4	078500105	095773313	095775193
G5-2/2/T	077502102	G5-2/2/T-4	078502101	095773321	095775292
G5-3/3/T	077503100	G5-3/3/T-4	078503109	095773339	095775391
G5-4/4/T	077504108	G5-4/4/T-4	078504107	095773347	095775490
G5-5/5/T	077505105	G5-5/5/T-4	078505104	095773354	095775599
G5-7/7/T	077507101	G5-7/7/T-4	078507100	095773370	095775797
G5-8/8/T	077508109	G5-8/8/T-4	078508108	095773388	095775896
G5-5/13/ZT	077505196	G5-5/13/ZT-4	078505195	095773354	095775391
G5-5/22/ZT	077505188	G5-5/22/ZT-4	078505187	095773354	095775292
G5-6/33/ZT	077506194	G5-6/33/ZT-4	078506193	095773362	095775391
G5-8/25/ZT	077508190	G5-8/25/ZT-4	078508199	095773388	095775599
G5-9/28/ZT	077509198	G5-9/28/ZT-4	078509197	095773396	095775896
<b>Depth mm 460</b>					
GH5-2/2/T	077512101	GH5-2/2/T-4	078512100	095774626	095775292
GH5-3/3/T	077513109	GH5-3/3/T-4	078513109	095774634	095775391
GH5-4/4/T	077514107	GH5-4/4/T-4	078514106	095774642	095775490
GH5-5/5/T	077515104	GH5-5/5/T-4	078515103	095774659	095775599
GH5-7/7/T	077517100	GH5-7/7/T-4	078517109	095774675	095775797
GH5-8/8/T	077518108	GH5-8/8/T-4	078518107	095774683	095775896
GH5-5/13/ZT	077515195	GH5-5/13/ZT-4	078515194	095774659	095775391
GH5-5/22/ZT	077515187	GH5-5/22/ZT-4	078515186	095774659	095775292
GH5-6/33/ZT	077516193	GH5-6/33/ZT-4	078516192	095774667	095775391
GH5-8/25/ZT	077518199	GH5-8/25/ZT-4	078518198	095774683	095775599
GH5-9/28/ZT	077519197	GH5-9/28/ZT-4	078519196	095774691	095775896

### How to order

To order the kits for making panels you need simply to know the code of the enclosure and select the codes of the order kits corresponding to the reference enclosure code. Example: enclosure code 078514106

### Corresponding kits:

- Uprights/Brackets Kit: code 095774642
- Frame/Panels/Racks kit for compartment "a" code 095775490

**N.B. All panels provided in the Frame/Panels/Rack kit are slotted. Any requests for blank panels must be integrated separately.**

For further details on the composition of internal accessories for the realization of panels, consult the dedicated section at page 181.

**Maximum load applicable on the mounting plate/Usable protected space for equipment/Thermal energy dissipation, page 51**

Accessories and spare parts common to the whole Grafi5 series:

**Ventilation units, page 190**

**Anchor frame, page 189**

## 2 compartments cabinet



### Characteristics

Made with 2 equipment compartments separated by an intermediate partition.  
Overall height sizes available: 940mm - 1120mm - 1390mm - 1840mm for two depths: 330mm - 460mm.

Rated insulation voltage  $U_i$  690V.

Complete with fixing frame for installation on a concrete base.

Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock on all compartments (DIN18252 profile cylinder - customized differentiated on request). Door opening side can be changed on site even on a single compartment (for detailed information consult the accessories selection).

The layout of the compartment (upper/lower) that can be modified according to the need for the installation of the internal equipment and accessories (DOTPER® system).

Can be equipped with mounting plates and dedicated accessories for creating panels. Mounting plates equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories. Lower closing partition with conical fairleads and seal (only IP55 versions).

### Materials

Made of RAL 7035 color berglass-reinforced plastic. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262.

Pre-engineered for apparatus in class II according to CEI 64-8/4

External dimensions, mm			Internal dimensions compartment, mm			Door dimension mm	IP	Model	Code		
Height	Width	Depth	Height	Width	Depth						
<div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">b</div> <div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">a</div>	*940	580	330	a-b= 433	562	298	374x490	IP55	G5-5/22/T	077505204	
		580	460	a-b= 433	562	428	374x490	IP44	G5-5/22/T-4	078505203	
	<div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">b</div> <div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">a</div>	*940	580	330	a= 523 b= 343	562	298	464x490 284x490	IP55	GH5-5/22/T	077515203
			580	460	a= 523 b= 343	562	428	464x490 284x490	IP44	GH5-5/22/T-4	078515202
<div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">b</div> <div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">a</div>	1120	580	330	a-b= 523	562	298	464x490	IP55	G5-5/31/T	077505212	
		580	460	a-b= 523	562	428	464x490 284x490	IP44	G5-5/31/T-4	078505211	
	<div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">b</div> <div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">a</div>	1120	580	330	a= 523 b= 343	562	298	464x490 284x490	IP55	GH5-5/31/T	077515211
			580	460	a= 523 b= 343	562	428	464x490 284x490	IP44	GH5-5/31/T-4	078515210
<div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">b</div> <div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">a</div>	1390	580	330	a-b= 523	562	298	464x490	IP55	G5-6/33/T	077506202	
		580	460	a-b= 523	562	428	464x490	IP44	G5-6/33/T-4	078506201	
	<div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">b</div> <div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">a</div>	1390	580	330	a-b= 658	562	298	599x490	IP55	GH5-6/33/T	077516201
			580	460	a-b= 658	562	428	599x490	IP44	GH5-6/33/T-4	078516200
<div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">b</div> <div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">a</div>	1390	580	330	a-b= 658	562	298	599x490	IP55	G5-8/44/T	077508208	
		580	460	a-b= 658	562	428	599x490	IP44	G5-8/44/T-4	078508207	
	<div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">b</div> <div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">a</div>	1390	580	330	a= 883 b= 433	562	298	824x490 374x490	IP55	GH5-8/44/T	077518207
			580	460	a= 883 b= 433	562	428	824x490 374x490	IP44	GH5-8/44/T-4	078518206
<div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">b</div> <div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">a</div>	1840	580	330	a-b= 883	562	298	824x490	IP55	G5-8/52/T	077508216	
		580	460	a-b= 883	562	428	824x490	IP44	G5-8/52/T-4	078508215	
	<div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">b</div> <div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">a</div>	1840	580	330	a= 883 b= 433	562	298	824x490 374x490	IP55	GH5-8/52/T	077518215
			580	460	a= 883 b= 433	562	428	824x490 374x490	IP44	GH5-8/52/T-4	078518214
<div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">b</div> <div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">a</div>	1840	580	330	a-b= 883	562	298	824x490	IP55	G5-9/55/T	077509208	
		580	460	a-b= 883	562	428	824x490	IP44	G5-9/55/T-4	078509205	
	<div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">b</div> <div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">a</div>	1840	580	330	a-b= 883	562	298	824x490	IP55	GH5-9/55/T	077519205
			580	460	a-b= 883	562	428	824x490	IP44	GH5-9/55/T-4	078519204
<div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">b</div> <div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">a</div>	1840	580	330	a= 1340 b= 433	562	298	1274x490 374x490	IP55	G5-9/82/T	077509214	
		580	460	a= 1340 b= 433	562	428	1274x490 374x490	IP44	G5-9/82/T-4	078509213	
	<div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">b</div> <div style="border: 1px solid black; padding: 2px; width: 20px; height: 20px; margin: 2px;">a</div>	1840	580	330	a= 1340 b= 433	562	298	1274x490 374x490	IP55	GH5-9/82/T	077519213
			580	460	a= 1340 b= 433	562	428	1274x490 374x490	IP44	GH5-9/82/T-4	078519212

\* Models that can also be produced on the wall, see the Accessories section on page 177

## 2 compartments with integrated plinth



### Characteristics

Made with 2 equipment compartments separated by an intermediate partition + bottom plinth integrated in a single support structure.

Available overall heights: 1120mm – 1390mm – 1840mm for two depth: 330mm – 460mm.

Rated insulation voltage  $U_i$  690V.

Complete with fixing frame for installation on a concrete base.

Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock on all compartments (DIN18252 profile cylinder - customized differentiated on request). Door opening side can be changed on site even on a single compartment (for detailed information consult the accessories selection).

The layout of the compartment (higher/lower) that can be modified according to the need for the installation of the internal equipment and accessories (DOTPER® system).


Can be equipped with bottom plates and dedicated accessories for creating panels. Mounting plates equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories. Lower closing partition with conical fairleads and seal (only IP55 versions).

### Materials

Made of RAL 7035 color berglass-reinforced plastic. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262.

Pre-engineered for apparatus in class II according to CEI 64-8/4 

	External dimensions, mm			Internal dimensions compartment, mm			Plinth height, mm	Door dimension mm	IP	Model	Code			
	Height	Width	Depth	Height	Width	Depth								
<table border="1" style="border-collapse: collapse; width: 20px; height: 20px;"> <tr><td>b</td></tr> <tr><td>a</td></tr> <tr><td>plinth</td></tr> </table>	b	a	plinth	1120	580	330	a-b= 343	562	298	400	284x490	IP55	G5-6/111/ZT	077506293
	b													
a														
plinth														
580	460	a-b= 343	562	428	284x490	IP44	G5-6/111/ZT-4	078506292						
<table border="1" style="border-collapse: collapse; width: 20px; height: 20px;"> <tr><td>b</td></tr> <tr><td>a</td></tr> <tr><td>plinth</td></tr> </table>	b	a	plinth	1390	580	330	a= 523 b= 433	562	298	400	464x490 374x490	IP55	G5-8/132/ZT	077508281
	b													
a														
plinth														
580	460	a= 523 b= 433	562	428	464x490 374x490	IP44	G5-8/132/ZT-4	078508280						
<table border="1" style="border-collapse: collapse; width: 20px; height: 20px;"> <tr><td>b</td></tr> <tr><td>a</td></tr> <tr><td>plinth</td></tr> </table>	b	a	plinth	1390	580	330	a= 523 b= 433	562	298	490	464x490 284x490	IP55	G5-8/231/ZT	077508273
	b													
a														
plinth														
580	460	a= 523 b= 433	562	428	464x490 284x490	IP44	G5-8/231/ZT-4	078508272						
<table border="1" style="border-collapse: collapse; width: 20px; height: 20px;"> <tr><td>b</td></tr> <tr><td>a</td></tr> <tr><td>plinth</td></tr> </table>	b	a	plinth	1390	580	330	a-b= 433	562	298	490	374x490	IP55	G5-8/222/ZT	077508299
	b													
a														
plinth														
580	460	a-b= 433	562	428	374x490	IP44	G5-8/222/ZT-4	078508298						
<table border="1" style="border-collapse: collapse; width: 20px; height: 20px;"> <tr><td>b</td></tr> <tr><td>a</td></tr> <tr><td>plinth</td></tr> </table>	b	a	plinth	1840	580	330	a= 883 b= 523	562	298	400	824x490 464x490	IP55	G5-9/153/ZT	077509297
	b													
a														
plinth														
580	460	a= 883 b= 523	562	428	824x490 464x490	IP44	G5-9/153/ZT-4	078509296						
<table border="1" style="border-collapse: collapse; width: 20px; height: 20px;"> <tr><td>b</td></tr> <tr><td>a</td></tr> <tr><td>plinth</td></tr> </table>	b	a	plinth	1840	580	330	a= 883 b= 433	562	298	490	824x490 374x490	IP55	G5-9/252/ZT	077509271
	b													
a														
plinth														
580	460	a= 883 b= 433	562	428	824x490 374x490	IP44	G5-9/252/ZT-4	078509270						
<table border="1" style="border-collapse: collapse; width: 20px; height: 20px;"> <tr><td>b</td></tr> <tr><td>a</td></tr> <tr><td>plinth</td></tr> </table>	b	a	plinth	1840	580	330	a-b= 658	562	298	490	599x490	IP55	G5-9/244/ZT	077509289
	b													
a														
plinth														
580	460	a-b= 658	562	428	599x490	IP44	G5-9/244/ZT-4	078509288						
<table border="1" style="border-collapse: collapse; width: 20px; height: 20px;"> <tr><td>b</td></tr> <tr><td>a</td></tr> <tr><td>plinth</td></tr> </table>	b	a	plinth	1840	580	330	a-b= 658	562	298	490	599x490	IP55	G5-9/244/ZT	077519288
	b													
a														
plinth														
580	460	a-b= 658	562	428	599x490	IP44	G5-9/244/ZT-4	078519287						

### Mounting plates



#### Characteristics

Can be applied to the bottom of the enclosure using special threaded inserts with M6x20 stud bolts or in conjunction with switchgear risers or racks using the dedicated fixing brackets. Available in: Pre-galvanized steel - thickness 2 mm; bakelite - thickness 5 mm; PVC - thickness 5 mm. Must be chosen to suit the size of the compartment in question.

Useful height mm	Plate dimensions mm	Steel (2mm thick)		Bakelite (5 mm thick)		PVC (5 mm thick)	
		Model	Code	Model	Code	Model	Code
343	455x265	G5/1/PA	095775011	G5/1/PB	095775110	G5/1/PP	095775219
433	455x355	G5/2/PA	095775029	G5/2/PB	095775128	G5/2/PP	095775227
523	455x445	G5/3/PA	095775037	G5/3/PB	095775136	G5/3/PP	095775235
658	455x580	G5/4/PA	095775045	G5/4/PB	095775144	G5/4/PP	095775243
883	455x805	G5/5/PA	095775052	G5/5/PB	095775151	G5/5/PP	095775250
1340	455x1240 (in 2 pezzi)	G5/8/PA	095775078	G5/8/PB	095775177	G5/8/PP	095775276

### Closing bottom plates

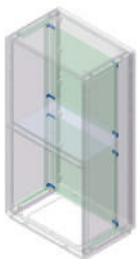


#### Characteristics

Made of 3 mm thick bakelite. It is installed in the lower part of the cabinets to provide additional protection for the compartment where the cable input channels are situated. Available in the blank version so that the required holes can be made during installation or complete with 3 conical fairleads (max. diam. 76). In the IP55 enclosure the partition is supplied as standard.

Enclosure depth mm	Blank partition		Partition with conical fairleads	
	Model	Code	Model	Code
330	G5/SIC	095775409	G5/SIM	095775425
460	GH5/SIC	095775458	GH5/SIM	095775474

### Brackets kit for supporting the mounting plates on the uprights

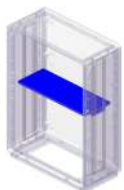


#### Characteristics

Made from steel. To be used together with an uprights kit and brackets kit for installing the depth-adjustable plate. If uprights and brackets kits are envisaged for supporting modular equipment, a further uprights kit without the upright support brackets kit is required. Suitable for all types of plate. For plates provided in 2 parts, 2 bracket kits are required.

Description	Model	Code
Brackets kit for support plates on uprights (4 pcs)	G/SP/MT	095770921

### Pre-galvanized sheet metal equipment holding shelves



#### Characteristics

To be installed using 2 upright kits G-../MT (selected based on the overall height) and 1 brackets kit G/SM or GH/SM. These are complete with 2 brackets for application of shelves. To be selected based on enclosure depth.

Enclosure depth mm	Overall shelves dimension, mm			Shelves	
	Height	Width	Depth	Model	Code
330	225	485	17	G5/RP	095775631
460	355	485	17	GH5/RP	095775649



### Accessories for creating modular equipment panels

For creating panels inside enclosures, you must order:

- Uprights kit + brackets kit for the realization of modular equipment panels
- Frame/framework for supporting modular equipment panels
- Modular equipment support rack
- Blank and slotted panels
- Mounting plates/brackets kit for arranging the modular equipment support racks (Optional)

### Uprights kit + brackets kit for the realization of modular equipment panels



#### Characteristics

Steel uprights set up with holes for fastening modular panel frames, equipment holding racks, bottom panels. Brackets for upright supports made from steel. The kit must be selected based on the depth and overall height of the enclosure regardless of the number and layout of compartments.

Overall height enclosure mm	Uprights (2 pieces)		Uprights support brackets (4 pieces)			
	Model	Code	Depth 330 mm		Depth 460 mm	
			Model	Code	Model	Code
940	G-5/MT	095770053	G/SM	095770905	GH/SM	095770913
1120	G-6/MT	095770061				
1390	G-8/MT	095770087				
1840	G-9/MT	095770095				
N.B. The support brackets can be used on all heights of upright kits and up to an overall number of three kits.						

### Frame/framework for supporting modular equipment panels



#### Characteristics

Made from self-extinguishing thermoplastic material, grey color RAL 7035. Designed to be fastened onto the uprights kit.

To be selected based on the usable height of the individual compartment. In the case of multiple compartments, the individual compartments can also be fitted out.

Useful height compartment mm	No. Installable panels (Blank or slotted)	Max. No. DIN modules available	Frame/framework	
			Model	Code
343	1	24	G5/1/TPM	095775706
433	2	48	G5/2/TPM	095775714
523	3	72	G5/3/TPM	095775722
658	3	72	G5/4/TPM	095775730
883	4	96	G5/5/TPM	095775748
1340	6	144	G5/8/TPM	095775763



### Modular equipment support rack



#### Characteristics

Made from steel, can be removed from the enclosure to facilitate execution of the panel; assembly and wiring of the various equipment can be carried out on a work bench. Designed to be fastened onto the uprights kit. Complete with DIN 46 277/3 profiles.

To be selected in combination with the relative panels support frame/framework.

Useful height compartment, mm	Modular equipment support rack		no. pieces installable	In combination with frame/framework	
	Model	Code		Model	Code
343	G5/1/CST	095775805	1	G5/1/TPM	095775706
433	G5/2-5/CST	095775813	1	G5/2/TPM	095775714
523	G5/3-7/CST	095775821	1	G5/3/TPM	095775722
658	G5/4-8/CST	095775839	1	G5/4/TPM	095775730
883	G5/2-5/CST	095775813	2	G5/5/TPM	095775748
1340	G5/4-8/CST	095775839	2	G5/8/TPM	095775763

### Blank or slotted panels



#### Characteristics

Made from thermoplastic material. Suitable for Graf5 enclosures. To be applied on the modular equipment support rack.

Panels	Description	Model	Code
Blank		G5/PC	095775607
Slotted	24 DIN modules (17,5mm) for each panel	G5/PM24	095775623

### Bottom partition/brackets kit for arranging the modular equipment support racks





#### Characteristics

Kit made up of 4 brackets and 1 mounting plate. Brackets and plate made from steel. Plate thickness 2mm. To be used together with the modular equipment support racks for fixing any non-modular components on the back of the panel. To be selected based on the equipment support rack and enclosure depth (330 - 460 mm).

Modular equipment support rack		Enclosure depth mm	Rack/plate distance	Bracket/plate Kit	
Model	Code			Model	Code
G5/1/CST	095775805	330	85	G5/1/PACST	095775854
G5/2-5/CST	095775813	330	85	G5/2-5/PACST	095775862
		460	215	GH5/2-5/PACST	095775904
G5/3-7/CST	095775821	330	85	G5/3-7/PACST	095775870
		460	215	GH5/3-7/PACST	095775912
G5/4-8/CST	095775839	330	85	G5/4-8/PACST	095775888
		460	215	GH5/4-8/PACST	095775920

### Standard ordering kit for panels realization with modular devices accessories

For a quick composition of the accessories for the realization of panels it is necessary to request: **Upright/bracket kit + Frame/Panels/Rack kit.**

REFERENCE ENCLOSURE				Upright/Bracket kit	Frame/Panels/Rack kit	
IP55		IP44				
Model	Code	Model	Code		Compartment "a"	Compartment "b"
Model	Code	Model	Code	Code	Code	Code
<b>Depth mm 330</b>						
G5-5/22/T	077505204	G5-5/22/T-4	078505203	095773354	095775292	095775292
G5-5/31/T	077505212	G5-5/31/T-4	078505211	095773354	095775391	095775193
G5-6/33/T	077506202	G5-6/33/T-4	078506201	095773362	095775391	095775391
G5-8/44/T	077508208	G5-8/44/T-4	078508207	095773388	095775490	095775490
G5-8/52/T	077508216	G5-8/52/T-4	078508215	095773388	095775599	095775292
G5-9/55/T	077509208	G5-9/55/T-4	078509205	095773396	095775599	095775599
G5-9/82/T	077509214	G5-9/82/T-4	078509213	095773396	095775896	095775292
G5-6/111/ZT	077506293	G5-6/111/ZT-4	078506292	095773362	095775193	095775193
G5-8/132/ZT	077508281	G5-8/132/ZT-4	078508280	095773388	095775391	095775292
G5-8/231/ZT	077508273	G5-8/231/ZT-4	078508272	095773388	095775391	095775193
G5-8/222/ZT	077508299	G5-8/222/ZT-4	078508298	095773388	095775292	095775292
G5-9/153/ZT	077509297	G5-9/153/ZT-4	078509296	095773396	095775599	095775292
G5-9/252/ZT	077509271	G5-9/252/ZT-4	078509270	095773396	095775599	095775391
G5-9/244/ZT	077509289	G5-9/244/ZT-4	078509288	095773396	095775490	095775490
<b>Depth mm 460</b>						
GH5-5/22/T	077515203	GH5-5/22/T-4	078515202	095774659	095775292	095775292
GH5-5/31/T	077515211	GH5-5/31/T-4	078515210	095774659	095775391	095775193
GH5-6/33/T	077516201	GH5-6/33/T-4	078516200	095774667	095775391	095775391
GH5-8/44/T	077518207	GH5-8/44/T-4	078518206	095774683	095775490	095775490
GH5-8/52/T	077518215	GH5-8/52/T-4	078518214	095774683	095775599	095775292
GH5-9/55/T	077519205	GH5-9/55/T-4	078519204	095774691	095775599	095775599
GH5-9/82/T	077519213	GH5-9/82/T-4	078519212	095774691	095775896	095775292
GH5-6/111/ZT	077516292	GH5-6/111/ZT-4	078516291	095774667	095775193	095775193
GH5-8/132/ZT	077518280	GH5-8/132/ZT-4	078518289	095774683	095775391	095775292
GH5-8/231/ZT	077518272	GH5-8/231/ZT-4	078518271	095774683	095775391	095775193
GH5-8/222/ZT	077518298	GH5-8/222/ZT-4	078518297	095774683	095775292	095775292
GH5-9/153/ZT	077519296	GH5-9/153/ZT-4	078519295	095774691	095775599	095775292
GH5-9/252/ZT	077519270	GH5-9/252/ZT-4	078519279	095774691	095775599	095775391
GH5-9/244/ZT	077519288	GH5-9/244/ZT-4	078519287	095774691	095775490	095775490

#### How to order

To order the kits for making panels you need simply to know the code of the 2 compartments enclosure - 2 compartments with integrated plinth and select the codes of the order kits corresponding to the reference enclosure code. Example: Enclosure code 077508281.

#### Corresponding kits:

- Uprights/Brackets Kit: code 095773388
- Frame/Panels/Racks kit
  - for compartment "a" code 095775391
  - for compartment "b" code 095775292

In case you want to equip only a single compartment must always order the Upright/Brackets Kit + Frame/Panel/Rack Kit corresponding to the compartment to be accessorized..

**N.B. All panels provided in the Frame/Panels/Rack kit are slotted. Any requests for blank panels must be integrated separately.**

For further details on the composition of internal accessories for the realization of panels, consult the dedicated section at page 181.

**Maximum load applicable on the mounting plate/Usable protected space for equipment/Thermal energy dissipation, page 52**

Accessories and spare parts common to the whole Graf5 series:

**Ventilation units, page 190**

**Anchor frame, page 189**

### 3 compartments enclosures



#### Characteristics

Made with 3 equipment compartments separated by an intermediate partition.  
 Overall height sizes available: 1120mm – 1390mm – 1840mm for two depths: 330mm – 460mm.  
 Rated insulation voltage Ui 690V.  
 Complete with fixing frame for installation on a concrete base.  
 Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder - customized cipher on request).  
 Door opening side can be changed on site even on a single compartment (for detailed information consult the accessories selection).  
 Arrangement of the compartments (upper / intermediate / lower) modifiable on site according to the needs of installation of equipment and internal accessories (DOTPER® system)  
 Can be equipped with mounting plates and dedicated accessories for creating panels.  
 Mounting plates equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.  
 Closing bottom plate with conical fairleads and seal (only IP55 versions).

#### Materials

Made of RAL 7035 color fiberglass-reinforced plastic. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

#### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262.  
 Pre-engineered for apparatus in class II according to CEI 64-8/4

External dimensions, mm			Internal dimensions compartment, mm			Door dimension, mm	IP	Model	Code
Height	Width	Depth	Height	Width	Depth				
1120	580	330	a-b-c= 343	562	298	284x490	IP55	G5-6/111/T	077506301
							IP44	G5-6/111/T-4	078506300
	580	460	a-b-c= 343	562	428	284x490	IP55	GH5-6/111/T	077516300
							IP44	GH5-6/111/T-4	078516309
1390	580	330	a-b-c= 433	562	298	374x490	IP55	G5-8/222/T	077508307
							IP44	G5-8/222/T-4	078508306
	580	460	a-b-c= 433	562	428	374x490	IP55	GH5-8/222/T	077518306
							IP44	GH5-8/222/T-4	078518305
1390	580	330	a= 523 b= 433 c= 343	562	298	464x490 374x490 284x490	IP55	G5-8/321/T	077508315
							IP44	G5-8/321/T-4	078508314
	580	460	a= 523 b= 433 c= 343	562	428	464x490 374x490 284x490	IP55	GH5-8/321/T	077518314
							IP44	GH5-8/321/T-4	078518313
1840	580	330	a= 883 b-c= 433	562	298	824x490 374x490	IP55	G5-9/522/T	077509305
							IP44	G5-9/522/T-4	078509304
	580	460	a= 883 b-c= 433	562	428	824x490 374x490	IP55	GH5-9/522/T	077519304
							IP44	GH5-9/522/T-4	078519303
1840	580	330	a-b= 658 c= 433	562	298	599x490 374x490	IP55	G5-9/442/T	077509313
							IP44	G5-9/442/T-4	078509312
	580	460	a-b= 658 c= 433	562	428	599x490 374x490	IP55	GH5-9/442/T	077519312
							IP44	GH5-9/442/T-4	078519311
1840	580	330	a= 883 b= 523 c= 343	562	298	824x490 464x490 284x490	IP55	G5-9/531/T	077509321
							IP44	G5-9/531/T-4	078509320
	580	460	a= 883 b= 523 c= 343	562	428	824x490 464x490 284x490	IP55	GH5-9/531/T	077519320
							IP44	GH5-9/531/T-4	078519329

### 3 compartments enclosures with integrated plinth




**Characteristics**

Made with 3 equipment compartments separated by an intermediate partition + bottom plinth integrated in a single support structure.  
 Overall height sizes available: 1840mm for two depths: 330mm – 460mm.  
 Rated insulation voltage Ui 690V.  
 Complete with fixing frame for installation on a concrete base.  
 Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder - customized cipher on request).  
 Door opening side can be changed on site even on a single compartment (for detailed information consult the accessories selection).  
 Arrangement of the compartments (upper / intermediate / lower) modifiable on site according to the needs of installation of equipment and internal accessories (DOTPER® system)  
 Can be equipped with mounting plates and dedicated accessories for creating panels.  
 Mounting plates equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.  
 Closing bottom plate with conical fairleads and seal (only IP55 versions).

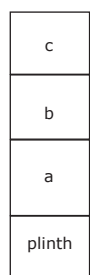
**Materials**

Made of RAL 7035 color fiberglass-reinforced plastic. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

**Standards**

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262.  
 Pre-engineered for apparatus in class II according to CEI 64-8/4 .

Craft 5



External dimensions, mm			Internal dimensions compartment, mm			Plinth height mm	Door dimension mm	IP	Model	Code
Height	Width	Depth	Height	Width	Depth					
1840	580	330	a= 523 b-c= 433	562	298	400	464x490 374x490	IP55	G5-9/1322/ZT	077509388
								IP44	G5-9/1322/ZT-4	078509387
	580	460	a= 523 b-c= 433	562	428		464x490 374x490	IP55	GH5-9/1322/ZT	077519387
								IP44	GH5-9/1322/ZT-4	078519386
1840	580	330	a-b= 523 c= 343	562	298	400	464x490 284x490	IP55	G5-9/1331/ZT	077509396
								IP44	G5-9/1331/ZT-4	078509395
	580	460	a-b= 523 c= 343	562	428		464x490 284x490	IP55	GH5-9/1331/ZT	077519395
								IP44	GH5-9/1331/ZT-4	078519394
1840	580	330	a-b-c= 433	562	298	490	374x490	IP55	G5-9/2222/ZT	077509370
								IP44	G5-9/2222/ZT-4	078509379
	580	460	a-b-c= 433	562	428		374x490	IP55	GH5-9/2222/ZT	077519379
								IP44	GH5-9/2222/ZT-4	078519378

## Mounting plates



#### Characteristics

Can be applied to the bottom of the enclosure using special threaded inserts with M6x20 stud bolts or in conjunction with switchgear risers or racks using the dedicated fixing brackets. Available in: Pre-galvanized steel - thickness 2 mm; bakelite - thickness 5 mm; PVC - thickness 5 mm. Must be chosen to suit the size of the compartment in question.

Useful height mm	Plate dimensions mm	Steel (2mm thick)		Bachelite (spessore 5 mm)		PVC (5 mm thick)	
		Model	Code	Model	Code	Model	Code
343	455x265	G5/1/PA	095775011	G5/1/PB	095775110	G5/1/PP	095775219
433	455x355	G5/2/PA	095775029	G5/2/PB	095775128	G5/2/PP	095775227
523	455x445	G5/3/PA	095775037	G5/3/PB	095775136	G5/3/PP	095775235
658	455x580	G5/4/PA	095775045	G5/4/PB	095775144	G5/4/PP	095775243
883	455x805	G5/5/PA	095775052	G5/5/PB	095775151	G5/5/PP	095775250

## Closing bottom plates



#### Characteristics

Made of 3 mm thick bakelite. It is installed in the lower part of the cabinets to provide additional protection for the compartment where the cable input channels are situated. Available in the blank version so that the required holes can be made during installation or complete with 3 conical fairleads (max. diam. 76). In the IP55 enclosure the partition is supplied as standard.

Enclosure depth mm	Blank partition		Partition with conical fairleads	
	Model	Code	Model	Code
330	G5/SIC	095775409	G5/SIM	095775425
460	GH5/SIC	095775458	GH5/SIM	095775474

## Brackets kit for supporting the mounting plates on the uprights



#### Characteristics

Made from steel. To be used together with an uprights kit and brackets kit for installing the depth-adjustable plate. If uprights and brackets kits are envisaged for supporting modular equipment, a further uprights kit without the upright support brackets kit is required. Suitable for all types of plate. For plates provided in 2 parts, 2 bracket kits are required.

Description	Model	Code
Brackets kit for support plates on uprights (4 pcs)	G/SP/MT	095770921

## Pre-galvanized sheet metal equipment holding shelves



#### Characteristics

To be installed using 2 upright kits G-../MT (selected based on the overall height) and 1 brackets kit G/SM or GH/SM. These are complete with 2 brackets for application of shelves. To be selected based on enclosure depth.

Enclosure depth mm	Overall shelves dimension, mm			Shelves	
	Height	Width	Depth	Model	Code
330	225	485	17	G5/RP	095775631
460	355	485	17	GH5/RP	095775649

## Accessories for creating modular equipment panels

For creating panels inside enclosures, you must order:

- Uprights kit + brackets kit for the realization of modular equipment panels
- Frame/framework for supporting modular equipment plates
- Modular equipment support rack
- Blank and slotted plates
- Mounting plate/brackets kit for arranging the modular equipment support racks (Optional)

### Uprights kit + brackets kit for the realization of modular equipment panels

Craft-5



#### Characteristics

Steel uprights set up with holes for fastening modular panel frames, equipment holding racks, bottom plates. Brackets for upright supports made from steel. The kit must be selected based on the depth and overall height of the enclosure regardless of the number and layout of compartments.

Overall height enclosure mm	Uprights (2 pieces)		Uprights support brackets (4 pieces)			
	Model	Code	Depth 330 mm		Depth 460 mm	
			Model	Code	Model	Code
1120	G-6/MT	095770061	G/SM	095770905	GH/SM	095770913
1390	G-8/MT	095770087	N.B. The support brackets can be used on all heights of upright kits and up to an overall number of three kits.			
1840	G-9/MT	095770095				

### Frame/framework for supporting modular equipment panels



#### Characteristics

Made from self-extinguishing thermoplastic material, grey color RAL 7035. Designed to be fastened onto the uprights kit. To be selected based on the usable height of the individual compartment. In the case of multiple compartments, the individual compartments can also be fitted out.

Useful height compartment, mm	No. Installable panels (Blank or slotted)	Max. No. DIN modules available	Frame/framework	
			Model	Code
343	1	24	G5/1/TPM	095775706
433	2	48	G5/2/TPM	095775714
523	3	72	G5/3/TPM	095775722
658	3	72	G5/4/TPM	095775730
883	4	96	G5/5/TPM	095775748

## Modular equipment support rack



#### Characteristics

Made from steel, can be removed from the enclosure to facilitate execution of the panel; assembly and wiring of the various equipment can be carried out on a work bench. Designed to be fastened onto the uprights kit. Complete with DIN 46 277/3 profiles. To be selected in combination with the relative panels support frame/framework.

Useful height compartment, mm	Modular equipment support rack		no. pieces installable	In combination with frame/framework	
	Model	Code		Model	Code
343	G5/1/CST	095775805	1	G5/1/TPM	095775706
433	G5/2-5/CST	095775813	1	G5/2/TPM	095775714
523	G5/3-7/CST	095775821	1	G5/3/TPM	095775722
658	G5/4-8/CST	095775839	1	G5/4/TPM	095775730
883	G5/2-5/CST	095775813	2	G5/5/TPM	095775748

## Blank or slotted panels



#### Characteristics

Made from thermoplastic material. Suitable for Graf5 enclosures. To be applied on the modular equipment support rack.

Panels	Description	Model	Code
Blank		G5/PC	095775607
Slotted	24 DIN modules (17,5mm) for each panel	G5/PM24	095775623

## Mounting plate/brackets kit for arranging the modular equipment support racks



#### Characteristics



Kit made up of 4 brackets and 1 mounting plate. Brackets and plate made from steel. Plate thickness 2mm. To be used together with the modular equipment support racks for fixing any non-modular components on the back of the panel. To be selected based on the equipment support rack and enclosure depth (330 - 460 mm).

Modular equipment support rack		Enclosure depth mm	Rack/plate distance	Bracket/plate Kit	
Model	Code			Model	Code
G5/1/CST	095775805	330	85	G5/1/PACST	095775854
G5/2-5/CST	095775813	330	85	G5/2-5/PACST	095775862
		460	215	GH5/2-5/PACST	095775904
G5/3-7/CST	095775821	330	85	G5/3-7/PACST	095775870
		460	215	GH5/3-7/PACST	095775912
G5/4-8/CST	095775839	330	85	G5/4-8/PACST	095775888
		460	215	GH5/4-8/PACST	095775920



## Standard ordering kit for panels realization with modular devices accessories

For a quick composition of the accessories for the realization of panels it is necessary to request: **Upright/bracket kit + Frame/Panels/Rack kit.**

REFERENCE ENCLOSURE				Upright/Bracket kit	Frame/Panels/Rack kit		
IP55		IP44					
Model	Code	Model	Code	Code	Compartment "a"	Compartment "b"	Compartment "c"
					Code	Code	Code
<b>Depth mm 330</b>							
G5-6/111/T	077506301	G5-6/111/T-4	078506300	095773362	095775193	095775193	095775193
G5-8/222/T	077508307	G5-8/222/T-4	078508306	095773388	095775292	095775292	095775292
G5-8/321/T	077508315	G5-8/321/T-4	078508314	095773388	095775391	095775292	095775193
G5-9/522/T	077509305	G5-9/522/T-4	078509304	095773396	095775599	095775292	095775292
G5-9/442/T	077509313	G5-9/442/T-4	078509312	095773396	095775490	095775490	095775292
G5-9/531/T	077509321	G5-9/531/T-4	078509320	095773396	095775599	095775391	095775193
G5-9/1322/ZT	077509388	G5-9/1322/ZT-4	078509387	095773396	095775391	095775292	095775292
G5-9/1331/ZT	077509396	G5-9/1331/ZT-4	078509395	095773396	095775391	095775391	095775193
G5-9/2222/ZT	077509370	G5-9/2222/ZT-4	078509379	095773396	095775292	095775292	095775292
<b>Depth mm 460</b>							
GH5-6/111/T	077516300	GH5-6/111/T-4	078516309	095774667	095775193	095775193	095775193
GH5-8/222/T	077518306	GH5-8/222/T-4	078518305	095774683	095775292	095775292	095775292
GH5-8/321/T	077518314	GH5-8/321/T-4	078518313	095774683	095775391	095775292	095775193
GH5-9/522/T	077519304	GH5-9/522/T-4	078519303	095774691	095775599	095775292	095775292
GH5-9/442/T	077519312	GH5-9/442/T-4	078519311	095774691	095775490	095775490	095775292
GH5-9/531/T	077519320	GH5-9/531/T-4	078519329	095774691	095775599	095775391	095775193
GH5-9/1322/ZT	077519387	GH5-9/1322/ZT-4	078519386	095774691	095775391	095775292	095775292
GH5-9/1331/ZT	077519395	GH5-9/1331/ZT-4	078519394	095774691	095775391	095775391	095775193
GH5-9/2222/ZT	077519379	GH5-9/2222/ZT-4	078519378	095774691	095775292	095775292	095775292

#### How to order

To order the kits for making panels you need simply to know the code of the 3 compartments enclosure - 3 compartments with integrated plinth and select the codes of the order kits corresponding to the reference enclosure code. Example: Enclosure code 077508281.

#### Corresponding kits:

- Uprights/Brackets Kit: code 095774683
- Frame/Panels/Racks kit
  - for compartment "a" code 095775391
  - for compartment "b" code 095775292
  - for compartment "c" code 095775193

In case you want to equip only a single compartment must always order the Upright/Brackets Kit + Frame/Panel/Rack Kit corresponding to the compartment to be accessorised.

**N.B. All panels provided in the Frame/Panels/Rack kit are slotted. Any requests for blank panels must be integrated separately.**

For further details on the composition of internal accessories for the realization of panels, consult the dedicated section at page 181.

**Maximum load applicable on the mounting plate/Usable protected space for equipment/Thermal energy dissipation, page 54**

Accessories and spare parts common to the whole Graf5 series:

**Ventilation units, page 190**

**Anchor frame, page 189**

## 4 and 5 compartments enclosures



### Characteristics

Made with 4/5 equipment compartments separated by an intermediate partition. Arrangement of the compartments (upper / intermediate / lower) modifiable on site according to the needs of installation of equipment and internal accessories (DOTPER® system). Overall height sizes available: 1840mm for two depths: 330mm – 460mm. Rated insulation voltage Ui 690V.

Complete with fixing frame for installation on a concrete base.

Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder - customized cipher on request).

Door opening side can be changed on site even on a single compartment (for detailed information consult the accessories selection).

Mounting plates equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.

Closing bottom plate with conical fairleads and seal (only IP55 versions).

### Materials

Made of RAL 7035 color fiberglass-reinforced plastic. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

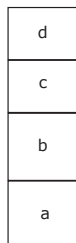
### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with

CEI EN 60529, IK10 according to CEI EN 62262.

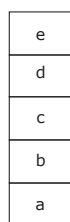
Pre-engineered for apparatus in class II according to CEI 64-8/4

## 4 compartments cabinets



External dimensions, mm			Internal dimensions compartment, mm			Door dimension, mm	IP	Model	Code
Height	Width	Depth	Height	Width	Depth				
1840	580	330	a-b= 523 c-d= 343	562	298	464x490 284x490	IP55	G5-9/3311/T	077509404
							IP44	G5-9/3311/T-4	078509403
	580	460	a-b= 523 c-d= 343	562	428	464x490 284x490	IP55	GH5-9/3311/T	077519403
							IP44	GH5-9/3311/T-4	078519402
1840	580	330	a= 523 b-c= 433 d= 343	562	298	464x490 374x490 284x490	IP55	G5-9/3221/T	077509412
							IP44	G5-9/3221/T-4	078509411
	580	460	a= 523 b-c= 433 d= 343	562	428	464x490 374x490 284x490	IP55	GH5-9/3221/T	077519411
							IP44	GH5-9/3221/T-4	078519410
1840	580	330	a-b-c-d=433	562	298	374x490	IP55	G5-9/2222/T	077509420
							IP44	G5-9/2222/T-4	078509429
	580	460	a-b-c-d= 433	562	428	374x490	IP55	GH5-9/2222/T	077519429
							IP44	GH5-9/2222/T-4	078519428

## 5 compartments cabinets



External dimensions, mm			Internal dimensions compartment, mm			Door dimension, mm	IP	Model	Code
Height	Width	Depth	Height	Width	Depth				
1840	580	330	a-b-c-d-e=343	562	298	284x490	IP55	G5-9/11111/T	077509503
							IP44	G5-9/11111/T-4	078509502
	580	460	a-b-c-d-e=343	562	428	284x490	IP55	GH5-9/11111/T	077519502
							IP44	GH5-9/11111/T-4	078519501

## 4 compartments enclosures with integrated plinth




### Characteristics

Made with 4 equipment compartments separated by an intermediate partition + bottom plinth integrated in a single support structure.  
 Arrangement of the compartments (upper / intermediate / lower) modifiable on site according to the needs of installation of equipment and internal accessories (DOTPER® system)  
 Overall height sizes available: 1840mm for two depth: 330mm – 460mm.  
 Rated insulation voltage Ui 690V.  
 Complete with fixing frame for installation on a concrete base. Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder - customized cipher on request).  
 Door opening side can be changed on site even on a single compartment (for detailed information consult the accessories selection).  
 Mounting plates equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.  
 Closing bottom plate with conical fairleads and seal (only IP55 versions).

### Materials

Made of RAL 7035 color fiberglass-reinforced plastic. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with  
 CEI EN 60529, IK10 according to CEI EN 62262.  
 Pre-engineered for apparatus in class II according to CEI 64-8/4 .

	External dimensions, mm			Internal dimensions compartment, mm			Plinth height mm	Door dimension mm	IP	Model	Code
	Height	Width	Depth	Height	Width	Depth					
d	1840	580	330	a-b-c-d= 343	562	298	400	284x490	IP55	G5-9/11111/ZT	077509495
c									IP44	G5-9/1111/ZT-4	078509494
b	1840	580	460	a-b-c-d= 343	562	428	400	284x490	IP55	GH5-9/1111/ZT	077519494
a									IP44	GH5-9/1111/ZT-4	078519493
plinth											

### Mounting plates



**Characteristics**

Can be applied to the bottom of the enclosure using special threaded inserts with M6x20 stud bolts or in conjunction with switchgear risers or racks using the dedicated fixing brackets. Available in: Pre-galvanized steel - thickness 2 mm; bakelite - thickness 5 mm; PVC - thickness 5 mm. Must be chosen to suit the size of the compartment in question.

Useful height mm	Plate dimensions mm	Steel (2mm thick)		Bakelite (5 mm thick)		PVC (5 mm thick)	
		Model	Code	Model	Code	Model	Code
343	455x265	G5/1/PA	095775011	G5/1/PB	095775110	G5/1/PP	095775219
433	455x355	G5/2/PA	095775029	G5/2/PB	095775128	G5/2/PP	095775227
523	455x445	G5/3/PA	095775037	G5/3/PB	095775136	G5/3/PP	095775235

### Closing bottom plate



**Characteristics**

Made of 3 mm thick bakelite. It is installed in the lower part of the cabinets to provide additional protection for the compartment where the cable input channels are situated. Available in the blank version so that the required holes can be made during installation or complete with 3 conical fairleads (max. diam. 76). In IP55 cabinets the partition is provided as standard.

Enclosure depth mm	Blank plate		Plate with conical fairleads	
	Model	Code	Model	Code
330	G5/SIC	095775409	G5/SIM	095775425
460	GH5/SIC	095775458	GH5/SIM	095775474

### Brackets kit for supporting the mounting plates on the uprights

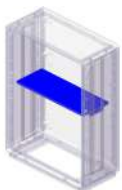


**Characteristics**

Made from steel. To be used together with an uprights kit and brackets kit for installing the depth-adjustable plate. If uprights and brackets kits are envisaged for supporting modular equipment, a further uprights kit without the upright support brackets kit is required. Suitable for all types of plate. For plates provided in 2 parts, 2 bracket kits are required.

Description	Model	Code
Brackets kit for support plates on uprights (4 pcs)	G/SP/MT	095770921

### Pre-galvanized sheet metal equipment holding shelves



**Characteristics**

To be installed using 2 upright kits G-./MT (selected based on the overall height) and 1 brackets kit G/SM or GH/SM. These are complete with 2 brackets for application of shelves. To be selected based on enclosure depth.

Enclosure depth mm	Overall shelves dimension, mm			Shelves	
	Height	Width	Depth	Model	Code
330	225	485	17	G5/RP	095775631
460	355	485	17	GH5/RP	095775649

## Accessories for creating modular equipment panels

For creating panels inside enclosures, you must order:

- Uprights kit + brackets kit for the realization of modular equipment panels
- Frame/framework for supporting modular equipment panels
- Modular equipment support rack
- Blank and slotted panels
- Mounting plate/brackets kit for arranging the modular equipment support racks (Optional)

### Uprights kit + brackets kit for the realization of modular equipment panels



#### Characteristics

Steel uprights set up with holes for fastening modular panel frames, equipment holding racks, bottom plates.

Brackets for upright supports made from steel. The kit must be selected based on the depth and overall height of the enclosure regardless of the number and layout of compartments.

Overall height enclosure, mm	Uprights (2 pieces)		Uprights support brackets (4 pieces)			
	Model	Code	Depth 330 mm		Depth 460 mm	
			Model	Code	Model	Code
1840	G-9/MT	095770095	G/SM	095770905	GH/SM	095770913

### Frame/framework for supporting modular equipment panels



#### Characteristics

Made from self-extinguishing thermoplastic material, grey color RAL 7035. Designed to be fastened onto the uprights kit. To be selected based on the usable height of the individual compartment. In the case of multiple compartments, the individual compartments can also be fitted out.

Useful height compartment, mm	Nr. Installable panels (Blank or slotted)	Max. No. DIN modules available	Frame/framework	
			Model	Code
343	1	24	G5/1/TPM	095775706
433	2	48	G5/2/TPM	095775714
523	3	72	G5/3/TPM	095775722

### Modular equipments support rack



#### Characteristics

Made from steel, can be removed from the enclosure to facilitate execution of the panel; assembly and wiring of the various equipment can be carried out on a work bench. Designed to be fastened onto the uprights kit. Complete with DIN 46 277/3 profiles. To be selected in combination with the relative panels support frame/framework.

Useful height compartment, mm	Modular equipment support rack		no. pieces installable	In combination with frame/framework	
	Model	Code		Model	Code
343	G5/1/CST	095775805	1	G5/1/TPM	095775706
433	G5/2-5/CST	095775813	1	G5/2/TPM	095775714
523	G5/3-7/CST	095775821	1	G5/3/TPM	095775722

### Blank or slotted panels



#### Characteristics

Made from thermoplastic material. Suitable for Grafi5 enclosures. To be applied on the modular equipment support rack.

Panels	Description	Model	Code
Blank		G5/PC	095775607
Slotted	24 DIN modules (17,5mm) for each panel	G5/PM24	095775623

### Mounting plate/brackets kit for arranging the modular equipment support racks



#### Characteristics



Kit made up of 4 brackets and 1 mounting plate. Brackets and plate made from steel. Plate thickness 2mm. To be used together with the modular equipment support racks for fixing any non-modular components on the back of the panel. To be selected based on the equipment support rack and enclosure depth (330 - 460 mm).

Modular equipment support rack		Enclosure depth mm	Rack/plate distance	Bracket/plate Kit	
Model	Code			Model	Code
G5/1/CST	095775805	330	85	G5/1/PACST	095775854
G5/2-5/CST	095775813	330	85	G5/2-5/PACST	095775862
		460	215	GH5/2-5/PACST	095775904
G5/3-7/CST	095775821	330	85	G5/3-7/PACST	095775870
		460	215	GH5/3-7/PACST	095775912



### Standard ordering kit for panels realization with modular devices accessories

For a quick composition of the accessories for the realization of panels it is necessary to request: **Upright/bracket kit + Frame/Panels/Rack kit.**

REFERENCE ENCLOSURE				Upright/ Bracket kit	Frame/Panels/Rack kit				
IP55		IP44							
Model	Code	Model	Code	Code	Compartment "a"	Compartment "b"	Compartment "c"	Compartment "d"	Compartment "e"
<b>Depth mm 330</b>									
G5-9/3311/T	077509404	G5-9/3311/T-4	078509403	095773396	095775391	095775391	095775193	095775193	
G5-9/3221/T	077509412	G5-9/3221/T-4	078509411	095773396	095775391	095775292	095775292	095775193	
G5-9/2222/T	077509420	G5-9/2222/T-4	078509429	095773396	095775292	095775292	095775292	095775292	
G5-9/11111/ZT	077509495	G5-9/1111/ZT-4	078509494	095773396	095775193	095775193	095775193	095775193	
G5-9/11111/T	077509503	G5-9/11111/T-4	078509502	095773396	095775193	095775193	095775193	095775193	095775193
<b>Depth mm 460</b>									
GH5-9/3311/T	077519403	GH5-9/3311/T-4	078519402	095774691	095775391	095775391	095775193	095775193	
GH5-9/3221/T	077519411	GH5-9/3221/T-4	078519410	095774691	095775391	095775292	095775292	095775193	
GH5-9/2222/T	077519429	GH5-9/2222/T-4	078519428	095774691	095775292	095775292	095775292	095775292	
GH5-9/1111/ZT	077519494	GH5-9/1111/ZT-4	078519493	095774691	095775193	095775193	095775193	095775193	
GH5-9/11111/T	077519502	GH5-9/11111/T-4	078519501	095774691	095775193	095775193	095775193	095775193	095775193

#### How to order

To order the kits for making panels you need simply to know the code of the 2 compartments enclosure - 2 compartments with integrated plinth and select the codes of the order kits corresponding to the reference enclosure code. Example: Enclosure code 077519502.

#### Corresponding kits:

- Uprights/Brackets Kit: code 095774691
- Frame/Panels/Racks kit
  - for compartment "a" code 095775193
  - for compartment "b" code 095775193
  - for compartment "c" code 095775193
  - for compartment "d" code 095775193.
  - for compartment "e" code 095775193

In case you want to equip only a single compartment must always order the Upright/Brackets Kit + Frame/Panel/Rack Kit corresponding to the compartment to be accessorised.

**N.B. All panels provided in the Frame/Panels/Rack kit are slotted. Any requests for blank panels must be integrated separately.**

For further details on the composition of internal accessories for the realization of panels, consult the dedicated section at page 181.

**Maximum load applicable on the mounting plate/Usable protected space for equipment/Thermal energy dissipation, page 55-56**

Accessories and spare parts common to the whole Graf5 series:

**Ventilation units, page 190**

**Anchor frame, page 189**

## Enclosures without doors, customizable



### Characteristics

Made with the standard bearing structure but without door.

Overall height sizes available: 1390mm - 1840mm for two depths: 330mm - 460mm.

Can be used in conjunction with single "door kits" to create enclosures with multiple compartments in sizes and/or arrangements to suit specific requirements. Structure pre-engineered with hinges into which the individual doors can be fitted in the required positions.

Complete with fixing frame for installation on a concrete base. Can be equipped with mounting plates and dedicated accessories for creating switchgear.

Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories. Closing bottom plate with conical fairleads and seal available.

### Materials

Made of fiberglass-reinforced plastic in RAL7035 color.

External non-accessible stainless steel hinges. Galvanized and painted steel frame.

Seals made of expanded EPDM.

### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262.

Pre-engineered for apparatus in class II according to CEI 64-8/4

External dimensions, mm			Internal dimensions compartment, mm			IP	Model	Code
Height	Width	Depth	Height	Width	Depth			
1390	580	330	-	562	298	IP55	G5-8/T	077508000
	580	460	-	562	428	IP55	GH5-8/T	077518009
1840	580	330	-	562	298	IP55	G5-9/T	077509008
	580	460	-	562	428	IP55	GH5-9/T	077519007

Through the combination of the following accessories, on the enclosure without doors can be made over the coded compartments, other versions with compartments arranged according to the specific requirements of switchboards.

### Plinth front panel kit + crossbar



**Characteristics**  
Supplied complete with gasket and fixing screws.

Compartment useful height, mm	Model	Code
343	G5/1/KTZ	095778015
433	G5/2/KTZ	095778023
523	G5/3/KTZ	095778031

### Compartment door Kit



**Characteristics**  
Supplied with side door hinge parts, seals and lever lock Y21 encryption.

Compartment useful height, mm	Door dimension, mm	Model	Code
343	284x490	G5/1/KA	095778510
433	374x490	G5/2/KA	095778528
523	464x490	G5/3/KA	095778536
658	599x490	G5/4/KA	095778544
883	824x490	G5/5/KA	095778551
1340	1274x490	G5/8/KA	095778585

### Partition compartment Kit + crossbar



**Characteristics**  
Supplied complete with brackets and fixing screws. To be chosen according to the enclosure depth (330 or 460).

Depth, mm	Model	Code
330	G5/KTS	095775003
460	GH5/KTS	095775102

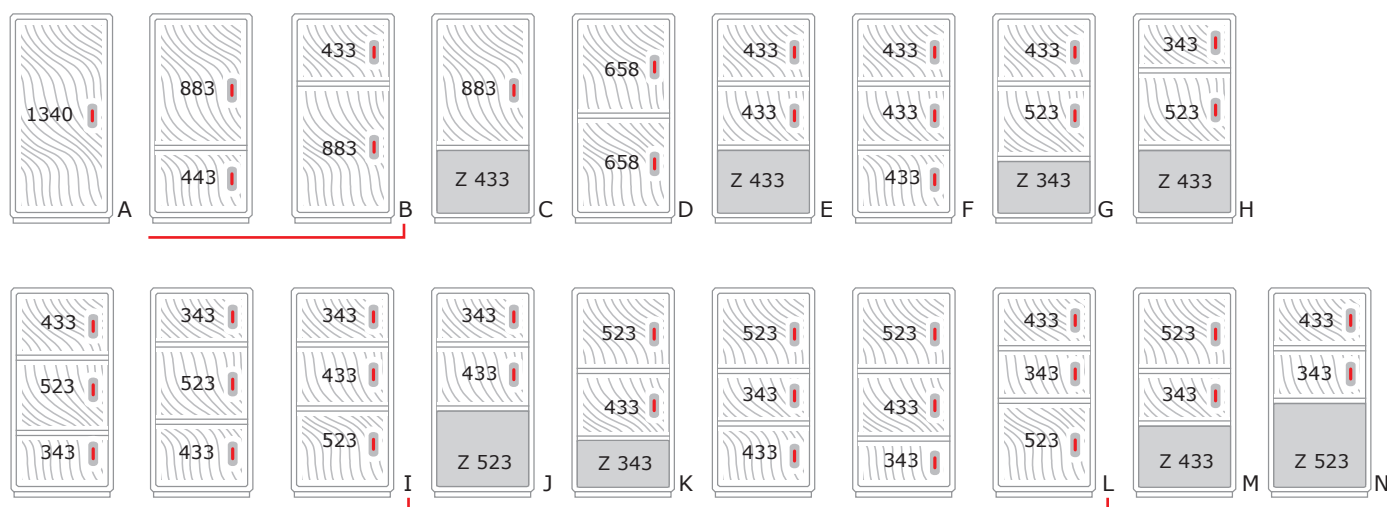


## Possible compositions

Customizable enclosures without doors make it possible to tackle different partitioning needs of the interior volume starting with a few basic elements. In the composition diagrams provided below, all the possible combinations which can be obtained on enclosures of an overall height of 1390mm and 1840mm are highlighted. The letters identifying the single compositions shown in the table make it possible to quickly identify the types and number of kits needed to make them.

The figures shown on each individual compartment indicate its usable height, which is essential for identifying any internal accessories (mounting plates, accessories for making panels, etc.). When selecting accessories, refer to the sections corresponding to the selected composition/s based on the number of compartments (1 compartment page 20; 2 compartments page 26; 3 compartments page 32; 4 compartments page 38; 5 compartments page 38).

## COMPOSITIONS REALIZED ON ENCLOSURES WITHOUT DOOR HEIGHT OVERALL DIMENSIONS - 1390MM

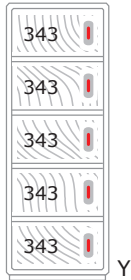
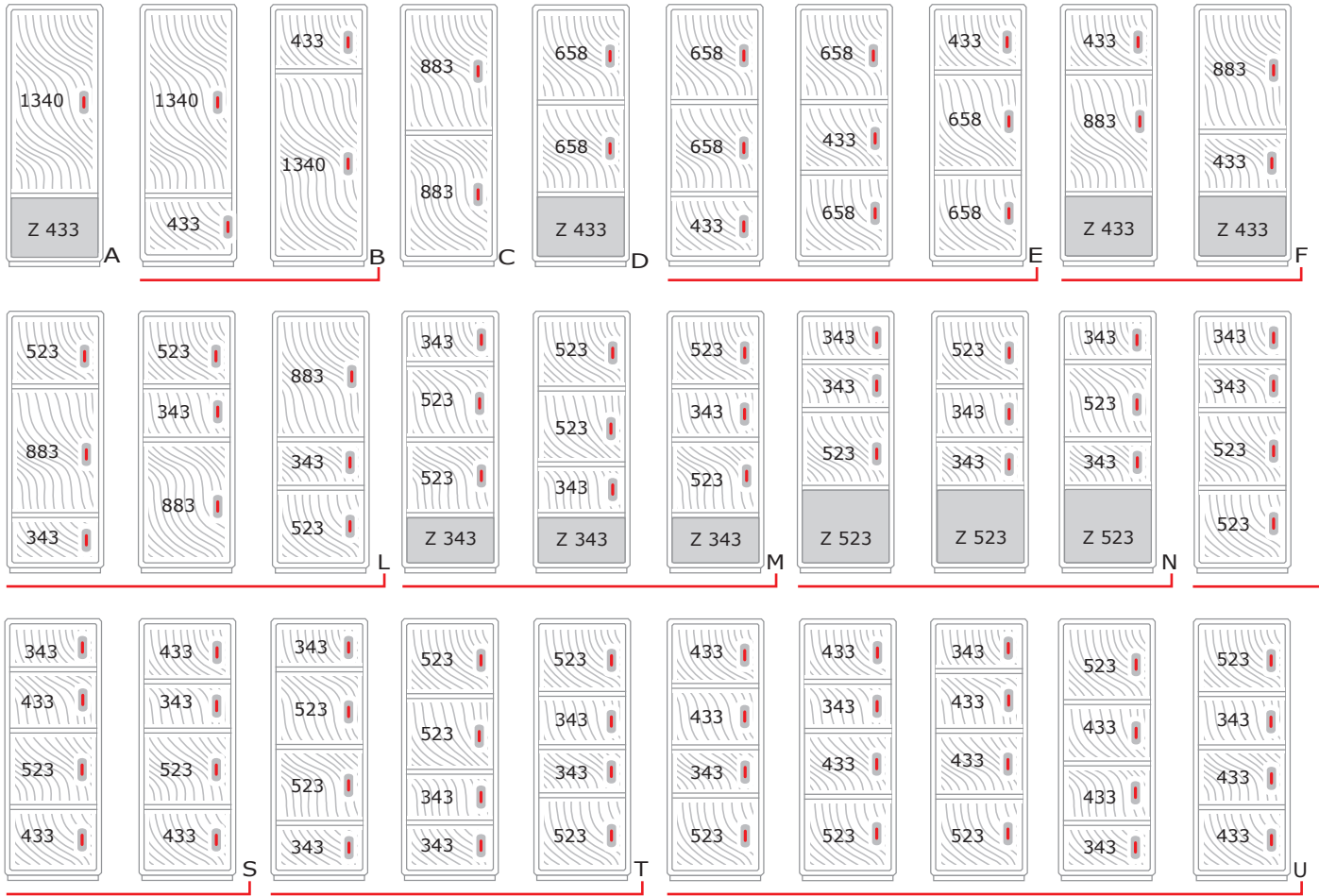


	Code	Model	Useful height mm	A	B	C	D	E	F	G	H	I	J	K	L	M	N
<b>Plinth kit</b>	095778015	G5/1/KTZ	343							1				1			
	095778023	G5/2/KTZ	433			1		1			1					1	
	095778031	G5/3/KTZ	523										1				1
<b>Door kit</b>	095778510	G5/1/KA	343								1	1	1		1	1	1
	095778528	G5/2/KA	433		1			2	3	1		1	1	1	1		1
	095778536	G5/3/KA	523							1	1	1		1	1	1	
	095778544	G5/4/KA	658				2										
	095778551	G5/5/KA	883		1	1											
	095778585	G5/8/KA	1340	1													
<b>Partition kit Depth 330</b>	095775003	G5/KTS			1		1	1	2	1	1	2	1	1	2	1	1
or																	
<b>Partition kit Depth 460</b>	095775102	GH5/KTS			1		1	1	2	1	1	2	1	1	2	1	1

The following table specifies what configurations are supported for customizable without door enclosures.

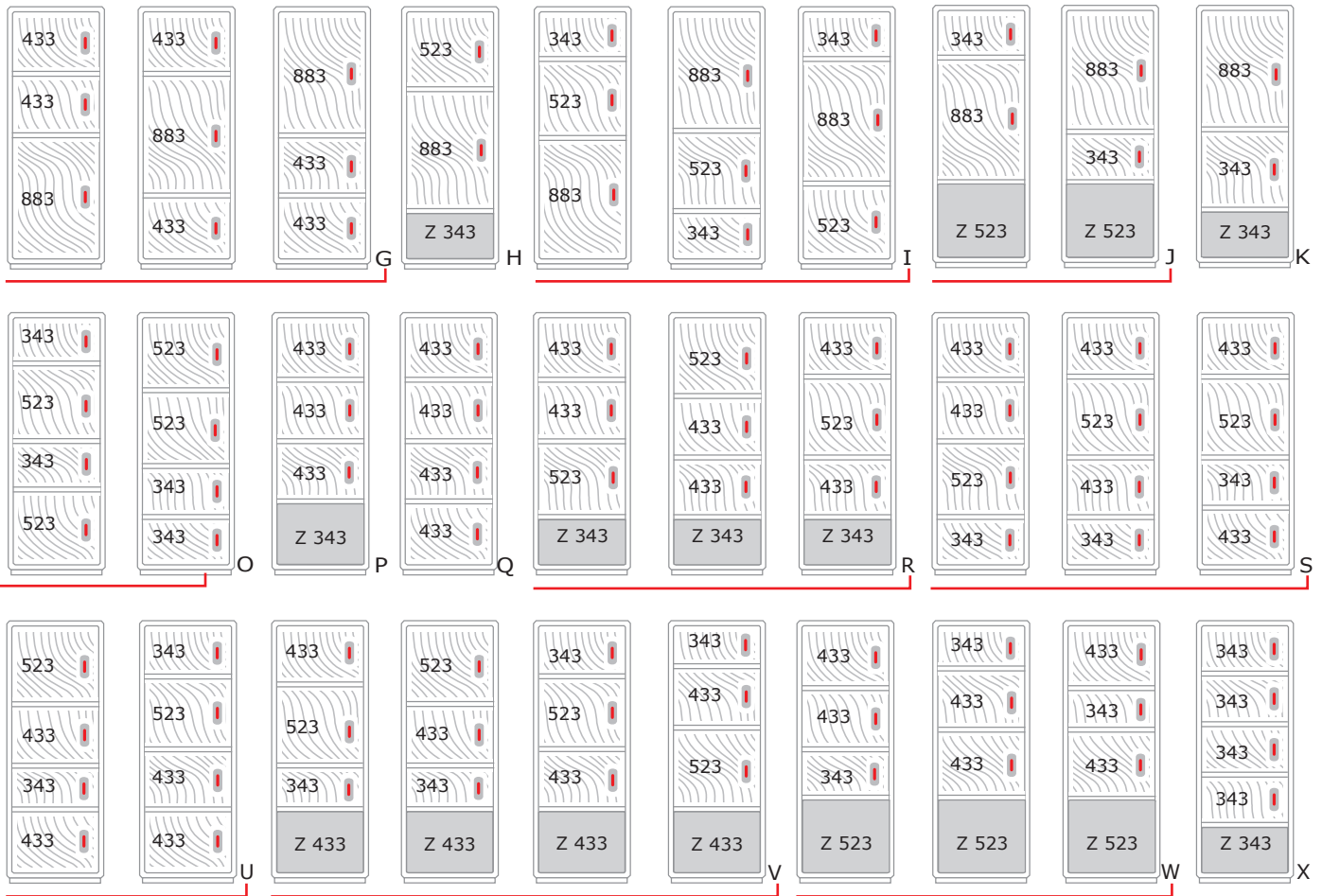


## COMPOSITIONS REALIZED ON ENCLOSURES WITHOUT DOOR HEIGHT OVERALL DIMENSIONS - 1840mm



	Code	Model	Useful height mm	A	B	C	D	E	F	G	H	I
<b>Plinth kit</b>	095778015	G5/1/KTZ	343								1	
	095778023	G5/2/KTZ	433	1			1		1			
	095778031	G5/3/KTZ	523									
<b>Door kit</b>	095778510	G5/1/KA	343									1
	095778528	G5/2/KA	433		1			1	1	2		
	095778536	G5/3/KA	523								1	1
	095778544	G5/4/KA	658				2	2				
	095778551	G5/5/KA	883			2			1	1	1	1
	095778585	G5/8/KA	1340	1	1							
<b>Partition kit Depth 330</b>	095775003	G5/KTS			1	1	1	2	1	2	1	2
or												
<b>Partition kit Depth 460</b>	095775102	GH5/KTS			1	1	1	2	1	2	1	2

The following table specifies what configurations are supported for customizable without door enclosures.



	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
		1		1					1						1	
							1					1				
	1				1									1		
	1		1	1	2	2				1	2	1	1	1	4	5
							3	4	2	2		2	1	2		
		1	1	2	1	2			1	1	2	1	1			
	1	1	1													
	1	1	2	2	2	3	2	3	2	3	3	3	2	2	3	4
	1	1	2	2	2	3	2	3	2	3	3	3	2	2	3	4

## Maximum load

Maximum load applicable on the mounting plate and usable protected space for equipment in observance of the characteristics certified by standard CEI EN 62208.

The table shows the maximum load value applicable on the mounting plate installed on both the bottom wall and on the uprights (in the case of multiple compartments, the value refers to the individual compartments). Other installation methods may bear greater weights.

By usable protected space we mean the space dedicated to the installation of protection and manoeuvring equipment for which the IP rating is guaranteed by the casing.

## Thermal energy dissipation (Pmax. = watt)

Calculation carried out in accordance with standard CEI 17-43: method of temperature-rise assessment by extrapolation for partially type-tested assemblies of low-voltage (BT panels) switchgear and controlgear not in series (ANS). Thermal energy dissipation values (Pmax=watt) of the enclosures provided in the table are valid considering:

- standard installation conditions (exposure on all sides);
- ambient temperature established at 35 °C;
- overtemperature values achieved at mid height [ $\Delta t$  0.5 (°C)] (value indicated in the table);
- overtemperature values established at the top  $\Delta t$  1.0 = 30 °C.

Pmax(watt) is an overall value referring to the entire structure of the enclosure; in the case of multiple compartments, the value must be divided by the number of compartments. The standard thermal energy dissipation value [Pmax(watt)] can be increased by applying ventilation units.

## Top units



Code	Model	Useful space protected, mm			Max load kg compartment "a"	$\Delta T$ 0,5 (°C)	Pmax (W)
		Height	Width	Depth			
<b>IP55</b>							
077501906	G5-1/1/S	a=265	455	235	40	26,8	84
077502904	G5-2/2/S	a=355	455	235	50	26	94
077503902	G5-3/3/S	a=445	455	235	60	25,4	104
077504900	G5-4/4/S	a=580	455	235	65	22,4	111
077505907	G5-5/5/S	a=805	455	235	70	21,3	130
077512903	GH5-2/2/S	a=355	455	365	50	26	114
077513901	GH5-3/3/S	a=445	455	365	60	23,7	119
077514909	GH5-4/4/S	a=580	455	365	65	23,1	134
077515906	GH5-5/5/S	a=805	455	365	70	22,3	168
<b>IP44</b>							
078501905	G5-1/1/S-4	a=265	455	235	40	27,7	88
078502903	G5-2/2/S-4	a=355	455	235	50	27	98
078503901	G5-3/3/S-4	a=445	455	235	60	26,3	109
078504909	G5-4/4/S-4	a=580	455	235	65	23	115
078505906	G5-5/5/S-4	a=805	455	235	70	22	135
078512902	GH5-2/2/S-4	a=355	455	365	50	27	119
078513900	GH5-3/3/S-4	a=445	455	365	60	24,5	124
078514908	GH5-4/4/S-4	a=580	455	365	65	24	140
078515905	GH5-5/5/S-4	a=805	455	365	70	23	175

## 1 compartment



Code	Model	Useful space protected, mm			Max load kg compartment "a"	Δ T 0,5 (°C)	Pmax (W)
		Height	Width	Depth			
<b>IP55</b>							
077500106	G5-1/1/T	a=265	455	235	40	26,8	84
077502102	G5-2/2/T	a=355	455	235	50	26	94
077503100	G5-3/3/T	a=445	455	235	60	25,4	104
077504108	G5-4/4/T	a=580	455	235	65	22,4	111
077505105	G5-5/5/T	a=805	455	235	70	21,3	130
077507101	G5-7/7/T	a=1045	455	235	80	20,2	159
077508109	G5-8/8/T	a=1255	455	235	90	19,6	184
077512101	GH5-2/2/T	a=355	455	365	50	26	114
077513109	GH5-3/3/T	a=445	455	365	60	23,7	119
077514107	GH5-4/4/T	a=580	455	365	65	23,1	134
077515104	GH5-5/5/T	a=805	455	365	70	22,3	168
077517100	GH5-7/7/T	a=1045	455	365	80	21,3	216
077518108	GH5-8/8/T	a=1255	455	365	90	20,6	241
<b>IP44</b>							
078500105	G5-1/1/T-4	a=265	455	235	40	27,7	88
078502101	G5-2/2/T-4	a=355	455	235	50	27	98
078503109	G5-3/3/T-4	a=445	455	235	60	26,3	109
078504107	G5-4/4/T-4	a=580	455	235	65	23	115
078505104	G5-5/5/T-4	a=805	455	235	70	22	135
078507100	G5-7/7/T-4	a=1045	455	235	80	21	166
078508108	G5-8/8/T-4	a=1255	455	235	90	20	192
078512100	GH5-2/2/T-4	a=355	455	365	50	27	119
078513109	GH5-3/3/T-4	a=445	455	365	60	24,5	124
078514106	GH5-4/4/T-4	a=580	455	365	65	24	140
078515103	GH5-5/5/T-4	a=805	455	365	70	23	175
078517109	GH5-7/7/T-4	a=1045	455	365	80	22	225
078518107	GH5-8/8/T-4	a=1255	455	365	90	21,3	252

## 1 compartment with integrated plinth



Code	Model	Useful space protected, mm			Max load, kg compartment "a"	Δ T 0,5 (°C)	Pmax (W)
		Height	Width	Depth			
<b>IP55</b>							
077505196	G5-5/13/ZT	a=445	455	235	60	21,3	130
077505188	G5-5/22/ZT	a=805	455	235	60	21,3	130
077506194	G5-6/33/ZT	a=445	455	235	60	20,4	151
077508190	G5-8/25/ZT	a=580	455	235	65	19,6	184
077509198	G5-9/28/ZT	a=1255	455	235	90	18,7	244
077515195	GH5-5/13/ZT	a=445	455	365	60	22,3	168
077515187	GH5-5/22/ZT	a=355	455	365	60	22,3	168
077516193	GH5-6/33/ZT	a=445	455	365	60	21,5	194
077518199	GH5-8/25/ZT	a=580	455	365	65	20,6	241
077519197	GH5-9/28/ZT	a=1255	455	365	90	19,5	298
<b>IP44</b>							
078505195	G5-5/13/ZT-4	a=445	455	235	60	22	135
078505187	G5-5/22/ZT-4	a=805	455	235	60	22	135
078506193	G5-6/33/ZT-4	a=445	455	235	60	21	157
078508199	G5-8/25/ZT-4	a=580	455	235	65	20	192
078509197	G5-9/28/ZT-4	a=1255	455	235	90	19,3	254
078515194	GH5-5/13/ZT-4	a=445	455	365	60	23	175
078515186	GH5-5/22/ZT-4	a=355	455	365	60	23	175
078516192	GH5-6/33/ZT-4	a=445	455	365	60	22,2	202
078518198	GH5-8/25/ZT-4	a=580	455	365	65	21,3	252
078519196	GH5-9/28/ZT-4	a=1255	455	365	90	20,2	311

**2 compartments**


Code	Model	Useful space, mm			Max load, kg		$\Delta T_{0,5}$ (°C)	Pmax (W)
		Height	Width	Depth	comp. "a"	comp. "b"		
<b>IP55</b>								
077505204	G5-5/22/T	a-b=355	455	235	50	50	21,3	122
077505212	G5-5/31/T	a=445 b=265	455	235	60	40	21,3	122
077506202	G5-6/33/T	a-b =445	455	235	60	60	20,4	142
077508208	G5-8/44/T	a-b=580	455	235	65	65	19,6	173
077508216	G5-8/52/T	a=805 b=355	455	235	70	50	19,6	173
077509208	G5-9/55/T	a-b=805	455	235	70	70	18,7	229
077509214	G5-9/82/T	a=1255 b=355	455	235	90	50	18,7	229
077515211	GH5-5/31/T	a=445 b=265	455	365	60	40	22,3	158
077515203	GH5-5/22/T	a-b=355	455	365	50	50	22,3	158
077516201	GH5-6/33/T	a-b=445	455	365	60	60	21,5	183
077518207	GH5-8/44/T	a-b=580	455	365	65	65	20,6	227
077518215	GH5-8/52/T	a=805 b=355	455	365	70	50	20,6	227
077519205	GH5-9/55/T	a-b=805	455	365	70	70	19,5	281
077519213	GH5-9/82/T	a=1255 b=355	455	365	90	50	19,5	281
<b>IP44</b>								
078505203	G5-5/22/T-4	a-b=355	455	235	50	50	22	127
078505211	G5-5/31/T-4	a=445 b=265	455	235	60	40	22	127
078506201	G5-6/33/T-4	a-b =445	455	235	60	60	21	148
078508207	G5-8/44/T-4	a-b=580	455	235	65	65	20	180
078508215	G5-8/52/T-4	a=805 b=355	455	235	70	50	20	180
078509205	G5-9/55/T-4	a-b=805	455	235	70	70	19,3	239
078509213	G5-9/82/T-4	a=1255 b=355	455	235	90	50	19,3	239
078515210	GH5-5/31/T-4	a=445 b=265	455	365	60	40	23	165
078515202	GH5-5/22/T-4	a-b=355	455	365	50	50	23	165
078516200	GH5-6/33/T-4	a-b=445	455	365	60	60	22,2	190
078518206	GH5-8/44/T-4	a-b=580	455	365	65	65	21,3	237
078518214	GH5-8/52/T-4	a=805 b=355	455	365	70	50	21,3	237
078519204	GH5-9/55/T-4	a-b=805	455	365	70	70	20,2	293
078519212	GH5-9/82/T-4	a=1255 b=355	455	365	90	50	20,2	293

2 compartments with integrated plinth



Code	Model	Useful space, mm			Max load, kg		$\Delta T_{0,5}$ (°C)	Pmax (W)
		Height	Width	Depth	comp. "a"	comp. "b"		
<b>IP55</b>								
077506293	G5-6/111/ZT	a-b=265	455	235	40	40	20,4	142
077508281	G5-8/132/ZT	a=445 b=355	455	235	60	50	19,6	173
077508273	G5-8/231/ZT	a=445 b=355	455	235	60	50	19,6	173
077508299	G5-8/222/ZT	a-b=355	455	235	50	50	19,6	173
077509297	G5-9/153/ZT	a=805 b=445	455	235	70	60	18,7	229
077509271	G5-9/252/ZT	a=805 b=355	455	235	70	50	18,7	229
077509289	G5-9/244/ZT	a-b=580	455	235	65	65	18,7	229
077516292	GH5-6/111/ZT	a-b=265	455	365	40	40	21,5	183
077518280	GH5-8/132/ZT	a=445 b=355	455	365	60	50	20,6	227
077518272	GH5-8/231/ZT	a=445 b=355	455	365	60	50	20,6	227
077518298	GH5-8/222/ZT	a-b=355	455	365	50	50	20,6	227
077519296	GH5-9/153/ZT	a=805 b=445	455	365	70	60	19,5	281
077519270	GH5-9/252/ZT	a=805 b=355	455	365	70	50	19,5	281
077519288	GH5-9/244/ZT	a-b=580	455	365	65	65	19,5	281
<b>IP44</b>								
078506292	G5-6/111/ZT-4	a-b=265	455	235	40	40	21	148
078508280	G5-8/132/ZT-4	a=445 b=355	455	235	60	50	20	180
078508272	G5-8/231/ZT-4	a=445 b=355	455	235	60	50	20	180
078508298	G5-8/222/ZT-4	a-b=355	455	235	50	50	20	180
078509296	G5-9/153/ZT-4	a=805 b=445	455	235	70	60	19,3	239
078509270	G5-9/252/ZT-4	a=805 b=355	455	235	70	50	19,3	239
078509288	G5-9/244/ZT-4	a-b=580	455	235	65	65	19,3	239
078516291	GH5-6/111/ZT-4	a-b=265	455	365	40	40	22,2	190
078518289	GH5-8/132/ZT-4	a=445 b=355	455	365	60	50	21,3	237
078518271	GH5-8/231/ZT-4	a=445 b=355	455	365	60	50	21,3	237
078518297	GH5-8/222/ZT-4	a-b=355	455	365	50	50	21,3	237
078519295	GH5-9/153/ZT-4	a=805 b=445	455	365	70	60	20,2	293
078519279	GH5-9/252/ZT-4	a=805 b=355	455	365	70	50	20,2	293
078519287	GH5-9/244/ZT-4	a-b=580	455	365	65	65	20,2	293



**3 compartments**


Conchi 5

Code	Model	Useful space, mm			Max load, kg			Δ T 0,5 (°C)	Pmax (W)
		Height	Width	Depth	comp. "a"	comp. "b"	comp. "c"		
<b>IP55</b>									
077506301	G5-6/111/T	a-b-c=265	455	235	40	40	40	20,4	127
077508307	G5-8/222/T	a-b-c=355	455	235	50	50	50	19,6	154
077508315	G5-8/321/T	a=445 b=355 c=265	455	235	60	50	40	19,6	154
077509305	G5-9/522/T	a=805 b-c=355	455	235	70	50	50	18,7	205
077509313	G5-9/442/T	a-b=580 c=355	455	235	65	65	50	18,7	205
077509321	G5-9/531/T	a=805 b=445 c=265	455	235	70	60	40	18,7	205
077516300	GH5-6/111/T	a-b-c=265	455	365	40	40	40	21,5	163
077518306	GH5-8/222/T	a-b-c=355	455	365	50	50	50	20,6	203
077518314	GH5-8/321/T	a=445 b=355 c=265	455	365	60	50	40	20,6	203
077519304	GH5-9/522/T	a=805 b-c=355	455	365	70	50	50	19,5	251
077519312	GH5-9/442/T	a-b=580 c=355	455	365	65	65	50	19,5	251
077519320	GH5-9/531/T	a=805 b=445 c=265	455	365	70	60	40	19,5	251
<b>IP44</b>									
078506300	G5-6/111/T-4	a-b-c=265	455	235	40	40	40	21	132
078508306	G5-8/222/T-4	a-b-c=355	455	235	50	50	50	20	161
078508314	G5-8/321/T-4	a=445 b=355 c=265	455	235	60	50	40	20	161
078509304	G5-9/522/T-4	a=805 b-c=355	455	235	70	50	50	19,3	213
078509312	G5-9/442/T-4	a-b=580 c=355	455	235	65	65	50	19,3	213
078509320	G5-9/531/T-4	a=805 b=445 c=265	455	235	70	60	40	19,3	213
078516309	GH5-6/111/T-4	a-b-c=265	455	365	40	40	40	22,2	170
078518305	GH5-8/222/T-4	a-b-c=355	455	365	50	50	50	21,3	211
078518313	GH5-8/321/T-4	a=445 b=355 c=265	455	365	60	50	40	21,3	211
078519303	GH5-9/522/T-4	a=805 b-c=355	455	365	70	50	50	20,2	261
078519311	GH5-9/442/T-4	a-b=580 c=355	455	365	65	65	50	20,2	261
078519329	GH5-9/531/T-4	a=805 b=445 c=265	455	365	70	60	40	20,2	261

### 3 compartments with integrated plinth



Code	Model	Useful space, mm			Max load, kg			$\Delta T_{0,5}$ (°C)	Pmax (W)
		Height	Width	Depth	comp. "a"	comp. "b"	comp. "c"		
<b>IP55</b>									
077509388	G5-9/1322/ZT	a=445 b-c=355	455	235	60	50	50	18,7	205
077509396	G5-9/1331/ZT	a-b=445 c=265	455	235	60	60	40	18,7	205
077509370	G5-9/2222/ZT	a-b-c=355	455	235	50	50	50	18,7	205
077519387	GH5-9/1322/ZT	a=445 b-c=355	455	365	60	50	50	19,5	251
077519395	GH5-9/1331/ZT	a-b=445 c=265	455	365	60	60	40	19,5	251
077519379	GH5-9/2222/ZT	a-b-c=355	455	365	50	50	50	19,5	251
<b>IP44</b>									
078509387	G5-9/1322/ZT-4	a=445 b-c=355	455	235	60	50	50	19,3	213
078509395	G5-9/1331/ZT-4	a-b=445 c=265	455	235	60	60	40	19,3	213
078509379	G5-9/2222/ZT-4	a-b-c=355	455	235	50	50	50	19,3	213
078519386	GH5-9/1322/ZT-4	a=445 b-c=355	455	365	60	50	50	20,2	261
078519394	GH5-9/1331/ZT-4	a-b=445 c=265	455	365	60	60	40	20,2	261
078519378	GH5-9/2222/ZT-4	a-b-c=355	455	365	50	50	50	20,2	261

### 4 compartments



Code	Model	Useful space, mm			Max load, kg				$\Delta T_{0,5}$ (°C)	Pmax (W)
		Height	Width	Depth	comp. "a"	comp. "b"	comp. "c"	comp. "d"		
<b>IP55</b>										
077509404	G5-9/3311/T	a-b=445 c-d=265	455	235	60	60	40	40	18,7	176
077509412	G5-9/3221/T	a=445 b-c=355 d=265	455	235	60	50	50	40	18,7	176
077509420	G5-9/2222/T	a-b-c-d=355	455	235	50	50	50	50	18,7	176
077519403	GH5-9/3311/T	a-b=445 c-d=265	455	365	60	60	40	40	19,5	215
077519411	GH5-9/3221/T	a=445 b-c=255 d=265	455	365	60	50	50	40	19,5	215
077519429	GH5-9/2222/T	a-b-c-d=355	455	365	50	50	50	50	19,5	215
<b>IP44</b>										
078509403	G5-9/3311/T-4	a-b=445 c-d=265	455	235	60	60	40	40	19,3	183
078509411	G5-9/3221/T-4	a=445 b-c=355 d=265	455	235	60	50	50	40	19,3	183
078509429	G5-9/2222/T-4	a-b-c-d=355	455	235	50	50	50	50	19,3	183
078519402	GH5-9/3311/T-4	a-b=445 c-d=265	455	365	60	60	40	40	20,2	224
078519410	GH5-9/3221/T-4	a=445 b-c=255 d=265	455	365	60	50	50	40	20,2	224
078519428	GH5-9/2222/T-4	a-b-c-d=355	455	365	50	50	50	50	20,2	224

**4 compartments with integrated plinth**


Code	Model	Useful space, mm			Max load, kg				Δ T 0,5 (°C)	Pmax (W)
		Height	Width	Depth	comp. "a"	comp. "b"	comp. "c"	comp. "d"		
<b>IP55</b>										
077509495	G5-9/11111/ZT	a-b-c-d=265	455	235	40	40	40	40	18,7	176
077519494	GH5-9/11111/ZT	a-b-c-d=265	455	365	40	40	40	40	19,5	215
<b>IP44</b>										
078509494	G5-9/11111/ZT -4	a-b-c-d=265	455	235	40	40	40	40	19,3	183
078519493	GH5-9/11111/ZT-4	a-b-c-d=265	455	365	40	40	40	40	20,2	224

**5 compartments**


Code	Model	Useful space, mm			Max load, kg					Δ T 0,5 (°C)	Pmax (W)
		Height	Width	Depth	comp. "a"	comp. "b"	comp. "c"	comp. "d"	comp. "e"		
<b>IP55</b>											
77509503	G5-9/11111/T	a-b-c-d-e=265	455	235	40	40	40	40	40	18,7	176
77519502	GH5-9/11111/T	a-b-c-d-e=265	455	365	40	40	40	40	40	19,5	215
<b>IP44</b>											
78509502	G5-9/11111/T-4	a-b-c-d-e=265	455	235	40	40	40	40	40	19,3	183
78519501	GH5-9/11111/T-4	a-b-c-d-e=265	455	365	40	40	40	40	40	20,2	224

**Average integration of the Dissipable Power**

The standard value of Pmax (Watt) can be increased by the application of the aeration vents, in particular:

- n ° 2 aeration vents, applied diagonally, increase the dissipable power [Pmax (Watt)] of 100W.  
Ex. For the enclosure G5-1 / 1 / T Pmax (Watt) = 84W. Applying n ° 2 ventilation units the Pmax (Watt) is 84W + 100W = 184W.
- n ° 2 aeration vents, applied diagonally, one of which with forced ventilation and installed in the upper part of the enclosure, increase the dissipable power [Pmax (Watt)] of 250W.  
Ex. For the enclosure G5-5 / 5 / T Pmax (Watt) = 130W. Applying n ° 2 ventilation units, one with forced ventilation, the Pmax (Watt) is 130W + 250W = 380W.

**For any specific compositions request a specific calculation in place.**



# Grabi 7

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**Width 685 mm**



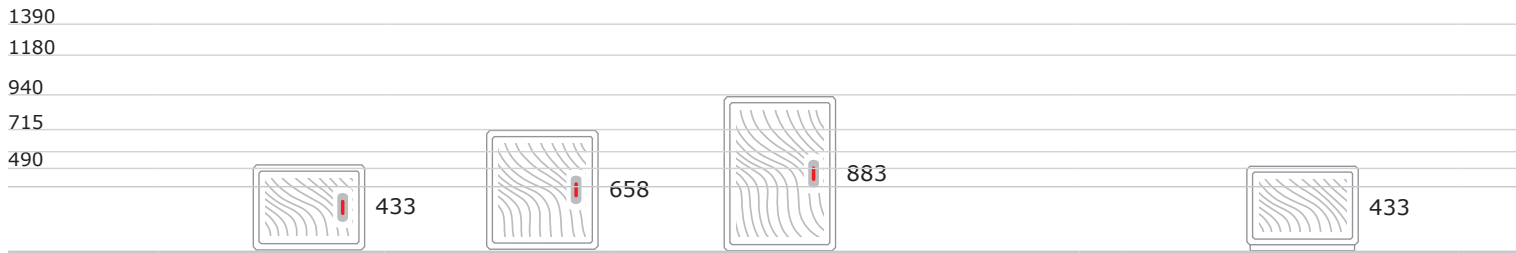
**Characteristics**

The Grafi7 series is characterized by an external width of 685 mm (usable interior width = 667 mm). 6 different overall heights available, from 490 mm to 1840 mm. All versions are available in two depths: 330 mm and 460 mm. Rated insulation voltage = Ui 690V. IMQ Certification in accordance with CEI EN 62208.

**Production drawing**

The values on the left of the drawing indicate the overall height. The figures for the individual compartments indicate their usable height, essential when selecting dedicated accessories.

**TOP UNITS** PAG. 60 **PLINTHS** PAG. 61

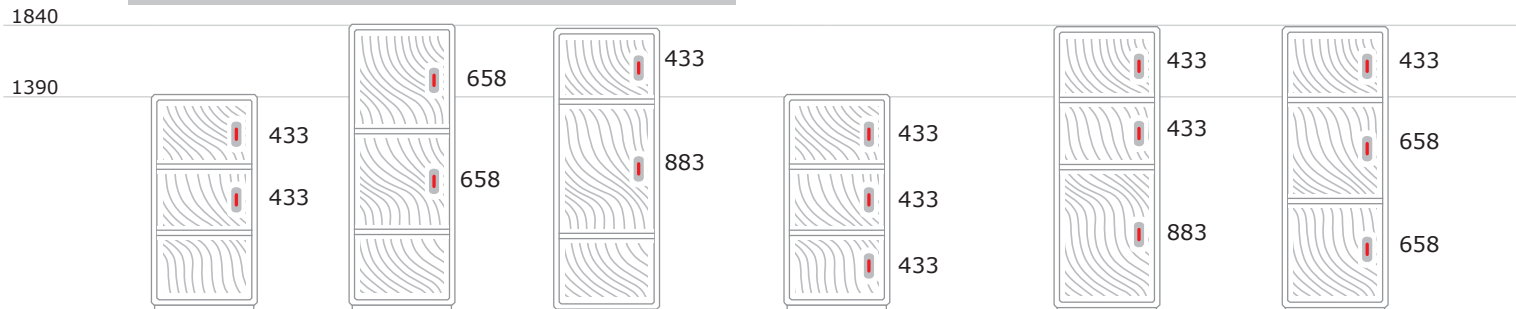


**1 COMPARTMENT ENCLOSURES INTEGRATED PLINTH** PAG. 71



**2 COMPARTMENTS ENCLOSURES WITH INTEGRATED PLINTH** PAG. 81

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**Materials**

Made in fiberglass (SMC) in RAL 7035 color. Thermoplastic resin handle, operating tenon in galvanized steel, internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Anchor frame in galvanized and painted steel. Seals in foamed EPDM.

**Level of protection**

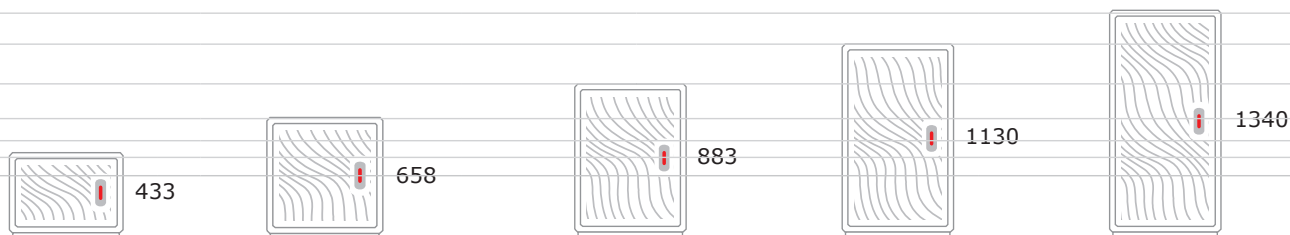
Available with IP44 - IP55 protection class according to CEI EN 60529, IK10 according to CEI EN 62262.

Prepared for execution of CLASS II equipment according to CEI 64-8/4. 

Grafi 7

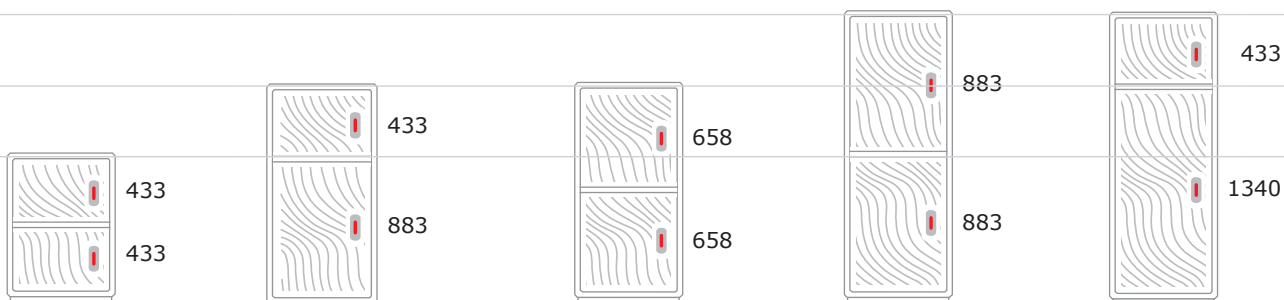
1 COMPARTMENT ENCLOSURES

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4 COMPARTMENTS ENCLOSURES

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WITHOUT DOOR ENCLOSURES FOR CUSTOMIZED COMPOSITIONS

PAG. 96





## Top units



### Characteristics

Overall height sizes available: 460mm - 685mm - 910mm for two depths: 330mm - 460mm. Rated insulation voltage Ui 690V. Completely intact structure without holes. The holes for cable passage to be realized by the customer or on request. Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder - customized cipher on request). Door opening side can be changed on site. Can be equipped with mounting plates and dedicated accessories for creating panels. Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.

### Materials

Made in fiberglass RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262.

Pre-engineered for apparatus in class II according to CEI 64-8/4

	External dimensions, mm			Internal dimensions compartment, mm			Door dimension mm	IP	Model	Code
	Height	Width	Depth	Height	Width	Depth				
a	460	685	330	a= 433	667	298	374x595	IP55	G7-2/2/S	077702900
		685	460	a= 433	667	428		IP44	G7-2/2/S-4	078702909
a	685	685	330	a= 658	667	298	599x595	IP55	G7-4/4/S	077704906
								IP44	G7-4/4/S-4	078704905
		685	460	a= 658	667	428		IP55	GH7-4/4/S	077714905
								IP44	GH7-4/4/S -4	078714904
a	910	685	330	a= 883	667	298	824x595	IP55	G7-5/5/S	077705903
								IP44	G7-5/5/S-4	078705902
		685	460	a= 883	667	428		IP55	GH7-5/5/S	077715902
								IP44	GH7-5/5/S-4	078715901

### Warnings

Usable for installation in enclosures of the same series and depth to achieve non-standard compositions in the integrated units or for extending enclosures already in use. Can be used to make single compartment enclosures for floor installation, together with dedicated plinths.

Holes for fastening systems and cable opening to be made in site or in the factory on request.

Wall-mounted version also available.

## Plinths


**Characteristics**

Overall height sizes available: 490mm for two depths: 330mm - 460mm.  
 Prepared for installation on a concrete base using an anchor frame (not included).  
 To be used in combination with cabinets of the series 7 same depth not available in the version with "integrated plinth".  
 They allow the realization of enclosures for floor installation combined with top units.

**Material**

Made in fiberglass in RAL 7035 color. Seals in foamed EPDM.

**Standards**

Made in accordance with standard CEI EN 62208. Protection classes IP55 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4 .

	External dimensions, mm			Useful height	IP	Model	Code
	Height	Width	Depth				
z	490	685	330	z= 433	IP55	G7-2/ZT	077702959
		685	460	z= 433	IP55	GH7-2/ZT	077712958

## Closing bottom plate for plinths



### Characteristics

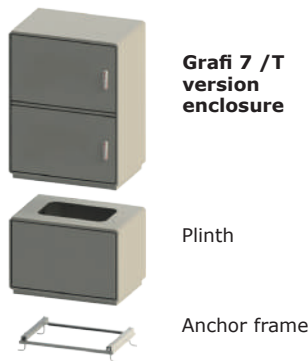
Made of 3 mm thick bakelite, it is installed in the lower part of the enclosures to provide additional protection for the compartment where the cable input channels are situated. Available in the blank version so that the required holes can be made during installation or complete with 3 conical fairleads (max. diam. 76)

Enclosures depth mm	Blank plate		Plate with conical fairleads	
	Model	Code	Model	Code
330	G7/SIC	095777405	G7/SIM	095777421
460	GH7/SIC	095777454	GH7/SIM	095777470

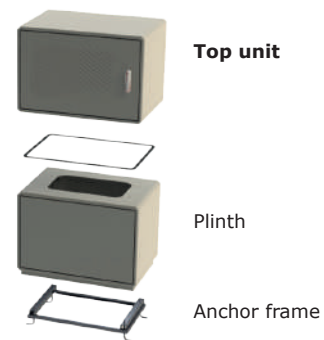
## Installation method

The plinths can be fitted with closing bottom plates (blank or with conical fairleads) positioned between the fixing frame and plinth, to provide additional protection in the cable input area.

Use of an additional plinth on /T version enclosures



Use of plinth with top unit



## Anchor frame



### Characteristics

Screws in AISI 304 stainless steel to guarantee access over time. Complete with brackets for fixing onto a concrete base.

### Materials

Made of steel with black color 18/24 cataphoretic coating treatment.

Enclosure depth mm	Model	Code
330	G7/TA	095777306
460	GH7/TA	095777355

## Mounting plates



### Characteristics

Can be applied to the bottom of the enclosure using special threaded inserts with M6x20 stud bolts or in conjunction with switchgear risers or racks using the dedicated fixing brackets. Available in: Pre-galvanized steel - thickness 2 mm; bakelite - thickness 5 mm; PVC - thickness 5 mm. Must be chosen to suit the size of the compartment in question.

Useful height mm	Plate dimensions mm	Steel (2mm thick)		Bakelite (5 mm thick)		PVC (5 mm thick)	
		Model	Code	Model	Code	Model	Code
433	560x355	G7/2/PA	095777017	G7/2/PB	095777116	G7/2/PP	095777215
658	560x580	G7/4/PA	095777025	G7/4/PB	095777124	G7/4/PP	095777223
883	560x805	G7/5/PA	095777033	G7/5/PB	095777132	G7/5/PP	095777231

## Brackets for fixing to a wall



### Characteristics

The top units can be used as single compartments that can be installed on the wall using special brackets, using wall plugs or another fixing element depending on the type of wall. Drilling holes for cable entry by the customer with cable/cable glands. The brackets are available in loose execution (with assembly by the customer) or in applied execution performed directly in the factory.

Description	Model	Code
Brackets for fixing to a wall (loose version)	G/SFP	095770939
Version on brackets for fixing to a wall	G-EA/SFP	097770028

## Brackets kit for supporting the mounting plates on the uprights

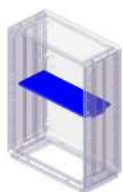


### Characteristics

Made from steel. To be used together with an uprights kit and brackets kit for installing the depth-adjustable plate. If uprights and brackets kits are envisaged for supporting modular equipment, a further uprights kit without the upright support brackets kit is required. Suitable for all types of plate. For plates provided in 2 parts, 2 bracket kits are required.

Description	Model	Code
Brackets kit for support plates on uprights (4 pcs)	G/SP/MT	095770921

## Pre-galvanized sheet metal equipment holding shelves

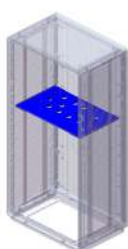

**Characteristics**

To be installed using 2 upright kits G-../MT (selected based on the overall height) and 1 brackets kit G/SM or GH/SM.

These are complete with 2 brackets for application of shelves. To be selected based on enclosure depth.

Enclosure depth mm	Overall shelves dimension, mm			Shelves	
	Height	Width	Depth	Model	Code
330	225	590	17	G7/RP	095777561
460	355	590	17	GH7/RP	095777579

## Fiberglass equipment holding shelves


**Characteristics**

To be installed using 2 upright kits G-../MT (selected based on the overall height) and 1 brackets kit GH/SM and 1 Kit dedicated brackets GH/SRP/A-L.

To be selected based on enclosure depth.

Enclosure depth mm	Overall shelves dimension, mm			Max capacity, kg	Shelf		Combination with bracket (2 PCS)	
	Height	Width	Depth		Model	Code	Model	Code
460	360	575	12	20	RPA/CVL	095751202	GH/SRP/A-L	095777397

## Accessories for creating modular equipment panels

For creating panels inside enclosures, you must order:

- Uprights kit + brackets kit for the realization of modular equipment panels
- Frame/framework for supporting modular equipment plates
- Modular equipment support rack
- Blank and slotted plates
- Mounting plate/brackets kit for arranging the modular equipment support racks (Optional)

## Uprights kit + brackets kit for the realization of modular equipment panels


**Characteristics**

Steel uprights set up with holes for fastening modular panel frames, equipment holding racks, bottom plates. Brackets for upright supports made from steel. The kit must be selected based on the depth and overall height of the enclosure regardless of the number and layout of compartments.

Overall height mm	Uprights (2 pieces)		Uprights support brackets (4 pieces)			
	Model	Code	Depth 330 mm		Depth 460 mm	
			Model	Code	Model	Code
490	G-2/MT	095770020	G/SM	095770905	GH/SM	095770913
715	G-4/MT	095770046	N.B. The support brackets can be used on all heights of upright kits and up to an overall number of three kits.			
940	G-5/MT	095770053				

## Frame/framework for supporting modular equipment panels



### Characteristics

Made from self-extinguishing thermoplastic material, grey RAL 7035 color. Designed to be fastened onto the uprights kit.  
To be selected based on the usable height of the individual compartment. In the case of multiple compartments, the individual compartments can also be fitted out.

Useful height compartment, mm	No. Installable panels (Blank or slotted)	Max. No. DIN modules available	Frame/framework	
			Model	Code
433	2	58	G7/2/TPM	095777702
658	3	87	G7/4/TPM	095777710
883	4	116	G7/5/TPM	095777728

## Modular equipments support rack



### Characteristics

Made from steel, can be removed from the enclosure to facilitate execution of the panel; assembly and wiring of the various equipment can be carried out on a work bench.  
Designed to be fastened onto the uprights kit.  
Complete with DIN 46 277/3 profiles.  
To be selected in combination with the relative panels support frame/framework.

Useful height mm	Modular equipment support rack		no. pieces installable	In combination with frame/framework	
	Model	Code		Model	Code
433	G7/2-5/CST	095777801	1	G7/2/TPM	095777702
658	G7/4-8/CST	095777819	1	G7/4/TPM	095777710
883	G7/2-5/CST	095777801	2	G7/5/TPM	095777728

## Blank or slotted panels

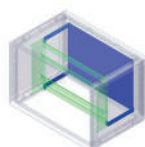


### Characteristics

Made from thermoplastic material. Suitable for Grafi7 enclosures. To be applied on the modular equipment support rack.

Panels	Description	Model	Code
Blank		G7/PC	095777603
Slotted	29 DIN modules (17,5mm) for each panel	G7/PM29	095777629

## Mounting plate/brackets kit for arranging the modular equipments support racks



### Characteristics

Kit made up of 4 brackets and 1 closign bottom plate. Brackets and plate made from steel. Plate thickness 2mm. To be used together with the modular equipment support racks for fixing any non-modular components on the back of the panel.  
To be selected based on the equipment support rack and enclosure depth (330 - 460 mm).

Modular equipment support rack		Enclosure depth mm	Rack/plate distance	Bracket/plate Kit	
Model	Code			Model	Code
G7/2-5/CST	095777801	330	85	G7/2-5/PACST	095777865
		460	215	GH7/2-5/PACST	095777868
G7/4-8/CST	095777819	330	85	G7/4-8/PACST	095777850
		460	215	GH7/4-8/PACST	095777884



## Accessories for creating RACK 19" equipments

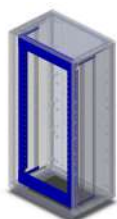
### Uprights kit + brackets kit for RACK 19"


**Characteristics**

Uprights made of steel. Predisposed with holes for frame/frame fixing and shelves for RACK19". Brackets for support uprights made of steel. The kit must be chosen according to the depth and overall height of the enclosure regardless of the number and arrangement of the compartments. Order 2 kit uprights and 1 kit brackets.

Top unit overall height, mm	Uprights (2 pieces)		No. Uprights kit to be requested	Uprights support brackets (4 pieces)			
	Model	Code		Depth 330 mm		Depth 460 mm	
				Model	Code	Model	Code
490	G-2/MT	095770020	2	G/SM	095770905	GH/SM	095770913
715	G-4/MT	095770046					
940	G-5/MT	095770053					

### Frame/framework for Rack 19"


**Characteristics**

Made of sheet metal complete with grey RAL7035 color. Prepared for fixing on uprights kit. To be chosen according to the useful height of the single compartment. In case of multiple compartments, the individual compartment can also be equipped.

Useful height compartment, mm	No. max unit HE	Max equipment weight (Kg)	Frame/framework	
			Model	Code
433	6	20	G7/2/TR19	095777645
658	12	35	G7/4/TR19	095777652
883	16	48	G7/5/TR19	095777660

## Modular equipments panels



### Characteristics

Made of steel sheet grey RAL7032 color  
Complete with DIN 46 277/3 profile and a pair of slotted fixing brackets in 24 modules for 17,5mm.  
Overall height 4 units HE.

### With buttonhole

Buttonhole size	External dimensions	No. unit HE	Model	Code
423x46	490x177	4	ACV/PM/RACK	095759247

## Closing blinds

### Characteristics

Made of steel sheet grey RAL7032 color

External dimensions	Dimensions	Model	Code
490x44	n. 1 unit HE	ACV/PC1/RACK	095759114
490x88	n. 2 unit HE	ACV/PC2/RACK	095759122
490x177	n. 4 unit HE	ACV/PC4/RACK	095759148
490x355	n. 8 unit HE	ACV/PC8/RACK	095759139

## Brackets and guides



ACV/SF/RACK

### Profile fixing brackets

Made of galvanized and passivated sheet steel; adjustable in depth. For fixing DIN profiles.

### Drawer support guides

Made of galvanized and passivated sheet steel. For guide and support drawers for RACK 19 "

Notes	Model	Code
Profile fixing bracket set (2pc)	ACV/SF/RACK	095759627
Set of support for bins rack 19" (2pc)	ACV/GS/RACK	095759619

## Cage nuts

Made of galvanized and passivated steel - M6 thread.

Model	Code
ACV/DG6/50	095759817

## Shelves for deep equipments support



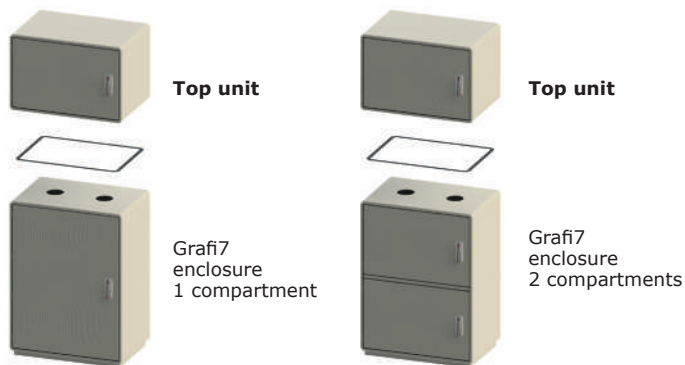
### Characteristics

In galvanized steel. To be used with the RACK19" to support and secure heavy and deep equipments frontally.

Shelves (2 pieces)	
Model	Code
G/M/TR19	095770806

## Installation methods

The top units can be installed on any type of enclosure of the corresponding series (Grafi7) and of the same depth. Installation is carried out easily by making holes in the fixing points already arranged on the enclosures and with the insertion of special seals to guarantee the necessary protection rating. Any passages between the bottom compartment and top unit must be made in site as required. The arrangement for the installation of the top unit may be carried out directly in the factory on request. It is suitable for both IP44 and IP55 enclosures and is valid for all depths (330 - 460 mm).



### Execution of top unit installation arrangement with 2 holes

#### Bottom compartment:

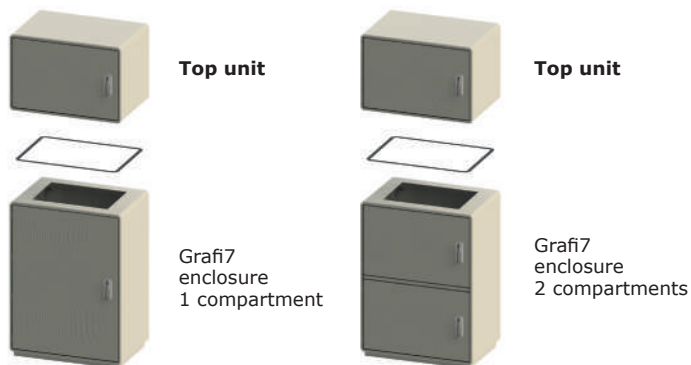
- 4 fastening holes
- 2 holes (Ø 85) for cable passage

#### Top compartment (top unit):

- 2 holes (Ø 76) for securing the conical membrane

**Provided:** Compartment fastening screws/seal/2 conical membranes.

Model	Code	Description
G-EA/MS/I	097770002	Execution of slotted roof for installing top unit
G-EA/MS/S	097770010	Execution of slotted top unit for installation on compartment



### Execution of preparation for installation of top unit with maximum clearance

Application envisages the realization of enclosures with fully open slots and realization of the corresponding slot on the top unit which will be installed above.

#### Bottom compartment:

- 4 fastening holes
- 1 single slot for cable passage

#### Top compartment (top unit):

- 4 fastening holes
- 1 single slot

**Provided:** Compartment fastening screws/seal

Model	Code	Slot size Depth 330 mm	Slot size Depth 460 mm	Description
G-EA/MSA/I	097770044	455x225	455x305	Application of an insulated roof for overlap
G-EA/MSA/S	097770051	490x260	490x340	Execution of raising slotted application to overlap on the lower compartment



## Warning

Separation partitions can also be requested with or without cable passage to integrate execution, to be selected from the normal envisaged accessories. G7/SIC o GH7/SIC (blank partition) - G7/SIM OR GH7/SIM (partition with conical membranes).

The top units may be installed on the floor using the relative plinth envisaged in the series and of the same depth. The fixing frame must be requested separately. Also in this case it is possible to request arrangement in the factory of hole drilling for cable passage into the top units (G-EA/MS/S or G-EA/MSA/S).

### Standard ordering kit for panels realization with modular devices accessories

For a quick composition of the accessories for the realization of panels it is necessary to request: **Upright/bracket kit + Frame/Panels/Rack kit.**

REFERENCE TOP UNIT				Upright/Bracket kit	Frame/Panels/Rack kit
IP55		IP44			Compartment "a" 
Model	Code	Model	Code	Code	Code
<b>Depth mm 330</b>					
G7-2/2/S	077702900	G7-2/2/S-4	078702909	095773321	095777298
G7-4/4/S	077704906	G7-4/4/S-4	078704905	095773347	095777496
G7-5/5/S	077705903	G7-5/5/S-4	078705902	095773354	095777595
<b>Depth mm 460</b>					
GH7-2/2/S	077712909	GH7-2/2/S-4	078712908	095774626	095777298
GH7-4/4/S	077714905	GH7-4/4/S-4	078714904	095774642	095777496
GH7-5/5/S	077715902	GH7-5/5/S-4	078715901	095774659	095777595

**How to order**

To order the kits for making panels you need simply to know the code of top unit and select the codes of the order kits corresponding to the reference top unit code. Example: Top unit code 077702900

**Corresponding kits:**

- Uprights/Brackets Kit: code 095773321
- Frame/Panels/Racks kit for compartment "a" code 095777298

**N.B. All panels provided in the Frame/Panels/Rack kit are slotted. Any requests for blank panels must be integrated separately.**

For further details on the composition of internal accessories for the realization of panels, consult the dedicated section.

**Maximum load applicable on the bottom partition/Usable protected space for equipment/Thermal energy dissipation, page 99**

Accessories and spare parts common to the whole Grafi7 series:

**Ventilation units, page 190**

Grafi7

## Enclosure 1 compartment



### Characteristics

Overall height sizes available: 490mm - 715mm - 940mm - 1180mm - 1390mm- for two depths: 330mm - 460mm.

Rated insulation voltage  $U_i$  690V.

Complete with fixing frame for installation on a concrete base. Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock on all compartments (DIN18252 profile cylinder - customized differentiated on request).

Door opening side can be changed on site even on a single compartment (for detailed information consult the accessories selection).

Can be equipped with mounting plates and dedicated accessories for creating panels.

Mounting plates equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.

Closing bottom plate with conical fairleads and seal (only IP55 versions).

### Materials

Made of fiberglass, RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Galvanized and painted steel frame.

Concealed external hinges in stainless steel. Seals in foamed EPDM.

### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4

	External dimensions, mm			Internal dimensions compartment, mm			Door dimension, mm	IP	Model	Code
	Height	Width	Depth	Height	Width	Depth				
	*490	685	330	a= 433	667	298	374x595	IP55	G7-2/2/T	077702108
		IP44	G7-2/2/T-4	078702107						
	*490	685	460	a= 433	667	428	374x595	IP55	GH7-2/2/T	077712107
		IP44	GH7-2/2/T-4	078712106						
	*715	685	330	a= 658	667	298	599x595	IP55	G7-4/4/T	077704104
		IP44	G7-4/4/T-4	078704103						
	*715	685	460	a= 658	667	428	599x595	IP55	GH7-4/4/T	077714103
		IP44	GH7-4/4/T-4	078714102						
	*940	685	330	a= 883	667	298	824x595	IP55	G7-5/5/T	077705101
		IP44	G7-5/5/T-4	078705100						
	*940	685	460	a= 883	667	428	824x595	IP55	GH7-5/5/T	077715100
		IP44	GH7-5/5/T-4	078715109						
	1180	685	330	a= 1130	667	298	1064x595	IP55	G7-7/7/T	077707107
		IP44	G7-7/7/T-4	078707106						
	1180	685	460	a= 1130	667	428	1064x595	IP55	GH7-7/7/T	077717106
		IP44	GH7-7/7/T-4	078717105						
	1390	685	330	a= 1340	667	298	1274x595	IP55	G7-8/8/T	077708105
		IP44	G7-8/8/T-4	078708104						
	1390	685	460	a= 1340	667	428	1274x595	IP55	GH7-8/8/T	077718104
		IP44	GH7-8/8/T-4	078718103						

\* Models that can also be made in the wall version see Accessories section on page 177

## Enclosure 1 compartment with integrated plinth



### Characteristics

Made with 1 equipment compartment + bottom plinth integrated in a single support structure. Overall height sizes available: 940mm - 1390mm - 1840mm for two depths: 330mm - 460mm. Rated insulation voltage Ui 690V.


Complete with fixing frame for installation on a concrete base. Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock on all compartments (DIN18252 profile cylinder - customized differentiated on request). Door opening side can be changed on site even on a single compartment (for detailed information consult the accessories selection). Can be equipped with mounting plates and dedicated accessories for creating panels.

Mounting plates equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories. Closures bottom plate with conical fairleads and seal (only IP55 versions).

### Materials

Made of fiberglass, RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Galvanized and painted steel frame. Concealed external hinges in stainless steel. Seals in foamed EPDM.

### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4 4 .

Craft 7

	External dimensions, mm			Internal dimensions compartment, mm			Plinth height mm	Door dimension mm	IP	Model	Code
	Height	Width	Depth	Height	Width	Depth					
a plinth	940	685	330	a= 433	667	298	490	374x595	IP55	G7-5/22/ZT	077705192
		685	460	a= 433	667	428		374x595	IP44	G7-5/22/ZT-4	078705191
a plinth	1390	685	330	a= 883	667	298	490	824x595	IP55	G7-8/25/ZT	077708196
		685	460	a= 883	667	428		824x595	IP44	G7-8/25/ZT-4	078708195
a plinth	1840	685	330	a= 1340	667	298	490	1274x595	IP55	G7-9/28/ZT	077709194
		685	460	a= 1340	667	428		1274x595	IP44	G7-9/28/ZT-4	078709193
									IP55	GH7-9/28/ZT	077719193
									IP44	GH7-9/28/ZT-4	078719192



## Mounting plates



### Characteristics

Can be applied to the bottom of the enclosure using special threaded inserts with M6x20 stud bolts or in conjunction with switchgear risers or racks using the dedicated fixing brackets.

Available in: Pre-galvanized steel - thickness 2 mm; bakelite - thickness 5 mm;

PVC - thickness 5 mm.

Must be chosen to suit the size of the compartment in question.

Useful height mm	Plate dimensions mm	Steel (2mm thick)		Bakelite (5 mm thick)		PVC (5 mm thick)	
		Model	Code	Model	Code	Model	Code
433	560x355	G7/2/PA	095777017	G7/2/PB	095777116	G7/2/PP	095777215
658	560x580	G7/4/PA	095777025	G7/4/PB	095777124	G7/4/PP	095777223
883	560x805	G7/5/PA	095777033	G7/5/PB	095777132	G7/5/PP	095777231
1130	560x1030 (supplied in 2 pcs)	G7/7/PA	095777041	G7/7/PB	095777140	G7/7/PP	095777249
1340	560x1240 (supplied in 2 pcs)	G7/8/PA	095777058	G7/8/PB	095777157	G7/8/PP	095777256

## Closing bottom plate

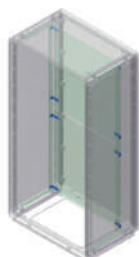


### Characteristics

Made of 3 mm thick bakelite, it is installed in the lower part of the enclosures to provide additional protection for the compartment where the cable input channels are situated. Available in the blank version so that the required holes can be made during installation or complete with 3 conical fairleads (max. diam. 76). In IP55 enclosures the partition is provided as standard.

Enclosures depth mm	Blank partition		Partition with conical fairleads	
	Model	Code	Model	Code
330	G7/SIC	095777405	G7/SIM	095777421
460	GH7/SIC	095777454	GH7/SIM	095777470

## Brackets kit for supporting the mounting plates on the uprights



### Characteristics

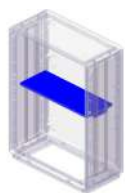
Made from steel. To be used together with an uprights kit and brackets kit for installing the depth-adjustable plate. If uprights and brackets kits are envisaged for supporting modular equipment, a further uprights kit without the upright support brackets kit is required.

Suitable for all types of plate.

For plates provided in 2 parts, 2 bracket kits are required.

Model	Code	Description
G/SP/MT	095770921	Brackets kit for support plates on uprights (4 pcs)

## Pre-galvanized sheet metal equipment holding shelves



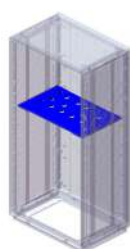
### Characteristics

To be installed using 2 upright kits G-../MT (selected based on the overall height) and 1 brackets kit G/SM or GH/SM.

These are complete with 2 brackets for application of shelves. To be selected based on enclosure depth.

Enclosure depth mm	Overall shelves dimension, mm			Shelves	
	Height	Width	Depth	Model	Code
330	225	590	17	G7/RP	095777561
460	355	590	17	GH7/RP	095777579

## Fiberglass equipment holding shelves



### Characteristics

To be installed using 2 upright kits G-../MT uprights (selected based on the overall height), 1 brackets kit GH/SM and 1 brackets dedicate kit GH/SRP/A-L.

To be selected based on enclosure depth.

Enclosure depth mm	Overall shelves dimension, mm			Max capacity, kg	Shelf		Combination with bracket (2 PCS)	
	Height	Width	Depth		Model	Code	Model	Code
460	360	575	12	20	RPA/CVL	095751202	GH/SRP/A-L	095777397

## Accessories for creating modular equipments panels

For creating panels inside enclosures, you must order:

- Uprights kit + brackets kit for the realization of modular equipment panels
- Frame/framework for supporting modular equipment plates
- Modular equipment support rack
- Blank and slotted plates
- Mounting plate/brackets kit for arranging the modular equipment support racks (Optional)

## Uprights kit + brackets kit for the realization of modular equipment panels



### Characteristics

Steel uprights set up with holes for fastening modular panel frames, equipment holding racks, mounting plates. Brackets for upright supports made from steel. The kit must be selected based on the depth and overall height of the enclosure regardless of the number and layout of compartments.

Overall height mm	Uprights (2 pieces)		Uprights support brackets (4 pieces)			
	Model	Code	Depth 330 mm		Depth 460 mm	
			Model	Code	Model	Code
490	G-2/MT	095770020	G/SM	095770905	GH/SM	095770913
715	G-4/MT	095770046				
940	G-5/MT	095770053				
1180	G-7/MT	095770079				
1390	G-8/MT	095770087				
1840	G-9/MT	095770095	N.B. The support brackets can be used on all heights of upright kits and up to an overall number of three kits.			

## Frame/framework for supporting modular equipments panels



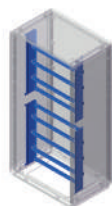
### Characteristics

Made from self-extinguishing thermoplastic material, grey RAL 7035 color. Designed to be fastened onto the uprights kit.

To be selected based on the usable height of the individual compartment. In the case of multiple compartments, the individual compartments can also be fitted out.

Useful height compartment, mm	No. Installable panels (Blank or slotted)	Max. No. DIN modules available	Frame/framework	
			Model	Code
433	2	58	G7/2/TPM	095777702
658	3	87	G7/4/TPM	095777710
883	4	116	G7/5/TPM	095777728
1130	6	174	G7/7/TPM	095777736
1340	6	174	G7/8/TPM	095777744

## Modular equipments support rack



### Characteristics

Made from steel, can be removed from the enclosure to facilitate execution of the panel; assembly and wiring of the various equipment can be carried out on a work bench. Designed to be fastened onto the uprights kit.

Complete with DIN 46 277/3 profiles.

To be selected in combination with the relative support frame/framework panels.

Useful height compartment, mm	Modular equipment support rack		no. pieces installable	In combination with frame/framework	
	Model	Code		Model	Code
433	G7/2-5/CST	095777801	1	G7/2/TPM	095777702
658	G7/4-8/CST	095777819	1	G7/4/TPM	095777710
883	G7/2-5/CST	095777801	2	G7/5/TPM	095777728
1130	G7/7/CST	095777827	2	G7/7/TPM	095777736
1340	G7/4-8/CST	095777819	2	G7/8/TPM	095777744

## Blank or slotted panels

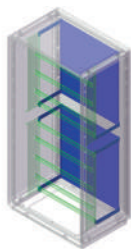


### Characteristics

Made from thermoplastic material. Suitable for Grafi7 enclosures. To be applied on the modular equipment support rack.

Panels	Description	Model	Code
Blank		G7/PC	095777603
Slotted	29 DIN modules (17,5mm) for each panel	G7/PM/29	095777629

## Mounting plate/brackets kit for arranging the modular equipments support racks



### Characteristics

Kit made up of 4 brackets and 1 closing bottom plate. Brackets and plate made from steel. Plate thickness 2mm. To be used together with the modular equipments support racks for fixing any non-modular components on the back of the panel. To be selected based on the equipment support rack and enclosure depth (330 - 460 mm).

Modular equipment support rack		Enclosure depth mm	Rack/plate distance	Bracket/plate Kit	
Model	Code			Model	Code
G7/2-5/CST	095777801	330	85	G7/2-5/PACST	095777865
		460	215	GH7/2-5/PACST	095777868
G7/4-8/CST	095777819	330	85	G7/4-8/PACST	095777850
		460	215	GH7/4-8/PACST	095777884
G7/7/CST	095777827	330	85	G7/7/PACST	095777843
		460	215	GH7/7/PACST	095777876

## Accessories for creating RACK 19" equipments

### Uprights kit + brackets kit for RACK 19"



### Characteristics

Uprights made of steel. Predisposed with holes for frame/frame fixing and shelves for RACK19". Brackets for support uprights made of steel. The kit must be chosen according to the depth and overall height of the enclosure regardless of the number and arrangement of the compartments. Order 2 kit uprights and 1 kit brackets.

Enclosure overall height, mm	Uprights (2 pezzi)		No. Uprights kit to be requested	Uprights support brackets (4 pieces)			
	Model	Code		Depth 330 mm		Depth 460 mm	
				Model	Code	Model	Code
490	G-2/MT	095770020	2	G/SM	095770905	GH/SM	095770913
715	G-4/MT	095770046					
940	G-5/MT	095770053					
1180	G-7/MT	095770079					
1390	G-8/MT	095770087					
1840	G-9/MT	095770095					

## Frame/framework for Rack 19"


**Characteristics**

Made of sheet metal complete with grey RAL7035 color. Prepared for fixing on uprights kit. To be chosen according to the useful height of the single compartment. In case of multiple compartments, the individual compartment can also be equipped.

Useful height compartment, mm	No. max unit HE	Max equipment weight (Kg)	Frame/framework	
			Model	Code
433	6	20	G7/2/TR19	095777645
658	12	35	G7/4/TR19	095777652
883	16	48	G7/5/TR19	095777660
1130	20	60	G7/7/TR19	095777678
1340	24	80	G7/8/TR19	095777686

## Modular equipments panels


**Characteristics**

Made of steel sheet grey RAL7032 color  
Complete with DIN 46 277/3 profile and a pair of slotted fixing brackets in 24 modules for 17,5mm.  
Overall height 4 units HE.

### With buttonhole

Buttonhole size	External dimensions	No. unit HE	Model	Code
423x46	490x177	4	ACV/PM/RACK	095759247

## Closing blinds

**Characteristics**

Made of steel sheet grey RAL7032 color

External dimensions	Dimensions	Model	Code
490x44	n. 1 unità HE	ACV/PC1/RACK	095759114
490x88	n. 2 unità HE	ACV/PC2/RACK	095759122
490x177	n. 4 unità HE	ACV/PC4/RACK	095759148
490x355	n. 8 unità HE	ACV/PC8/RACK	095759139

Brackets and guides



ACV/SF/RACK

**Profile fixing brackets**

Made of galvanized and passivated steel sheet; adjustable in depth. For fixing DIN profiles.

**Drawer support guides**

Made of galvanized and passivated steel sheet. For guide and support for RACK 19" drawers

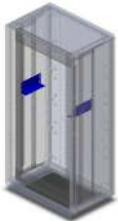
Type	Model	Code
Profile fixing bracket (2pcs)	ACV/SF/RACK	095759627
Drawer support guide for Rack 19" (2pcs)	ACV/GS/RACK	095759619

Cage nuts

Made of galvanized and passivated steel - M6 thread.

Model	Code
ACV/DG6/50	095759817

Shelves for deep equipments support



**Characteristics**



In galvanized steel. To be used with the RACK 19" to frontally fix and support heavy and deep equipment.

Shelves (2 pieces)	
Model	Code
G/M/TR19	095770806



## Standard ordering kit for panels realization with modular devices accessories

For a quick composition of the accessories for the realization of panels it is necessary to request: **Upright/bracket kit + Frame/Panels/Rack kit.**

REFERENCE TOP UNIT				Upright/Bracket kit	Frame/Panels/Rack kit
IP55		IP44			Compartment "a" 
Model	Code	Model	Code	Code	Code
<b>Depth mm 330</b>					
G7-2/2/T	077702108	G7-2/2/T-4	078702107	095773321	095777298
G7-4/4/T	077704104	G7-4/4/T-4	078704103	095773347	095777496
G7-5/5/T	077705101	G7-5/5/T-4	078705100	095773354	095777595
G7-7/7/T	077707107	G7-7/7/T-4	078707106	095773370	095777793
G7-8/8/T	077708105	G7-8/8/T-4	078708104	095773388	095777892
G7-5/22/ZT	077705192	G7-5/22/ZT-4	078705191	095773354	095777298
G7-8/25/ZT	077708196	G7-8/25/ZT-4	078708195	095773388	095777595
G7-9/28/ZT	077709194	G7-9/28/ZT-4	078709193	095773396	095777892
<b>Depth mm 460</b>					
GH7-2/2/T	077712107	GH7-2/2/T-4	078712106	095774626	095777298
GH7-4/4/T	077714103	GH7-4/4/T-4	078714102	095774642	095777496
GH7-5/5/T	077715100	GH7-5/5/T-4	078715109	095774659	095777595
GH7-7/7/T	077717106	GH7-7/7/T-4	078717105	095774675	095777793
GH7-8/8/T	077718104	GH7-8/8/T-4	078718103	095774683	095777892
GH7-5/22/ZT	077715191	GH7-5/22/ZT-4	078715190	095774659	095777298
GH7-8/25/ZT	077718195	GH7-8/25/ZT-4	078718194	095774683	095777595
GH7-9/28/ZT	077719193	GH7-9/28/ZT-4	078719192	095774691	095777892

### How to order

To order the kits for making panels you need simply to know the code of the 1 compartment enclosure - 1 compartment with integrated plinth and select the codes of the order kits corresponding to the reference enclosure code. Example: Enclosure code 077718104.

### Corresponding kits:

- Uprights/Brackets Kit: code 095774683
- Frame/Panels/Racks kit: for compartment "a" code 09577892

**N.B. All panels provided in the Frame/Panels/Rack kit are slotted. Any requests for blank panels must be integrated separately.**

For further details on the composition of internal accessories for the realization of panels, consult the dedicated section at page 181.

**Maximum load applicable on the bottom partition/Usable protected space for equipment/Thermal energy dissipation, page 55-56**

Accessories and spare parts common to the whole Grafi7 series:

**Ventilation units, page 190**

**Anchor frame, page 189**

## 1 compartment enclosure with counter compartment



### Characteristics

Overall height sizes available: 1390mm with depth: 460mm.

Rated insulation voltage Ui 690V.

Complete with fixing frame for installation on a concrete base. Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder-customized cipher on request).

Door opening side can be changed on site. Can be equipped with mounting plates and dedicated accessories for creating panels.

Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.

With built-in contact box on the right-hand side-independent access with a diversified lock (standard, triangular, lukeable). **Suitable for direct mounting of electronic meters:**

- max n°1 integrated single-phase measuring group, GMI-GMY type.

- max n°1 single phase for powers up to 10Kw GEM-GISM type. Fixing with no.1 base T5 A2 (serial number 286103).

- max n°1 three-phase for powers up to 16.5Kw type GET2A, up to 30Kw type GIST. Fixing with n°1 base T5 A4 (Serial number 286142).


IP43 degree of protection according to CEI EN 60529, IK10 according to CEI EN 62262.

For self-standing installation with masonry frame.

### Materials

Made of fiberglass, RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Galvanized and painted steel frame. Concealed external hinges in stainless steel. Seals in foamed EPDM.

### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4 4 .

External dimensions, mm			Internal dimensions compartment, mm			Door dimension mm	Counter compartment dimension, mm			IP	Model	Code
Height	Width	Depth	Height	Width	Depth		Height	Width	Depth			
1390	685	460	a = 1340	667	428	1274x595	375	182	182	IP44	GH7-8/8/ GMI/T-4	078718350

## 2 compartments enclosures



### Characteristics

Made with 2 equipment compartments separated by an intermediate partition.  
 Overall height sizes available: 940mm – 1390mm – 1840mm for two depths: 330mm – 460mm.  
 Rated insulation voltage Ui 690V.  
 Complete with fixing frame for installation on a concrete base.  
 Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder - customized cipher on request).  
 Door opening side can be changed on site even on a single compartment (for detailed information consult the accessories selection).  
 Arrangement of the compartments (upper/lower) modifiable on site according to the needs of installation of equipment and internal accessories (DOTPER® system)  
 Can be equipped with mounting plates and dedicated accessories for creating panels.  
 Mounting plates equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.  
 Closing bottom plate with conical fairleads and seal (only IP55 versions).

### Materials

Made of fiberglass RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4

External dimensions, mm			Internal dimensions compartment, mm			Door dimension, mm	IP	Model	Code
Height	Width	Depth	Height	Width	Depth				
*940	685	330	a-b= 433	667	298	374x595	IP55	G7-5/22/T	077705200
							IP44	G7-5/22/T-4	078705209
	685	460	a-b= 433	667	428	374x595	IP55	GH7-5/22/T	077715209
							IP44	GH7-5/22/T-4	078715208
1390	685	330	a-b= 658	667	298	599x595	IP55	G7-8/44/T	077708204
							IP44	G7-8/44/T-4	078708203
	685	460	a-b= 658	667	428	599x595	IP55	GH7-8/44/T	077718203
							IP44	GH7-8/44/T-4	078718202
1390	685	330	a= 883 b= 433	667	298	824x595 374x595	IP55	G7-8/52/T	077708212
							IP44	G7-8/52/T-4	078708211
	685	460	a= 883 b= 433	667	428	824x595 374x595	IP55	GH7-8/52/T	077718211
							IP44	GH7-8/52/T-4	078718210
1840	685	330	a-b= 883	667	298	824x595	IP55	G7-9/55/T	077709202
							IP44	G7-9/55/T-4	078709201
	685	460	a-b= 883	667	428	824x595	IP55	GH7-9/55/T	077719201
							IP44	GH7-9/55/T-4	078719200
1840	685	330	a= 1340 b= 433	667	298	1274x595 374x595	IP55	G7-9/82/T	077709210
							IP44	G7-9/82/T-4	078709219
	685	460	a= 1340 b= 433	667	428	1274x595 374x595	IP55	GH7-9/82/T	077719219
							IP44	GH7-9/82/T-4	078719218
2080	685	330	a= 1340 b= 658	667	298	1274x595 599x595	IP44	G7-S/84/T-4**	078709508
	685	460						GH7-S/84/T-4**	078719507

\* Models that can also be produced on the wall, see the Accessories section on page 177

\*\* Double compartment executions + complete top unit with sealing gasket;

Cable passage made with 3 tapered diaphragms diam. 76 mm.

## 2 compartments enclosures with integrated plinth



### Characteristics

Made with 2 compartments separated by an intermediate partition + lower base integrated into a single support structure.

Overall height sizes available: 1390mm – 1840mm for two depths: 330mm – 460mm.

Rated insulation voltage  $U_i$  690V.

Complete with fixing frame for installation on a concrete base.

Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder - customized cipher on request).

Door opening side can be changed on site even on a single compartment (for detailed information consult the accessories selection).

Arrangement of the compartments (upper/lower) modifiable on site according to the needs of installation of equipment and internal accessories (DOTPER® system)

Can be equipped with mounting plates and dedicated accessories for creating panels.

Mounting plates equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.

Closing bottom plate with conical fairleads and seal (only IP55 versions).

### Materials

Made of fiberglass, RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262.

Pre-engineered for apparatus in class II according to CEI 64-8/4 .

External dimensions, mm			Internal dimensions compartment, mm			Plinth height mm	Door dimension mm	IP	Model	Code				
Height	Width	Depth	Height	Width	Depth									
<table border="1" style="width: 100%; text-align: center;"> <tr><td>b</td></tr> <tr><td>a</td></tr> <tr><td>plinth</td></tr> </table>	b	a	plinth	1390	685	330	a-b=433	667	298	490	374x595	IP55	G7-8/222/ZT	077708295
	b													
	a													
	plinth													
685	460	a-b=433	667	428	374x595	IP44	G7-8/222/ZT-4	078708294						
<table border="1" style="width: 100%; text-align: center;"> <tr><td>b</td></tr> <tr><td>a</td></tr> <tr><td>plinth</td></tr> </table>	b	a	plinth	1840	685	330	a-b=658	667	298	490	599x595	IP55	G7-9/244/ZT	077709293
	b													
a														
plinth														
685	460	a-b=658	667	428	599x595	IP44	G7-9/244/ZT-4	078709292						
<table border="1" style="width: 100%; text-align: center;"> <tr><td>b</td></tr> <tr><td>a</td></tr> <tr><td>plinth</td></tr> </table>	b	a	plinth	1840	685	330	a= 883 b= 433	667	298	490	824x595 374x595	IP55	G7-9/252/ZT	077709285
	b													
	a													
	plinth													
685	460	a= 883 b= 433	667	428	824x595 374x595	IP44	G7-9/252/ZT-4	078709284						
<table border="1" style="width: 100%; text-align: center;"> <tr><td>b</td></tr> <tr><td>a</td></tr> <tr><td>plinth</td></tr> </table>	b	a	plinth	1840	685	330	a= 883 b= 433	667	298	490	824x595 374x595	IP55	GH7-9/252/ZT-4	077719284
	b													
a														
plinth														
685	460	a= 883 b= 433	667	428	824x595 374x595	IP44	GH7-9/252/ZT	078719284						

### Mounting plates



#### Characteristics

Can be applied to the bottom of the enclosure using special threaded inserts with M6x20 stud bolts or in conjunction with switchgear risers or racks using the dedicated fixing brackets. Available in: Pre-galvanized steel - thickness 2 mm; bakelite - thickness 5 mm; PVC - thickness 5 mm. Must be chosen to suit the size of the compartment in question.

Useful height mm	Plate dimensions mm	Steel (2mm thick)		Bakelite (5 mm thick)		PVC (5 mm thick)	
		Model	Code	Model	Code	Model	Code
433	560x355	G7/2/PA	095777017	G7/2/PB	095777116	G7/2/PP	095777215
658	560x580	G7/4/PA	095777025	G7/4/PB	095777124	G7/4/PP	095777223
883	560x805	G7/5/PA	095777033	G7/5/PB	095777132	G7/5/PP	095777231
1340	560x1240 (supplied in 2 pcs)	G7/8/PA	095777058	G7/8/PB	095777157	G7/8/PP	095777256

### Closing bottom plate

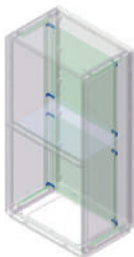


#### Characteristics

Made of 3 mm thick bakelite, it is installed in the lower part of the enclosures to provide additional protection for the compartment where the cable input channels are situated. Available in the blank version so that the required holes can be made during installation or complete with 3 conical fairleads (max. diam. 76). In IP55 cabinets the partition is provided as standard.

Enclosure depth mm	Blank plate		Plate with conical fairleads	
	Model	Code	Model	Code
330	G7/SIC	095777405	G7/SIM	095777421
460	GH7/SIC	095777454	GH7/SIM	095777470

### Brackets kit for supporting the mounting plates on the uprights

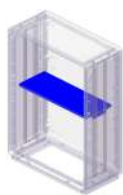


#### Characteristics

Made from steel. To be used together with an uprights kit and brackets kit for installing the depth-adjustable plate. If uprights and brackets kits are envisaged for supporting modular equipment, a further uprights kit without the upright support brackets kit is required. Suitable for all types of plate. For plates provided in 2 parts, 2 bracket kits are required.

Description	Model	Code
Brackets kit for support plates on uprights (4 pcs)	G/SP/MT	095770921

## Pre-galvanized sheet metal equipment holding shelves

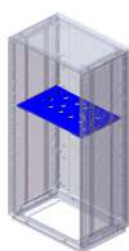


### Characteristics

To be installed using 2 upright kits G-../MT (selected based on the overall height) and 1 brackets kit G/SM or GH/SM. These are complete with 2 brackets for application of shelves. To be selected based on enclosure depth.

Enclosure depth mm	Overall shelves dimension, mm			Shelves	
	Height	Width	Depth	Model	Code
330	225	590	17	G7/RP	095777561
460	355	590	17	GH7/RP	095777579

## Fiberglass equipment holding shelves



### Characteristics

To be installed using 2 G-../MT uprights (selected based on the overall height), 1 GH/SM brackets kit and 1 GH/SRP/A-L brackets kit. To be selected based on enclosure depth.

Enclosure depth mm	Overall shelves dimension, mm			Max capacity, kg	Shelf		Combination with bracket (2 PCS)	
	Height	Width	Depth		Model	Code	Model	Code
460	360	575	12	20	RPA/CVL	095751202	GH/SRP/A-L	095777397

## Accessories for creating modular equipment panels

For creating panels inside enclosures, you must order:

- Uprights kit + brackets kit for the realization of modular equipment panels
- Frame/framework for supporting modular equipment panels
- Modular equipment support rack
- Blank and slotted panels
- Mounting plate/brackets kit for arranging the modular equipment support racks (Optional)

## Uprights kit + brackets kit for the realization of modular equipment panels



### Characteristics

Steel uprights set up with holes for fastening modular panel frames, equipment holding racks, bottom plates. Brackets for upright supports made from steel. The kit must be selected based on the depth and overall height of the enclosure regardless of the number and layout of compartments.

Enclosure overall height mm	Uprights (2 pieces)		Uprights support brackets (4 pieces)			
	Model	Code	Depth 330 mm		Depth 460 mm	
			Model	Code	Model	Code
940	G-5/MT	095770053	G/SM	095770905	GH/SM	095770913
1390	G-8/MT	095770087	N.B. The support brackets can be used on all heights of upright kits and up to an overall number of three kits.			
1840	G-9/MT	095770095				



### Frame/framework for supporting modular equipments panels



#### Characteristics

Made from self-extinguishing thermoplastic material, grey RAL 7035 color. Designed to be fastened onto the uprights kit. To be selected based on the usable height of the individual compartment. In the case of multiple compartments, the individual compartments can also be fitted out.

Useful height compartment mm	No. Installable panels (Blank or slotted)	Max. No. DIN modules available	Frame/framework	
			Model	Code
433	2	58	G7/2/TPM	095777702
658	3	87	G7/4/TPM	095777710
883	4	116	G7/5/TPM	095777728
1340	6	174	G7/8/TPM	095777744

### Modular equipment support rack



#### Characteristics

Made from steel, can be removed from the enclosure to facilitate execution of the panel; assembly and wiring of the various equipment can be carried out on a work bench. Designed to be fastened onto the uprights kit. Complete with DIN 46 277/3 profiles.

To be selected in combination with the relative panels support frame/framework.

Useful height compartment, mm	Modular equipment support rack		no. pieces installable	In combination with frame/framework	
	Model	Code		Model	Code
433	G7/2-5/CST	095777801	1	G7/2/TPM	095777702
658	G7/4-8/CST	095777819	1	G7/4/TPM	095777710
883	G7/2-5/CST	095777801	2	G7/5/TPM	095777728
1340	G7/4-8/CST	095777819	2	G7/8/TPM	095777744

### Blank or slotted panels

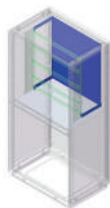


#### Characteristics

Made from thermoplastic material. Suitable for Grafi7 enclosures. To be applied on the modular equipment support rack.

Panels	Description	Model	Code
Blank		G7/PC	095777603
Slotted	29 DIN modules (17,5mm) for each panel	G7/PM/29	095777629

## Mounting plate/brackets kit for arranging the modular equipment support racks



### Characteristics

Kit made up of 4 brackets and 1 closing bottom plate. Brackets and plate made from steel. Plate thickness 2mm. To be used together with the modular equipment support racks for fixing any non-modular components on the back of the panel.  
To be selected based on the equipment support rack and enclosure depth (330 - 460 mm).

Modular equipment support rack		Enclosure depth mm	Rack/plate distance	Bracket/plate Kit	
Model	Code			Model	Code
G7/2-5/CST	095777801	330	85	G7/2-5/PACST	095777865
		460	215	GH7/2-5/PACST	095777868
G7/4-8/CST	095777819	330	85	G7/4-8/PACST	095777850
		460	215	GH7/4-8/PACST	095777884

## Accessories for creating RACK 19" equipments

### Uprights kit + brackets kit for RACK 19"

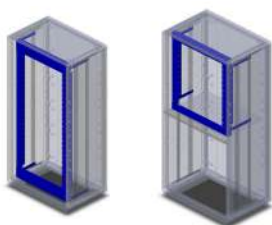


### Characteristics

Uprights made of steel. Predisposed with holes for frame/frame fixing and shelves for RACK19". Brackets for support uprights made of steel. The kit must be chosen according to the depth and overall height of the enclosure regardless of the number and arrangement of the compartments. Order 2 kit uprights and 1 kit brackets.

Enclosure overall height, mm	Uprights (2 pieces)		No. Uprights kit to be requested	Uprights support brackets (4 pieces)			
	Model	Code		Depth 330 mm		Depth 460 mm	
				Model	Code	Model	Code
940	G-5/MT	095770053	2	G/SM	095770905	GH/SM	095770913
1390	G-8/MT	095770087					
1840	G-9/MT	095770095					

### Frame/framework for Rack 19"



### Characteristics

Made of sheet metal complete with grey RAL7035 color. Prepared for fixing on uprights kit. To be chosen according to the useful height of the single compartment. In case of multiple compartments, the individual compartment can also be equipped.

Useful height compartment mm	No. max unit HE	Max equipment weight (Kg)	Frame/framework	
			Model	Code
433	6	20	G7/2/TR19	095777645
658	12	35	G7/4/TR19	095777652
883	16	48	G7/5/TR19	095777660
1340	24	80	G7/8/TR19	095777686

### Modular equipments panels



**Characteristics**

Made of steel sheet grey RAL7032 color  
Complete with DIN 46 277/3 profile and a pair of slotted fixing brackets in 24 modules for 17,5mm.  
Overall height 4 units HE.

#### With buttonhole

Buttonhole size	External dimensions	No. unit HE	Model	Code
423x46	490x177	4	ACV/PM/RACK	095759247

### Closing blinds

**Characteristics**

Made of steel sheet grey RAL7032 color

External dimensions	Dimensions	Model	Code
490x44	no. 1 unit HE	ACV/PC1/RACK	095759114
490x88	no. 2 unit HE	ACV/PC2/RACK	095759122
490x177	no. 4 unit HE	ACV/PC4/RACK	095759148
490x355	no. 8 unit HE	ACV/PC8/RACK	095759139

### Brackets and guides



ACV/SF/RACK

**Profile fixing brackets**

Made of galvanized and passivated steel sheet; adjustable in depth. For fixing DIN profiles.

**Drawer support guides**

Made of galvanized and passivated steel sheet. For guide and support for RACK 19" drawers

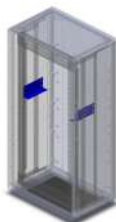
Notes	Model	Code
Profile fixing bracket (2pcs)	ACV/SF/RACK	095759627
Drawer support guide for Rack 19" (2pcs)	ACV/GS/RACK	095759619

### Cage nuts

Made of galvanized and passivated steel - M6 thread.

Model	Code
ACV/DG6/50	095759817

### Shelves for deep equipments support





**Characteristics**

In galvanized steel. To be used with the RACK 19" to frontally fix and support heavy and deep equipment.

Shelves (2 pieces)	
Model	Code
G/M/TR19	095770806

### Standard ordering kit for panels realization with modular devices accessories

For a quick composition of the accessories for the realization of panels it is necessary to request: **Upright/bracket kit + Frame/Panels/Rack kit.**

REFERENCE ENCLOSURE				Upright/Bracket kit	Frame/Panels/Rack kit	
IP55		IP44				
Model	Code	Model	Code	Code	Compartment "a"	Compartment "b"
Depth mm 330						
G7-5/22/T	077705200	G7-5/22/T-4	078705209	095773354	095777298	095777298
G7-8/44/T	077708204	G7-8/44/T-4	078708203	095773388	095777496	095777496
G7-8/52/T	077708212	G7-8/52/T-4	078708211	095773388	095777595	095777298
G7-9/55/T	077709202	G7-9/55/T-4	078709201	095773396	095777595	095777595
G7-9/82/T	077709210	G7-9/82/T-4	078709219	095773396	095777892	095777298
		G7-S/84/T-4	078709508	Comp "a" = 095773396 Comp "b" = 095773388	095777892	095777496
G7-8/222/ZT	077708295	G7-8/222/ZT-4	078708294	095773388	095777298	095777298
G7-9/244/ZT	077709293	G7-9/244/ZT-4	078709292	095773396	095777496	095777496
G7-9/252/ZT	077709285	G7-9/252/ZT-4	078709284	095773396	095777595	095777298
Depth mm 460						
GH7-5/22/T	077715209	GH7-5/22/T-4	078715208	095774659	095777298	095777298
GH7-8/44/T	077718203	GH7-8/44/T-4	078718202	095774683	095777496	095777496
GH7-8/52/T	077718211	GH7-8/52/-4	078718210	095774683	095777595	095777298
GH7-9/55/T	077719201	GH7-9/55/T-4	078719200	095774691	095777595	095777595
GH7-9/82/T	077719219	GH7-9/82/T-4	078719218	095774691	095777892	095777298
		GH7-S/84/T-4	078719507	Comp "a" = 095774691 Comp "b" = 095774683	095777892	095777496
GH7-8/222/ZT	077718294	GH7-8/222/ZT-4	078718293	095774683	095777298	095777298
GH7-9/244/ZT	077719292	GH7-9/244/ZT-4	078719291	095774691	095777496	095777496
GH7-9/252/ZT	077719284	GH7-9/252/ZT-4	078719284	095774691	095777595	095777298

#### How to order

To order the kits for making panels you need simply to know the code of the 2 compartment enclosure - 2 compartment with integrated plinth and select the codes of the order kits corresponding to the reference cabinet code. Example: Enclosure code 077709210.

#### Corresponding kits:

- Uprights/Brackets Kit: code 095773396
- Frame/Panels/Racks kit
  - for compartment "a" code 095777892
  - for compartment "b" code 095777298.

In case you want to equip only a single compartment must always order the Upright/Brackets Kit + Frame/Panel/Rack Kit corresponding to the compartment to be accessorised.

**N.B. All panels provided in the Frame/Panels/Rack kit are slotted. Any requests for blank panels must be integrated separately.**

**Maximum load applicable on the bottom partition/Usable protected space for equipment/Thermal energy dissipation, page 102**

Accessories and spare parts common to the whole Grafi7 series:

**Ventilation units, page 190**

**Anchor frame, page 189**

### 3 and 4 compartments enclosures


**Characteristics**

Made with 3/4 equipments compartments separated by an intermediate partition.  
Overall height sizes available: 1390mm - 1840mm for two depths: 330mm - 460mm.  
Rated insulation voltage Ui 690V.

Complete with fixing frame for installation on a concrete base.

Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder-customized cipher on request).

Door opening side can be changed on site even on a single compartment (for detailed information consult the accessories selection).

Door opening side can be changed on site (for detailed information see the Accessories section).

Arrangement of the compartments (upper/intermediate/lower) modifiable on site according to the need for installation of internal equipment and accessories (DOTPER® system).

Can be equipped with mounting plates and dedicated accessories for creating panels.

Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.

Closing bottom plate with conical fairleads and seal (only IP55 versions).

**Materials**

Made of fiberglass RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

**Standards**

Made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4

#### 3 compartments

	External dimensions, mm			Internal dimensions compartment, mm			Door dimension, mm	IP	Model	Code
	Height	Width	Depth	Height	Width	Depth				
<div style="border: 1px solid black; padding: 2px; display: inline-block;">c</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">b</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">a</div>	1390	685	330	a-b-c= 433	667	298	374x595	IP55	G7-8/222/T	077708303
								IP44	G7-8/222/T-4	078708302
	1390	685	460	a-b-c= 433	667	428	374x595	IP55	GH7-8/222/T	077718302
								IP44	GH7-8/222/T-4	078718301
<div style="border: 1px solid black; padding: 2px; display: inline-block;">c</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">b</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">a</div>	1840	685	330	a= 883 b-c= 433	667	298	824x595 374x595	IP55	G7-9/522/T	077709301
								IP44	G7-9/522/T-4	078709300
	1840	685	460	a= 883 b-c= 433	667	428	824x595 374x595	IP55	GH7-9/522/T	077719300
								IP44	GH7-9/522/T-4	078719309
<div style="border: 1px solid black; padding: 2px; display: inline-block;">c</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">b</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">a</div>	1840	685	330	a-b= 658 c= 433	667	298	599x595 374x595	IP55	G7-9/442/T	077709319
								IP44	G7-9/442/T-4	078709318
	1840	685	460	a-b= 658 c= 433	667	428	599x595 374x595	IP55	GH7-9/442/T	077719318
								IP44	GH7-9/442/T-4	078719317

#### 4 compartments

	External dimensions, mm			Internal dimensions compartment, mm			Door dimension mm	IP	Model	Code
	Height	Width	Depth	Height	Width	Depth				
<div style="border: 1px solid black; padding: 2px; display: inline-block;">d</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">c</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">b</div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">a</div>	1840	685	330	a-b-c-d=433	667	298	374x595	IP55	G7-9/2222/T	077709400
								IP44	G7-9/2222/T-4	078709409
	1840	685	460	a-b-c-d=433	667	428	374x595	IP55	GH7-9/2222/T	077719409
								IP44	GH7-9/2222/T-4	078719408

### 3 compartments enclosures with integrated plinth



#### Characteristics

Made with 3 compartments separated by an intermediate partition + lower base integrated into a single support structure.

Overall height sizes available: 1840mm for two depths: 330mm – 460mm.

Rated insulation voltage Ui 690V.

Complete with fixing frame for installation on a concrete base.

Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder-customized cipher on request).

Door opening side can be changed on site even on a single compartment (for detailed information consult the accessories selection).

Door opening side can be changed on site (for detailed information see the Accessories section). Arrangement of the compartments (upper/intermediate/lower) modifiable on site according to the need for installation of internal equipment and accessories (DOTPER® system).

Can be equipped with mounting plates and dedicated accessories for creating panels.


Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.

Closing bottom plate with conical fairleads and seal (only IP55 versions).

#### Materials

Made of fiberglass RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

#### Standards

Made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4 .

	External dimensions, mm			Internal dimensions compartment, mm			Plinth height mm	Door dimension mm	IP	Model	Code
	Height	Width	Depth	Height	Width	Depth					
c	1840	685	330	a-b-c=433	667	298	490	374x595	IP55	G7-9/2222/ZT	077709392
b									IP44	G7-9/2222/ZT-4	078709391
a	1840	685	460	a-b-c=433	667	428	490	374x595	IP55	GH7-9/2222/ZT	077719391
plinth									IP44	GH7-9/2222/ZT-4	078719390



## Mounting plates



#### Characteristics

Can be applied to the bottom of the cabinet using special threaded inserts with M6x20 stud bolts or in conjunction with switchgear risers or racks using the dedicated fixing brackets.  
Available in: Pre-galvanized steel - thickness 2 mm; bakelite - thickness 5 mm; PVC - thickness 5 mm. Must be chosen to suit the size of the compartment in question.

Useful height mm	Plate dimensions mm	Steel (2mm thick)		Bakelite (5 mm thick)		PVC (5 mm thick)	
		Model	Code	Model	Code	Model	Code
433	560x355	G7/2/PA	095777017	G7/2/PB	095777116	G7/2/PP	095777215
658	560x580	G7/4/PA	095777025	G7/4/PB	095777124	G7/4/PP	095777223
883	560x805	G7/5/PA	095777033	G7/5/PB	095777132	G7/5/PP	095777231

## Closing bottom plate

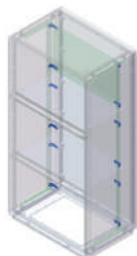


#### Characteristics

Made of 3 mm thick bakelite, it is installed in the lower part of the enclosures to provide additional protection for the compartment where the cable input channels are situated.  
Available in the blank version so that the required holes can be made during installation or complete with 3 conical fairleads (max. diam. 76). In IP55 cabinets the plate is provided as standard.

Enclosure depth mm	Blank plate		Plate with conical fairleads	
	Model	Code	Model	Code
330	G7/SIC	095777405	G7/SIM	095777421
460	GH7/SIC	095777454	GH7/SIM	095777470

## Brackets kit for supporting the mounting plates on the uprights

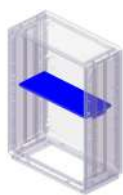


#### Characteristics

Made from steel. To be used together with an uprights kit and brackets kit for installing the depth-adjustable partition. If uprights and brackets kits are envisaged for supporting modular equipment, a further uprights kit without the upright support brackets kit is required.  
Suitable for all types of partition. For partitions provided in 2 parts, 2 bracket kits are required.

Description	Model	Code
Brackets kit for support plates on uprights (4 pcs)	G/SP/MT	095770921

## Pre-galvanized sheet metal equipment holding shelves

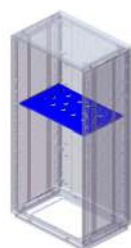


### Characteristics

To be installed using 2 upright kits G-../MT (selected based on the overall height) and 1 brackets kit G/SM or GH/SM. These are complete with 2 brackets for application of shelves. To be selected based on enclosure depth.

Enclosure depth mm	Overall shelves dimension, mm			Shelves	
	Height	Width	Depth	Model	Code
330	225	590	17	G7/RP	095777561
460	355	590	17	GH7/RP	095777579

## Fiberglass equipment holding shelves



### Characteristics

To be installed using 2 G-../MT uprights kits (selected based on the overall height), 1 GH/SM brackets kit and 1 GH/SRP/A-L brackets kit. To be chosen in width to the depth of the enclosure.

Enclosure depth mm	Overall shelves dimension, mm			Max capacity, kg	Shelf		Combination with bracket (2 PCS)	
	Height	Width	Depth		Model	Code	Model	Code
460	360	575	12	20	RPA/CVL	095751202	GH/SRP/A-L	095777397

## Accessories for creating modular equipments panels

For creating panels inside enclosures, you must order:

- Uprights kit + brackets kit for the realization of modular equipment panels
- Frame/framework for supporting modular equipment panels
- Modular equipment support rack
- Blank and slotted panels
- Mounting plate/brackets kit for arranging the modular equipment support racks (Optional)

## Uprights kit + brackets kit for the realization of modular equipment panels



### Characteristics

Steel uprights set up with holes for fastening modular panel frames, equipment holding racks, mounting plates. Brackets for upright supports made from steel. The kit must be selected based on the depth and overall height of the enclosure regardless of the number and layout of compartments.

Enclosure overall height mm	Uprights (2 pieces)		Uprights support brackets (4 pieces)			
	Model	Code	Depth 330 mm		Depth 460 mm	
			Model	Code	Model	Code
1390	G-8/MT	095770087	G/SM	095770905	GH/SM	095770913
1840	G-9/MT	095770095	N.B. The support brackets can be used on all heights of upright kits and up to an overall number of three kits.			

## Frame/framework for supporting modular equipment panels



#### Characteristics

Made from self-extinguishing thermoplastic material, grey RAL 7035 color. Designed to be fastened onto the uprights kit.

To be chosen according to the useful height of the single compartment. In the case of multiple compartments, the individual compartment can also be equipped.

Useful height compartment, mm	No. Installable panels (Blank or slotted)	Max. No. DIN modules available	Frame/framework	
			Model	Code
433	2	58	G7/2/TPM	095777702
658	3	87	G7/4/TPM	095777710
883	4	116	G7/5/TPM	095777728

## Modular equipment support rack



#### Characteristics

Made from steel, can be removed from the enclosure to facilitate execution of the panel; assembly and wiring of the various equipment can be carried out on a work bench.

Designed to be fastened onto the uprights kit.

Complete with DIN 46 277/3 profiles.

To be selected in combination with the relative panels support frame/framework.

Useful height mm	Modular equipment support rack		no. pieces installable	In combination with frame/framework	
	Model	Code		Model	Code
433	G7/2-5/CST	095777801	1	G7/2/TPM	095777702
658	G7/4-8/CST	095777819	1	G7/4/TPM	095777710
883	G7/2-5/CST	095777801	2	G7/5/TPM	095777728

## Blank or slotted panels



#### Characteristics

Made from thermoplastic material. Suitable for Graf7 enclosures. To be applied on the modular equipment support rack.

Panels	Description	Model	Code
Blank		G7/PC	095777603
Slotted	29 DIN modules (17,5mm) for each panel	G7/PM/29	095777629

## Mounting plate/brackets kit for arranging the modular equipment support racks



### Characteristics

Kit made up of 4 brackets and 1 closign bottom plate. Brackets and partition made from steel. Plate thickness 2mm. To be used together with the modular equipment support racks for fixing any non-modular components on the back of the panel.  
To be selected based on the equipment support rack and enclosure depth (330 - 460 mm).

Modular equipment support rack		Enclosure depth mm	Rack/plate distance	Kit staffe/plate	
Model	Code			Model	Code
G7/2-5/CST	095777801	330	85	G7/2-5/PACST	095777865
		460	215	GH7/2-5/PACST	095777868
G7/4-8/CST	095777819	330	85	G7/4-8/PACST	095777850
		460	215	GH7/4-8/PACST	095777884

## Accessories for creating RACK 19" equipments

### Uprights kit + brackets kit for RACK 19"



### Characteristics

Uprights made of steel. Predisposed with holes for frame/frame fixing and shelves for RACK19". Brackets for support uprights made of steel. The kit must be chosen according to the depth and overall height of the enclosure regardless of the number and arrangement of the compartments. Order 2 kit uprights and 1 kit brackets.

Enclosure overall height, mm	Uprights (2 pieces)		No. Uprights kit to be requested	Uprights support brackets (4 pieces)			
	Model	Code		Depth 330 mm		Depth 460 mm	
				Model	Code	Model	Code
1390	G-8/MT	095770087	2	G/SM	095770905	GH/SM	095770913
1840	G-9/MT	095770095					

## Frame/framework for Rack 19"



### Characteristics

Made of sheet metal complete with grey RAL7035 color. Prepared for fixing on uprights kit. To be chosen according to the useful height of the single compartment. In case of multiple compartments, the individual compartment can also be equipped.

Useful height mm	N° max unità HE	Peso max apparecchiature (Kg)	Telaio/Cornice	
			Model	Code
433	6	20	G7/2/TR19	095777645
658	12	35	G7/4/TR19	095777652
883	16	48	G7/5/TR19	095777660

## Modular equipments panels



#### Characteristics

Made of steel sheet grey RAL7032 color  
Complete with DIN 46 277/3 profile and a pair of slotted fixing brackets in 24 modules for 17,5mm.  
Overall height 4 units HE.

### With buttonhole

Buttonhole size	External dimensions	No. unit HE	Model	Code
423x46	490x177	4	ACV/PM/RACK	095759247

## Closing blinds

#### Characteristics

Made of steel sheet grey RAL7032 color

External dimensions	Dimensions	Model	Code
490x44	no. 1 unit HE	ACV/PC1/RACK	095759114
490x88	no. 2 unit HE	ACV/PC2/RACK	095759122
490x177	no. 4 unit HE	ACV/PC4/RACK	095759148
490x355	no. 8 unit HE	ACV/PC8/RACK	095759139

## Brackets and guides



ACV/SF/RACK

#### Profile fixing brackets

Made of galvanized and passivated steel sheet; adjustable in depth. For fixing DIN profiles.

#### Drawer support guides

Made of galvanized and passivated steel sheet. For guide and support for RACK 19" drawers

Notes	Model	Code
Profile fixing bracket (2pcs)	ACV/SF/RACK	095759627
Drawer support guide for Rack 19" (2pcs)	ACV/GS/RACK	095759619

## Cage nuts

Made of galvanized and passivated steel - M6 thread.

Model	Code
ACV/DG6/50	095759817

## Shelves for deep equipments support



#### Characteristics

In galvanized steel. To be used with the RACK 19" to frontally fix and support heavy and deep equipment.

Shelves (2 pieces)	
Model	Code
G/M/TR19	095770806

## Standard ordering kit for panels realization with modular devices accessories

For a quick composition of the accessories for the realization of panels it is necessary to request: **Upright/bracket kit + Frame/Panels/Rack kit.**

REFERENCE ENCLOSURE				Upright/ Bracket kit	Frame/Panels/Rack kit			
IP55		IP44						
Model	Code	Model	Code					
<b>Depth mm 330</b>								
G7-8/222/T	077708303	G7-8/222/T-4	078708302	095773388	095777298	095777298	095777298	-
G7-9/522/T	077709301	G7-9/522/T-4	078709300	095773396	095777595	095777298	095777298	-
G7-9/442/T	077709319	G7-9/442/T-4	078709318	095773396	095777496	095777496	095777298	-
G7-9/2222/ZT	077709392	G7-9/2222/ZT-4	078709391	095773396	095777298	095777298	095777298	-
G7-9/2222/T	077709400	G7-9/2222/T-4	078709409	095773396	095777298	095777298	095777298	095777298
<b>Depth mm 460</b>								
GH7-8/222/T	077718302	GH7-8/222/T-4	078718301	095774683	095777298	095777298	095777298	-
GH7-9/522/T	077719300	GH7-9/522/T-4	078719309	095774691	095777595	095777298	095777298	-
GH7-9/442/T	077719318	GH7-9/442/T-4	078719317	095774691	095777496	095777496	095777298	-
GH7-9/2222/ZT	077719391	GH7-9/2222/ZT-4	078719390	095774691	095777298	095777298	095777298	-
GH7-9/2222/T	077719409	GH7-9/2222/T-4	078719408	095774691	095777298	095777298	095777298	095777298

### How to order

To order the kits for making panels you need simply to know the code of the 3 compartments enclosures - 3 compartments with integrated plinth and select the codes of the order kits corresponding to the reference enclosure code. Example: Enclosure code 077709319.

### Corresponding kits:

- Uprights/Brackets Kit: code 095773396
- Frame/Panels/Racks kit
  - for compartment "a" code 095777496
  - for compartment "b" code 095777496
  - for compartment "c" code 095777298

In case you want to equip only a single compartment must always order the Upright/Brackets Kit + Frame/Panel/Rack Kit corresponding to the compartment to be accessorised.

**N.B. All panels provided in the Frame/Panels/Rack kit are slotted. Any requests for blank panels must be integrated separately.**

**Maximum load applicable on the bottom partition/Usable protected space for equipment/Thermal energy dissipation, page 102**

Accessories and spare parts common to the whole Grafi7 series:

**Ventilation units, page 190**

**Anchor frame, page 189**



## Enclosures without doors, customizable



### Characteristics

Made with the standard bearing structure but without door.

Overall height sizes available: 1390mm - 1840mm for two depths: 330mm - 460mm.

Can be used in conjunction with single "door kits" to create cabinets with multiple compartments in sizes and/or arrangements to suit specific requirements.

Structure pre-engineered with hinges into which the individual doors can be fitted in the required positions.

Complete with fixing frame for installation on a concrete base. Can be equipped with mounting plates and dedicated accessories for creating switchgear.

Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories. Lower closing partition with conical fairleads and seal available.

### Materials

Made of fiberglass in grey RAL7035 color. External non-accessible stainless steel hinges. Galvanized and painted steel frame. Seals made of expanded EPDM.

### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262.

Pre-engineered for apparatus in class II according to CEI 64-8/4

External dimensions, mm			Internal dimensions compartment, mm			IP	Model	Code
Height	Width	Depth	Height	Width	Depth			
1390	685	330		667	298	IP55	G7-8/T	077708006
	685	460		667	428	IP55	GH7-8/T	077718005
1840	685	330		667	298	IP55	G7-9/T	077709004
	685	460		667	428	IP55	GH7-9/T	077719003

Through the combination of the following accessories, on the enclosure without doors can be made over the coded compartments, other versions with compartments arranged according to the specific requirements of switchboards.

## Plinth front panel kit + trail



### Characteristics

Supplied complete with gasket and fixing screws.

Useful height, mm	Model	Code
433	G7/2/KTZ	095778205

## Compartment doors Kit



### Characteristics

Supplied with side door hinge parts, seals and Y21 encrypted lever lock.

Useful height, mm	Door dimension mm	Model	Code
433	374x595	G7/2/KA	095778726
658	599x595	G7/4/KA	095778742
883	824x595	G7/5/KA	095778759
1180	1064x595	G7/7/KA	095778775
1340	1274x595	G7/8/KA	095778783

## Partition compartments Kit + trail



### Characteristics

Supplied complete with brackets and fixing screws. To be chosen according to the enclosure depth (330 or 460).

Depth, mm	Model	Code
330	G7/KTS	095777009
460	GH7/KTS	095777108

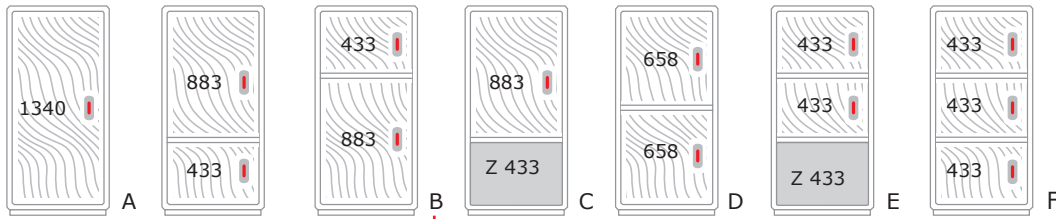
### Possible compositions

Customizable enclosures without doors make it possible to tackle different partitioning needs of the interior volume starting with a few basic elements. In the composition diagrams provided below, all the possible combinations which can be obtained on enclosures of an overall height of 1390mm and 1840mm are highlighted.

The letters identifying the single compositions shown in the table make it possible to quickly identify the types and number of kits needed to make them.

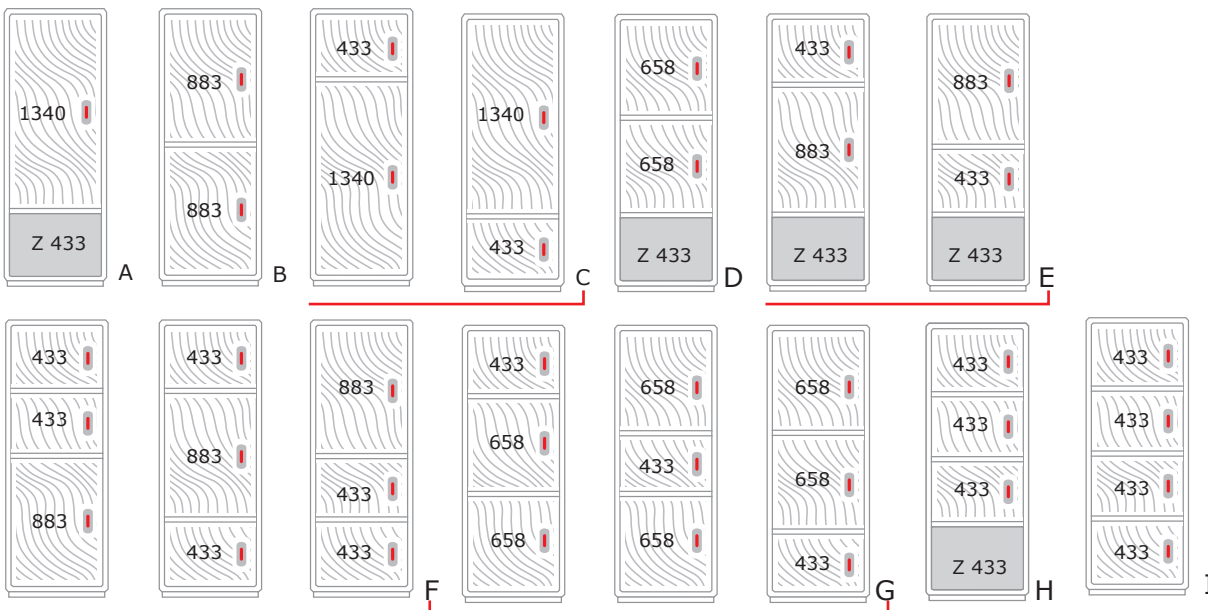
The figures shown on each individual compartment indicate its usable height, which is essential for identifying any internal accessories (mounting plates, accessories for making panels, etc.). When selecting accessories, refer to the sections corresponding to the selected composition/s based on the number of compartments.

COMPOSITIONS REALIZED ON ENCLOSURES WITHOUT DOOR HEIGHT OVERALL DIMENSIONS - 1390mm



	Code	Model	Useful height mm	A	B	C	D	E	F
<b>Plinth kit</b>	095778205	G7/2/KTZ	433			1		1	
<b>Doors Kit</b>	095778726	G7/2/KA	433		1			2	3
	095778742	G7/4/KA	658				2		
	095778759	G7/5/KA	883		1	1			
	095778783	G7/8/KA	1340	1					
<b>Partition kit Depth330</b>	095777009	G7/KTS			1		1	1	2
or									
<b>Partition kit Depth460</b>	095777108	GH7/KTS			1		1	1	2

COMPOSITIONS REALIZED ON ENCLOSURES WITHOUT DOOR HEIGHT OVERALL DIMENSIONS - 1840mm



	Code	Model	Useful height mm	A	B	C	D	E	F	G	H	I
<b>Plinth kit</b>	095778205	G7/2/KTZ	433	1			1	1			1	
<b>Doors kit</b>	095778726	G7/2/KA	433			1		1	2	1	3	4
	095778742	G7/4/KA	658				2			2		
	095778759	G7/5/KA	883		2			1	1			
	095778783	G7/8/KA	1340	1		1						
<b>Partition kit Depth 330</b>	095777009	G7/KTS			1	1	1	1	2	2	2	3
or												
<b>Partition kit Depth 460</b>	095777108	GH7/KTS			1	1	1	1	2	2	2	3

The following table specifies what configurations are supported for customizable without door enclosures.

## Maximum load

Maximum load applicable on the mounting plate and usable protected space for equipment in observance of the characteristics certified by standard CEI EN 62208.

The table shows the maximum load value applicable on the mounting plate installed on both the bottom wall and on the uprights (in the case of multiple compartments, the value refers to the individual compartments). Other installation methods may bear greater weights.

By usable protected space we mean the space dedicated to the installation of protection and manoeuvring equipment for which the IP rating is guaranteed by the casing.

## Thermal energy dissipation (Pmax. = watt)

Calculation carried out in accordance with standard CEI 17-43: method of temperature-rise assessment by extrapolation for partially type-tested assemblies for protection (BT panels) of low-voltage switchgear not standard (ANS).

Thermal energy dissipation values (Pmax=watt) of the enclosures provided in the table are valid considering:

- standard installation conditions (exposure on all sides);
- ambient temperature established at 35 °C;
- overtemperature values achieved at mid height [ $\Delta t$  0.5 (°C)] (value indicated in the table);
- overtemperature values established at the top  $\Delta t$  1.0 = 30 °C.

Pmax(watt) is an overall value referring to the entire structure of the enclosure; in the case of multiple compartments, the value must be divided by the number of compartments. The standard thermal energy dissipation value [Pmax(watt)] can be increased by applying ventilation units.

## Top Units



Code	Model	Useful space protected, mm			Max load kg compartment "a"	$\Delta T$ 0,5 (°C)	Pmax (W)
		Height	Width	Depth			
<b>IP55</b>							
077702900	G7-2/2/S	a=355	580	235	45	26,6	109
077704906	G7-4/4/S	a=580	580	235	55	22,8	122
077705903	G7-5/5/S	a=805	580	235	65	21,8	153
077712909	GH7-2/2/S	a=355	580	365	45	24,2	122
077714905	GH7-4/4/S	a=580	580	365	55	23,4	158
077715902	GH7-5/5/S	a=805	580	365	65	22,7	194
<b>IP44</b>							
078702909	G7-2/2/S-4	a=355	580	235	45	25	114
078704905	G7-4/4/S-4	a=580	580	235	55	23,5	128
078705902	G7-5/5/S-4	a=805	580	235	65	22,5	159
078712908	GH7-2/2/S-4	a=355	580	365	45	25	127
078714904	GH7-4/4/S-4	a=580	580	365	55	24,3	165
078715901	GH7-5/5/S-4	a=805	580	365	65	23,5	203

## Average integration of the Dissipable Power

The standard value of Pmax (Watt) can be increased by the application of the aeration vents, in particular:

- no. 2 aeration vents, applied diagonally, increase the dissipable power [Pmax (Watt)] of **100W**.

Ex. For the enclosure G7-5/22/T Pmax (Watt) = 144W. Applying no. 2 ventilation units the Pmax (Watt) is 144W + 100W = 244W.

- no. 2 aeration vents, applied diagonally, one of which with forced ventilation and installed in the upper part of the enclosure, increase the dissipable power [Pmax (Watt)] of **250W**.

Ex. For the enclosure G7-8/25/ZT Pmax (Watt) = 222W. Applying no. 2 ventilation units, one with forced ventilation, the Pmax (Watt) is 222W + 250W = 472W.

**For any specific composition requests a specific calculation in place.**

**1 compartment**


Code	Model	Useful space protected, mm			Max load kg compartment "a"	$\Delta T_{0,5}$ (°C)	Pmax (W)
		Height	Width	Depth			
<b>IP55</b>							
077702108	G7-2/2/T	a=355	580	235	45	26,6	109
077704104	G7-4/4/T	a=580	580	235	55	22,8	122
077705101	G7-5/5/T	a=805	580	235	65	21,8	153
077707107	G7-7/7/T	a=1045	580	235	80	20,8	185
077708105	G7-8/8/T	a=1255	580	235	90	20,1	222
077712107	GH7-2/2/T	a=355	580	365	45	24,2	122
077714103	GH7-4/4/T	a=580	580	365	55	23,4	158
077715100	GH7-5/5/T	a=805	580	365	65	22,7	194
077717106	GH7-7/7/T	a=1045	580	365	80	21,9	248
077718104	GH7-8/8/T	a=1255	580	365	90	21,2	284
<b>IP44</b>							
078702107	G7-2/2/T-4	a=355	580	235	45	25	114
078704103	G7-4/4/T-4	a=580	580	235	55	23,5	128
078705100	G7-5/5/T-4	a=805	580	235	65	22,5	159
078707106	G7-7/7/T-4	a=1045	580	235	80	21,5	193
078708104	G7-8/8/T-4	a=1255	580	235	90	21	232
078712106	GH7-2/2/T-4	a=355	580	365	45	25	127
078714102	GH7-4/4/T-4	a=580	580	365	55	24,3	165
078715109	GH7-5/5/T-4	a=805	580	365	65	23,5	203
078717105	GH7-7/7/T-4	a=1045	580	365	80	22,6	258
078718103	GH7-8/8/T-4	a=1255	580	365	90	22	296

**1 compartment with integrated plinth**


Code	Model	Useful space protected, mm			Max load kg compartment "a"	$\Delta T_{0,5}$ (°C)	Pmax (W)
		Height	Width	Depth			
<b>IP55</b>							
077705192	G7-5/22/ZT	a=355	580	235	45	21,8	153
077708196	G7-8/25/ZT	a=805	580	235	65	20,1	222
077709194	G7-9/28/ZT	a=1255	580	235	90	19	281
077715191	GH7-5/22/ZT	a=355	580	365	45	22,7	194
077718195	GH7-8/25/ZT	a=805	580	365	65	21,2	284
077719193	GH7-9/28/ZT	a=1255	580	365	90	20	332
<b>IP44</b>							
078705191	G7-5/22/ZT-4	a=355	580	235	45	22,5	159
078708195	G7-8/25/ZT-4	a=805	580	235	65	21	232
078709193	G7-9/28/ZT-4	a=1255	580	235	90	20	293
078715190	GH7-5/22/ZT-4	a=355	580	365	45	23,5	203
078718194	GH7-8/25/ZT-4	a=805	580	365	65	22	296
078719192	GH7-9/28/ZT-4	a=1255	580	365	90	21	345

2 compartments



Code	Model	Useful space protected, mm			Max load kg		$\Delta T_{0,5}$ (°C)	Pmax (W)
		Height	Width	Depth	comp. "a"	comp. "b"		
<b>IP55</b>								
077705200	G7-5/22/T	a-b=355	580	235	45	45	21,8	144
077708204	G7-8/44/T	a-b=580	580	235	55	55	20,1	209
077708212	G7-8/52/T	a=805 b=355	580	235	65	45	20,1	209
077709202	G7-9/55/T	a-b=805	580	235	65	65	19	264
077709210	G7-9/82/T	a=1255 b=355	580	235	90	45	19	264
077715209	GH7-5/22/T	a-b=355	580	365	45	45	22,7	183
077718203	GH7-8/44/T	a-b=580	580	365	55	55	21,2	268
077718211	GH7-8/52/T	a=805 b=355	580	365	65	45	21,2	268
077719201	GH7-9/55/T	a-b=805	580	365	65	65	20	312
077719219	GH7-9/82/T	a=1255 b=355	580	365	90	45	20	312
<b>IP44</b>								
078705209	G7-5/22/T-4	a-b=355	580	235	45	45	22,5	150
078708203	G7-8/44/T-4	a-b=580	580	235	55	55	21	218
078708211	G7-8/52/T-4	a=805 b=355	580	235	65	45	21	218
078709201	G7-9/55/T-4	a-b=805	580	235	65	65	20	275
078709219	G7-9/82/T-4	a=1255 b=355	580	235	90	45	20	275
078709508	G7-S/84/T-4	a=1255 b=580	580	235	90	55	a=20 b=21	a=275 b=218
078715208	GH7-5/22/T-4	a-b=355	580	365	45	45	23,5	191
078718202	GH7-8/44/T-4	a-b=580	580	365	55	55	22	279
078718210	GH7-8/52/T-4	a=805 b=355	580	365	65	45	22	279
078719200	GH7-9/55/T-4	a-b=805	580	365	65	65	21	325
078719218	GH7-9/82/T-4	a=1255 b=355	580	365	90	45	21	325
078719507	GH7-S/84/T-4	a=1255 b=580	580	365	90	55	a=20 b=21	a=275 b=218

2 compartments with integrated plinth



Code	Model	Useful space protected, mm			Max load kg		$\Delta T_{0,5}$ (°C)	Pmax (W)
		Height	Width	Depth	comp "a"	comp "b"		
<b>IP55</b>								
077708295	G7-8/222/ZT	a-b=355	580	235	45	45	20,1	209
077709293	G7-9/244/ZT	a-b=580	580	235	55	55	19	264
077709285	G7-9/252/ZT	a=805 b=355	580	235	65	45	19	264
077718294	GH7-8/222/ZT	a-b=355	580	365	45	45	21,2	268
077719292	GH7-9/244/ZT	a-b=580	580	365	55	55	20	312
077719284	GH7-9/252/ZT	a=805 b=355	580	365	65	45	20	312
<b>IP44</b>								
078708294	G7-8/222/ZT-4	a-b=355	580	235	45	45	21	218
078709292	G7-9/244/ZT-4	a-b=580	580	235	55	55	20	275
078709284	G7-9/252/ZT-4	a=805 b=355	580	235	65	45	20	275
078718293	GH7-8/222/ZT-4	a-b=355	580	365	45	45	22	279
078719291	GH7-9/244/ZT-4	a-b=580	580	365	55	55	21	325
078719284	GH7-9/252/ZT-4	a=805 b=355	580	365	65	45	21	325



**3 compartments**


Code	Model	Useful space protected, mm			Max load kg			$\Delta T_{0,5}$ (°C)	Pmax (W)
		Height	Width	Depth	comp "a"	comp "b"	comp "c"		
<b>IP55</b>									
077708303	G7-8/222/T	a-b-c=355	580	235	45	45	45	20,1	187
077709301	G7-9/522/T	a=805 b-c=355	580	235	65	45	45	19	236
077709319	G7-9/442/T	a-b=580 c=355	580	235	55	55	45	19	236
077718302	GH7-8/222/T	a-b-c=355	580	365	45	45	45	21,2	239
077719300	GH7-9/522/T	a=805 b-c=355	580	365	65	45	45	20	279
077719318	GH7-9/442/T	a-b=580 c=355	580	365	55	55	45	20	279
<b>IP44</b>									
078708302	G7-8/222/T-4	a-b-c=355	580	235	45	45	45	21	195
078709300	G7-9/522/T-4	a=805 b-c=355	580	235	65	45	45	20	246
078709318	G7-9/442/T-4	a-b=580 c=355	580	235	55	55	45	20	246
078718301	GH7-8/222/T-4	a-b-c=355	580	365	45	45	45	22	249
078719309	GH7-9/522/T-4	a=805 b-c=355	580	365	65	45	45	21	290
078719317	GH7-9/442/T-4	a-b=580 c=355	580	365	55	55	45	21	290

**3 compartments with integrated plinth**


Code	Model	Useful space protected, mm			Max load kg			$\Delta T_{0,5}$ (°C)	Pmax (W)
		Height	Width	Depth	comp "a"	comp "b"	comp "c"		
<b>IP55</b>									
077709392	G7-9/2222/ZT	a-b-c=355	580	235	45	45	45	19	236
077719391	GH7-9/2222/ZT	a-b-c=355	580	365	45	45	45	20	279
<b>IP44</b>									
078709391	G7-9/2222/ZT-4	a-b-c=355	580	235	45	45	45	20	246
078719390	GH7-9/2222/ZT-4	a-b-c=355	580	365	45	45	45	21	290

**4 compartments**


Code	Model	Useful space protected, mm			Max load kg				$\Delta T_{0,5}$ (°C)	Pmax (W)
		Height	Width	Depth	comp "a"	comp "b"	comp "c"	comp "d"		
<b>IP55</b>										
077709400	G7-9/2222/T	a-b-c-d=355	580	235	45	45	45	45	19	203
077719409	GH7-9/2222/T	a-b-c-d=355	580	365	45	45	45	45	20	239
<b>IP44</b>										
078709409	G7-9/2222/T-4	a-b-c-d=355	580	235	45	45	45	45	20	211
078719408	GH7-9/2222/T-4	a-b-c-d=355	580	365	45	45	45	45	21	249



# Graf 9

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**Width 910 mm**



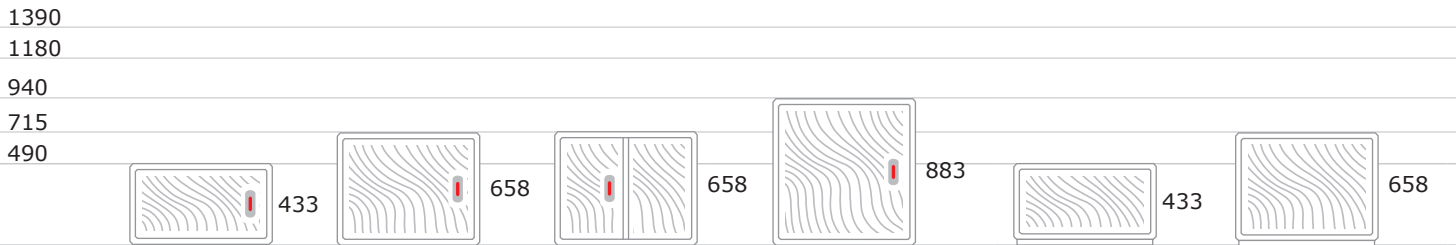
**Characteristics**

The Grafi9 series is characterized by an external width of 910 mm (usable interior width = 892 mm).  
 6 different overall heights available, from 490 mm to 1840 mm.  
 All versions are available in two depths: 330 mm and 460 mm.  
 Rated insulation voltage = Ui 690V.  
 IMQ Certification in accordance with CEI EN 62208.

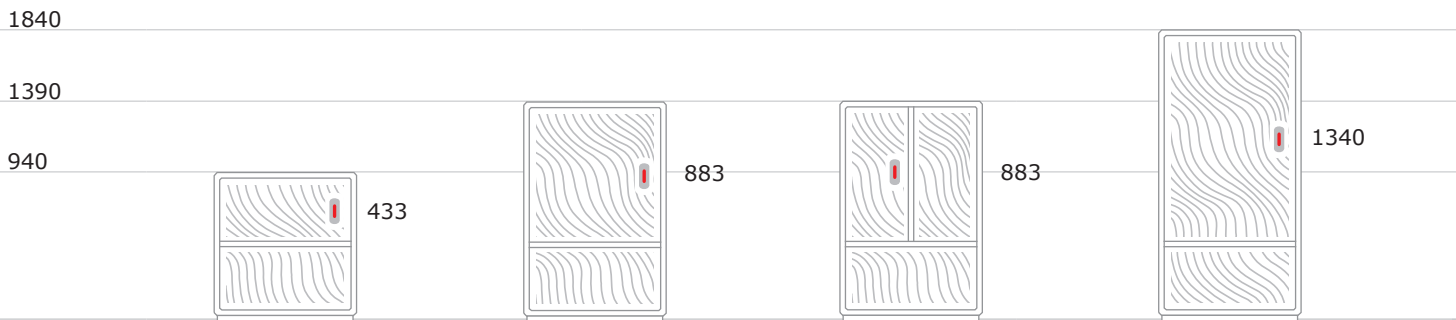
**Production drawing**

The values on the left of the drawing indicate the overall height. The figures for the individual compartments indicate their usable height, essential when selecting dedicated accessories.

**TOP UNITS** PAG. 106 **PLINTHS** PAG. 107

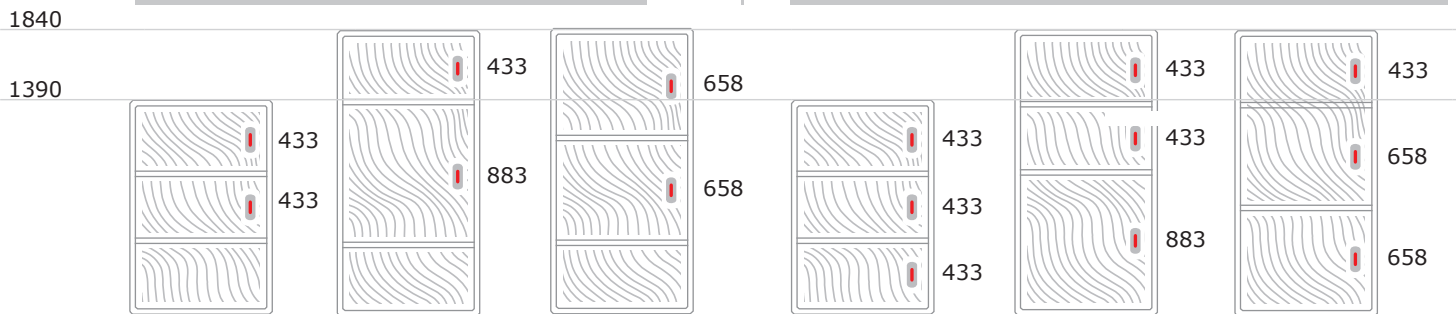


**1 COMPARTMENT ENCLOSURE WITH INTEGRATED PLINTH** PAG. 117



**2 COMPARTMENTS ENCLOSURES WITH INTEGRATED PLINTH** PAG. 127

**3 COMPARTMENTS ENCLOSURES** PAG. 134




**Materials**

Made in fiberglass (SMC) in RAL 7035 colour. Thermoplastic resin handle, operating tenon in galvanized steel, internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Anchor frame in galvanized and painted steel. Seals in foamed EPDM.

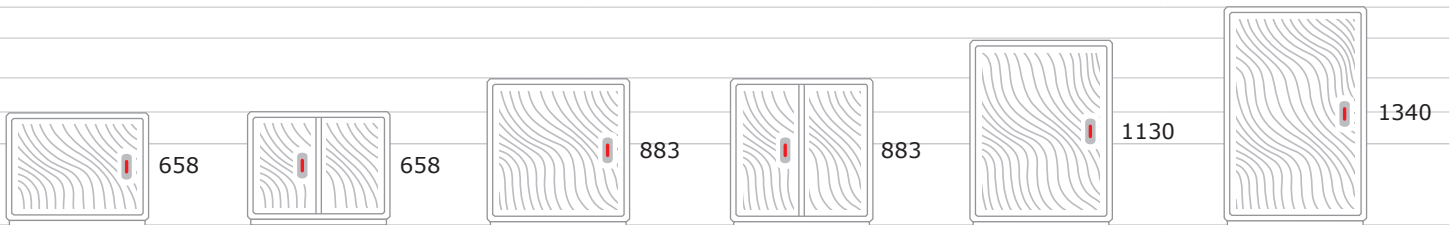
**Degree of protection**

Available with IP44 - IP55 protection class according to CEI EN 60529, IK10 according to CEI EN 62262.

Prepared for execution of CLASS II equipment according to CEI 64-8 / 4. 

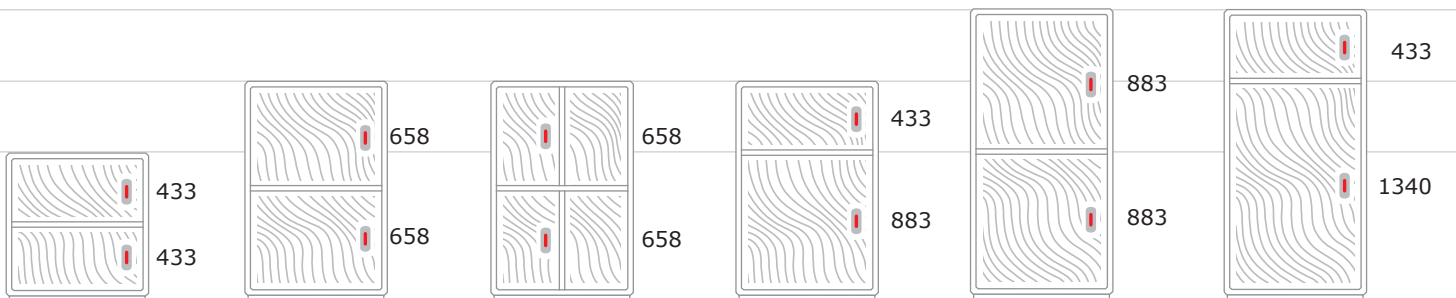
1 COMPARTMENT ENCLOSURE

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2 COMPARTMENTS ENCLOSURES

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3 COMPARTMENTS ENCLOSURES WITH INTEGRATED PLINTH

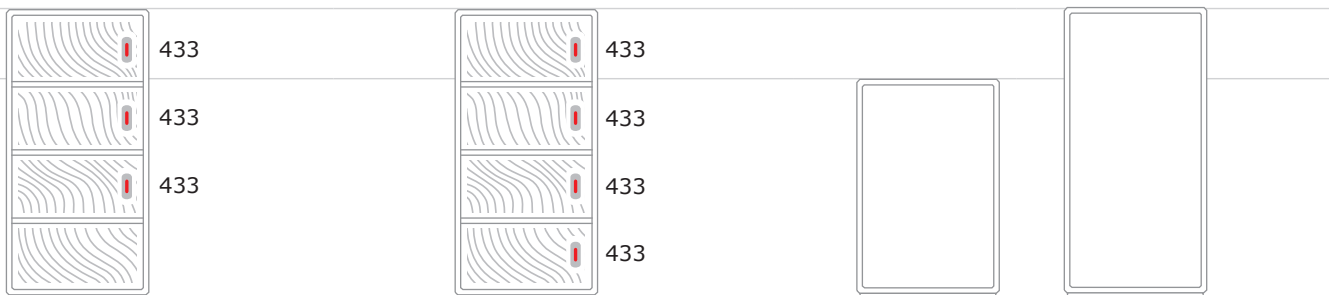
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4 COMPARTMENTS ENCLOSURES

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ENCLOSURES WITHOUT DOORS CUSTOMIZABLE

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## Top units



Conchi-9

### Characteristics

Overall height sizes available: 460mm - 685mm - 910mm for two depths: 330mm - 460mm. Rated insulation voltage Ui 690V. Completely intact structure without holes. The holes for cable passage to be realized by the customer or on request. Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder - customized cipher on request). Door opening side can be changed on site even on a single compartment (for detailed information consult the accessories selection). Can be equipped with bottom plates and dedicated accessories for creating panels. Bottom plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.

### Materials

Made of fiberglass RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4

	External dimensions, mm			Internal dimensions compartment, mm			Door dimension mm	IP	Model	Code
	Height	Width	Depth	Height	Width	Depth				
	460	910	330	a= 433	892	298	374x820	IP55	G9-2/2/S	077902906
								IP44	G9-2/2/S-4	078902905
	460	910	460	a= 433	892	428	374x820	IP55	GH9-2/2/S	077912905
								IP44	GH9-2/2/S-4	078912904
	685	910	330	a= 658	892	298	599x820	IP55	G9-4/4/S	077904902
								IP44	G9-4/4/S-4	078904901
	685	910	460	a= 658	892	428	599x820	IP55	GH9-4/4/S	077914901
								IP44	GH9-4/4/S-4	078914900
	685	910	330	a= 658	892	298	599x820	IP55	G9-4/4A/S*	077904910
								IP44	G9-4/4A/S-4*	078904919
	685	910	460	a= 658	892	428	599x820	IP55	GH9-4/4A/S*	077914919
								IP44	GH9-4/4A/S-4*	078914918
	910	910	330	a= 883	892	298	824x820	IP55	G9-5/5/S	077905909
								IP44	G9-5/5/S-4	078905908
	910	910	460	a= 883	892	428	824x820	IP55	GH9-5/5/S	077915908
								IP44	GH9-5/5/S-4	078915907

\*with double door

### Warnings

Usable for installation in enclosures of the same series and depth to achieve non-standard compositions in the integrated units or for extending enclosures already in use. Can be used to make single compartment enclosures for floor installation, together with dedicated plinths. Holes for fastening systems and cable opening to be made in situ or in the factory on request. Wall-mounted version also available.



Plinths




**Characteristics**

Overall height sizes available: 490mm - 715mm - with two depths: 330mm - 460mm. Prepared for installation on a concrete based using an anchor frame (not included). To be used in combination with enclosures of the series 9 same depth not available in the version with "integrated plinth". They allow the realization of enclosures for floor installation combined with top units.

**Material**

Made in fiberglass in RAL 7035 color. Seals in foamed EPDM.

**Standards**

Made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4 .

Craft 9

External dimensions, mm			Useful height	IP	Model	Code
Height	Width	Depth				
z 490	910	330	433	IP55	G9-2/ZT	077902955
	910	460	433	IP55	GH9-2/ZT	077912954
z 715	910	330	658	IP55	G9-4/ZT	077904951
	910	460	658	IP55	GH9-4/ZT	077914950



## Closign bottom plate for plinths



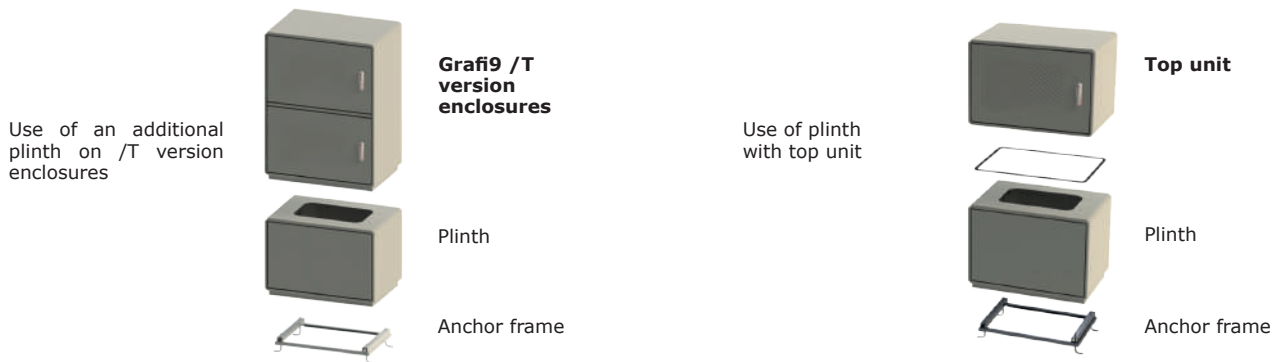
### Characteristics

Made of 3 mm thick bakelite, it is installed in the lower part of the enclosures to provide additional protection for the compartment where the cable input channels are situated. Available in the blank version so that the required holes can be made during installation or complete with 3 conical fairleads (max. diam. 76)

Enclosures depth mm	Blank plate		Plate with conical fairleads	
	Model	Code	Model	Code
330	G9/SIC	095779401	G9/SIM	095779427
460	GH9/SIC	095779450	GH9/SIM	095779476

### Installation method

The plinths can be fitted with closing bottom plate (blank or with conical fairleads) positioned between the fixing frame and plinth, to provide additional protection in the cable input area.



## Anchor frame



### Characteristics

Screws in AISI 304 stainless steel to guarantee access over time. Complete with brackets for fixing onto a concrete base.

### Materials

Made of steel with black coloured 18/24 cataphoretic coating treatment.

Enclosure depth mm	Model	Code
330	G9/TA	095779302
460	GH9/TA	095779351

## Top units accessories

### Mounting plates



### Characteristics

Can be applied to the bottom of the enclosure using special threaded inserts with M6x20 stud bolts or in conjunction with switchgear risers or racks using the dedicated fixing brackets. Available in: Pre-galvanized steel - thickness 2 mm; bakelite - thickness 5 mm; PVC - thickness 5 mm. Must be chosen to suit the size of the compartment in question.

Useful height mm	Plate dimensions mm	Steel (2mm thick)		Bakelite (5 mm thick)		PVC (5 mm thick)	
		Model	Code	Model	Code	Model	Code
433	785x355	G9/2/PA	095779013	G9/2/PB	095779112	G9/2/PP	095779211
658	785x580	G9/4/PA	095779021	G9/4/PB	095779120	G9/4/PP	095779229
883	785x805	G9/5/PA	095779039	G9/5/PB	095779138	G9/5/PP	095779237

## Brackets for fixing to a wall

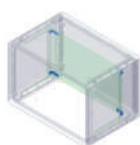


### Characteristics

The top units can be used as single compartments that can be installed on the wall using special brackets, using wall plugs or another fixing element depending on the type of wall. Drilling holes for cable entry by the customer with cable/cable glands. The brackets are available in loose execution (with assembly by the customer) or in applied execution performed directly in the factory.

Description	Model	Code
Brackets for fixing to a wall (loose version)	G/SFP	095770938
Version on brackets for fixing to a wall	G-EA/SFP	097770028

## Brackets kit for supporting the mounting plate on the uprights

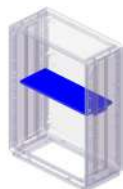


### Characteristics

Made from steel. To be used together with an uprights kit and brackets kit for installing the depth-adjustable plate. If uprights and brackets kits are envisaged for supporting modular equipment, a further uprights kit without the upright support brackets kit is required. Suitable for all types of plate. For plates provided in 2 parts, 2 bracket kits are required.

Description	Model	Code
Brackets kit for support plates on uprights (4 pcs)	G/SP/MT	095770921

## Pre-galvanized sheet metal equipment holding shelves

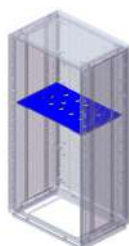


### Characteristics

To be installed using 2 upright kits G-../MT (selected based on the overall height) and 1 brackets kit G/SM or GH/SM. These are complete with 2 brackets for application of shelves. To be selected based on enclosure depth.

Top unit depth mm	Overall shelves dimension, mm			Shelves	
	Height	Width	Depth	Model	Code
330	225	815	17	G9/RP	095779633
460	355	815	17	GH9/RP	095779641

## Fiberglass equipment holding shelves



### Characteristics

To be installed using 2 G-../MT uprights kit (selected based on the overall height), 1 GH/SM brackets kit and GH/SRP/A-L brackets kit. To be selected based on enclosure depth.

Top unit depth mm	Overall shelves dimension, mm			Max capacity, kg	Shelf		Combination with bracket (2 PCS)	
	Height	Width	Depth		Model	Code	Model	Code
460	360	675	12	20	RPL/CVL	095751251	GH/SRP/A-L	095777397

## Accessories for creating modular equipment panels

For creating panels inside enclosures, you must order:

- Uprights kit + brackets kit for the realization of modular equipment panels
- Frame/framework for supporting modular equipment panels
- Modular equipment support rack
- Blank and slotted panels
- Mounting plate/brackets kit for arranging the modular equipment support racks (Optional)

### Uprights kit + brackets kit for the realization of modular equipment panels



#### Characteristics

Steel uprights set up with holes for fastening modular panel frames, equipment holding racks, mounting plate. Brackets for upright supports made from steel. The kit must be selected based on the depth and overall height of the enclosure regardless of the number and layout of compartments.

Top unit overall height mm	Uprights (2 pieces)		Uprights support brackets (4 pieces)			
	Model	Code	Depth 330 mm		Depth 460 mm	
			Model	Code	Model	Code
490	G-2/MT	095770020	G/SM	095770905	GH/SM	095770913
715	G-4/MT	095770046	N.B. The support brackets can be used on all heights of upright kits and up to an overall number of three kits.			
940	G-5/MT	095770053				

### Frame/framework for supporting modular equipment panels



#### Characteristics

Made from self-extinguishing thermoplastic material, grey RAL 7035 color. Designed to be fastened onto the uprights kit.

To be selected based on the usable height of the individual compartment. In the case of multiple compartments, the individual compartments can also be fitted out.

Useful height compartment mm	No. Installable panels (Blank or slotted)	Max. No. DIN modules available	Frame/framework	
			Model	Code
433	2	80	G9/2/TPM	095779708
658	3	120	G9/4/TPM	095779716
883	4	160	G9/5/TPM	095779724

### Modular equipment support rack



#### Characteristics

Made from steel, can be removed from the enclosure to facilitate execution of the panel; assembly and wiring of the various equipment can be carried out on a work bench. Designed to be fastened onto the uprights kit.

Complete with DIN 46 277/3 profiles.

To be selected in combination with the relative panels support frame/framework.

Useful height compartment mm	Modular equipment support rack		no. pieces installable	In combination with frame/framework	
	Model	Code		Model	Code
433	G9/2-5/CST	095779807	1	G9/2/TPM	095779708
658	G9/4-8/CST	095779815	1	G9/4/TPM	095779716
883	G9/2-5/CST	095779807	2	G9/5/TPM	095779724

## Blank or slotted panels

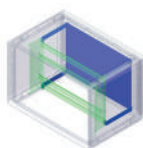


### Characteristics

Made from thermoplastic material. Suitable for Grafi9 enclosures. To be applied on the modular equipment support rack.

Panels	Description	Model	Code
Blank		G9/PC	095779609
Slotted	40 DIN modules (17,5mm) for each panel	G9/PM/40	095779625

## Mounting plate/brackets kit for arranging the modular equipment support racks



### Characteristics

Kit made up of 4 brackets and 1 closing bottom plate. Brackets and plate made from steel. Plate thickness 2mm. To be used together with the modular equipment support racks for fixing any non-modular components on the back of the panel.  
To be selected based on the equipment support rack and enclosure depth (330 - 460 mm).

Modular equipment support rack		Enclosure depth mm	Rack/plate distance	Bracket/plate Kit	
Model	Code			Model	Code
G9/2-5/CST	095779807	330	85	G9/2-5/PACST	095779831
		460	215	GH9/2-5/PACST	095779906
G9/4-8/CST	095779815	330	85	G9/4-8/PACST	095779856
		460	215	GH9/4-8/PACST	095779922

## Trasparent internal door



### Characteristics

Made up of a panel in transparent self-extinguishing thermoplastic material (polycarbonate) and 2 black fibreglass reinforced polyamide (PA) hinges.

Hinge fastening screws in AISI304 stainless steel and 2 self-tapping captive screws.

To be applied on uprights kit, brackets kit and frame/framework to make modular equipment panels. To be selected based on the usable height of the individual compartment.

Useful height compartment mm	Internal door dimension, mm	No. internal door	Trasparent internal door		Drilling execution frame/framework		in combination*
			Model	Code	Model	Code	Frame/framework
							Code
433	796x300	1	G9-2/CNT	095779948			095779708
658	796x450	1	G9-4/CNT	095779963	G-EA/CNPT	097770192	095779716
883	796x300	2	G9-2/CNT	095779948			095779724

\*Used together with uprights kit + brackets kit to be selected based on the depth and overall height of the enclosure regardless of the number and arrangement of compartments (see page 110).

## Opaque internal door



### Characteristics

Panel made in self-extinguishing thermoplastic material (ABS), grey RAL7035 color, 2 black fibreglass reinforced polyamide (PA) hinges.

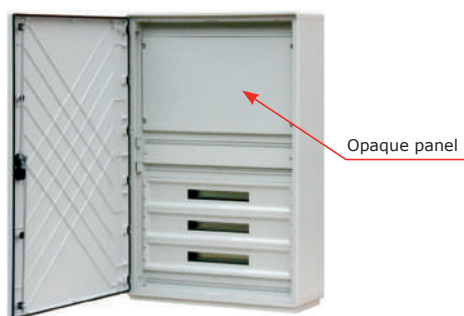
Hinge fastening screws in AISI304 stainless steel and 2 self-tapping captive screws.

To be applied on uprights kit, brackets kit and frame/framework to make modular equipment panels. To be selected based on the usable height of the individual compartment.

Useful height compartment mm	Internal door dimension, mm	No. internal door	Opaque blank panel		Drilling execution frame/framework		in combination*
			Model	Code	Model	Code	Frame/framework
							Code
433	796x300	1	G9-2/CNP	095779930			095779708
658	796x450	1	G9-4/CNP	095779955	G-EA/CNPT	097770192	095779716
883	796x300	2	G9-2/CNP	095779930			095779724

\*Used together with uprights kit + brackets kit to be selected based on the depth and overall height of the enclosure regardless of the number and arrangement of compartments (see page 110).

## Opaque blank panel



### Characteristics

Panel made in self-extinguishing thermoplastic material (ABS), grey RAL7035 color, 2 black fibreglass reinforced polyamide (PA) hinges.

To be applied on uprights kit, brackets kit and frame/framework to make modular equipment panels. To be selected based on the usable height of the individual compartment.

Useful height compartment, mm	Panel dimension, mm	No. panel	Opaque blank panel		in combination*
			Model	Code	Frame/framework
					Code
433	796x300	1	G9-2/PC/P	095779658	095779708
658	796x450	1	G9-4/PC/P	095779674	095779716
883	796x300	2	G9-2/PC/P	095779658	095779724

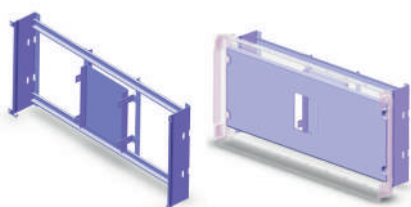
\*Used together with uprights kit + brackets kit to be selected based on the depth and overall height of the enclosure regardless of the number and arrangement of compartments (see page 110).

## Trasparent blank panel

Useful height compartment, mm	Panel dimension, mm	No. panel	Trasparent blank panel		in combination*
			Model	Code	Frame/framework
					Code
433	796x300	1	G9-2/PC/T	095779666	095779708
658	796x450	1	G9-4/PC/T	095779682	095779716
883	796x300	2	G9-2/PC/T	095779666	095779724

\*Used together with uprights kit + brackets kit to be selected based on the depth and overall height of the enclosure regardless of the number and arrangement of compartments (see page 110).

## Functional unit for MCCB



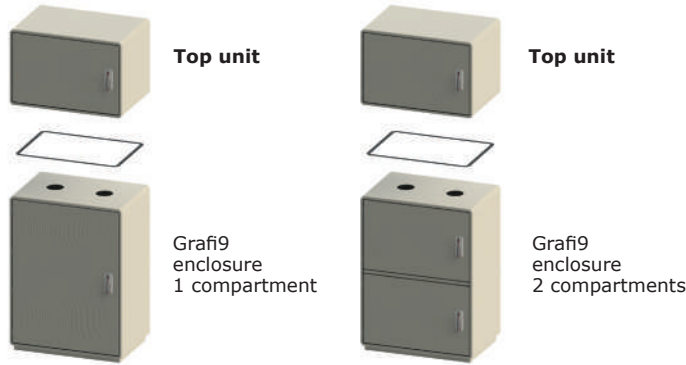
### CharacteristicsI

In electrolytically galvanized steel, complete with plate, removable and adjustable in depth, for moulded case circuit breakers. Drill holes the plate as per the fastening template of the moulded case circuit breakers used. Holes must be drilled in the opaque blank panel based on the front size of the moulded case circuit breaker.

Useful height compartment, mm	No. racks	Rack		In combination	
		Model	Code	Opaque blank panel	
				Model	Code
433	1	G9-2/CST/SC	095779864	G9-2/PC/P	095779658
658	1	G9-4/CST/SC	095779872	G9-4/PC/P	095779674

### Installation method

The top units can be installed on any type of enclosure of the corresponding series (Grafi9) and of the same depth. Installation is carried out easily by making holes in the fixing points already arranged on the enclosures and with the insertion of special seals to guarantee the necessary protection rating. Any passages between the bottom compartment and top unit must be made in situ as required. The arrangement for the installation of the top unit may be carried out directly in the factory on request. It is suitable for both IP44 and IP55 enclosures and is valid for all depths (330 - 460 mm).



#### Execution of top unit installation arrangement with 2 holes

##### Bottom compartment:

- 4 fastening holes
- 2 holes (Ø 85) for cable passage

##### Top compartment (top unit):

- 4 fastening holes
- 2 holes (Ø 76) for securing the conical membrane

**Provided:** Compartment fastening screws/seal/2 conical membranes.

Model	Code	Description
G-EA/MS/I	097770002	Execution of slotted roof for installing enclosure
G-EA/MS/S	097770010	Execution of slotted top unit for installation on enclosure



#### Execution of preparation for installation of top unit with maximum clearance

Application envisages the realization of enclosures with fully open slots and realization of the corresponding slot on the top unit which will be installed above.

##### Bottom compartment:

- 4 fastening holes
- 1 single slot for cable passage

##### Top compartment (top unit):

- 4 fastening holes
- 1 single slot

**Provided:** Compartment fastening screws/seal

Model	Code	Slot size Depth 330 mm	Slot size Depth 460 mm	Description
G-EA/MSA/I	097770044	650x225	650x305	Application of an insulated roof for overlap top unit
G-EA/MSA/S	097770051	685x260	685x340	Execution of raising slotted top unit application to overlap on the lower compartment

### Warning



Separation partitions can also be requested with or without cable passage to integrate execution, to be selected from the normal envisaged accessories. G9/SIC o GH9/SIC (blank partition) - G9/SIM OR GH9/SIM (partition with conical membranes).

The top units may be installed on the floor using the relative plinth envisaged in the series and of the same depth. The fixing frame must be requested separately. Also in this case it is possible to request arrangement in the factory of hole drilling for cable passage into the top units (G-EA/MS/S or G-EA/MSA/S).



**Standard ordering kit for panels realization with modular devices accessories**

For a quick composition of the accessories for the realization of panels it is necessary to request: **Upright/bracket kit + Frame/Panels/Rack kit.**

REFERENCE TOP UNIT				Upright/Bracket kit	Frame/Panels/Rack kit
IP55		IP44			
					Compartment "a"
Model	Code	Model	Code	Code	Code
<b>Depth mm 330</b>					
G9-2/2/S	077902906	G9-2/2/S-4	078902905	095773321	095779294
G9-4/4/S	077904902	G9-4/4/S-4	078904901	095773347	095779492
G9-4/4A/S	077904910	G9-4/4A/S-4	078904919	095773347	095779492
G9-5/5/S	077905909	G9-5/5/S-4	078905908	095773354	095779591
<b>Depth mm 460</b>					
GH9-2/2/S	077912905	GH9-2/2/S-4	078912904	095774626	095779294
GH9-4/4/S	077914901	GH9-4/4/S -4	078914900	095774642	095779492
GH9-4/4A/S	077914919	GH9-4/4A/S -4	078914918	095774642	095779492
GH9-5/5/S	077915908	GH9-5/5/S-4	078915907	095774659	095779591

**How to order**

To order the kits for making panels you need simply to know the code of the top unit and select the codes of the order kits corresponding to the reference top unit code. Example: Top unit code 077912905.

**Corresponding kits:**

- Uprights/Brackets Kit: code 095774626
- Frame/Panels/Racks kit for compartment "a" code 095779294

**N.B. All panels provided in the Frame/Panels/Rack kit are slotted. Any requests for blank panels must be integrated separately.**

For more details on the composition of internal accessories see the dedicated section.

**Maximum load applicable on the bottom partition/Usable protected space for equipment/Thermal energy dissipation, page 145**

Accessories and spare parts common to the whole Graf9 series:

**Ventilation units, page 190**

## Enclosure 1 compartment



### Characteristics

Overall height sizes available: 715mm - 940mm - 1180mm - 1390mm- for two depths: 330mm - 460mm.

Rated insulation voltage  $U_i$  690V.

Complete with fixing frame for installation on a concrete base. Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder-customized cipher on request).

Door opening side can be changed on site even on a single compartment (for detailed information consult the accessories selection).

Can be equipped with mounting plates and dedicated accessories for creating panels.

Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.

Closing bottom plate with conical fairleads and seal (only IP55 versions).

### Materials

Made of fiberglass RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4

	External dimensions, mm			Internal dimensions, mm			Door dimension, mm	IP	Model	Code
	Height	Width	Depth	Height	Width	Depth				
	**715	910	330	a= 658	892	298	599x820	IP55	G9-4/4/T	077904100
		910	460	a= 658	892	428	599x820	IP44	G9-4/4/T-4	078904109
	**715	910	330	a= 658	892	298	599x820	IP55	GH9-4/4/T	077914109
		910	460	a= 658	892	428	599x820	IP44	GH9-4/4/T-4	078914108
	**715	910	330	a= 658	892	298	599x820	IP55	G9-4/4A/T	077904118
		910	460	a= 658	892	428	599x820	IP44	G9-4/4A/T-4	078904117
	**715	910	330	a= 658	892	298	599x820	IP55	GH9-4/4A/T*	077914117
		910	460	a= 658	892	428	599x820	IP44	GH9-4/4A/T-4*	078914116
	**940	910	330	a= 883	892	298	824x820	IP55	G9-5/5/T	077905107
		910	460	a= 883	892	428	824x820	IP44	G9-5/5/T-4	078905106
	**940	910	330	a= 883	892	298	824x820	IP55	GH9-5/5/T	077915106
		910	460	a= 883	892	428	824x820	IP44	GH9-5/5/T -4	078915105
	**940	910	330	a= 883	892	298	824x820	IP55	G9-5/5A/T*	077905115
		910	460	a= 883	892	428	824x820	IP44	G9-5/5A/T-4 *	078905114
	**940	910	330	a= 883	892	298	824x820	IP55	GH9-5/5A/T*	077915114
		910	460	a= 883	892	428	824x820	IP44	GH9-5/5A/T-4*	078915113
	1180	910	330	a= 1130	892	298	1064x820	IP55	G9-7//7/T	077907103
		910	460	a= 1130	892	428	1064x820	IP44	G9-7//7/T-4	078907102
	1180	910	330	a= 1130	892	298	1064x820	IP55	GH9-7/7/T	077917102
		910	460	a= 1130	892	428	1064x820	IP44	GH9-7/7/T-4	078917101
	1390	910	330	a= 1340	892	298	1274x820	IP55	G9-8/8/T	077908101
		910	460	a= 1340	892	428	1274x820	IP44	G9-8/8/T-4	078908100
	1390	910	330	a= 1340	892	298	1274x820	IP55	GH9-8/8/T	077918100
		910	460	a= 1340	892	428	1274x820	IP44	GH9-8/8/T-4	078918109

\* Double door

\*\* Models that can also be realized in wall version see Accessories section on page 177

## 1 compartment with integrated plinth




### Characteristics


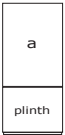
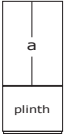

Made with 1 compartment + lower plinth integrated into a single support structure.  
Overall height sizes available: 940mm - 1390mm - 1840mm - for two depths: 330mm - 460mm.  
Rated insulation voltage  $U_i$  690V.  
Complete with fixing frame for installation on a concrete base. Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder-customized cipher on request). Door opening side can be changed on site even on a single compartment (for detailed information consult the accessories selection).  
Can be equipped with mounting plates and dedicated accessories for creating panels.  
Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories. Closing bottom plate with conical fairleads and seal (only IP55 versions).

### Materials

Made of fiberglass RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4 .

	External dimensions, mm			Internal dimensions, mm			Plinth height mm	Door dimension mm	IP	Model	Code
	Height	Width	Depth	Height	Width	Depth					
	940	910	330	a= 433	892	298	490	374x820	IP55	G9-5/22/ZT	077905198
		910	460	a= 433	892	428		374x820	IP44	G9-5/22/ZT-4	078905197
	1390	910	330	a= 883	892	298	490	824x820	IP55	G9-8/25/ZT	077908192
		910	460	a= 883	892	428		824x820	IP44	G9-8/25/ZT-4	078908191
	1390	910	330	a= 883	892	298	490	824x820	IP55	G9-8/25A/ZT*	077908184
		910	460	a= 883	892	428		824x820	IP44	G9-8/25A/ZT-4*	078908183
	1840	910	330	a= 1340	892	298	490	1274x820	IP55	G9-9/28/ZT	077909190
		910	460	a= 1340	892	428		1274x820	IP44	G9-9/28/ZT-4	078909199

\* Double door

## Mounting plates



### Characteristics

Can be applied to the bottom of the enclosure using special threaded inserts with M6x20 stud bolts or in conjunction with switchgear risers or racks using the dedicated fixing brackets. Available in: Pre-galvanized steel - thickness 2 mm; bakelite - thickness 5 mm; PVC - thickness 5 mm. Must be chosen to suit the size of the compartment in question.

Useful height mm	Plate dimensions mm	Steel (2mm thick)		Bakelite (5 mm thick)		PVC (5 mm thick)	
		Model	Code	Model	Code	Model	Code
433	785x355	G9/2/PA	095779013	G9/2/PB	095779112	G9/2/PP	095779211
658	785x580	G9/4/PA	095779021	G9/4/PB	095779120	G9/4/PP	095779229
883	785x805	G9/5/PA	095779039	G9/5/PB	095779138	G9/5/PP	095779237
1130	785x1030 (supplied in 2 pcs)	G9/7/PA	095779047	G9/7/PB	095779146	G9/7/PP	095779245
1340	785x1240 (supplied in 2 pcs)	G9/8/PA	095779054	G9/8/PB	095779153	G9/8/PP	095779252

## Closing bottom plate

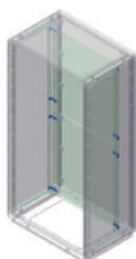


### Characteristics

Made of 3 mm thick bakelite, it is installed in the lower part of the enclosures to provide additional protection for the compartment where the cable input channels are situated. Available in the blank version so that the required holes can be made during installation or complete with 3 conical fairleads (max. diam. 76). In IP55 enclosures the partition is provided as standard.

Enclosure depth mm	Blank plate		Plate with conical fairleads	
	Model	Code	Model	Code
330	G9/SIC	095779401	G9/SIM	095779427
460	GH9/SIC	095779450	GH9/SIM	095779476

## Brackets kit for supporting the bottom partitions on the uprights

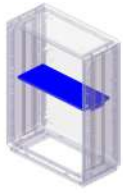


### Characteristics

Made from steel. To be used together with an uprights kit and brackets kit for installing the depth-adjustable plate. If uprights and brackets kits are envisaged for supporting modular equipment, a further uprights kit without the upright support brackets kit is required. Suitable for all types of plate. For plates provided in 2 parts, 2 bracket kits are required.

Description	Model	Code
Brackets kit for support plates on uprights (4 pcs)	G/SP/MT	095770921

## Pre-galvanized sheet metal equipment holding shelves

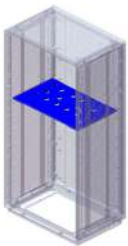


### Characteristics

To be installed using 2 upright kits G-../MT (selected based on the overall height) and 1 brackets kit G/SM or GH/SM. These are complete with 2 brackets for application of shelves. To be selected based on enclosure depth.

Enclosure depth mm	Overall shelves dimension, mm			Shelves	
	Height	Width	Depth	Model	Code
330	225	815	17	G9/RP	095779633
460	355	815	17	GH9/RP	095779641

## Fiberglass equipment holding shelves



### Characteristics

To be installed using 2 G-../MT uprights (selected based on the overall height), 1 GH/SM brackets kit and 1 GH/SRP/A-L brackets kit. To be chosen in width to the depth of the enclosure.

Enclosure depth mm	Overall shelves dimension, mm			Max capacity, kg	Shelf		Combination with bracket (2 PCS)	
	Height	Width	Depth		Model	Code	Model	Code
460	360	675	12	20	RPL/CVL	095751251	GH/SRP/A-L	095777397

## Accessories for creating modular equipment panels

For creating panels inside enclosures, you must order:

- Uprights kit + brackets kit for the realization of modular equipment panels
- Frame/framework for supporting modular equipment plates
- Modular equipment support rack
- Blank and slotted plates
- Mounting plate/brackets kit for arranging the modular equipment support racks (Optional)

## Uprights kit + brackets kit for the realization of modular equipment panels



### Characteristics

Steel uprights set up with holes for fastening modular panel frames, equipment holding racks, mounting plates. Brackets for upright supports made from steel. The kit must be selected based on the depth and overall height of the enclosure regardless of the number and layout of compartments.

Enclosure overall height mm	Uprights (2 pieces)		Uprights support brackets (4 pieces)			
	Model	Code	Depth 330 mm		Depth 460 mm	
			Model	Code	Model	Code
490	G-2/MT	095770020	G/SM	095770905	GH/SM	095770913
715	G-4/MT	095770046				
940	G-5/MT	095770053				
1180	G-7/MT	095770079				
1390	G-8/MT	095770087	N.B. The support brackets can be used on all heights of upright kits and up to an overall number of three kits.			
1840	G-9/MT	095770095				

## Frame/framework for supporting modular equipment panels

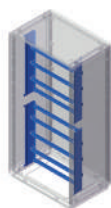


### Characteristics

Made from self-extinguishing thermoplastic material, grey RAL 7035 color. Designed to be fastened onto the uprights kit. To be selected based on the usable height of the individual compartment. In the case of multiple compartments, the individual compartment can also be fitted out.

Useful height compartment, mm	No. Installable panels (Blank or slotted)	Max. No. DIN modules available	Frame/framework	
			Model	Code
433	2	80	G9/2/TPM	095779708
658	3	120	G9/4/TPM	095779716
883	4	160	G9/5/TPM	095779724
1130	6	240	G9/7/TPM	095779732
1340	6	240	G9/8/TPM	095779740

## Modular equipments support rack



### Characteristics

Made from steel, can be removed from the enclosure to facilitate execution of the panel; assembly and wiring of the various equipment can be carried out on a work bench. Designed to be fastened onto the uprights kit.

Complete with DIN 46 277/3 profiles.

To be selected in combination with the relative panels support frame/framework.

Useful height compartment, mm	Modular equipment support rack		no. pieces installable	In combination with frame/framework	
	Model	Code		Model	Code
433	G9/2-5/CST	095779807	1	G9/2/TPM	095779708
658	G9/4-8/CST	095779815	1	G9/4/TPM	095779716
883	G9/2-5/CST	095779807	2	G9/5/TPM	095779724
1130	G9/7/CST	095779823	2	G9/7/TPM	095779732
1340	G9/4-8/CST	095779815	2	G9/8/TPM	095779740

## Blank or slotted panels

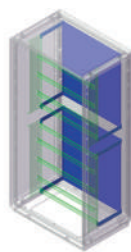


### Characteristics

Made from thermoplastic material. Suitable for Graf9 enclosures. To be applied on the modular equipment support rack.

Panels	Description	Model	Code
Blank		G9/PC	095779609
Slotted	40 DIN modules (17,5mm) for each panel	G9/PM/40	095779625

## Mounting plate/brackets kit for arranging the modular equipment support racks



### Characteristics

Kit made up of 4 brackets and 1 closing bottom plate. Brackets and plate made from steel. Plates thickness 2mm. To be used together with the modular equipment support racks for fixing any non-modular components on the back of the panel. To be selected based on the equipment support rack and enclosure depth (330 - 460 mm).

Modular equipment support rack		Enclosure depth mm	Rack/plate distance	Bracket/plate Kit	
Model	Code			Model	Code
G9/2-5/CST	095779807	330	85	G9/2-5/PACST	095779831
		460	215	GH9/2-5/PACST	095779906
G9/4-8/CST	095779815	330	85	G9/4-8/PACST	095779856
		460	215	GH9/4-8/PACST	095779922
G9/7/CST	095779823	330	85	G9/7/PACST	095779849
		460	215	GH9/7/PACST	095779914



## Trasparent internal door



### Characteristics

Made up of a partition in transparent self-extinguishing thermoplastic material (polycarbonate) and 2 black fibreglass reinforced polyamide (PA) hinges.

Hinge fastening screws in AISI304 stainless steel and 2 self-tapping captive screws.

To be applied on uprights kit, brackets kit and frame/framework to make modular equipment panels. To be selected based on the usable height of the individual compartment.

Useful height compartment mm	Internal door dimension, mm	No. internal door	Trasparent internal door		Drilling execution frame/framework		in combination*
			Model	Code	Model	Code	Frame/framework
							Code
658	796x450	1	G9-4/CNT	095779963	G-EA/CNPT	097770192	095779716
883	796x300	2	G9-2/CNT	095779948			095779724
1130	796x450	2	G9-4/CNT	095779963			095779732
1340	796x450	2	G9-4/CNT	095779963			095779740

\*Used together with uprights kit + brackets kit to be selected based on the depth and overall height of the enclosure regardless of the number and arrangement of compartments (see page 119).

## Opaque internal door



### Characteristics

Panel made in self-extinguishing thermoplastic material (ABS), grey RAL7035 color, 2 black fibreglass reinforced polyamide (PA) hinges.

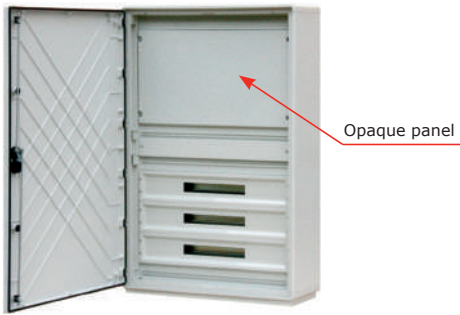
Hinge fastening screws in AISI304 stainless steel and 2 self-tapping captive screws.

To be applied on uprights kit, brackets kit and frame/framework to make modular equipment panels. To be selected based on the usable height of the individual compartment.

Useful height compartment mm	Internal door dimension, mm	No. internal door	Opaque blank panel		Drilling execution frame/framework		in combination*
			Model	Code	Model	Code	Frame/framework
							Code
658	796x450	1	G9-4/CNP	095779955	G-EA/CNPT	097770192	095779716
883	796x300	2	G9-2/CNP	095779930			095779724
1130	796x450	2	G9-4/CNP	095779955			095779732
1340	796x450	2	G9-4/CNP	095779955			095779740

\*Used together with uprights kit + brackets kit to be selected based on the depth and overall height of the enclosure regardless of the number and arrangement of compartments (see page 119).

## Opaque blank panel



### Characteristics

Panel made in self-extinguishing thermoplastic material (ABS), grey RAL7035 color, 2 black fibreglass reinforced polyamide (PA) hinges. To be applied on uprights kit, brackets kit and frame/framework to make modular equipment panels. To be selected based on the usable height of the individual compartment.

Useful height compartment, mm	Panel dimension, mm	No. panels	Opaque blank panel		in combination*
			Model	Code	Frame/framework
					Code
658	796x450	1	G9-4/PC/P	095779674	095779716
883	796x300	2	G9-2/PC/P	095779658	095779724
1130	796x450	2	G9-4/PC/P	095779674	095779732
1340	796x450	2	G9-4/PC/P	095779674	095779740

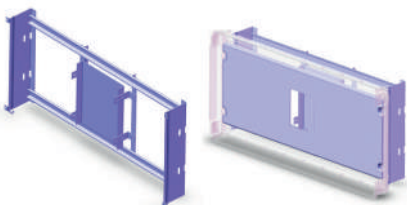
\*Used together with uprights kit + brackets kit to be selected based on the depth and overall height of the enclosure regardless of the number and arrangement of compartments (see page 119).

## Trasparent blank panel

Useful height compartment, mm	Panel dimension, mm	No. panels	Trasparent blank panel		in combination*
			Model	Code	Frame/framework
					Code
658	796x450	1	G9-4/PC/T	095779682	095779716
883	796x300	2	G9-2/PC/T	095779666	095779724
1130	796x450	2	G9-4/PC/T	095779682	095779732
1340	796x450	2	G9-4/PC/T	095779682	095779740

\*Used together with uprights kit + brackets kit to be selected based on the depth and overall height of the enclosure regardless of the number and arrangement of compartments (see page 119).

## Functional unit for MCCB





### CharacteristicsI

In electrolytically galvanized steel, complete with plate, removable and adjustable in depth, for moulded case circuit breakers. Drill holes the plate as per the fastening template of the moulded case circuit breakers used. Holes must be drilled in the opaque blank panel based on the front size of the moulded case circuit breaker.

Useful height compartment, mm	No. rack	Rack		in combination	
		Model	Code	Opaque blank panel	
				Model	Code
658	1	G9-4/CST/SC	095779872	G9-4/PC/P	095779674

## Standard ordering kit for panels realization with modular devices accessories

For a quick composition of the accessories for the realization of panels it is necessary to request: **Upright/bracket kit + Frame/Panels/Rack kit.**

REFERENCE ENCLOSURE				Upright/Bracket kit	Frame/Panels/Rack kit
IP55		IP44			
				Compartment "a"	
Model	Code	Model	Code	Code	Code
<b>Depth mm 330</b>					
G9-4/4/T	077904100	G9-4/4/T-4	078904109	095773347	095779492
G9-4/4A/T	077904118	G9-4/4A/T-4	078904117	095773347	095779492
G9-5/5/T	077905107	G9-5/5/T-4	078905106	095773354	095779591
G9-5/5A/T	077905115	G9-5/5A/T-4	078905114	095773354	095779591
G9-7//7/T	077907103	G9-7//7/T-4	078907102	095773370	095779799
G9-8/8/T	077908101	G9-8/8/T-4	078908100	095773388	095779898
G9-5/22/ZT	077905198	G9-5/22/ZT-4	078905197	095773354	095779294
G9-8/25/ZT	077908192	G9-8/25/ZT-4	078908191	095773388	095779591
G9-8/25A/ZT	077908184	G9-8/25A/ZT-4	078908183	095773388	095779591
G9-9/28/ZT	077909190	G9-9/28/ZT-4	078909199	095773396	095779898
<b>Depth mm 460</b>					
GH9-4/4/T	077914109	GH9-4/4/T -4	078914108	095774642	095779492
GH9-4/4A/T	077914117	GH9-4/4A/T -4	078914116	095774642	095779492
GH9-5/5/T	077915106	GH9-5/5/T-4	078915105	095774659	095779591
GH9-5/5A/T	077915114	GH9-5/5A/T-4	078915113	095774659	095779591
GH9-7/7/T	077917102	GH9-7/7/T-4	078917101	095774675	095779799
GH9-8/8/T	077918100	GH9-8/8/T-4	078918109	095774683	095779898
GH9-5/22/ZT	077915197	GH9-5/22/ZT-4	078915196	095774659	095779294
GH9-8/25/ZT	077918191	GH9-8/25/ZT-4	078918190	095774683	095779591
GH9-8/25A/ZT	077918183	GH9-8/25A/ZT-4	078918182	095774683	095779591
GH9-9/28/ZT	077919199	GH9-9/28/ZT-4	078919198	095774691	095779898

### How to order

To order the kits for making panels you need simply to know the code of the 1 compartment enclosure - 1 compartment with integrated plinth and select the codes of the order kits corresponding to the reference enclosure code. Example: Enclosure code 077905107.

### Corresponding kits:

- Uprights/Brackets Kit: code 095773354
- Frame/Panels/Racks kit for compartment "a" code 095779591.

**N.B. All panels provided in the Frame/Panels/Rack kit are slotted. Any requests for blank panels must be integrated separately.**

**Maximum load applicable on the bottom partition / Usable protected space for equipment / Thermal energy dissipation, page 146**

Accessories and spare parts common to the whole Graf9 series:

**Ventilation units, page 190**

**Anchor frame, page 189**

## 1 compartment enclosure with counter compartment



### Characteristics

Overall height sizes available: 1390mm with depth: 460mm.

Rated insulation voltage Ui 690V.

Complete with fixing frame for installation on a concrete base. Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder - customized cipher on request).

Door opening side can be changed on site.

Can be equipped with mounting plates and dedicated accessories for creating panels. Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.

With built-in contact box on the right-hand side independent access with a diversified lock (standard, triangular, lukeable). **Suitable for direct mounting of electronic meters:**

- max n°1 integrated single-phase measuring group, GMI-GMY type.

- max n°1 single phase for powers up to 10Kw GEM-GISM type. Fixing with no.1 base T5 A2 (serial number 286103).

- max n°1 three-phase for powers up to 16.5Kw type GET2A, up to 30Kw type GIST. Fixing with n°1 base T5 A4 (Serial number 286142).


IP43 degree of protection according to CEI EN 60529, IK10 according to CEI EN 62262.

For self-standing installation with masonry frame.

### Materials

Made of RAL 7035 coloured berglass-reinforced plastic. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Galvanized and painted steel frame. Concealed external hinges in stainless steel. Seals in foamed EPDM.

### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4 .

External dimensions, mm			Internal dimensions, mm			Door dimension mm	Counter compartment dimension, mm			IP	Model	Code
Height	Width	Depth	Height	Width	Depth		Height	Width	Depth			
1390	910	460	a = 1340	892	428	1274x820	375	182	182	IP44	GH9-8/8/GMI/T-4	078918356

## 2 compartments enclosures



### Characteristics

Can be equipped with mounting plates and dedicated accessories for creating panels.  
 Made with 2 equipment compartments separated by an intermediate partition.  
 Overall height sizes available: 940mm – 1390mm – 1840mm for two depths: 330mm – 460mm.  
 Rated insulation voltage  $U_i$  690V.

Complete with fixing frame for installation on a concrete base. Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder-customized cipher on request).

Door opening side can be changed on site even on a single compartment (for detailed information consult the accessories selection). Arrangement of the compartments (upper/lower) modifiable on site according to the need for installation of internal equipment and accessories (DOTPER® system).

Can be equipped with mounting plates and dedicated accessories for creating panels.  
 Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.

Closing bottom plate with conical fairleads and seal (only IP55 versions).

### Materials

Made of fiberglass RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4

External dimensions, mm			Internal dimensions, mm			Door dimension mm	IP	Model	Code		
Height	Width	Depth	Height	Width	Depth						
 b a	**940	910	330	a-b= 433	892	298	374x820	IP55	G9-5/22/T	077905206	
		910	460	a-b= 433	892	428	374x820	IP44	G9-5/22/T-4	078905205	
	 b a	1390	910	330	a-b= 658	892	298	599x820	IP55	GH9-5/22/T	077915205
			910	460	a-b= 658	892	428	599x820	IP44	GH9-5/22/T-4	078915204
 b a	1390	910	330	a-b= 658	892	298	599x820	IP55	G9-8/44/T	077908200	
		910	460	a-b= 658	892	428	599x820	IP44	G9-8/44/T-4	078908209	
	 b a	1390	910	330	a-b= 658	892	298	599x820	IP55	GH9-8/44/T	077918209
			910	460	a-b= 658	892	428	599x820	IP44	GH9-8/44/T-4	078918208
 b a	1390	910	330	a-b= 658	892	298	599x820	IP55	G9-8/44A/T*	077908226	
		910	460	a-b= 658	892	428	599x820	IP44	G9-8/44A/T-4*	078908225	
	 b a	1390	910	330	a= 883 b= 433	892	298	824x820 374x820	IP55	GH9-8/44A/T*	077918225
			910	460	a= 883 b= 433	892	428	824x820 374x820	IP44	GH9-8/44A/T-4*	078918224
 b a	1840	910	330	a-b= 883	892	298	824x820	IP55	G9-8/52/T	077908218	
		910	460	a-b= 883	892	428	824x820	IP44	G9-8/52/T-4	078908217	
	 b a	1840	910	330	a= 883 b= 433	892	298	824x820 374x820	IP55	GH9-8/52/T	077918217
			910	460	a= 883 b= 433	892	428	824x820 374x820	IP44	GH9-8/52/T-4	078918216
 b a	1840	910	330	a-b= 883	892	298	824x820	IP55	G9-9/55/T	077909208	
		910	460	a-b= 883	892	428	824x820	IP44	G9-9/55/T-4	078909207	
	 b a	1840	910	330	a-b= 883	892	298	824x820	IP55	GH9-9/55/T	077919207
			910	460	a-b= 883	892	428	824x820	IP44	GH9-9/55/T-4	078919206
 b a	1840	910	330	a= 1340 b= 433	892	298	1274x820 374x820	IP55	G9-9/82/T	077909216	
		910	460	a= 1340 b= 433	892	428	1274x820 374x820	IP44	G9-9/82/T-4	078909215	
	 b a	1840	910	330	a= 1340 b= 433	892	298	1274x820 374x820	IP55	GH9-9/82/T	077919215
			910	460	a= 1340 b= 433	892	428	1274x820 374x820	IP44	GH9-9/82/T-4	078919214
2080	910	330	a= 1340 b= 658	892	298	1274x820	IP44	G9-S/84/T-4***	078909504		
		460	428		599x820	078919503					

\* Double door

\*\* Models can also be realized in wall version see Accessories section on page 177

\*\*\* Double compartment executions with complete reported raising with sealing gasket;  
 Cable passage made with 3 tapered diaphragms diam. 76 mm.

## 2 compartments enclosures with integrated plinth



### Characteristics

Made with 2 compartments separated by an intermediate partition + lower base integrated into a single support structure.

Overall height sizes available: 1390mm – 1840mm for two depths: 330mm – 460mm.

Rated insulation voltage  $U_i$  690V.

Complete with fixing frame for installation on a concrete base. Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder-customized cipher on request).

Door opening side can be changed on site even on a single compartment (for detailed information consult the accessories selection). Arrangement of the compartments (upper/lower) modifiable on site according to the need for installation of internal equipment and accessories (DOTPER® system).

Can be equipped with mounting plates and dedicated accessories for creating panels.


Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.

Closing bottom plate with conical fairleads and seal (only IP55 versions).

### Materials

Made of fiberglass RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4 .

	External dimensions, mm			Internal dimensions, mm			Plinth height mm	Door dimension mm	IP	Model	Code			
	Height	Width	Depth	Height	Width	Depth								
<table border="1" style="border-collapse: collapse; width: 100%;"> <tr><td>b</td></tr> <tr><td>a</td></tr> <tr><td>plinth</td></tr> </table>	b	a	plinth	1390	910	330	a-b=433	892	298	490	374x820	IP55	G9-8/222/ZT	077908291
	b													
	a													
	plinth													
IP44	G9-8/222/ZT-4	078908290												
910	460	a-b=433	892	428	374x820	IP55	GH9-8/222/ZT	077918290						
		IP44				GH9-8/222/ZT-4	078918299							
<table border="1" style="border-collapse: collapse; width: 100%;"> <tr><td>b</td></tr> <tr><td>a</td></tr> <tr><td>plinth</td></tr> </table>	b	a	plinth	1840	910	330	a= 883 b= 433	892	298	490	824x820 374x820	IP55	G9-9/252/ZT	077909281
	b													
	a													
	plinth													
IP44	G9-9/252/ZT-4	078909280												
910	460	a= 883 b= 433	892	428	824x820 374x820	IP55	GH9-9/252/ZT	077919280						
		IP44				GH9-9/252/ZT-4	078919289							
<table border="1" style="border-collapse: collapse; width: 100%;"> <tr><td>b</td></tr> <tr><td>a</td></tr> <tr><td>plinth</td></tr> </table>	b	a	plinth	1840	910	330	a-b=658	892	298	490	599x820	IP55	G9-9/244/ZT	077909299
	b													
	a													
	plinth													
IP44	G9-9/244/ZT-4	078909298												
910	460	a-b=658	892	428	599x820	IP55	GH9-9/244/ZT	077919298						
		IP44				GH9-9/244/ZT-4	078919297							



### Mounting plates



#### Characteristics

Can be applied to the bottom of the enclosure using special threaded inserts with M6x20 stud bolts or in conjunction with switchgear risers or racks using the dedicated fixing brackets. Available in: Pre-galvanized steel - thickness 2 mm; bakelite - thickness 5 mm; PVC - thickness 5 mm. Must be chosen to suit the size of the compartment in question.

Useful height mm	Plate dimensions mm	Steel (2mm thick)		Bakelite (5 mm thick)		PVC (5 mm thick)	
		Model	Code	Model	Code	Model	Code
433	785x355	G9/2/PA	095779013	G9/2/PB	095779112	G9/2/PP	095779211
658	785x580	G9/4/PA	095779021	G9/4/PB	095779120	G9/4/PP	095779229
883	785x805	G9/5/PA	095779039	G9/5/PB	095779138	G9/5/PP	095779237
1340	785x1240 (supplied in 2 pcs)	G9/8/PA	095779054	G9/8/PB	095779153	G9/8/PP	095779252

### Closing bottom plate

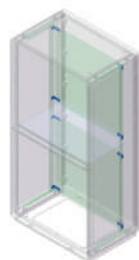


#### Characteristics

Made of 3 mm thick bakelite, it is installed in the lower part of the enclosures to provide additional protection for the compartment where the cable input channels are situated. Available in the blank version so that the required holes can be made during installation or complete with 3 conical fairleads (max. diam. 76). In IP55 enclosures the partition is provided as standard.

Enclosure depth mm	Blank partition		Partition with conical fairleads	
	Model	Code	Model	Code
330	G9/SIC	095779401	G9/SIM	095779427
460	GH9/SIC	095779450	GH9/SIM	095779476

### Brackets kit for supporting the mounting plate on the uprights

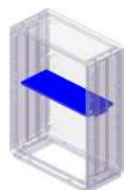


#### Characteristics

Made from steel. To be used together with an uprights kit and brackets kit for installing the depth-adjustable plate. If uprights and brackets kits are envisaged for supporting modular equipment, a further uprights kit without the upright support brackets kit is required. Suitable for all types of plate. For plates provided in 2 parts, 2 bracket kits are required.

Description	Model	Code
Brackets kit for support plates on uprights (4 pcs)	G/SP/MT	095770921

### Pre-galvanized sheet metal equipment holding shelves



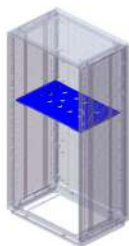
#### Characteristics

To be installed using 2 upright kits G-./MT (selected based on the overall height) and 1 brackets kit G/SM or GH/SM. These are complete with 2 brackets for application of shelves. To be selected based on enclosure depth.

Enclosure depth mm	Overall shelves dimension, mm			Shelves	
	Height	Width	Depth	Model	Code
330	225	815	17	G9/RP	095779633
460	355	815	17	GH9/RP	095779641



## Fiberglass equipment holding shelves



### Characteristics

To be installed using 2 G-./MT uprights (selected based on the overall height), 1 GH/SM brackets kit and 1 GH/SRP/A-L brackets kit.

To be chosen in width to the depth of the enclosure.

Enclosure depth mm	Overall shelves dimension, mm			Max capacity, kg	Shelf		Combination with bracket (2 PCS)	
	Height	Width	Depth		Model	Code	Model	Code
460	360	675	12	20	RPL/CVL	095751251	GH/SRP/A-L	095777397

## Accessories for creating modular equipment panels

For creating panels inside enclosures, you must order:

- Uprights kit + brackets kit for the realization of modular equipment panels
- Frame/framework for supporting modular equipment panels
- Modular equipment support rack
- Blank and slotted panels
- Mounting plate/brackets kit for arranging the modular equipment support racks (Optional)

## Uprights kit + brackets kit for the realization of modular equipment panels



### Characteristics

Steel uprights set up with holes for fastening modular panel frames, equipment holding racks, mounting plates. Brackets for upright supports made from steel. The kit must be selected based on the depth and overall height of the enclosure regardless of the number and layout of compartments.

Enclosure overall height mm	Uprights (2 pieces)		Uprights support brackets (4 pieces)			
	Model	Code	Depth 330 mm		Depth 460 mm	
			Model	Code	Model	Code
940	G-5/MT	095770053	G/SM	095770905	GH/SM	095770913
1390	G-8/MT	095770087	N.B. The support brackets can be used on all heights of upright kits and up to an overall number of three kits.			
1840	G-9/MT	095770095				

## Frame/framework for supporting modular equipment panels



### Characteristics

Made from self-extinguishing thermoplastic material, grey RAL 7035 color. Designed to be fastened onto the uprights kit. To be selected based on the usable height of the individual compartment. In the case of multiple compartments, the individual compartment can also be fitted out.

Useful height compartement, mm	No. Installable panels (Blank or slotted)	Max. No. DIN modules available	Frame/framework	
			Model	Code
433	2	80	G9/2/TPM	095779708
658	3	120	G9/4/TPM	095779716
883	4	160	G9/5/TPM	095779724
1340	6	240	G9/8/TPM	095779740

### Modular equipments support rack



**Characteristics**

Made from steel, can be removed from the enclosure to facilitate execution of the panel; assembly and wiring of the various equipment can be carried out on a work bench. Designed to be fastened onto the uprights kit.

Complete with DIN 46 277/3 profiles.

To be selected in combination with the relative panels support frame/framework.

Useful height compartment, mm	Modular equipment support rack		no. pieces installable	In combination with frame/framework	
	Model	Code		Model	Code
433	G9/2-5/CST	095779807	1	G9/2/TPM	095779708
658	G9/4-8/CST	095779815	1	G9/4/TPM	095779716
883	G9/2-5/CST	095779807	2	G9/5/TPM	095779724
1340	G9/4-8/CST	095779815	2	G9/8/TPM	095779740

### Blank or slotted panels



**Characteristics**

Made from thermoplastic material. Suitable for Graf9 enclosures. To be applied on the modular equipments support rack.

Panels	Description	Model	Code
Blank		G9/PC	095779609
Slotted	40 DIN modules (17,5mm) for each panel	G9/PM/40	095779625

### Mounting plate/brackets kit for arranging the modular equipment support racks



**Characteristics**

Kit made up of 4 brackets and 1 closing bottom plate. Brackets and plate made from steel. Plate thickness 2mm. To be used together with the modular equipments support racks for fixing any non-modular components on the back of the panel.

To be selected based on the equipment support rack and enclosure depth (330 - 460 mm).

Modular equipment support rack		Enclosure depth mm	Rack/plate distance	Bracket/plate Kit	
Model	Code			Model	Code
G9/2-5/CST	095779807	330	85	G9/2-5/PACST	095779831
		460	215	GH9/2-5/PACST	095779906
G9/4-8/CST	095779815	330	85	G9/4-8/PACST	095779856
		460	215	GH9/4-8/PACST	095779922

### Trasparent internal door



**Characteristics**

Made up of a partition in transparent self-extinguishing thermoplastic material (polycarbonate) and 2 black fibreglass reinforced polyamide (PA) hinges.

Hinge fastening screws in AISI304 stainless steel and 2 self-tapping captive screws.

To be applied on uprights kit, brackets kit and frame/framework to make modular equipment panels. To be selected based on the usable height of the individual compartment.

Useful height compartment, mm	Internal door dimension, mm	No. internal door	Trasparent internal door		Drilling execution frame/framework		in combination*	
			Model	Code	Model	Code	Frame/framework	Code
433	796x300	1	G9-2/CNT	095779948	G-EA/CNPT	097770192		095779708
658	796x450	1	G9-4/CNT	095779963				095779716
883	796x300	2	G9-2/CNT	095779948				095779724
1340	796x450	2	G9-4/CNT	095779963				095779740

\*Used together with uprights kit + brackets kit to be selected based on the depth and overall height of the enclosure regardless of the number and arrangement of compartments (see page 129).

### Opaque internal door



**Characteristics**

Panel made in self-extinguishing thermoplastic material (ABS), grey RAL7035 color, 2 black fibreglass reinforced polyamide (PA) hinges.

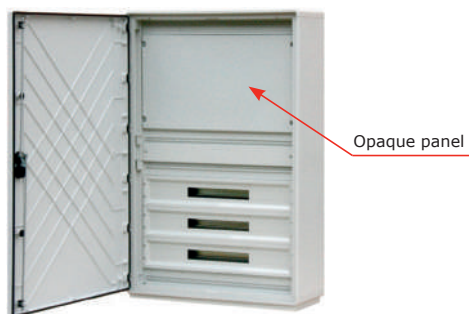
Hinge fastening screws in AISI304 stainless steel and 2 self-tapping captive screws.

To be applied on uprights kit, brackets kit and frame/framework to make modular equipment panels. To be selected based on the usable height of the individual compartment.

Useful height compartment mm	Internal door dimension, mm	No. internal door	Opaque blank panel		Drilling execution frame/framework		in combination*	
			Model	Code	Model	Code	Frame/framework	Code
433	796x300	1	G9-2/CNP	095779930	G-EA/CNPT	097770192		095779708
658	796x450	1	G9-4/CNP	095779955				095779716
883	796x300	2	G9-2/CNP	095779930				095779724
1340	796x450	2	G9-4/CNP	095779955				095779740

\*Used together with uprights kit + brackets kit to be selected based on the depth and overall height of the enclosure regardless of the number and arrangement of compartments (see page 129).

### Opaque blank panel



#### Characteristics

Panel made in self-extinguishing thermoplastic material (ABS), grey RAL7035 color, 2 black fibreglass reinforced polyamide (PA) hinges.

To be applied on uprights kit, brackets kit and frame/framework to make modular equipment panels. To be selected based on the usable height of the individual compartment.

Useful height compartment, mm	Panel dimension, mm	No. panels	Opaque blank panel		in combination*
			Model	Code	Frame/framework
					Code
433	796x300	1	G9-2/PC/P	095779658	095779708
658	796x450	1	G9-4/PC/P	095779674	095779716
883	796x300	2	G9-2/PC/P	095779658	095779724
1340	796x450	2	G9-4/PC/P	095779674	095779740

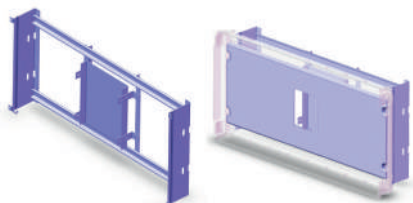
\*Used together with uprights kit + brackets kit to be selected based on the depth and overall height of the enclosure regardless of the number and arrangement of compartments (see page 129).

### Trasparent blank panel

Useful height compartment, mm	Panel dimension, mm	No. panels	Trasparent blank panel		in combination*
			Model	Code	Frame/framework
					Code
433	796x300	1	G9-2/PC/T	095779666	095779708
658	796x450	1	G9-4/PC/T	095779682	095779716
883	796x300	2	G9-2/PC/T	095779666	095779724
1340	796x450	2	G9-4/PC/T	095779682	095779740

\*Used together with uprights kit + brackets kit to be selected based on the depth and overall height of the enclosure regardless of the number and arrangement of compartments (see page 129).

### Functional unit for MCCB





#### Characteristics

In electrolytically galvanized steel, complete with plate, removable and adjustable in depth, for moulded case circuit breakers. Drill holes the plate as per the fastening template of the moulded case circuit breakers used. Holes must be drilled in the opaque blank panel based on the front size of the moulded case circuit breaker.

Useful height compartment, mm	No. rack	Rack		in combination	
		Model	Code	Opaque blank panel	
				Model	Code
433	1	G9-2/CST/SC	095779864	G9-2/PC/P	095779658
658	1	G9-4/CST/SC	095779872	G9-4/PC/P	095779674

### Standard ordering kit for panels realization with modular devices accessories

For a quick composition of the accessories for the realization of panels it is necessary to request: **Upright/bracket kit + Frame/Panels/Rack kit.**

REFERENCE ENCLOSURE				Upright/Bracket kit	Frame/Panels/Rack kit	
IP55		IP44				
Model	Code	Model	Code			
<b>Depth mm 330</b>						
G9-5/22/T	077905206	G9-5/22/T-4	078905205	095773354	095779294	095779294
G9-8/44/T	077908200	G9-8/44/T-4	078908209	095773388	095779492	095779492
G9-8/44A/T	077908226	G9-8/44A/T-4	078908225	095773388	095779492	095779492
G9-8/52/T	077908218	G9-8/52/T-4	078908217	095773388	095779591	095779294
G9-9/55/T	077909208	G9-9/55/T-4	078909207	095773396	095779591	095779591
G9-9/82/T	077909216	G9-9/82/T-4	078909215	095773396	095779898	095779294
		G9-S/84/T-4	078909504	Comp. "a" = 095773396 Comp. "b" = 095773388	095779898	095779492
G9-8/222/ZT	077908291	G9-8/222/ZT-4	078908290	095773388	095779294	095779294
G9-9/252/ZT	077909281	G9-9/252/ZT-4	078909280	095773396	095779591	095779294
G9-9/244/ZT	077909299	G9-9/244/ZT-4	078909298	095773396	095779492	095779492
<b>Depth mm 460</b>						
GH9-5/22/T	077915205	GH9-5/22/T-4	078915204	095774659	095779294	095779294
GH9-8/44/T	077918209	GH9-8/44/T-4	078918208	095774683	095779492	095779492
GH9-8/44A/T	077918225	GH9-8/44A/T-4	078918224	095774683	095779492	095779492
GH9-8/52/T	077918217	GH9-8/52/T-4	078918216	095774683	095779591	095779294
GH9-9/55/T	077919207	GH9-9/55/T-4	078919206	095774691	095779591	095779591
GH9-9/82/T	077919215	GH9-9/82/T-4	078919214	095774691	095779898	095779294
		GH9-S/84/T-4	078919503	Comp. "a" = 095774691 Comp. "b" = 095774683	095779898	095779492
GH9-8/222/ZT	077918290	GH9-8/222/ZT-4	078918299	095774683	095779294	095779294
GH9-9/252/ZT	077919280	GH9-9/252/ZT-4	078919289	095774691	095779591	095779294
GH9-9/244/ZT	077919298	GH9-9/244/ZT-4	078919297	095774691	095779492	095779492

#### How to order

To order the kits for making panels you need simply to know the code of the 2 compartments enclosures - 2 compartments with integrated plinth and select the codes of the order kits corresponding to the reference enclosure code. Example: Enclosure code 077908218.

#### Corresponding kits:

- Uprights/Brackets Kit: code 095773396
- Frame/Panels/Racks kit:
  - for compartment "a" code 095779591
  - for compartment "b" code 095779294.

In case you want to equip only a single compartment must always order the Upright/Brackets Kit + Frame/Panel/Rack Kit corresponding to the compartment to be accessorised.

**N.B. All panels provided in the Frame/Panels/Rack kit are slotted. Any requests for blank panels must be integrated separately.**

**Maximum load applicable on the bottom partition/Usable protected space for equipment/Thermal energy dissipation, page 147**

Accessories and spare parts common to the whole Graf9 series:

**Ventilation units, page 190**

**Anchor frame, page 189**

### 3/4 compartments enclosures

#### Characteristics

Made with 3/4 equipments compartments separated by an intermediate partition.  
Overall height sizes available: 1390mm - 1840mm for two depths: 330mm - 460mm.  
Rated insulation voltage Ui 690V.

Complete with fixing frame for installation on a concrete base. Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder-customized cipher on request).

Door opening side can be changed on site even on a single compartment (for detailed information consult the accessories selection). Arrangement of the compartments (upper/lower) modifiable on site according to the need for installation of internal equipment and accessories (DOTPER® system).

Can be equipped with mounting plates and dedicated accessories for creating panels.

Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.

Closing bottom plate with conical fairleads and seal (only IP55 versions).

#### Materials

Made of fiberglass RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

#### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4



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### 3 compartments

	External dimensions, mm			Internal dimensions, mm			Door dimension mm	IP	Model	Code			
	Height	Width	Depth	Height	Width	Depth							
<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>c</td></tr> <tr><td>b</td></tr> <tr><td>a</td></tr> </table>	c	b	a	1390	910	330	a-b-c= 433	892	298	374x820	IP55	G9-8/222/T	077908309
	c												
	b												
	a												
IP44	G9-8/222/T-4	078908308											
	910	460	a-b-c= 433	892	428	374x820	IP55	GH9-8/222/T	077918308				
							IP44	GH9-8/222/T-4	078918307				
<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>c</td></tr> <tr><td>b</td></tr> <tr><td>a</td></tr> </table>	c	b	a	1840	910	330	a= 883 b-c= 433	892	298	824x820 374x820	IP55	G9-9/522/T	077909307
	c												
	b												
	a												
IP44	G9-9/522/T-4	078909306											
	910	460	a= 883 b-c= 433	892	428	824x820 374x820	IP55	GH9-9/522/T	077919306				
							IP44	GH9-9/522/T-4	078919305				
<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>c</td></tr> <tr><td>b</td></tr> <tr><td>a</td></tr> </table>	c	b	a	1840	910	330	a-b= 658 c= 433	892	298	599x820 374x820	IP55	G9-9/442/T	077909315
	c												
	b												
	a												
IP44	G9-9/442/T-4	078909314											
	910	460	a-b= 658 c= 433	892	428	599x820 374x820	IP55	GH9-9/442/T	077919314				
							IP44	GH9-9/442/T-4	078919313				

### 4 compartments

	External dimensions, mm			Internal dimensions, mm			Door dimension mm	IP	Model	Code				
	Height	Width	Depth	Height	Width	Depth								
<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>d</td></tr> <tr><td>c</td></tr> <tr><td>b</td></tr> <tr><td>a</td></tr> </table>	d	c	b	a	1840	910	330	a-b-c-d= 433	892	298	374x820	IP55	G9-9/2222/T	077909406
	d													
	c													
	b													
a														
IP44	G9-9/2222/T-4	078909405												
	910	460	a-b-c-d= 433	892	428	374x820	IP55	GH9-9/2222/T	077919405					
							IP44	GH9-9/2222/T-4	078919404					

### 3 compartments enclosures with integrated plinth



#### Characteristics

Made with 3 compartments separated by an intermediate partition + lower base integrated into a single support structure.

Overall height size available: 1840mm for two depths: 330mm - 460mm.

Rated insulation voltage  $U_i$  690V.

Complete with fixing frame for installation on a concrete base. Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder-customized cipher on request).

Door opening side can be changed on site even on a single compartment (for detailed information consult the accessories selection). Arrangement of the compartments (upper/lower) modifiable on site according to the need for installation of internal equipment and accessories (DOTPER® system).

Can be equipped with mounting plates and dedicated accessories for creating panels.


Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.

Closing bottom plate with conical fairleads and seal (only IP55 versions).

#### Materials

Made of fiberglass RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

#### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4 .

	External dimensions, mm			Internal dimensions, mm			Plinth height mm	Door dimension mm	IP	Model	Code
	Height	Width	Depth	Height	Width	Depth					
c	1840	910	330	a-b-c= 433	892	298	490	374x820	IP55	G9-9/2222/ZT	077909398
b									IP44	G9-9/2222/ZT-4	078909397
a		910	460	a-b-c= 433	892	428		IP55	GH9-9/2222/ZT	077919397	
plinth								IP44	GH9-9/2222/ZT-4	078919396	



## Mounting plates



### Characteristics

Can be applied to the bottom of the enclosure using special threaded inserts with M6x20 stud bolts or in conjunction with switchgear risers or racks using the dedicated fixing brackets. Available in: Pre-galvanized steel - thickness 2 mm; bakelite - thickness 5 mm; PVC - thickness 5 mm. Must be chosen to suit the size of the compartment in question.

Useful height mm	Plate dimensions mm	Steel (2mm thick)		Bakelite (5 mm thick)		PVC (5 mm thick)	
		Model	Code	Model	Code	Model	Code
433	785x355	G9/2/PA	095779013	G9/2/PB	095779112	G9/2/PP	095779211
658	785x580	G9/4/PA	095779021	G9/4/PB	095779120	G9/4/PP	095779229
883	785x805	G9/5/PA	095779039	G9/5/PB	095779138	G9/5/PP	095779237

## Closing bottom plate



### Characteristics

Made of 3 mm thick bakelite, it is installed in the lower part of the cabinets to provide additional protection for the compartment where the cable input channels are situated. Available in the blank version so that the required holes can be made during installation or complete with 3 conical fairleads (max. diam. 76). In IP55 enclosures the plate is provided as standard.

Enclosure depth mm	Blank plate		Plate with conical fairleads	
	Model	Code	Model	Code
330	G9/SIC	095779401	G9/SIM	095779427
460	GH9/SIC	095779450	GH9/SIM	095779476

## Brackets kit for supporting the mounting plates on the uprights



### Characteristics

Made from steel. To be used together with an uprights kit and brackets kit for installing the depth-adjustable plate. If uprights and brackets kits are envisaged for supporting modular equipment, a further uprights kit without the upright support brackets kit is required.

Suitable for all types of plate. For plates provided in 2 parts, 2 bracket kits are required.

Model	Code	Description
G/SP/MT	095770921	Brackets kit for support plates on uprights (4 pcs)

## Pre-galvanized sheet metal equipment holding shelves



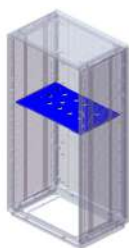
### Characteristics

To be installed using 2 upright kits G-../MT (selected based on the overall height) and 1 brackets kit G/SM or GH/SM.

These are complete with 2 brackets for application of shelves. To be selected based on enclosure depth.

Cabinet depth mm	Overall shelves dimension, mm			Shelves	
	Height	Width	Depth	Model	Code
330	225	815	17	G9/RP	095779633
460	355	815	17	GH9/RP	095779641

## Fiberglass equipment holding shelves



### Characteristics

To be installed using 2 G-../MT uprights (selected based on the overall height), 1 GH/SM brackets kit and 1 GH/SRP/A-L brackets kit.

To be chosen in width to the depth of the enclosure.

Enclosure depth mm	Overall shelves dimension, mm			Max capacity, kg	Shelf		Combination with bracket (2 PCS)	
	Height	Width	Depth		Model	Code	Model	Code
460	360	675	12	20	RPL/CVL	095751251	GH/SRP/A-L	095777397

## Accessories for creating modular equipment panels

For creating panels inside enclosures, you must order:

- Uprights kit + brackets kit for the realization of modular equipment panels
- Frame/framework for supporting modular equipment panels
- Modular equipment support rack
- Blank and slotted panels
- Mounting plate/brackets kit for arranging the modular equipment support racks (Optional)

## Uprights kit + brackets kit for the realization of modular equipment panels



### Characteristics

Steel uprights set up with holes for fastening modular panel frames, equipment holding racks, mounting plates. Brackets for upright supports made from steel. The kit must be selected based on the depth and overall height of the enclosure regardless of the number and layout of compartments.

Overall height mm	Uprights (2 pieces)		Uprights support brackets (4 pieces)			
	Model	Code	Depth 330 mm		Depth 460 mm	
			Model	Code	Model	Code
1390	G-8/MT	095770087	G/SM	095770905	GH/SM	095770913
1840	G-9/MT	095770095	N.B. The support brackets can be used on all heights of upright kits and up to an overall number of three kits.			

## Frame/framework for supporting modular equipments panels



### Characteristics

Made from self-extinguishing thermoplastic material, grey RAL 7035 color. Designed to be fastened onto the uprights kit. To be selected based on the usable height of the individual compartment. In the case of multiple compartments, the individual compartment can also be fitted out.

Useful height compartment, mm	No. Installable panels (Blank or slotted)	Max. No. DIN modules available	Frame/framework	
			Model	Code
433	2	80	G9/2/TPM	095779708
658	3	120	G9/4/TPM	095779716
883	4	160	G9/5/TPM	095779724

## Modular equipments support rack



#### Characteristics

Made from steel, can be removed from the enclosure to facilitate execution of the panel; assembly and wiring of the various equipment can be carried out on a work bench. Designed to be fastened onto the uprights kit.

Complete with DIN 46 277/3 profiles.

To be selected in combination with the relative panels support frame/framework.

Useful height compartment, mm	Modular equipment support rack		no. pieces installable	In combination with frame/framework	
	Model	Code		Model	Code
433	G9/2-5/CST	095779807	1	G9/2/TPM	095779708
658	G9/4-8/CST	095779815	1	G9/4/TPM	095779716
883	G9/2-5/CST	095779807	2	G9/5/TPM	095779724

## Blank or slotted panels



#### Characteristics

Made from thermoplastic material. Suitable for Graf9 enclosures. To be applied on the modular equipment support rack.

Panels	Description	Model	Code
Blank		G9/PC	095779609
Slotted	40 DIN modules (17,5mm) for each panel	G9/PM/40	095779625

## Mounting plate/brackets kit for arranging the modular equipment support racks



#### Characteristics

Kit made up of 4 brackets and 1 closing bottom plate. Brackets and plate made from steel. Plate thickness 2mm. To be used together with the modular equipment support racks for fixing any non-modular components on the back of the panel.

To be selected based on the equipment support rack and enclosure depth (330 - 460 mm).

Modular equipment support rack		Enclosure depth mm	Rack/plate distance	Bracket/plate Kit	
Model	Code			Model	Code
G9/2-5/CST	095779807	330	85	G9/2-5/PACST	095779831
		460	215	GH9/2-5/PACST	095779906
G9/4-8/CST	095779815	330	85	G9/4-8/PACST	095779856
		460	215	GH9/4-8/PACST	095779922

## Trasparent internal door



### Characteristics

Made up of a plate in transparent self-extinguishing thermoplastic material (polycarbonate) and 2 black fibreglass reinforced polyamide (PA) hinges.

Hinge fastening screws in AISI304 stainless steel and 2 self-tapping captive screws.

To be applied on uprights kit, brackets kit and frame/framework to make modular equipments panels. To be selected based on the usable height of the individual compartment.

Useful height mm	Internal door dimension, mm	No. second doors	Trasparent internal door		Drilling execution frame/framework		In combination*
			Model	Code	Model	Code	Frame/framework
							Code
433	796x300	1	G9-2/CNT	095779948	G-EA/CNPT	097770192	095779708
658	796x450	1	G9-4/CNT	095779963			095779716
883	796x300	2	G9-2/CNT	095779948			095779724

\*Used together with uprights kit + brackets kit to be selected based on the depth and overall height of the enclosure regardless of the number and arrangement of compartments (see page 137).

## Opaque internal door



### Characteristics

Panel made in self-extinguishing thermoplastic material (ABS), grey RAL7035 color, 2 black fibreglass reinforced polyamide (PA) hinges.

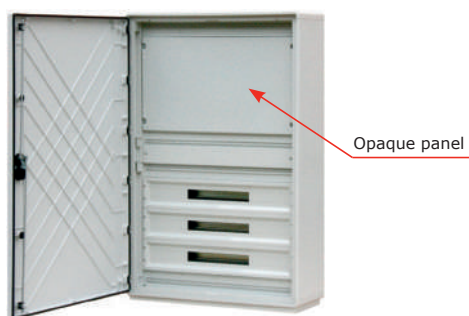
Hinge fastening screws in AISI304 stainless steel and 2 self-tapping captive screws.

To be applied on uprights kit, brackets kit and frame/framework to make modular equipment panels. To be selected based on the usable height of the individual compartment.

Useful height mm	Internal door dimension, mm	No. second doors	Opaque internal door		Drilling execution frame/framework		In combination
			Model	Code	Model	Code	Frame/framework
							Code
433	796x300	1	G9-2/CNP	095779930	G-EA/CNPT	097770192	095779708
658	796x450	1	G9-4/CNP	095779955			095779716
883	796x300	2	G9-2/CNP	095779930			095779724

\*Used together with uprights kit + brackets kit to be selected based on the depth and overall height of the enclosure regardless of the number and arrangement of compartments (see page 137).

## Opaque blank panel



#### Characteristics

Panel made in self-extinguishing thermoplastic material (ABS), grey RAL7035 color, 2 black fibreglass reinforced polyamide (PA) hinges.

To be applied on uprights kit, brackets kit and frame/framework to make modular equipment panels.

To be selected based on the usable height of the individual compartment.

Useful height compartment, mm	Panel dimension, mm	No. panels	Opaque blank panel		in combination*
			Model	Code	Frame/framework
					Code
433	796x300	1	G9-2/PC/P	095779658	095779708
658	796x450	1	G9-4/PC/P	095779674	095779716
883	796x300	2	G9-2/PC/P	095779658	095779724

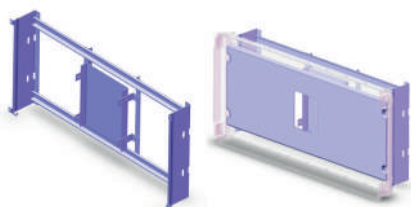
\*Used together with uprights kit + brackets kit to be selected based on the depth and overall height of the enclosure regardless of the number and arrangement of compartments (see page 137).

## Trasparent blank panel

Useful height compartment, mm	Panel dimension, mm	No. panels	Trasparent blank panel		in combination*
			Model	Code	Frame/framework
					Code
433	796x300	1	G9-2/PC/T	095779666	095779708
658	796x450	1	G9-4/PC/T	095779682	095779716
883	796x300	2	G9-2/PC/T	095779666	095779724

\*Used together with uprights kit + brackets kit to be selected based on the depth and overall height of the enclosure regardless of the number and arrangement of compartments (see page 137).

## Functional unit for MCCB



#### CharacteristicsI

In electrolytically galvanized steel, complete with plate, removable and adjustable in depth, for moulded case circuit breakers. Drill holes the plate as per the fastening template of the moulded case circuit breakers used. Holes must be drilled in the opaque blank panel based on the front size of the moulded case circuit breaker.

Useful height compartment, mm	No. racks	Rack		in combination	
		Model	Code	Opaque blank panel	
				Model	Code
433	1	G9-2/CST/SC	095779864	G9-2/PC/P	095779658
658	1	G9-4/CST/SC	095779872	G9-4/PC/P	095779674

## Standard ordering kit for panels realization with modular devices accessories

For a quick composition of the accessories for the realization of panels it is necessary to request: **Upright/bracket kit + Frame/Panels/Rack kit.**

REFERENCE ENCLOSURE				Upright/Bracket kit	Frame/Panels/Rack kit			
IP55		IP44						
Model	Code	Model	Code					
<b>Depth mm 330</b>								
G9-8/222/T	077908309	G9-8/222/T-4	078908308	095773388	095779294	095779294	095779294	
G9-9/522/T	077909307	G9-9/522/T-4	078909306	095773396	095779591	095779294	095779294	
G9-9/442/T	077909315	G9-9/442/T-4	078909314	095773396	095779492	095779492	095779294	
G9-9/2222/ZT	077909398	G9-9/2222/ZT-4	078909397	095773396	095779294	095779294	095779294	
G9-9/2222/T	077909406	G9-9/2222/T-4	078909405	095773396	095779294	095779294	095779294	095779294
<b>Depth mm 460</b>								
GH9-8/222/T	077918308	GH9-8/222/T-4	078918307	095774683	095779294	095779294	095779294	
GH9-9/522/T	077919306	GH9-9/522/T-4	078919305	095774691	095779591	095779294	095779294	
GH9-9/442/T	077919314	GH9-9/442/T-4	078919313	095774691	095779492	095779492	095779294	
GH9-9/2222/ZT	077919397	GH9-9/2222/ZT-4	078919396	095774691	095779294	095779294	095779294	
GH9-9/2222/T	077919405	GH9-9/2222/T-4	078919404	095774691	095779294	095779294	095779294	095779294

### How to order

To order the kits for making panels you need simply to know the code of the 3 compartments enclosure - 3 compartments with integrated plinth - 4 compartments and select the codes of the order kits corresponding to the reference cabinet code. Example: Enclosure code 077909307.

### Corresponding kits:

- Uprights/Brackets Kit: code 095773396
- Frame/Panels/Racks kit:
  - for compartment "a" code 095779591
  - for compartment "b" code 095779294
  - for compartment "c" code 095779294

In case you want to equip only a single compartment must always order the Upright/Brackets Kit + Frame/Panel/Rack Kit corresponding to the compartment to be accessorised.

**N.B. All panels provided in the Frame/Panels/Rack kit are slotted. Any requests for blank panels must be integrated separately.**

**Maximum load applicable on the mounting plate/Usable protected for equipment/Thermal energy dissipation, page 148**

Accessories and spare parts common to the whole Graf9 series:

**Ventilation units, page 190**

**Anchor frame, page 189**

## Enclosures without doors, customizable



### Characteristics

Made with the standard bearing structure but without door.

Overall height sizes available: 1390mm - 1840mm for two depths: 330mm - 460mm.

Can be used in conjunction with single "door kits" to create enclosures with multiple compartments in sizes and/or arrangements to suit specific requirements. Structure pre-engineered with hinges into which the individual doors can be fitted in the required positions.

Complete with fixing frame for installation on a concrete base. Can be equipped with mounting plates and dedicated accessories for creating switchgear.

Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories. Closing bottom plate with conical fairleads and seal available.

### Materials

Made of fiberglass in RAL7035 color. External non-accessible stainless steel hinges. Galvanized and painted steel frame. Seals made of expanded EPDM.

### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4 .

External dimensions, mm			Internal dimensions, mm			IP	Model	Code
Height	Width	Depth	Height	Width	Depth			
1390	910	330		892	298	IP55	G9-8/T	077908002
	910	460		892	428	IP55	GH9-8/T	077918001
1840	910	330		892	298	IP55	G9-9/T	077909000
	910	460		892	428	IP55	GH9-9/T	077919009



By combining the following accessories, on the enclosure without doors, beyond the coded compartment combinations, other versions can be made with compartments arranged according to the specific requirements of panel set-up.

### Front panel kit with plinth + rail



**Characteristics**

Supplied complete with gasket and fixing screws.

Useful height, mm	Model	Code
433	G9/2/KTZ	095778304

### Compartment door kit



**Characteristics**

Supplied complete with semi-hinged door leaves, sealing gaskets and Y21 encoded lever lock

Useful height, mm	Door dimension mm	Model	Code
433	374x820	G9/2/KA	095778924
658	599x820	G9/4/KA	095778940
883	824x820	G9/5/KA	095778957
1180	1064x820	G9/7/KA	095778973
1340	1274x820	G9/8/KA	095778981

### Compartment partition kit + trail



**Characteristics**

Supplied complete with brackets and fixing screws. To be chosen according to the enclosure depth (330 or 460).

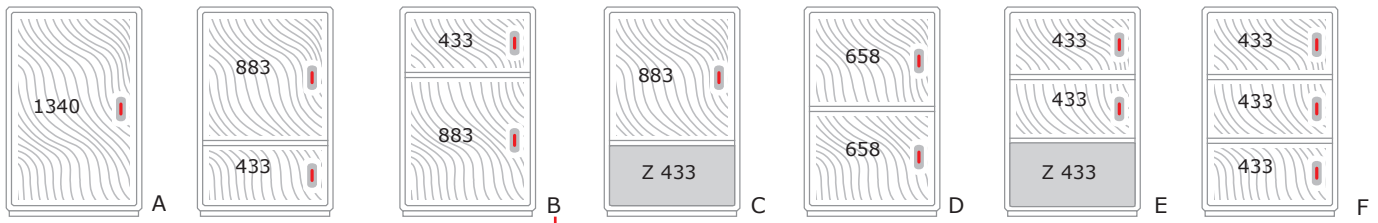
Depth, mm	Model	Code
330	G9/KTS	095779005
460	GH9/KTS	095779104

#### Possible compositions

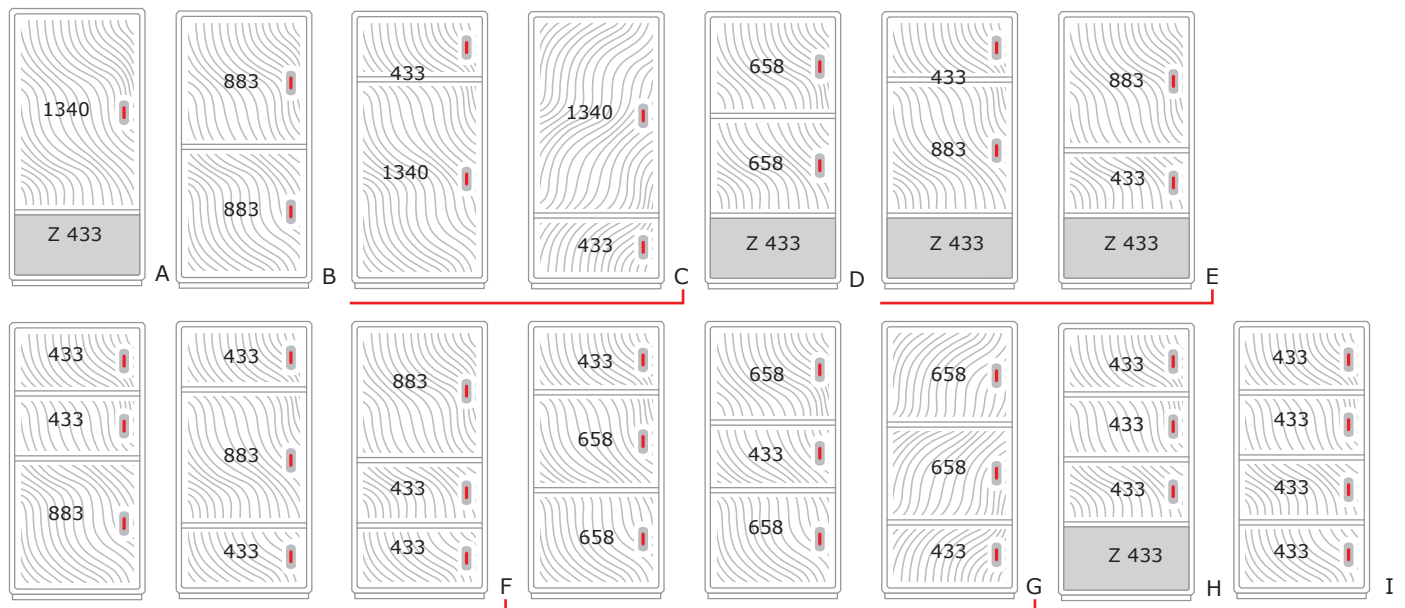
Customizable enclosures without doors make it possible to tackle different partitioning needs of the interior volume starting with a few basic elements. In the composition diagrams provided below, all the possible combinations which can be obtained on enclosures of an overall height of 1390mm and 1840mm are highlighted.

The letters identifying the single compositions shown in the table make it possible to quickly identify the types and number of kits needed to make them.

The figures shown on each individual compartment indicate its usable height, which is essential for identifying any internal accessories (mounting plates, accessories for making panels, etc.). When selecting accessories, refer to the sections corresponding to the selected composition/s based on the number of compartments.

**COMPOSITIONS REALIZED ON ENCLOSURES WITHOUT DOOR HEIGHT OVERALL DIMENSIONS - 1390mm**


	Code	Model	Useful height mm	A	B	C	D	E	F
<b>Plinth kit</b>	095778304	G9/2/KTZ	433			1		1	
<b>Doors kit</b>	095778924	G9/2/KA	433		1			2	3
	095778940	G9/4/KA	658				2		
	095778957	G9/5/KA	883		1	1			
	095778981	G9/8/KA	1340	1					
<b>Plate kit Depth330</b>	0957779005	G9/KTS			1		1	1	2
or									
<b>Plate kit Depth460</b>	0957779104	GH9/KTS			1		1	1	2

**COMPOSITIONS REALIZED ON ENCLOSURES WITHOUT DOOR HEIGHT OVERALL DIMENSIONS - 1840mm**


	Code	Model	Useful height mm	A	B	C	D	E	F	G	H	I
<b>Plinth Kit</b>	095778304	G9/2/KTZ	433	1			1	1			1	
<b>Doors Kit</b>	095778924	G9/2/KA	433			1		1	2	1	3	4
	095778940	G9/4/KA	658				2			2		
	095778957	G9/5/KA	883		2			1	1			
	095778981	G9/8/KA	1340	1		1						
<b>Plate Kit Depth 330</b>	0957779005	G9/KTS			1	1	1	1	2	2	2	3
or												
<b>Plate Kit Depth 460</b>	0957779104	GH9/KTS			1	1	1	1	2	2	2	3

The following table specifies what configurations are supported for customizable without door enclosures.

## Maximum load

Maximum load applicable on the mounting plate and usable protected space for equipment in observance of the characteristics certified by standard CEI EN 62208.

The table shows the maximum load value applicable on the mounting plate installed on both the bottom wall and on the uprights (in the case of multiple compartments, the value refers to the individual compartments). Other installation methods may bear greater weights.

By usable protected space we mean the space dedicated to the installation of protection and manoeuvring equipment for which the IP rating is guaranteed by the casing.

## Thermal energy dissipation (Pmax. = watt)

Calculation carried out in accordance with standard CEI 17-43: method of temperature-rise assessment by extrapolation for partially type-tested assemblies for protection (BT panels) of low-voltage switchgear not standard (ANS).

Thermal energy dissipation values (Pmax=watt) of the enclosures provided in the table are valid considering:

- standard installation conditions (exposure on all sides);
- ambient temperature established at 35 °C;
- overtemperature values achieved at mid height [ $\Delta t$  0.5 (°C)] (value indicated in the table);
- overtemperature values established at the top  $\Delta t$  1.0 = 30 °C.

Pmax(watt) is an overall value referring to the entire structure of the enclosure; in the case of multiple compartments, the value must be divided by the number of compartments. The standard thermal energy dissipation value [Pmax(watt)] can be increased by applying ventilation units.

## Top Units



Code	Model	Protected useful space, mm			Max load kg compartment "a"	$\Delta T$ 0,5 (°C)	Pmax (W)
		Height	Width	Depth			
<b>IP55</b>							
077902906	G9-2/2/S	a=355	805	235	50	24,1	121
077904902	G9-4/4/S	a=580	805	235	65	23,4	167
077904910	G9-4/4A/S	a=580	805	235	65	23,4	167
077905909	G9-5/5/S	a=805	805	235	70	22,5	218
077912905	GH9-2/2/S	a=355	805	365	50	24,5	154
077914901	GH9-4/4/S	a=580	805	365	65	24	207
077914919	GH9-4/4A/S	a=580	805	365	65	24	207
077915908	GH9-5/5/S	a=805	805	365	70	23,3	268
<b>IP44</b>							
078902905	G9-2/2/S-4	a=355	805	235	50	25	126
078904901	G9-4/4/S-4	a=580	805	235	65	24	174
078904919	G9-4/4A/S-4	a=580	805	235	65	24	174
078905908	G9-5/5/S-4	a=805	805	235	70	23,3	228
078912904	GH9-2/2/S-4	a=355	805	365	50	25,3	161
078914900	GH9-4/4/S-4	a=580	805	365	65	24,6	216
078914918	GH9-4/4A/S-4	a=580	805	365	65	24,6	216
078915907	GH9-5/5/S-4	a=805	805	365	70	24	279

### Average integration of the Dissipable Power

The standard value of Pmax (Watt) can be increased by the application of the aeration vents, in particular:

- n°2 aeration vents, applied diagonally, increase the dissipable power [Pmax (Watt)] of **100W**.

Ex. For the enclosure G9-4/4/T Pmax (Watt) = 167W. Applying n°2 ventilation units the Pmax (Watt) is 167W + 100W = 267W.

- n°2 aeration vents, applied diagonally, one of which with forced ventilation and installed in the upper part of the enclosure, increase the dissipable power [Pmax (Watt)] of **250W**.

Ex. For the enclosure G9-7/7/T Pmax (Watt) = 270W. Applying n°2 ventilation units, one with forced ventilation, the Pmax (Watt) is 270W + 250W = 520W.

**For any specific composition requests a specific calculation in place.**

**1 compartment**


Code	Model	Useful space, mm			Max load kg compartment "a"	$\Delta T_{0,5}$ (°C)	Pmax (W)
		Height	Width	Depth			
<b>IP55</b>							
077904100	G9-4/4/T	a=580	805	235	65	23,4	167
077904118	G9-4/4A/T	a=580	805	235	65	23,4	167
077905107	G9-5/5/T	a=805	805	235	70	22,5	218
077905115	G9-5/5A/T	a=805	805	235	70	22,5	218
077907103	G9-7/7/T	a=1045	805	235	90	21,7	270
077908101	G9-8/8/T	a=1255	805	235	100	21	302
077914109	GH9-4/4/T	a=580	805	365	65	24	207
077914117	GH9-4/4A/T	a=580	805	365	65	24	207
077915106	GH9-5/5/T	a=805	805	365	70	23,3	268
077915114	GH9-5/5A/T	a=805	805	365	70	23,3	268
077917102	GH9-7/7/T	a=1045	805	365	90	22,6	331
077918100	GH9-8/8/T	a=1255	805	365	100	22	361
<b>IP44</b>							
078904109	G9-4/4/T-4	a=580	805	235	65	24	174
078904117	G9-4/4A/T-4	a=580	805	235	65	24	174
078905106	G9-5/5/T-4	a=805	805	235	70	23,3	228
078905114	G9-5/5A/T-4	a=805	805	235	70	23,3	228
078907102	G9-7/7/T-4	a=1045	805	235	90	22,5	281
078908100	G9-8/8/T-4	a=1255	805	235	100	21,6	314
078914108	GH9-4/4/T-4	a=580	805	365	65	24,6	216
078914116	GH9-4/4A/T-4	a=580	805	365	65	24,6	216
078915105	GH9-5/5/T-4	a=805	805	365	70	24	279
078915113	GH9-5/5A/T-4	a=805	805	365	70	24	279
078917101	GH9-7/7/T-4	a=1045	805	365	90	23,3	345
078918109	GH9-8/8/T-4	a=1255	805	365	100	22,7	376

**1 compartment with integrated plinth**

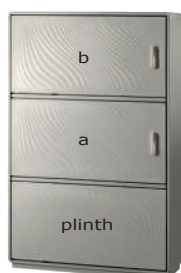

Code	Model	Useful space, mm			Max load kg compartment "a"	$\Delta T_{0,5}$ (°C)	Pmax (W)
		Height	Width	Depth			
<b>IP55</b>							
077905198	G9-5/22/ZT	a=355	805	235	50	22,5	218
077908192	G9-8/25/ZT	a=805	805	235	70	21	302
077908184	G9-8/25A/ZT	a=805	805	235	70	21	302
077909190	G9-9/28/ZT	a=1255	805	235	100	20	350
077915197	GH9-5/22/ZT	a=355	805	365	50	23,3	268
077918191	GH9-8/25/ZT	a=805	805	365	70	22	361
077918183	GH9-8/25A/ZT	a=805	805	365	70	22	361
077919199	GH9-9/28/ZT	a=1255	805	365	100	20,9	426
<b>IP44</b>							
078905197	G9-5/22/ZT-4	a=355	805	235	50	23,3	228
078908191	G9-8/25/ZT-4	a=805	805	235	70	21,6	314
078908183	G9-8/25A/ZT-4	a=805	805	235	70	21,6	314
078909199	G9-9/28/ZT-4	a=1255	805	235	100	20,4	364
078915196	GH9-5/22/ZT-4	a=355	805	365	50	24	279
078918190	GH9-8/25/ZT-4	a=805	805	365	70	22,7	376
078918182	GH9-8/25A/ZT-4	a=805	805	365	70	22,7	376
078919198	GH9-9/28/ZT-4	a=1255	805	365	100	21,6	444

2 compartments



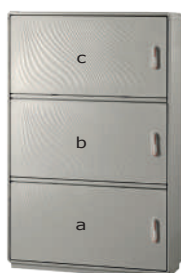
Code	Model	Useful space, mm			Max load kg		Δ T 0,5 (°C)	Pmax (W)
		Height	Width	Depth	comp. "a"	comp. "b"		
<b>IP55</b>								
077905206	G9-5/22/T	a-b=355	805	235	50	50	22,5	206
077908200	G9-8/44/T	a-b=580	805	235	65	65	21	284
077908226	G9-8/44A/T	a-b=580	805	235	65	65	21	284
077908218	G9-8/52/T	a=805 - b=355	805	235	70	50	21	284
077909208	G9-9/55/T	a-b=805	805	235	70	70	20	329
077909216	G9-9/82/T	a=1255 - b=355	805	235	100	50	20	329
077915205	GH9-5/22/T	a-b=355	805	365	50	50	23,3	252
077918209	GH9-8/44/T	a-b=580	805	365	65	65	22	340
077918225	GH9-8/44A/T	a-b=580	805	365	65	65	22	340
077918217	GH9-8/52/T	a=805 - b=355	805	365	70	50	22	340
077919207	GH9-9/55/T	a-b=805	805	365	70	70	20,9	401
077919215	GH9-9/82/T	a=1255 - b=355	805	365	100	50	20,9	401
<b>IP44</b>								
078905205	G9-5/22/T-4	a-b=355	805	235	50	50	23,3	214
078908209	G9-8/44/T-4	a-b=580	805	235	65	65	21,6	296
078908225	G9-8/44A/T-4	a-b=580	805	235	65	65	21,6	296
078908217	G9-8/52/T-4	a=805 - b=355	805	235	70	50	21,6	296
078909207	G9-9/55/T-4	a-b=805	805	235	70	70	20,4	343
078909215	G9-9/82/T-4	a=1255 - b=355	805	235	100	50	20,4	343
078909504	G9-S/84/T-4	a=1255- b=5280	805	235	100	65	a=20,04 b=21,6	a=243 b=296
078915204	GH9-5/22/T-4	a-b=355	805	365	50	50	24	262
078918208	GH9-8/44/T-4	a-b=580	805	365	65	65	22,7	354
078918224	GH9-8/44A/T-4	a-b=580	805	365	65	65	22,7	354
078918216	GH9-8/52/T-4	a=805 - b=355	805	365	70	50	22,7	354
078919206	GH9-9/55/T-4	a-b=805	805	365	70	70	21,6	418
078919214	GH9-9/82/T-4	a=1255 - b=355	805	365	100	50	21,6	418
078919503	GH9-S/84/T-4	a=1255 - b=580	805	365	100	65	a=20,04 b=21,6	a=243 b=296

2 compartments with integrated plinth



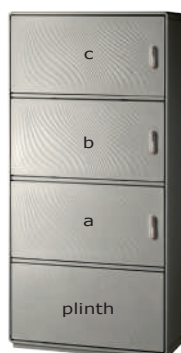
Code	Model	Useful space, mm			Max load kg		Δ T 0,5 (°C)	Pmax (W)
		Height	Width	Depth	comp. "a"	comp. "b"		
<b>IP55</b>								
077908291	G9-8/222/ZT	a-b=355	805	235	50	50	21	284
077909281	G9-9/252/ZT	a=805 b=355	805	235	70	50	20	329
077909299	G9-9/244/ZT	a-b=580	805	235	65	65	20	329
077918290	GH9-8/222/ZT	a-b=355	805	365	50	50	22	340
077919280	GH9-9/252/ZT	a=805 b=355	805	365	70	50	20,9	401
077919298	GH9-9/244/ZT	a-b=580	805	365	65	65	20,9	401
<b>IP44</b>								
078908290	G9-8/222/ZT-4	a-b=355	805	235	50	50	21,6	296
078909280	G9-9/252/ZT-4	a=805 b=355	805	235	70	50	20,4	343
078909298	G9-9/244/ZT-4	a-b=580	805	235	65	65	20,4	343
078918299	GH9-8/222/ZT-4	a-b=355	805	365	50	50	22,7	354
078919289	GH9-9/252/ZT-4	a=805 b=355	805	365	70	50	21,6	418
078919297	GH9-9/244/ZT-4	a-b=580	805	365	65	65	21,6	418

### 3 compartments



Code	Model	Useful space, mm			Max load kg			$\Delta T_{0,5}$ (°C)	Pmax (W)
		Height	Width	Depth	comp "a"	comp "b"	comp "c"		
<b>IP55</b>									
077908309	G9-8/222/T	a-b-c=355	805	235	50	50	50	21	254
077909307	G9-9/522/T	a=805 b-c=355	805	235	70	50	50	20	294
077909315	G9-9/442/T	a-b=580 c=355	805	235	65	65	50	20	294
077918308	GH9-8/222/T	a-b-c=355	805	365	50	50	50	22	303
077919306	GH9-9/522/T	a=805 b-c=355	805	365	70	50	50	20,9	358
077919314	GH9-9/442/T	a-b=580 c=355	805	365	65	65	50	20,9	358
<b>IP44</b>									
078908308	G9-8/222/T-4	a-b-c=355	805	235	50	50	50	21,6	264
078909306	G9-9/522/T-4	a=805 b-c=355	805	235	70	50	50	20,4	306
078909314	G9-9/442/T-4	a-b=580 c=355	805	235	65	65	50	20,4	306
078918307	GH9-8/222/T-4	a-b-c=355	805	365	50	50	50	22,7	316
078919305	GH9-9/522/T-4	a=805 b-c=355	805	365	70	50	50	21,6	373
078919313	GH9-9/442/T-4	a-b=580 c=355	805	365	65	65	50	21,6	373

### 3 compartments with integrated plinth



Code	Model	Useful space, mm			Max load kg			$\Delta T_{0,5}$ (°C)	Pmax (W)
		Height	Width	Depth	comp "a"	comp "b"	comp "c"		
<b>IP55</b>									
077909398	G9-9/2222/ZT	a-b-c=355	805	235	50	50	50	20	294
077919397	GH9-9/2222/ZT	a-b-c=355	805	365	50	50	50	20,9	358
<b>IP44</b>									
078909397	G9-9/2222/ZT-4	a-b-c=355	805	235	50	50	50	20,4	306
078919396	GH9-9/2222/ZT-4	a-b-c=355	805	365	50	50	50	21,6	373

### 4 compartments



Code	Model	Protected useful space, mm			Max load kg				$\Delta T_{0,5}$ (°C)	Pmax (W)
		Height	Width	Depth	comp "a"	comp "b"	comp "c"	comp "d"		
<b>IP55</b>										
077909406	G9-9/2222/T	a-b-c-d=355	805	235	50	50	50	50	20	252
077919405	GH9-9/2222/T	a-b-c-d=355	805	365	50	50	50	50	20,9	307
<b>IP44</b>										
078909405	G9-9/2222/T-4	a-b-c-d=355	805	235	50	50	50	50	20,4	263
078919404	GH9-9/2222/T-4	a-b-c-d=355	805	365	50	50	50	50	21,6	320





# Grabi 12

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**Width 1150 mm**



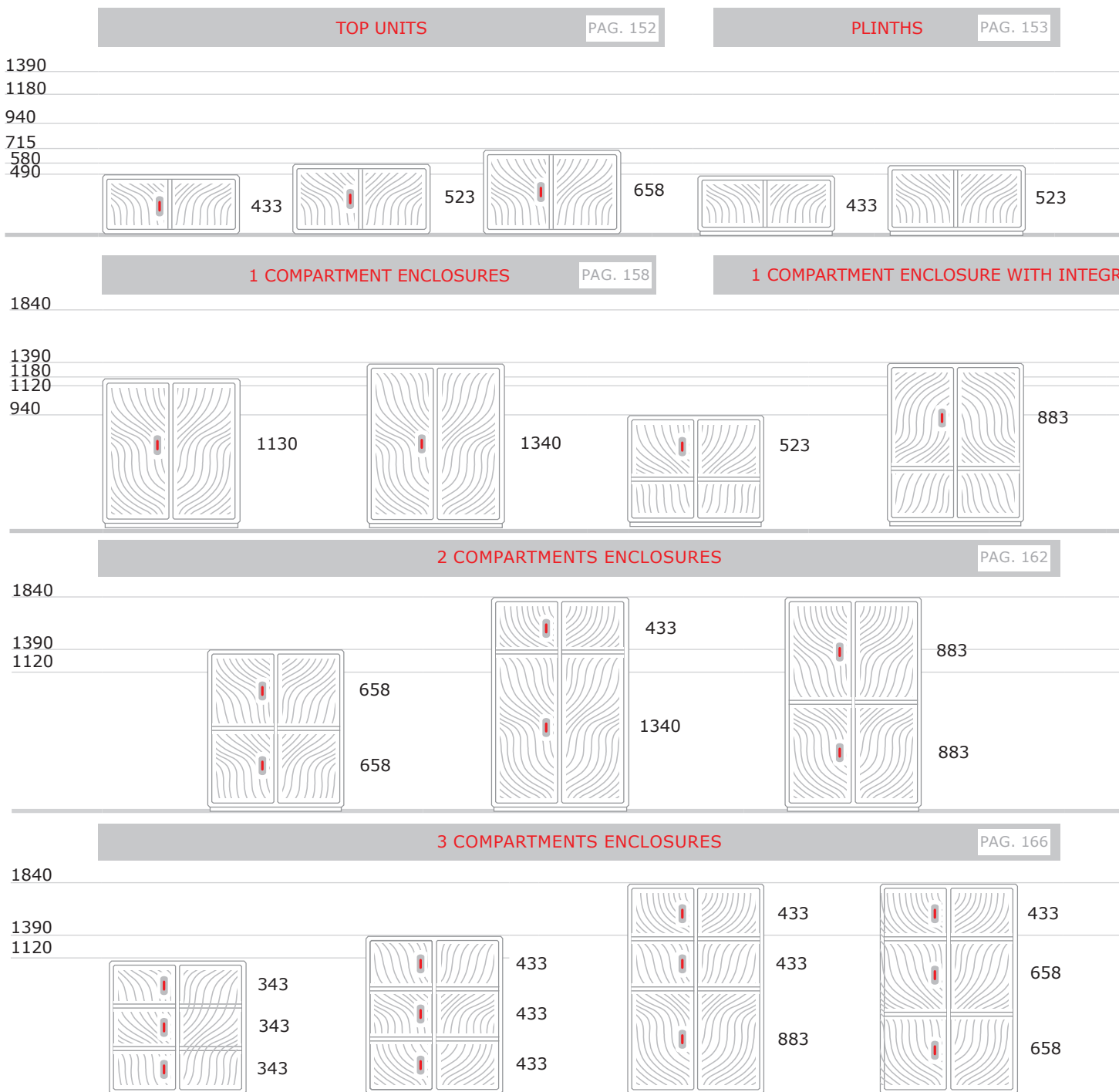
**Characteristics**

The Grafi12 series is characterized by an external width of 1150 mm (usable interior width = 1132 mm).  
 6 different overall heights available, from 490 mm to 1840 mm.  
 All versions are available in two depths: 330 mm and 460 mm.  
 Rated insulation voltage = Ui 690V.  
 IMQ Certification in accordance with CEI EN 62208.

**Production drawing**

The values on the left of the drawing indicate the overall height. The figures for the individual compartments indicate their usable height, essential when selecting dedicated accessories.

Grafi 12




**Materials**

Made in fiberglass (SMC) in RAL 7035 colour. Thermoplastic resin handle. Operating tenon in galvanized steel, internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Anchor frame in galvanized and painted steel. Seals in foamed EPDM.

**Standards**

Available with IP44 - IP55 protection class according to CEI EN 60529, IK10 according to CEI EN 62262.

Prepared for execution of CLASS II equipment according to CEI 64-8 / 4. 

1 COMPARTMENT ENCLOSURES

PAG. 158

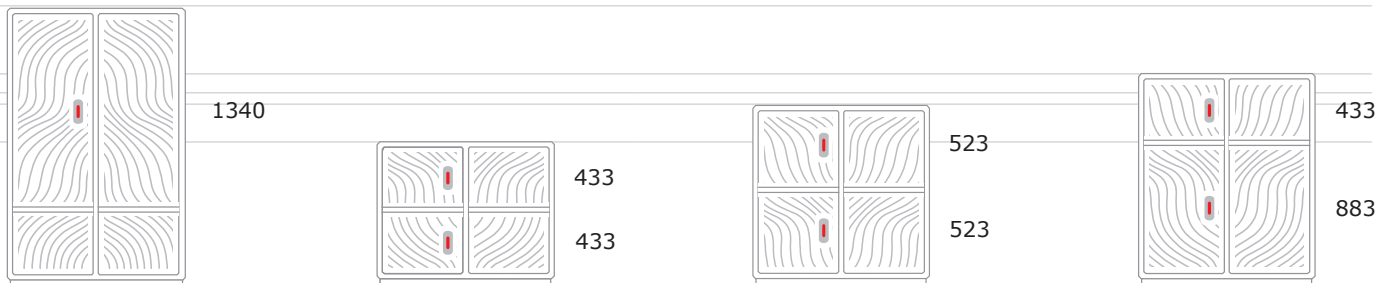


PLINTH

PAG. 159

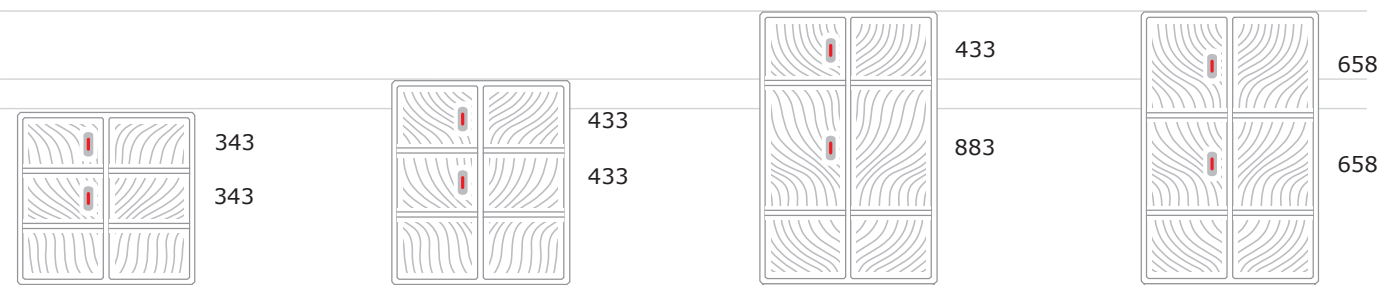
2 COMPARTMENTS ENCLOSURES

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2 COMPARTMENTS ENCLOSURES WITH INTEGRATED PLINTH

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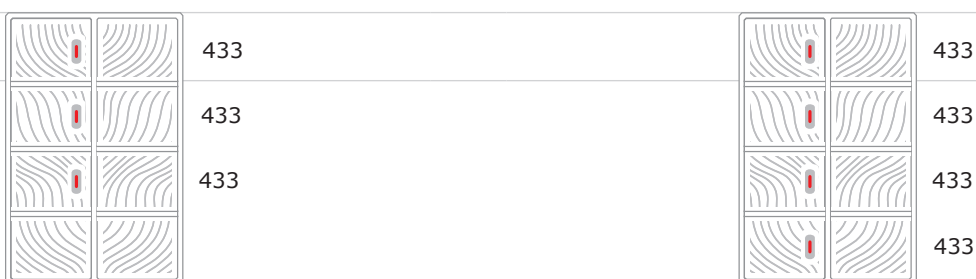


3 COMPARTMENTS WITH INTEGRATED PLINTH

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4 COMPARTMENTS ENCLOSURES

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## Top units double door



### Characteristics

Overall height sizes available: 460mm - 550mm - 685mm for two depths: 330mm - 460mm. Rated insulation voltage Ui 690V. Completely intact structure without holes. The holes for cable passage to be realized by the customer or on request. Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder - customized cipher on request). Door opening side can be changed on site. Can be equipped with mounting plates and dedicated accessories for creating panels. Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.

### Materials

Made of fiberglass RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4

External dimensions, mm			Internal dimensions, mm			Door dimension, mm	IP	Model	Code
Height	Width	Depth	Height	Width	Depth				
460	1150	330	a= 433	1132	298	374x1060	IP55	G12-2/2A/S	077122190
	1150	460	a= 433	1132	428		IP44	G12-2/2A/S-4	078122199
550	1150	330	a= 523	1132	298	464x1060	IP55	GH12-2/2A/S	077132199
	1150	460	a= 523	1132	428		IP44	GH12-2/2A/S-4	078132198
685	1150	330	a= 658	1132	298	599x1060	IP55	G12-3/3A/S	077123198
	1150	460	a= 523	1132	428		IP44	G12-3/3A/S-4	078123197
685	1150	330	a= 658	1132	298	599x1060	IP55	GH12-3/3A/S	077133197
	1150	460	a= 658	1132	428		IP44	GH12-3/3A/S-4	078133196
685	1150	330	a= 658	1132	298	599x1060	IP55	G12-4/4A/S	077124196
	1150	460	a= 658	1132	428		IP44	G12-4/4A/S-4	078124195
685	1150	330	a= 658	1132	298	599x1060	IP55	GH12-4/4A/S	077134195
	1150	460	a= 658	1132	428		IP44	GH12-4/4A/S-4	078134194

### Warnings

Usable for installation in enclosures of the same series and depth to achieve non-standard compositions in the integrated units or for extending enclosures already in use. Can be used to make single compartment enclosures for floor installation, together with dedicated plinths. Holes for fastening systems and cable opening to be made in site or in the factory on request. Wall-mounted version also available.

## Plinths

**Characteristics**

Overall height sizes available: 490mm - 580mm - for two depths: 330mm - 460mm.  
Prepared for installation on a concrete base using an anchor frame (not included).


To be used in combination with enclosures of the series 12 same depth not available in the version with "integrated plinth".


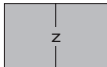
They allow the realization of enclosures for floor installation combined with top units.

**Material**

Made in fiberglass (SMC) in RAL 7035 colour. Seals in foamed EPDM.

**Normative**

Realizzati in conformità a norma CEI EN 62208 Grado di protezione IP55 secondo CEI EN 60529, IK10 secondo CEI EN 62262. Predisposti per esecuzione di apparecchiature in classe II secondo CEI 64-8/4 .

	External dimensions, mm			Useful height mm	IP	Model	Code
	Height	Width	Depth				
	490	1150	330	433	IP55	G12-2/ZT	077122158
		1150	460	433	IP55	GH12-2/ZT	077132157
	580	1150	330	523	IP55	G12-3/ZT	077123156
		1150	460	523	IP55	GH12-3/ZT	077133155

## Closing bottom plate



### Characteristics

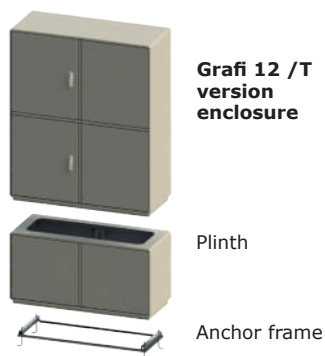
Made of 3 mm thick bakelite, it is installed in the lower part of the enclosures to provide additional protection for the compartment where the cable input channels are situated. Available in the blank version so that the required holes can be made during installation or complete with 4 conical fairleads (max. diam. 76).

Enclosure depth mm	Blank plate		Plate with conical fairleads	
	Model	Code	Model	Code
330	G12/SIC	095771408	G12/SIM	095771424
460	GH12/SIC	095771457	GH12/SIM	095771473

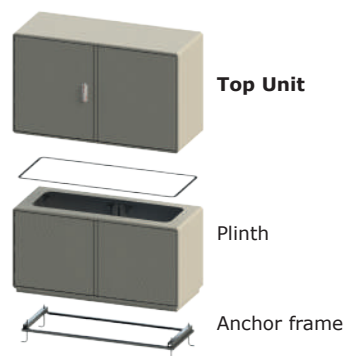
## Installation method

The plinths can be fitted with closing bottom plate (blank or with conical fairleads) positioned between the fixing frame and plinth, to provide additional protection in the cable input area.

Use of an additional plinth on /T version enclosures



Use of plinth with top unit



## Anchor frame



### Characteristics

Screws in AISI 304 stainless steel to guarantee access over time. Complete with brackets for fixing onto a concrete base.

### Materials

Made of steel with black coloured 18/24 cataphoretic coating treatment.

Enclosure depth mm	Model	Code
330	G12/TA	095771309
460	GH12/TA	095771358

## Mounting plates



### Characteristics

Can be applied to the bottom of the enclosure using special threaded inserts with M6x20 stud bolts or in conjunction with switchgear risers or racks using the dedicated fixing brackets. Available in: Pre-galvanized steel - thickness 2 mm; bakelite - thickness 5 mm; PVC - thickness 5 mm.

Must be chosen to suit the size of the compartment in question.

Useful height mm	Plate dimensions mm	Steel (2mm thick)		Bakelite (5 mm thick)		PVC (5 mm thick)	
		Model	Code	Model	Code	Model	Code
433	1026x355	G12/2/PA	095771028	G12/2/PB	095771127	G12/2/PP	095771226
523	1026x445	G12/3/PA	095771036	G12/3/PB	095771135	G12/3/PP	095771234
658	1026x580	G12/4/PA	095771044	G12/4/PB	095771143	G12/4/PP	095771242

## Uprights kit + brackets kit for the realization of modular equipment panels

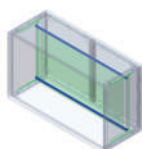


### Characteristics

Steel uprights set up with holes for fastening modular panel frames, equipment holding racks, bottom plates. Brackets for upright supports made from steel. The kit must be selected based on the depth and overall height of the enclosure regardless of the number and layout of compartments.

Top unit overall height mm	Uprights (2 pieces)		Uprights support brackets (4 pieces)			
	Model	Code	Depth 330 mm		Depth 460 mm	
			Model	Code	Model	Code
490	G-2/MT	095770020	G/SM	095770905	GH/SM	095770913
580	G-3/MT	095770038	N.B. The support brackets can be used on all heights of upright kits and up to an overall number of three kits.			
715	G-4/MT	095770046				

## Brackets kit for supporting the mounting plates on the uprights



### Characteristics

Made from steel. To be used together with an uprights kit and brackets kit for installing the depth-adjustable plate. If uprights and brackets kits are envisaged for supporting modular equipment, a further uprights kit without the upright support brackets kit is required. Suitable for all types of plate. For partitions provided in 2 parts, 2 bracket kits are required.

Description	Model	Code
Brackets kit for support plates on uprights (4 pcs)	G/SP/MT	095770921

**N.B. The Grafi12 series does not provide accessories for modular equipment.**



**Installation methods**

The top units can be installed on any type of enclosure of the corresponding series (Grafi12) and of the same depth. Installation is carried out easily by making holes in the fixing points already arranged on the enclosures and with the insertion of special seals to guarantee the necessary protection rating. Any passages between the bottom compartment and top unit must be made in situ as required. The arrangement for the installation of the top unit may be carried out directly in the factory on request. It is suitable for both IP44 and IP55 enclosures and is valid for all depths (330 - 460 mm).

Grafi 12



Top Unit

Grafi12 enclosure  
1 compartment



Top Unit

Grafi12 enclosure  
2 compartments

**Execution of top unit installation arrangement with 2 holes**

**Bottom compartment:**

- 4 fastening holes
- 2 holes (Ø 85) for cable passage

**Top compartment (top unit):**

- 4 fastening holes
- 2 holes (Ø 76) for securing the conical membrane

**Provided:** Compartment fastening screws/seal/2 conical membranes.

Model	Code	Description
G-EA/MS/I	097770002	Execution of slotted roof for installing top unit
G-EA/MS/S	097770010	Execution of slotted top unit for installation on compartment



Top Unit

Grafi12 enclosure  
1 compartment



Top Unit

Grafi12 enclosure  
2 compartments

**Execution of preparation for installation of top unit with maximum clearance**

Application envisages the realization of enclosures with fully open slots and realization of the corresponding slot on the top unit which will be installed above.

**Bottom compartment:**

- 4 fastening holes
- 1 single slot for cable passage

**Top compartment (top unit):**

- 4 fastening holes
- 1 single slot

**Provided:** Compartment fastening screws/seal

Model	Code	Dim. loophole for Depth 330 mm	Dim. loophole for Depth 460 mm	Description
G-EA/MSA/I	097770044	960x225	960x305	Execution of slotted roof for installing top unit
G-EA/MSA/S	097770051	960x260	960x340	Execution of slotted top unit for installation on lower compartment

**Warning**

Separation plates can also be requested with or without cable passage to integrate execution, to be selected from the normal envisaged accessories. G12/SIC o GH12/SIC (blank plate) - G12/SIM OR GH12/SIM (plate with conical membranes).

The top units may be installed on the floor using the relative plinth envisaged in the series and of the same depth. The fixing frame must be requested separately. Also in this case it is possible to request arrangement in the factory of hole drilling for cable passage into the top units (G-EA/MS/S or G-EA/MSA/S)

**N.B. The Grafi12 series does not provide accessories for modular equipment.**

**Maximum applicable load on bottom plate / Protected useful space for equipment / Heat dissipation pag. 170**

Accessories and spare parts for the whole Grafi12 series  
- **Ventilation units** page. 190

## Double door 1 compartment enclosures



### Characteristics

Overall height sizes available: 490mm - 580mm - 715mm - 940mm - 1180mm - 1390mm - for two depths: 330mm - 460mm.

Rated insulation voltage  $U_i$  690V.

Completely intact structure without holes. The holes for cable passage to be realized by the customer or on request. Complete with fixing frame for installation on a concrete base. Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder - customized cipher on request).

Door opening side can be changed on site. Can be equipped with mounting plates and dedicated accessories for creating panels. Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.

Closing bottom plate with conical fairleads and seal (only IP55 versions).

### Materials

Made in fiberglass RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4

	External dimensions, mm			Internal dimensions, mm			Door dimension, mm	IP	Model	Code
	Height	Width	Depth	Height	Width	Depth				
	490	1150	330	a= 433	1132	298	374x1060	IP55	G12-2/2A/T	077122117
		IP44	G12-2/2A/T-4	078122116						
	490	1150	460	a= 433	1132	428	374x1060	IP55	GH12-2/2A/T	077132116
		IP44	GH12-2/2A/T-4	078132115						
	580	1150	330	a= 523	1132	298	464x1060	IP55	G12-3/3A/T	077123115
		IP44	G12-3/3A/T-4	078123114						
	580	1150	460	a= 523	1132	428	464x1060	IP55	GH12-3/3A/T	077133114
		IP44	GH12-3/3A/T-4	078133113						
	715	1150	330	a= 658	1132	298	599x1060	IP55	G12-4/4A/T	077124113
		IP44	G12-4/4A/T-4	078124112						
	715	1150	460	a= 658	1132	428	599x1060	IP55	GH12-4/4A/T	077134112
		IP44	GH12-4/4A/T-4	078134111						
	940	1150	330	a= 883	1132	298	824x1060	IP55	G12-5/5A/T	077125110
		IP44	G12-5/5A/T-4	078125119						
	940	1150	460	a= 883	1132	428	824x1060	IP55	GH12-5/5A/T	077135119
		IP44	GH12-5/5A/T-4	078135118						
	1180	1150	330	a= 1130	1132	298	1064x1060	IP55	G12-7/7A/T	077127116
		IP44	G12-7/7A/T-4	078127115						
	1180	1150	460	a= 1130	1132	428	1064x1060	IP55	GH12-7/7A/T	077137115
		IP44	GH12-7/7A/T-4	078137114						
	1390	1150	330	a= 1340	1132	298	1274x1060	IP55	G12-8/8A/T	077128114
		IP44	G12-8/8A/T-4	078128113						
	1390	1150	460	a= 1340	1132	428	1274x1060	IP55	GH12-8/8A/T	077138113
		IP44	GH12-8/8A/T-4	078138112						

## Double door 1 compartment enclosures with integrated plinth



### Characteristics


Made with 1 equipment compartment + bottom plinth integrated in a single support structure. Overall height sizes available: 940mm - 1390mm - 1840mm for two depths: 330mm - 460mm. Rated insulation voltage Ui 690V.


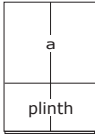
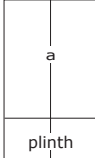
Completely intact structure without holes. The holes for cable passage to be realized by the customer or on request. Complete with fixing frame for installation on a concrete base. Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder - customized cipher on request). Door opening side can be changed on site. Can be equipped with mounting plates and dedicated accessories for creating panels. Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories. Closing bottom plate with conical fairleads and seal (only IP55 versions).

### Materials

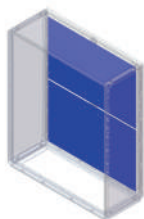
Made in fiberglass, RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4 .

	External dimensions, mm			Internal dimensions, mm			Plinth height mm	Door dimension mm	IP	Model	Code
	Height	Width	Depth	Height	Width	Depth					
	940	1150	330	a= 523	1132	298	400	464X1060	IP55	G12-5/13A/ZT	077125185
		1150	460	a= 523	1132	428			464X1060	IP44	G12-5/13A/ZT-4
	1390	1150	330	a= 883	1132	298	490	824x1060	IP55	G12-8/25A/ZT	077128197
		1150	460	a= 883	1132	428			824x1060	IP44	G12-8/25A/ZT-4
	1840	1150	330	a= 1340	1132	298	490	1274x1060	IP55	G12-9/28A/ZT	077129195
		1150	460	a= 1340	1132	428			1274x1060	IP44	G12-9/28A/ZT-4
									IP55	GH12-9/28A/ZT	077139194
									IP44	GH12-9/28A/ZT-4	078139193

## Mounting plates

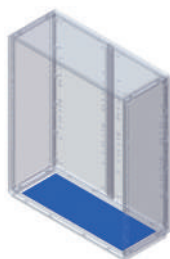


### Characteristics

Can be applied to the bottom of the enclosure using special threaded inserts with M6x20 stud bolts or in conjunction with switchgear risers or racks using the dedicated fixing brackets. Available in: Pre-galvanized steel - thickness 2 mm; bakelite - thickness 5 mm; PVC - thickness 5 mm. Must be chosen to suit the size of the compartment in question.

Useful height mm	Plate dimensions mm	Steel (2mm thick)		Bakelite (5 mm thick)		PVC (5 mm thick)	
		Model	Code	Model	Code	Model	Code
433	1026x355	G12/2/PA	095771028	G12/2/PB	095771127	G12/2/PP	095771226
523	1026x445	G12/3/PA	095771036	G12/3/PB	095771135	G12/3/PP	095771234
658	1026x580	G12/4/PA	095771044	G12/4/PB	095771143	G12/4/PP	095771242
883	1026x805	G12/5/PA	095771051	G12/5/PB	095771150	G12/5/PP	095771259
1130	1026x1030 (supplied in 2 pcs)	G12/7/PA	095771069	G12/7/PB	095771168	G12/7/PP	095771267
1340	1026x1240 (supplied in 2 pcs)	G12/8/PA	095771077	G12/8/PB	095771176	G12/8/PP	095771275

## Closing bottom plate

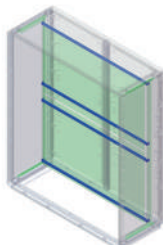


### Characteristics

Made of 3 mm thick bakelite, it is installed in the lower part of the enclosures to provide additional protection for the compartment where the cable input channels are situated. Available in the blank version so that the required holes can be made during installation or complete with 4 conical fairleads (max. diam. 76). In IP55 enclosures the plate is provided as standard.

Enclosure depth mm	Blank plate		Plate with conical fairleads	
	Model	Code	Model	Code
330	G12/SIC	095771408	G12/SIM	095771424
460	GH12/SIC	095771457	GH12/SIM	095771473

## Brackets kit for supporting the mounting plates on the uprights



### Characteristics

Made from steel. To be used together with an uprights kit and brackets kit for installing the depth-adjustable plate. If uprights and brackets kits are envisaged for supporting modular equipment, a further uprights kit without the upright support brackets kit is required. Suitable for all types of plate. For plates provided in 2 parts, 2 bracket kits are required.

Model	Code	Description
G/SP/MT	095770921	Brackets kit for support plates on uprights (4 pcs)

Uprights kit + brackets kit



Characteristics

Steel uprights set up with holes for fastening modular panel frames. Brackets for upright supports made from steel. The kit must be selected based on the depth and overall height of the enclosure regardless of the number and layout of compartments.

Overall height compartment, mm	Uprights (2 pieces)		Uprights support brackets (4 pieces)			
	Model	Code	Depth 330 mm		Depth 460 mm	
			Model	Code	Model	Code
490	G-2/MT	095770020	G/SM	095770905	GH/SM	095770913
580	G-3/MT	095770038				
715	G-4/MT	095770046				
940	G-5/MT	095770053				
1180	G-7/MT	095770079				
1390	G-8/MT	095770087	N.B. The support brackets can be used on all heights of upright kits and up to an overall number of three kits.			
1840	G-9/MT	095770095				

The Grafi12 series does not provide accessories for modular equipments

Maximum applicable load on mounting plate/Protected useful space for equipment/Heat dissipation pag. 171

Equal accessories and spare parts for the whole Grafi12 series

- Ventilation airs pag. 190

- Anchor frame pag. 189

Special executions

1 compartment enclosure with counter compartment



Characteristics

Overall height sizes available: 1390mm with depth: 460mm.

Rated insulation voltage Ui 690V.

Complete with fixing frame for installation on a concrete base. Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder - customized cipher on request).

Door opening side can be changed on site. Can be equipped with mounting plates and dedicated accessories for creating panels. Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.

With built-in contact box on the right-hand side - independent access with a diversified lock (standard, triangular, lukeable). Suitable for direct mounting of electronic meters:

- max n°1 integrated single-phase measuring group, GMI-GMY type.

- max n°1 single phase for powers up to 10Kw GEM-GISM type. Fixing with n. 1 base T5 A2 (serial number 286103).

- max n°1 three-phase for powers up to 16.5Kw type GET2A, up to 30Kw type GIST. Fixing with n°1 base T5 A4 (Serial number 286142).

IP43 degree of protection according to CEI EN 60529, IK10 according to CEI EN 62262.

For self-standing installation with masonry frame.

Materials

Made in fiberglass RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4 .

External dimensions, mm			Internal dimensions, mm			Door dimension, mm	Counter compartment dimension, mm			IP	Model	Code
Height	Width	Depth	Height	Width	Depth		Height	Width	Depth			
1390	1150	460	a 1340	1132	428	1274x1060	375	182	182	IP44	GH12-8/8/GMI/T-4	078138351

## Double door 2 compartments enclosures



### Characteristics

Made with 2 equipment compartments integrated in a single support structure. Overall height sizes available: 940 - 1120mm - 1390mm - 1840mm for two depths: 330mm - 460mm.

Rated insulation voltage  $U_i$  690V.

Complete with fixing frame for installation on a concrete base. Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder-customized cipher on request).

Door opening side can be changed on site even on a single compartment (for detailed information consult the accessories selection). Arrangement of the compartments (upper/lower) modifiable on site according to the need for installation of internal equipment and accessories (DOTPER® system).

Can be equipped with mounting plates and dedicated accessories for creating panels.

Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.

Closing bottom plate with conical fairleads and seal (only IP55 versions).

### Materials

Made in fiberglass, RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4

External dimensions, mm			Internal dimensions, mm			Door dimension, mm	IP	Model	Code	
Height	Width	Depth	Height	Width	Depth					
 940	1150	330	a-b= 433	1132	298	374x1060	IP55	G12-5/22A/T	077125219	
		460	a-b= 433	1132	428	374x1060	IP44	G12-5/22A/T-4	078125218	
	1150	330	460	a-b= 433	1132	428	374x1060	IP55	GH12-5/22A/T	077135218
								IP44	GH12-5/22A/T-4	078135217
 1120	1150	330	a-b= 523	1132	298	464x1060	IP55	G12-6/33A/T	077126217	
		460	a-b= 523	1132	428	464x1060	IP44	G12-6/33A/T-4	078126216	
	1150	330	460	a-b= 523	1132	428	464x1060	IP55	GH12-6/33A/T	077136216
								IP44	GH12-6/33A/T-4	078136215
 1390	1150	330	a= 883 b= 433	1132	298	824x1060 374x1060	IP55	G12-8/52A/T	077128213	
		460	a= 883 b= 433	1132	428	824x1060 374x1060	IP44	G12-8/52A/T-4	078128212	
	1150	330	460	a-b= 658	1132	298	599x1060	IP55	GH12-8/52A/T	077138212
								IP44	GH12-8/52A/T-4	078138211
 1390	1150	330	a-b= 658	1132	298	599x1060	IP55	G12-8/44A/T	077128221	
		460	a-b= 658	1132	428	599x1060	IP44	G12-8/44A/T-4	078128220	
	1150	330	460	a-b= 658	1132	428	599x1060	IP55	GH12-8/44A/T	077138220
								IP44	GH12-8/44A/T-4	078138229
 1840	1150	330	a= 1340 b= 433	1132	298	1274x1060 374x1060	IP55	G12-9/82A/T	077129211	
		460	a= 1340 b= 433	1132	428	1274x1060 374x1060	IP44	G12-9/82A/T-4	078129210	
	1150	330	460	a-b= 883	1132	298	824x1060	IP55	GH12-9/82A/T	077139210
								IP44	GH12-9/82A/T-4	078139219
 1840	1150	330	a-b= 883	1132	298	824x1060	IP55	G12-9/55A/T	077129229	
		460	a-b= 883	1132	428	824x1060	IP44	G12-9/55A/T-4	078129228	
	1150	330	460	a-b= 883	1132	298	824x1060	IP55	GH12-9/55A/T	077139228
								IP44	GH12-9/55A/T-4	078139227



## Double door 2 compartments with integrated plinth



### Characteristics

Made with 2 equipment compartments + bottom plinth integrated in a single support structure. Overall height sizes available: 1120mm - 1390mm - 1840mm for two depth: 330mm - 460mm. Rated insulation voltage  $U_i$  690V.

Complete with fixing frame for installation on a concrete base. Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder-customized cipher on request).

Door opening side can be changed on site even on a single compartment (for detailed information consult the accessories selection). Arrangement of the compartments (upper/lower) modifiable on site according to the need for installation of internal equipment and accessories (DOTPER® system).

Can be equipped with mounting plates and dedicated accessories for creating panels.


Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.

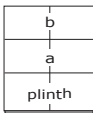
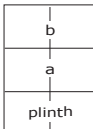
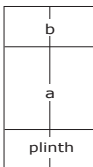
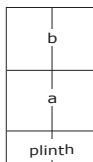
Closing bottom plate with conical fairleads and seal (only IP55 versions).

### Materials

Made in fiberglass, RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

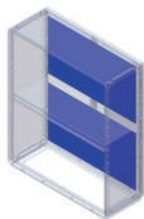
### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK1.0 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4 .

External dimensions, mm			Internal dimensions, mm			Plinth height mm	Door dimension mm	IP	Model	Code	
Height	Width	Depth	Height	Width	Depth						
 1120	1150	330	a-b= 343	1132	298	400	284x1060	IP55	G12-6/111A/ZT	077126290	
		460	a-b= 343	1132	428		284x1060	IP44	G12-6/111A/ZT-4	078126299	
	1150	460	460	a-b= 343	1132	428	490	374x1060	IP55	G12-8/222A/ZT	077128296
								374x1060	IP44	G12-8/222A/ZT-4	078128295
 1390	1150	330	a-b= 433	1132	298	490	374x1060	IP55	GH12-6/111A/ZT	077136299	
		460	a-b= 433	1132	428		374x1060	IP44	GH12-6/111A/ZT-4	078136298	
	1150	460	460	a-b= 433	1132	428	490	824x1060 374x1060	IP55	GH12-8/222A/ZT	077138295
								824x1060 374x1060	IP44	GH12-8/222A/ZT-4	078138294
 1840	1150	330	a= 883 b= 433	1132	298	490	824x1060 374x1060	IP55	G12-9/252A/ZT	077129286	
		460	a= 883 b= 433	1132	428		824x1060 374x1060	IP44	G12-9/252A/ZT-4	078129285	
	1150	460	460	a-b= 658	1132	298	490	599x1060	IP55	GH12-9/252A/ZT	077139285
								599x1060	IP44	GH12-9/252A/ZT-4	078139284
 1840	1150	330	a-b= 658	1132	298	490	599x1060	IP55	G12-9/244A/ZT	077129294	
		460	a-b= 658	1132	428		599x1060	IP44	G12-9/244A/ZT-4	078129293	
	1150	460	460	a-b= 658	1132	428	490	599x1060	IP55	GH12-9/244A/ZT	077139293
								599x1060	IP44	GH12-9/244A/ZT-4	078139292



### Mounting plates

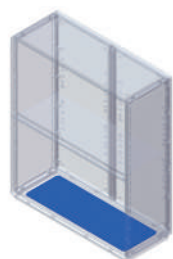


#### Characteristics

Can be applied to the bottom of the enclosure using special threaded inserts with M6x20 stud bolts or in conjunction with switchgear risers or racks using the dedicated fixing brackets. Available in: Pre-galvanized steel - thickness 2 mm; bakelite - thickness 5 mm; PVC - thickness 5 mm. Must be chosen to suit the size of the compartment in question.

Useful height mm	Plate dimensions mm	Steel (2mm thick)		Bakelite (5 mm thick)		PVC (5 mm thick)	
		Model	Code	Model	Code	Model	Code
343	1026x265	G12/1/PA	095771010	G12/1/PB	095771119	G12/1/PP	095771218
433	1026x355	G12/2/PA	095771028	G12/2/PB	095771127	G12/2/PP	095771226
523	1026x445	G12/3/PA	095771036	G12/3/PB	095771135	G12/3/PP	095771234
658	1026x580	G12/4/PA	095771044	G12/4/PB	095771143	G12/4/PP	095771242
883	1026x805	G12/5/PA	095771051	G12/5/PB	095771150	G12/5/PP	095771259
1340	1026x1240 (in 2 pezzi)	G12/8/PA	095771077	G12/8/PB	095771176	G12/8/PP	095771275

### Closing bottom plate



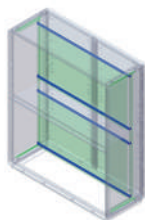
#### Characteristics

Made of 3 mm thick bakelite, it is installed in the lower part of the enclosures to provide additional protection for the compartment where the cable input channels are situated. Available in the blank version so that the required holes can be made during installation or complete with 2 conical fairleads (max. diam. 76)

In the IP55 enclosures the partition is supplied as standard.

Enclosure depth mm	Blank plate		Plate with conical fairleads	
	Model	Code	Model	Code
330	G12/SIC	095771408	G12/SIM	095771424
460	GH12/SIC	095771457	GH12/SIM	095771473

### Brackets kit for supporting the mounting plate on the uprights



#### Characteristics

Made from steel. To be used together with an uprights kit and brackets kit for installing the depth-adjustable plate. If uprights and brackets kits are envisaged for supporting modular equipment, a further uprights kit without the upright support brackets kit is required.

Suitable for all types of plate. For plates provided in 2 parts, 2 bracket kits are required.

Description	Model	Code
Brackets kit for support plates on uprights (4 pcs)	G/SP/MT	095770921

## Uprights kit + brackets kit

**Characteristics**

Steel uprights set up with holes for fastening modular panel frames, equipment holding racks, mounting plates. Brackets for upright supports made from steel. The kit must be selected based on the depth and overall height of the enclosure regardless of the number and layout of compartments.

Enclosure verall height mm	Uprights (2 pieces)		Uprights support brackets (4 pieces)			
	Model	Code	Depth 330 mm		Depth 460 mm	
			Model	Code	Model	Code
490	G-2/MT	095770020	G/SM	095770905	GH/SM	095770913
580	G-3/MT	095770038				
1390	G-8/MT	095770087	N.B. The support brackets can be used on all heights of upright kits and up to an overall number of three kits.			
1840	G-9/MT	095770095				

**N.B. The Grafi12 series does not provide accessories for modular equipments**

**Maximum applicable load on mounting plate/Protected useful space for equipment/Heat dissipation pag. 172**

Accessories and spare parts to the whole Grafi12 series

- Ventilation units page. 190
- Anchor frame pag. 189

## Double door 3/4 compartments enclosures




### Characteristics

Made with 3/4 equipment compartments integrated in a single support structure.  
 Overall height sizes available: 1120mm - 1390mm - 1840mm for two depths: 330mm - 460mm.  
 Rated insulation voltage  $U_i$  690V.  
 Complete with fixing frame for installation on a concrete base. Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder-customized cipher on request).  
 Door opening side can be changed on site even on a single compartment (for detailed information consult the accessories selection). Arrangement of the compartments (upper/lower) modifiable on site according to the need for installation of internal equipment and accessories (DOTPER® system).  
 Can be equipped with mounting plates and dedicated accessories for creating panels.  
 Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.  
 Closing bottom plate with conical fairleads and seal (only IP55 versions).

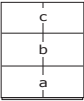
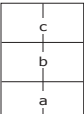
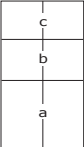
### Materials

Made in fiberglass, RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

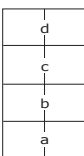
### Standards

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4 .

## 3 compartments

	External dimensions, mm			Internal dimensions, mm			Door dimension, mm	IP	Model	Code
	Height	Width	Depth	Height	Width	Depth				
	1120	1150	330	a-b-c= 343	1132	298	284x1060	IP55	G12-6/111A/T	077126316
		1150	460	a-b-c= 343	1132	428	284x1060	IP44	G12-6/111A/T-4	078126315
	1390	1150	330	a-b-c= 433	1132	298	374x1060	IP55	G12-8/222A/T	077128312
		1150	460	a-b-c= 433	1132	428	374x1060	IP44	G12-8/222A/T-4	078128311
	1390	1150	330	a= 883 b-c= 433	1132	298	824x1060 374x1060	IP55	G12-9/522A/T	077129310
		1150	460	a= 883 b-c= 433	1132	428	824x1060 374x1060	IP44	G12-9/522A/T-4	078129319
	1840	1150	330	a-b= 658 c= 433	1132	298	599x1060 374x1060	IP55	G12-9/442A/T	077129328
		1150	460	a-b= 658 c= 433	1132	428	599x1060 374x1060	IP44	G12-9/442A/T-4	078129327
	1840	1150	330	a-b= 658 c= 433	1132	298	599x1060 374x1060	IP55	G12-9/442A/T	077129328
		1150	460	a-b= 658 c= 433	1132	428	599x1060 374x1060	IP44	G12-9/442A/T-4	078129327

## 4 compartments

	External dimensions, mm			Internal dimensions, mm			Door dimension, mm	IP	Model	Code
	Height	Width	Depth	Height	Width	Depth				
	1840	1150	330	a-b-c-d= 433	1132	298	374x1060	IP55	G12-9/2222A/T	077129419
								IP44	G12-9/2222A/T-4	078129418
	1840	1150	460	a-b-c-d= 433	1132	428	374x1060	IP55	G12-9/2222A/T	077139418
								IP44	G12-9/2222A/T-4	078139417

## Double door 3/4 compartments enclosures with integrated plinth

**Characteristics**

Made with 3 equipment compartments separated by an intermediate partition + bottom plinth integrated in a single support structure.

Overall height 1840mm for two depths: 330mm – 460mm.

Rated insulation voltage  $U_i$  690V.

Complete with fixing frame for installation on a concrete base. Hinged door complete with closing mechanism operated by a retracting handle and Y21 single-cipher safety lock (DIN18252 profile cylinder - customized cipher on request).

Arrangement of the compartments (upper/intermediate) modifiable on site according to the needs of installation of equipment and internal accessories (DOTPER® system)

Door opening side can be changed on site. Can be equipped with mounting plates and dedicated accessories for creating panels.


Mounting plate equipped with studs that can be fitted with threaded inserts with M6x20 stud bolts for fixing accessories.

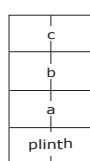
Closing bottom plate with conical fairleads and seal (only IP55 versions).

**Materials**

Made in fiberglass, RAL 7035 color. Handle in thermoplastic resin. Rotating bracket in galvanized steel. Internal rods and posts in steel with GEOMET 321 treatment. Concealed external hinges in stainless steel. Seals in foamed EPDM.

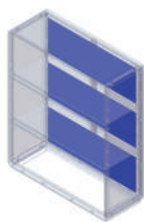
**Standards**

IMQ certification made in accordance with standard CEI EN 62208. Protection classes IP55 and IP44 in compliance with CEI EN 60529, IK10 according to CEI EN 62262. Pre-engineered for apparatus in class II according to CEI 64-8/4 .



External dimensions, mm			Internal dimensions, mm			Plinth height mm	Door dimension mm	IP	Model	Code
Height	Width	Depth	Height	Width	Depth					
1840	1150	330	a-b-c= 433	1132	298	490	374x1060	IP55	G12-9/2222A/ZT	077129393
								IP44	G12-9/2222A/ZT-4	078129392
	1150	460	a-b-c= 433	1132	428		374x1060	IP55	GH12-9/2222A/ZT	077139392
								IP44	GH12-9/2222A/ZT-4	078139391

## Mounting plates



#### Characteristics

Can be applied to the bottom of the enclosure using special threaded inserts with M6x20 stud bolts or in conjunction with switchgear risers or racks using the dedicated fixing brackets. Available in: Pre-galvanized steel - thickness 2 mm; bakelite - thickness 5 mm; PVC - thickness 5 mm. Must be chosen to suit the size of the compartment in question.

Useful height mm	Plate dimensions mm	Steel (mm thick)		Bakelite (5 mm thick)		PVC (5 mm thick)	
		Model	Code	Model	Code	Model	Code
343	1026x265	G12/1/PA	095771010	G12/1/PB	095771119	G12/1/PP	095771218
433	1026x355	G12/2/PA	095771028	G12/2/PB	095771127	G12/2/PP	095771226
658	1026x580	G12/4/PA	095771044	G12/4/PB	095771143	G12/4/PP	095771242
883	1026x805	G12/5/PA	095771051	G12/5/PB	095771150	G12/5/PP	095771259

## Closing bottom plate

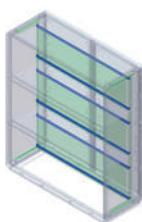


#### Characteristics

Made of 3 mm thick bakelite, it is installed in the lower part of the enclosures to provide additional protection for the compartment where the cable input channels are situated. Available in the blank version so that the required holes can be made during installation or complete with 4 conical fairleads (max. diam. 76). In IP55 enclosures the partition is provided as standard.

Enclosure depth mm	Blank plate		Plate with conical fairleads	
	Model	Code	Model	Code
330	G12/SIC	095771408	G12/SIM	095771424
460	GH12/SIC	095771457	GH12/SIM	095771473

## Brackets kit for supporting the mounting plates on the uprights



#### Characteristics

Made from steel. To be used together with an uprights kit and brackets kit for installing the depth-adjustable plate. If uprights and brackets kits are envisaged for supporting modular equipment, a further uprights kit without the upright support brackets kit is required. Suitable for all types of plate. For plates provided in 2 parts, 2 bracket kits are required.

Description	Model	Code
Brackets kit for support plates on uprights (4 pcs)	G/SP/MT	095770921

## Uprights kit + brackets kit



### Characteristics

Steel uprights set up with holes for fastening modular panel frames, equipment holding racks, mounting plates. Brackets for upright supports made from steel. The kit must be selected based on the depth and overall height of the enclosure regardless of the number and layout of compartments.

Enclosure overall height mm	Uprights (2 pieces)		Uprights support brackets (4 pieces)			
	Model	Code	Depth 330 mm		Depth 460 mm	
			Model	Code	Model	Code
1120	G-6/MT	095770061	G/SM	095770905	GH/SM	095770913
1390	G-8/MT	095770087	N.B. The support brackets can be used on all heights of upright kits and up to an overall number of three kits.			
1840	G-9/MT	095770095				

**N.B. The Grafi12 series does not provide accessories for modular equipment.**

**Maximum applicable load on mounting plate/Protected useful space for equipment/Heat dissipation pag. 173**

Accessories and spare parts to the whole Grafi12 series

- **Ventilation units page. 190**

- **Anchor frame pag. 189**

## Maximum load

Maximum load applicable on the mounting plate and usable protected space for equipment in observance of the characteristics certified by standard CEI EN 62208.

The table shows the maximum load value applicable on the mounting plate installed on both the bottom wall and on the uprights (in the case of multiple compartments, the value refers to the individual compartments). Other installation methods may bear greater weights.

By usable protected space we mean the space dedicated to the installation of protection and manoeuvring equipment for which the IP rating is guaranteed by the casing.

## Thermal energy dissipation (Pmax. = watt)

Calculation carried out in accordance with standard CEI 17-43: method of temperature-rise assessment by extrapolation for partially type-tested assemblies for protection (BT panels) of low-voltage switchgear not standard (ANS).

Thermal energy dissipation values (Pmax=watt) of the enclosures provided in the table are valid considering:

- standard installation conditions (exposure on all sides);
- ambient temperature established at 35 °C;
- overtemperature values achieved at mid height [ $\Delta t$  0.5 (°C)] (value indicated in the table);
- overtemperature values established at the top  $\Delta t$  1.0 = 30 °C.

Pmax(watt) is an overall value referring to the entire structure of the enclosure; in the case of multiple compartments, the value must be divided by the number of compartments. The standard thermal energy dissipation value [Pmax(watt)] can be increased by applying ventilation units.

## Top units



Code	Model	Useful space, mm			Max load, kg comp "a"	$\Delta T$ 0,5 (°C)	Pmax (W)
		Height	Width	Depth			
<b>IP55</b>							
077122190	G12-2/2A/S	a=355	1025	235	60	24,3	153
077123198	G12-3/3A/S	a=445	1025	235	70	24,1	174
077124196	G12-4/4A/S	a=580	1025	235	80	23,7	218
077132199	GH12-2/2A/S	a=355	1025	365	60	24,5	189
077133197	GH12-3/3A/S	a=445	1025	365	70	24,4	213
077134195	GH12-4/4A/S	a=580	1025	365	80	24,1	267
<b>IP44</b>							
078122199	G12-2/2A/S-4	a=355	1025	235	60	25	159
078123197	G12-3/3A/S-4	a=445	1025	235	70	25	181
078124195	G12-4/4A/S-4	a=580	1025	235	80	24,5	227
078132198	GH12-2/2A/S-4	a=355	1025	365	60	25,3	197
078133196	GH12-3/3A/S-4	a=445	1025	365	70	25,2	222
078134194	GH12-4/4A/S-4	a=580	1025	365	80	25	278

### Average integration of the Dissipable Power

The standard value of Pmax (Watt) can be increased by the application of the aeration vents, in particular:

- n°2 aeration vents, applied diagonally, increase the dissipable power [Pmax (Watt)] of **100W**.

Ex. For the enclosure G12-3/3A/T la Pmax(Watt) = 174W. Applying n°2 ventilation units the Pmax (Watt) is 174W+100W = 274W.

- n°2 aeration vents, applied diagonally, one of which with forced ventilation and installed in the upper part of the enclosure, increase the dissipable power [Pmax (Watt)] of **250W**.

Ex. For the enclosure G12-5/13A/ZT la Pmax(Watt) = 277W. Applying n°2 ventilation units, one with forced ventilation, the Pmax (Watt) is 277W+250W = 527W.

**For any specific composition requests a specific calculation in place.**



1 compartment



Code	Model	Useful space, mm			Max load, kg comp "a"	Δ T 0,5 (°C)	Pmax (W)
		Height	Width	Depth			
<b>IP55</b>							
077122117	G12-2/2A/T	a=355	1025	235	60	24,3	153
077123115	G12-3/3A/T	a=445	1025	235	70	24,1	174
077124113	G12-4/4A/T	a=580	1025	235	80	23,7	218
077125110	G12-5/5A/T	a=805	1025	235	90	23	277
077127116	G12-7/7A/T	a=1045	1025	235	95	22,3	343
077128114	G12-8/8A/T	a=1255	1025	235	100	21,7	367
077132116	GH12-2/2A/T	a=355	1025	365	60	24,5	189
077133114	GH12-3/3A/T	a=445	1025	365	70	24,4	213
077134112	GH12-4/4A/T	a=580	1025	365	80	24,1	267
077135119	GH12-5/5A/T	a=805	1025	365	90	23,7	351
077137115	GH12-7/7A/T	a=1045	1025	365	95	23,1	397
077138113	GH12-8/8A/T	a=1255	1025	365	100	22,6	435
<b>IP44</b>							
078122116	G12-2/2A/T-4	a=355	1025	235	60	25	159
078123114	G12-3/3A/T-4	a=445	1025	235	70	25	181
078124112	G12-4/4A/T-4	a=580	1025	235	80	24,5	227
078125119	G12-5/5A/T-4	a=805	1025	235	90	24	289
078127115	G12-7/7A/T-4	a=1045	1025	235	95	23	357
078128113	G12-8/8A/T-4	a=1255	1025	235	100	22,4	382
078132115	GH12-2/2A/T-4	a=355	1025	365	60	25,3	197
078133113	GH12-3/3A/T-4	a=445	1025	365	70	25,2	222
078134111	GH12-4/4A/T-4	a=580	1025	365	80	25	278
078135118	GH12-5/5A/T-4	a=805	1025	365	90	24,5	367
078137114	GH12-7/7A/T-4	a=1045	1025	365	95	24	414
078138112	GH12-8/8A/T-4	a=1255	1025	365	100	23,3	453

1 compartment with integrated plinth



Code	Model	Useful space, mm			Max load, kg comp "a"	Δ T 0,5 (°C)	Pmax (W)
		Height	Width	Depth			
<b>IP55</b>							
077125185	G12-5/13A/ZT	a=445	1025	235	70	23	277
077128197	G12-8/25A/ZT	a=805	1025	235	90	21,7	345
077129195	G12-9/28A/ZT	a=1255	1025	235	100	20,4	434
077135184	GH12-5/13A/ZT	a=445	1025	365	70	23,7	351
077138196	GH12-8/25A/ZT	a=805	1025	365	90	22,6	435
077139194	GH12-9/28A/ZT	a=1255	1025	365	100	21,6	496
<b>IP44</b>							
078125184	G12-5/13A/ZT-4	a=445	1025	235	70	24	289
078128196	G12-8/25A/ZT-4	a=805	1025	235	90	22,4	360
078129194	G12-9/28A/ZT-4	a=1255	1025	235	100	21,2	452
078135183	GH12-5/13A/ZT-4	a=445	1025	365	70	24,5	367
078138195	GH12-8/25A/ZT-4	a=805	1025	365	90	23,3	453
078139193	GH12-9/28A/ZT-4	a=1255	1025	365	100	22,3	517

## 2 compartments



Conchi:12

Code	Model	Useful space, mm			Max load kg		$\Delta T_{0,5}$ (°C)	Pmax (W)
		Height	Width	Depth	comp "a"	comp "b"		
<b>IP55</b>								
077125219	G12-5/22A/T	a-b=355	1025	235	60	60	23	261
077126217	G12-6/33A/T	a-b=445	1025	235	70	70	22,5	311
077128213	G12-8/52A/T	a=805 b=355	1025	235	90	60	21,7	345
077128221	G12-8/44A/T	a-b=580	1025	235	80	80	21,7	345
077129211	G12-9/82A/T	a=1255 b=265	1025	235	100	50	20,4	409
077129229	G12-9/55A/T	a-b=805	1025	235	90	90	20,4	409
077135218	GH12-5/22A/T	a-b=355	1025	365	60	60	23,7	331
077136216	GH12-6/33A/T	a-b=445	1025	365	70	70	23,7	362
077138212	GH12-8/52A/T	a=805 b=355	1025	365	90	60	22,6	410
077138220	GH12-8/44A/T	a-b=580	1025	365	80	80	22,6	410
077139210	GH12-9/82A/T	a=1255 b=355	1025	365	100	50	21,6	467
077139228	GH12-9/55A/T	a-b=805	1025	365	90	90	21,6	467
<b>IP44</b>								
078125218	G12-5/22A/T-4	a-b=355	1025	235	60	60	24	272
078126216	G12-6/33A/T-4	a-b=445	1025	235	70	70	23,3	324
078128212	G12-8/52A/T-4	a=805 b=355	1025	235	90	60	22,4	360
078128220	G12-8/44A/T-4	a-b=580	1025	235	80	80	22,4	360
078129210	G12-9/82A/T-4	a=1255 b=265	1025	235	100	50	21,2	426
078129228	G12-9/55A/T-4	a-b=805	1025	235	90	90	21,2	426
078135217	GH12-5/22A/T-4	a-b=355	1025	365	60	60	24,5	345
078136215	GH12-6/33A/T-4	a-b=445	1025	365	70	70	24	377
078138211	GH12-8/52A/T-4	a=805 b=355	1025	365	90	60	23,3	427
078138229	GH12-8/44A/T-4	a-b=580	1025	365	80	80	23,3	427
078139219	GH12-9/82A/T-4	a=1255 b=355	1025	365	100	50	22,3	486
078139227	GH12-9/55A/T-4	a-b=805	1025	365	90	90	22,3	486

## 2 compartments with integrated plinth



Code	Model	Useful space, mm			Max load kg		$\Delta T_{0,5}$ (°C)	Pmax (W)
		Height	Width	Depth	comp "a"	comp "b"		
<b>IP55</b>								
077126290	G12-6/111A/ZT	a-b=265	1025	235	50	50	22,5	311
077128296	G12-8/222A/ZT	a-b=355	1025	235	60	60	21,7	345
077129286	G12-9/252A/ZT	a=805 b=355	1025	235	90	60	20,4	409
077129294	G12-9/244A/ZT	a-b=580	1025	235	80	80	20,4	409
077136299	GH12-6/111A/ZT	a-b=265	1025	365	50	50	23,7	362
077138295	GH12-8/222A/ZT	a-b=355	1025	365	60	60	22,6	410
077139285	GH12-9/252A/ZT	a=805 b=355	1025	365	90	60	21,6	467
077139293	GH12-9/244A/ZT	a-b=580	1025	365	80	80	21,6	467
<b>IP44</b>								
078126299	G12-6/111A/ZT-4	a-b=265	1025	235	50	50	23,3	324
078128295	G12-8/222A/ZT-4	a-b=355	1025	235	60	60	22,4	360
078129285	G12-9/252A/ZT-4	a=805 b=355	1025	235	90	60	21,2	426
078129293	G12-9/244A/ZT-4	a-b=580	1025	235	80	80	21,2	426
078136298	GH12-6/111A/ZT-4	a-b=265	1025	365	50	50	24	377
078138294	GH12-8/222A/ZT-4	a-b=355	1025	365	60	60	23,3	427
078139284	GH12-9/252A/ZT-4	a=805 b=355	1025	365	90	60	22,3	486
078139292	GH12-9/244A/ZT-4	a-b=580	1025	365	80	80	22,3	486

3 compartments



Code	Model	Useful space, mm			Max load, kg			$\Delta T_{0,5}$ (°C)	Pmax (W)
		Height	Width	Depth	comp "a"	comp "b"	comp "c"		
<b>IP55</b>									
077126316	G12-6/111A/T	a-b-c=265	1025	235	50	50	50	22,5	277
077128312	G12-8/222A/T	a-b-c=355	1025	235	60	60	60	21,7	308
077129310	G12-9/522A/T	a=805 b-c=355	1025	235	90	60	60	20,4	365
077129328	G12-9/442A/T	a-b=580 c=355	1025	235	80	80	60	20,4	365
077136315	GH12-6/111A/T	a-b-c=265	1025	365	50	50	50	23,7	323
077138311	GH12-8/222A/T	a-b-c=355	1025	365	60	60	60	22,6	366
077139319	GH12-9/522A/T	a=805 b-c=355	1025	365	90	60	60	21,6	417
077139327	GH12-9/442A/T	a-b=580 c=355	1025	365	80	80	60	21,6	417
<b>IP44</b>									
078126315	G12-6/111A/T-4	a-b-c=265	1025	235	50	50	50	23,3	289
078128311	G12-8/222A/T-4	a-b-c=355	1025	235	60	60	60	22,4	321
078129319	G12-9/522A/T-4	a=805 b-c=355	1025	235	90	60	60	21,2	380
078129327	G12-9/442A/T-4	a-b=580 c=355	1025	235	80	80	60	21,2	380
078136314	GH12-6/111A/T-4	a-b-c=265	1025	365	50	50	50	24	337
078138310	GH12-8/222A/T-4	a-b-c=355	1025	365	60	60	60	23,3	381
078139318	GH12-9/522A/T-4	a=805 b-c=355	1025	365	90	60	60	22,3	434
078139326	GH12-9/442A/T-4	a-b=580 c=355	1025	365	80	80	60	22,3	434

3 compartments with integrated plinth



Code	Model	Useful space, mm			Max load, kg			$\Delta T_{0,5}$ (°C)	Pmax (W)
		Height	Width	Depth	comp "a"	comp "b"	comp "c"		
<b>IP55</b>									
077129393	G12-9/2222A/ZT	a-b-c=355	1025	235	60	60	60	20,4	365
077139392	GH12-9/2222A/ZT	a-b-c=355	1025	365	60	60	60	21,6	417
<b>IP44</b>									
078129392	G12-9/2222A/ZT-4	a-b-c=355	1025	235	60	60	60	21,2	380
078139391	GH12-9/2222A/ZT-4	a-b-c=355	1025	365	60	60	60	22,3	434

4 compartments



Code	Model	Useful space, mm			Max load, kg				$\Delta T_{0,5}$ (°C)	Pmax (W)
		Height	Width	Depth	comp "a"	comp "b"	comp "c"	comp "d"		
<b>IP55</b>										
077129419	G12-9/2222A/T	a-b-c-d=355	1025	235	60	60	60	60	20,4	313
077139418	GH12-9/2222A/T	a-b-c-d=355	1025	365	60	60	60	60	21,6	358
<b>IP44</b>										
078129418	G12-9/2222A/T-4	a-b-c-d=355	1025	235	60	60	60	60	21,2	326
078139417	GH12-9/2222A/T-4	a-b-c-d=355	1025	365	60	60	60	60	22,3	373





# Accessories

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## Mounting plates



### Characteristics

Can be applied to the bottom of the enclosure using special threaded inserts with M6x20 stud bolts or in conjunction with switchgear risers or racks using the dedicated fixing brackets (MT).

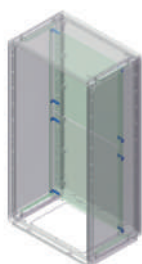
For the choice of the mounting plates, refer to the "useful height of the single compartment" and to the series of enclosures (Graf5-Graf7-Graf9-Graf12).

### Materials

Made of the following materials:  
 Pre-galvanized steel (PA) 2 mm thick.  
 Bakelite (PB) 5mm thick.  
 PVC (PP) 5mm thick.

Enclosure series	Useful height	Plate dimensions mm		Steel (2mm thick)		Bakelite (5 mm thick)		PVC (5 mm thick)	
		Width	Height	Model	Code	Model	Code	Model	Code
Graf5	343	455	265	G5/1/PA	095775011	G5/1/PB	095775110	G5/1/PP	095775219
	433	455	355	G5/2/PA	095775029	G5/2/PB	095775128	G5/2/PP	095775227
	523	455	445	G5/3/PA	095775037	G5/3/PB	095775136	G5/3/PP	095775235
	658	455	580	G5/4/PA	095775045	G5/4/PB	095775144	G5/4/PP	095775243
	883	455	805	G5/5/PA	095775052	G5/5/PB	095775151	G5/5/PP	095775250
	1130	455	1030 (in 2 pcs)	G5/7/PA	095775060	G5/7/PB	095775169	G5/7/PP	095775268
	1340	455	1240 (in 2 pcs)	G5/8/PA	095775078	G5/8/PB	095775177	G5/8/PP	095775276
Graf7	433	560	355	G7/2/PA	095777017	G7/2/PB	095777116	G7/2/PP	095777215
	658	560	580	G7/4/PA	095777025	G7/4/PB	095777124	G7/4/PP	095777223
	883	560	805	G7/5/PA	095777033	G7/5/PB	095777132	G7/5/PP	095777231
	1130	560	1030 (in 2 pcs)	G7/7/PA	095777041	G7/7/PB	095777140	G7/7/PP	095777249
	1340	560	1240 (in 2 pcs)	G7/8/PA	095777058	G7/8/PB	095777157	G7/8/PP	095777256
Graf9	433	785	355	G9/2/PA	095779013	G9/2/PB	095779112	G9/2/PP	095779211
	658	785	580	G9/4/PA	095779021	G9/4/PB	095779120	G9/4/PP	095779229
	883	785	805	G9/5/PA	095779039	G9/5/PB	095779138	G9/5/PP	095779237
	1130	785	1030 (in 2 pcs)	G9/7/PA	095779047	G9/7/PB	095779146	G9/7/PP	095779245
	1340	785	1240 (in 2 pcs)	G9/8/PA	095779054	G9/8/PB	095779153	G9/8/PP	095779252
Graf12	343	1026	265	G12/1/PA	095771010	G12/1/PB	095771119	G12/1/PP	095771218
	433	1026	355	G12/2/PA	095771028	G12/2/PB	095771127	G12/2/PP	095771226
	523	1026	445	G12/3/PA	095771036	G12/3/PB	095771135	G12/3/PP	095771234
	658	1026	580	G12/4/PA	095771044	G12/4/PB	095771143	G12/4/PP	095771242
	883	1026	805	G12/5/PA	095771051	G12/5/PB	095771150	G12/5/PP	095771259
	1130	1026	1030 (in 2 pcs)	G12/7/PA	095771069	G12/7/PB	095771168	G12/7/PP	095771267
	1340	1026	1240 (in 2 pcs)	G12/8/PA	095771077	G12/8/PB	095771176	G12/8/PP	095771275

## Installation on uprights for adjustable intermediate placement

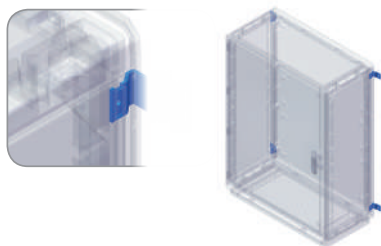


### Characteristics

For this installation mode, the enclosure must be arranged with the appropriate Upright Kit + Bracket Kit that allow to the mounting plate to be applied in an intermediate position among the depth of the compartment. Besides the Uprights and Brackets kit for this installation, it is necessary to have 1 Fixing brackets kit for single plate installation.

Description	Model	Code
Brackets kit for support plates on uprights	G/SP/MT	095770921

## Wall fixing brackets



### Characteristics

The top units and some predisposed enclosures in standard execution for floor fixing can be supplied complete with 4 brackets installed on the back wall, to allow them to be fixed to the wall.

The brackets can be supplied:

- loose execution, assembled by the customer;
- applied execution, performed directly at the factory.

The application of brackets for wall mounting is provided for both the top units and the enclosures (see tables).

Description	Model	Code
Brackets for wall mounting (loose execution)	G/SFP	095770939
Applied execution of brackets for wall mounting	G-EA/SFP	097770028



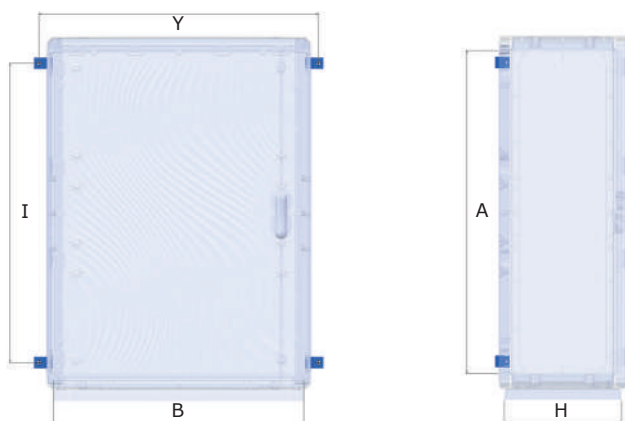
## Top Units

The uprights are not provided with cable entry holes: they must be made on site or on request according to drawing quantities (for fixing distances see picture)

### Brackets for wall mounting

Enclosures series	Top unit code		Top unit dimensions			Fixing wheelbase	
	IP55	IP44	A	B	H	I	Y
Graf5	077501906	078501905	400	580	330	233	616
	077502904	078502903	490	580	330	323	616
	077512903	078512902	490	580	460	323	616
	077503902	078503901	580	580	330	413	616
	077513901	078513900	580	580	460	413	616
	077504900	078504909	715	580	330	548	616
	077514909	078514908	715	580	460	548	616
	077505907	078505906	940	580	330	773	616
	077515906	078515905	940	580	460	773	616
Graf7	077702900	078702909	490	685	330	323	720
	077712909	078712908	490	685	460	323	720
	077704906	078704905	715	685	330	548	720
	077714905	078714904	715	685	460	548	720
	077705903	078705902	940	685	330	773	720
	077715902	078715901	940	685	460	773	720
Graf9	077902906	078902905	490	910	330	323	945
	077912905	078912904	490	910	460	323	945
	077904902	078904901	715	910	330	548	945
	077914901	078914900	715	910	460	548	945
	077904910	078904919	715	910	330	548	945
	077914919	078914918	715	910	460	548	945
	077905909	078905908	940	910	330	773	945
	077915908	078915907	940	910	460	773	945

### Fixing wheelbase



## Enclosures

The enclosures lower part must be completed with the corresponding closing bottom plate (included in the IP55 version): Closed plate (SIC) to make personalized holes - Plate with membranes (SIM) diam. 76mm (see accessory details on page 180).

### Enclosures brackets for wall mounting

Enclosures series	Enclosure code		Enclosure dimensions			Fixing wheelbase	
	IP55	IP44	A	B	H	I	Y
Graf5	077500106	078500105	400	580	330	233	616
	077502102	078502101	490	580	330	323	616
	077512101	078512100	490	580	460	323	616
	077503100	078503109	580	580	330	413	616
	077513109	078513109	580	580	460	413	616
	077504108	078504107	715	580	330	548	616
	077514107	078514106	715	580	460	548	616
	077505105	078505104	940	580	330	773	616
	077515104	078515103	940	580	460	773	616
	077505204	078505203	940	580	330	773	616
	077515203	078515202	940	580	460	773	616
	077505212	078505211	940	580	330	773	616
	077515211	078515210	940	580	460	773	616
Graf7	077702108	078702107	490	685	330	323	720
	077712107	078712106	490	685	460	323	720
	077704104	078704103	715	685	330	548	720
	077714103	078714102	940	685	460	773	720
	077705101	078705100	940	685	330	773	720
	077715100	078715109	940	685	460	773	720
	077705200	078705209	940	685	330	773	720
	077715209	078715208	940	685	460	773	720
Graf9	077904100	078904109	715	910	330	548	945
	077914109	078914108	715	910	460	548	945
	077904118	078904117	715	910	330	548	945
	077914117	078914116	715	910	460	548	945
	077905107	078905106	940	910	330	773	945
	077915106	078915105	940	910	460	773	945
	077905115	078905114	940	910	330	773	945
	077915114	078915113	940	910	460	773	945
	077905206	078905205	940	910	330	773	945
	077915205	078915204	940	910	460	773	945

## Compartment intermediate plate



### Characteristics

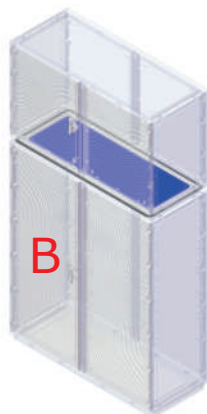
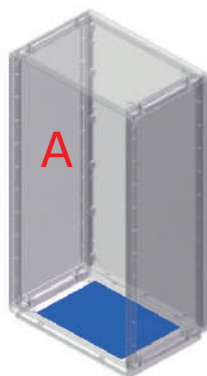
The intermediate plate are included in the supply of enclosures with multiple compartments, prepared for mounting in correspondence of the compartments through special brackets. They can be supplied individually as spare parts or for installation in enclosures with integrated plinth (G.../.../ZT versions) for separation between plinth and equipment compartment. In the standard version are interconnected over the entire enclosure section. The choice must be made based on the enclosure series (Graf5-Graf7-Graf9-Graf12) and its depth (330-460).

### Materials

Made of 3mm thick bakelite.

Enclosure series	Depth	Resin material (th. 3 mm)	
		Model	Code
Graf5	330	G5/SSV	095775508
	460	GH5/SSV	095775557
Graf7	330	G7/SSV	095777504
	460	GH7/SSV	095777553
Graf9	330	G9/SSV	095779500
	460	GH9/SSV	095779559
Graf12	330	G12/SSV	095771507
	460	GH12/SSV	095771556

## Enclosure closing bottom plates



### Characteristics

G.../SIC - Closed execution for possible drilling in place

G.../SIM - Complete execution of drilling diam. 76mm complete with thermoplastic conical cable glands. The choice must be made according to the enclosure series (Graf5 - Graf7 - Graf9 - Graf12) and its depth (330 - 460).

### Materials

Made of 3mm thick bakelite.

### The lower closing partitions can be used on request:

- on all floor-mounted enclosures to increase protection in the cable entry area from the tunnels. (A)
  - to separate the upper part with the lower compartment in the case where the applied execution of top mounting arrangement with maximum light is used (B) (see page Risers accessories).
- In the IP55 enclosures the lower plate is supplied as standard.

Enclosure series	Depth	Resin material (th. 3 mm)				
		Closed		With conical fairleads		
		Model	Code	Model	Code	
Graf5	330	G5/SIC	095775409	G5/SIM	095775425	3 fairleads Ø 76 mm
	460	GH5/SIC	095775458	GH5/SIM	095775474	
Graf7	330	G7/SIC	095777405	G7/SIM	095777421	3 fairleads Ø 76 mm
	460	GH7/SIC	095777454	GH7/SIM	095777470	
Graf9	330	G9/SIC	095779401	G9/SIM	095779427	3 fairleads Ø 76 mm
	460	GH9/SIC	095779450	GH9/SIM	095779476	
Graf12	330	G12/SIC	095771408	G12/SIM	095771424	4 fairleads Ø 76 mm
	460	GH12/SIC	095771457	GH12/SIM	095771473	

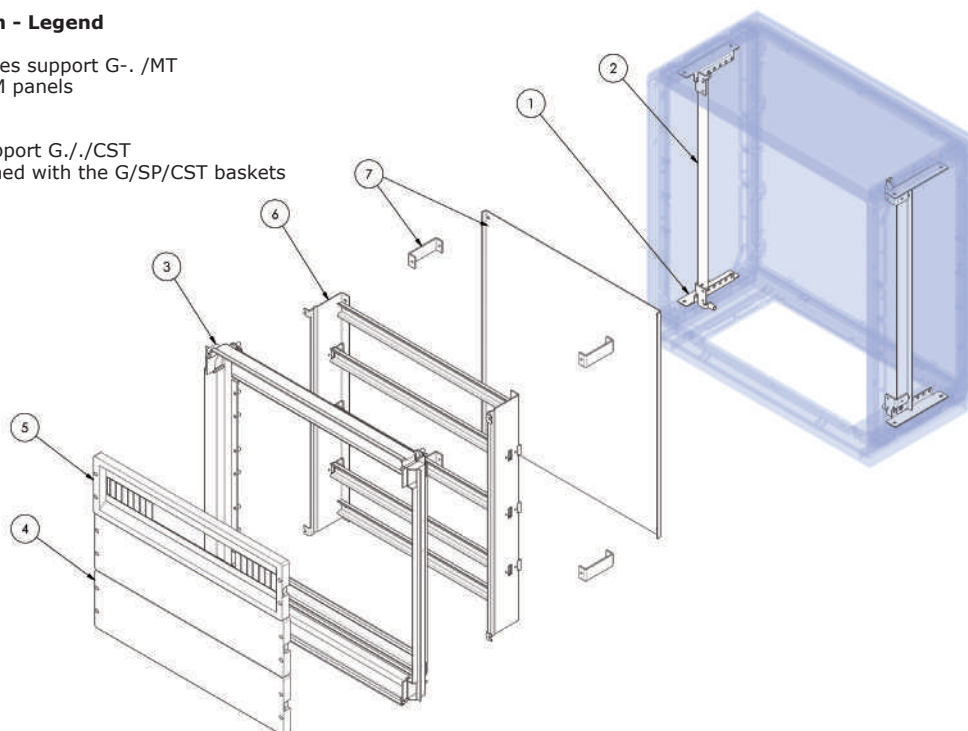
## Accessories for creating modular equipments panels

### Characteristics

The Grafi series enclosures provide a wide range of accessories that can be used for the realization of panels equipped with modular equipments. In addition to single-compartment enclosures, it is possible to customize enclosures with multiple compartments, even in different ways in order to be able to exploit the individual compartments in the most appropriate way.

### The components of the system - Legend

- 1 - Mounting brackets G. /SM
- 2 - Uprights for internal accessories support G-. /MT
- 3 - Frame for supporting G./TPM panels
- 4 - Closed panels G./PC
- 5 - Slotted panels G./PM.
- 6 - Basket for modular device support G././CST
- 7 - Bracket/plate kit to be combined with the G/SP/CST baskets



## Equipment compartments mode

To create panels inside the GRAFI enclosures, just follow the steps below:

Fixing upright brackets		Internal accessories brackets	
<p>You need 1 Kit (4 pcs) for single compartment enclosure even if used on a enclosure with multiple compartments. They must be chosen based on the enclosure depth (300 - 460 mm).</p>		<p>You need 1 Kit (2 pcs.) for single enclosure even if employed on a enclosure with multiple compartments. They must be chosen based on the enclosure overall height</p>	
Modular device support rack		Bracket/plate kit for rack mounting	
<p>1 piece for each single compartment that you want to accessorize. The choice must be made according to the series (Grafi5 - Grafi7 - Grafi9) and according to the useful height of the single compartment that you want to accessorize considering that: USEFUL HEIGHT COMPARTMENTS 883 - 1340 mm you need 2 pcs of suitable rack to use all the available space.</p>		<p>You need 1 kit (4 brackets + 1 steel plate) for each rack provided. To be chosen according to the enclosure series, depth (330-460mm) and type of rack. The brackets/plate kit is used in combination with modular equipment support racks for the possible fixing of non-modular back panel components.</p>	
Panel support frame		Closed or Slotted panels	
<p>1 piece for each single compartment that you want to accessorize. The choice must be made according to the series (Grafi5 - Grafi7 - Grafi9) and according to the useful height of the single compartment that you want to accessorize.</p>		<p>To be chosen according to the series (Grafi5 - Grafi7 - Grafi9) and maximum number that can be installed on each single support frame. The mix between closed and slotted execution according to the installation needs.</p>	

## Uprights fixing brackets kit



### Characteristics

The order code includes 4 pieces needed for the subsequent installation of the accessories support uprights and the plates used to equip the compartments.  
For any accessory installation only the BRACKETS KIT is needed.  
The selection depends entirely on the depth of the enclosures regardless of the number and usable height of the compartments.

### Materials

Made of electrolytically galvanized steel.

Enclosures series	Depth 330 mm		Depth 460 mm	
	Model	Code	Model	Code
Graf5-Graf7-Graf9-Graf12	G/SM	095770905	GH/SM	095770913

The uprights fixing brackets kit may also be used as a shelf for creating intermediate shelves within the panel space.

## Uprights kit to support internal accessories

### Characteristics

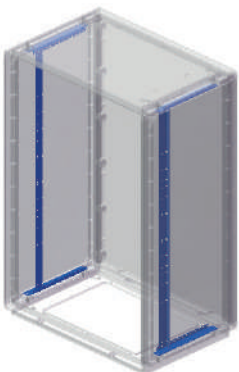
Made with holes for securing accessories. The order Code includes 2 pieces. Made for installation together with uprights installation brackets (G/SM-GH/SM). They can be used mainly to:

- support accessories to create panels with modular equipment in the individual compartments (frames - racks);
  - mounting plates support if the position is to be intermediate and adjustable in relation to the depth of the enclosure.
- Suitable also for customising installations defined by the customer. The selection must be made based on the overall height of the enclosure, regardless of the enclosure series and type (1 compartment, 1 compartment with integrated plinth, multi-compartment, multi-compartment with integrated plinth, top units).

### Materials

Made of electrolytically galvanized steel.

Graf5 Graf7 Graf9 Graf12	Overall height enclosure, mm								
	400	490	580	715	940	1120	1180	1390	1840
Model	G-1/MT	G-2/MT	G-3/MT	G-4/MT	G-5/MT	G-6/MT	G-7/MT	G-8/MT	G-9/MT
Code	095770012	095770020	095770038	095770046	095770053	095770061	095770079	095770087	095770095



Installation of uprights on a single compartment

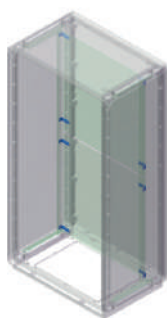


Installation of uprights on a 2 compartments enclosure with integrated plinth



Installation of uprights on a cabinet complete with plinth (not integrated)

## Bracket kit for mounting mounting plates on uprights adjustable in depth



### Characteristics

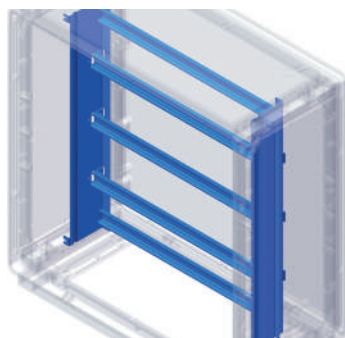
4 pieces Kit supplied. 1 kit is required for each mounting plate to be installed. Can be used on any type of enclosure as long as it is equipped with uprights dedicated to this installation (the uprights used to support the panel accessories can not be used).

### Materials

Made of electrolytically galvanized steel.

Description	Model	Code
Brackets Kit for uprights support plate (4Pcs)	G/SP/MT	095770921

## Modular equipments support rack



### Characteristics

Prepared for installation on support and extractable uprights to facilitate the wiring and components positioning operations.

Complete with DIN 46277/3 profiles for the installation of modular components with a 70mm and 92.5 max height.

To be chosen according to the enclosures series (Grafi5 - Grafi7 - Grafi9) and the useful height of the single compartment on which to make the equipment in combination with the frame/framework selected with the same criterion.

In case of multiple compartments, it is naturally possible to equip only 1 compartment or some of the compartments available.

The rack can be equipped with a mounting plate through special brackets that make two components integral. In this way, the need to install non-modular (open) equipment, it is possible to make the rack + mounting plate and to make it removable, as to be able to carry out the wiring out of the closet with maximum comfort.

### Materials

Made of electrolytically galvanized steel.

Enclosures series	Useful height	Model	Code	No. installable pieces*	Combination with frame/framework	
					Model	Code
Grafi5	343	G5/1/CST	095775805	1	G5/1/TPM	095775706
	433	G5/2-5/CST	095775813	1	G5/2/TPM	095775714
	523	G5/3-7/CST	095775821	1	G5/3/TPM	095775722
	658	G5/4-8/CST	095775839	1	G5/4/TPM	095775730
	883	G5/2-5/CST	095775813	2	G5/5/TPM	095775748
	1130	G5/3-7/CST	095775821	2	G5/7/TPM	095775755
	1340	G5/4-8/CST	095775839	2	G5/8/TPM	095775763
Grafi7	433	G7/2-5/CST	095777801	1	G7/2/TPM	095777702
	658	G7/4-8/CST	095777819	1	G7/4/TPM	095777710
	883	G7/2-5/CST	095777801	2	G7/5/TPM	095777728
	1130	G7/7/CST	095777827	1	G7/7/TPM	095777736
	1340	G7/4-8/CST	095777819	2	G7/8/TPM	095777744
Grafi9	433	G9/2-5/CST	095779807	1	G9/2/TPM	095779708
	658	G9/4-8/CST	095779815	1	G9/4/TPM	095779716
	883	G9/2-5/CST	095779807	2	G9/5/TPM	095779724
	1130	G9/7/CST	095779823	1	G9/7/TPM	095779732
	1340	G9/4-8/CST	095779815	2	G9/8/TPM	095779740

\*The useful height 883 and 1340 mm compartments have two identical racks as indicated in the table.

If the number of modules allows it, it is possible to use a single rack even if the compartment can accommodate 2.

## Brackets and mounting plate kit for modular equipments support racks



### Characteristics

Kit made up of 4 brackets and 1 plate to be combined with the racks when these are to be fitted out with accessories. For the selection of the KIT, refer to the series and depth of the enclosure and the type of rack used to support the modular equipment. In Grafi5 (usable height 883-1130-1340 mm), Grafi7 (usable height 883-1340 mm) and Grafi9 (usable height 883-1340 mm) enclosures, being as 2 racks per compartment are envisaged, it is necessary to also have 2 brackets and plates kits.

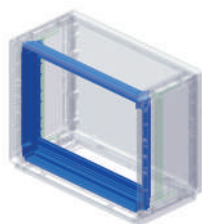
### Materials

Brackets made from electrolytically galvanized steel. Pre-galvanized steel partition (PA), thickness 2 mm.

Enclosures series	Modular equipment support rack		Enclosure depth mm	Bracket/plate kit		Rack/plate distance, mm
	Model	Code		Model	Code	
Grafi5	G5/1/CST	095775805	330	G5/1/PACST	095775854	85
	G5/2-5/CST	095775813	330	G5/2-5/PACST	095775862	85
			460	GH5/2-5/PACST	095775904	215
	G5/3-7/CST	095775821	330	G5/3-7/PACST	095775870	85
			460	GH5/3-7/PACST	095775912	215
	G5/4-8/CST	095775839	330	G5/4-8/PACST	095775888	85
460			GH5/4-8/PACST	095775920	215	
Grafi7	G7/2-5/CST	095777801	330	G7/2-5/PACST	095777865	85
			460	GH7/2-5/PACST	095777868	215
	G7/4-8/CST	095777819	330	G7/4-8/PACST	095777850	85
			460	GH7/4-8/PACST	095777884	215
	G7/7/CST	095777827	330	G7/7/PACST	095777843	85
			460	GH7/7/PACST	095777876	215
Grafi9	G9/2-5/CST	095779807	330	G9/2-5/PACST	095779831	85
			460	GH9/2-5/PACST	095779906	215
	G9/4-8/CST	095779815	330	G9/4-8/PACST	095779856	85
			460	GH9/4-8/PACST	095779922	215
	G9/7/CST	095779823	330	G9/7/PACST	095779849	85
			460	GH9/7/PACST	095779914	215



## Frame/framework for supporting modular equipments panels



1 compartment enclosure

### Characteristics

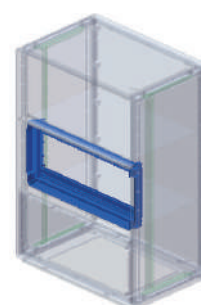
Made in 4 pieces (2 side uprights and 2 top/bottom crosspieces) designed to be fastened to the relative support uprights. Designed to accommodate blank or slotted panels to protect modular equipments (G./PC-G./PM). To be selected based on the enclosure series (Graf5 - Graf7 - Graf9) and the usable height of the individual compartment being equipped. In the case of multiple compartments, it is of course possible to equip only one compartment or just some of the compartments available.

### Materials

Made from self-extinguishing thermoplastic material, grey RAL 7035 color.



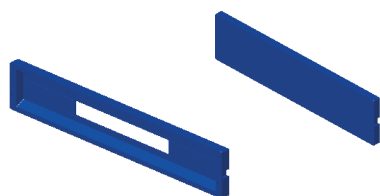
2 compartments enclosure



3 compartments enclosure

Enclosures series	Useful height compartment	Frame/framework for supporting modular equipment panels			
		Model	Code	Max No. installable panel	No. max DIN module (17,5 mm)
Graf5	343	G5/1/TPM	095775706	1	24
	433	G5/2/TPM	095775714	2	48
	523	G5/3/TPM	095775722	3	72
	658	G5/4/TPM	095775730	3	72
	883	G5/5/TPM	095775748	4	96
	1130	G5/7/TPM	095775755	6	144
	1340	G5/8/TPM	095775763	6	144
Graf7	433	G7/2/TPM	095777702	2	58
	658	G7/4/TPM	095777710	3	81
	883	G7/5/TPM	095777728	4	116
	1130	G7/7/TPM	095777736	6	174
	1340	G7/8/TPM	095777744	6	174
Graf9	433	G9/2/TPM	095779708	2	80
	658	G9/4/TPM	095779716	3	120
	883	G9/5/TPM	095779724	4	160
	1130	G9/7/TPM	095779732	6	240
	1340	G9/8/TPM	095779740	6	240

## Closed or slotted panels


**Characteristics**

Prepared for fixing on relative frame/framework.  
To be chosen according to the enclosures series (Grafı5 - Grafı7 - Grafı9) and to maximum installable on Frame/Framework.

**Materials**

Made in self-extinguishing thermoplastic material, grey RAL 7035 color.

Enclosures series	Description	Panels		
		Model	Code	No. max DIN module
Grafı5	Closed	G5/PC	095775607	-
	Slotted	G5/PM24	095775623	24
Grafı7	Closed	G7/PC	095777603	-
	slotted	G7/PM/29	095777629	29
Grafı9	Closed	G9/PC	095779609	-
	Slotted	G9/PM/40	095779625	40

## Standard order kit for making panels with modular equipment accessories

**Characteristics:** For quick composition of the accessories which can be used to make panels equipped with modular accessories, it is possible, by knowing the reference code for the top unit or enclosure, to identify the standard KITS for ordering the relative Uprights/Brackets and Frame/Panels/Rack.

Kits are available for the Grafı5 - Grafı7 and Grafı9 series and are made up of:

**Uprights/Brackets kit:** with 2 uprights and 4 brackets. The uprights come ready with holes for installing accessories.



**Frame/Panels/Rack kit:** with

- 1 modular equipment support rack which can be removed from the enclosure to facilitate execution of the panel, complete with profiles DIN 46277/3.
- 1 panels support frame
- slotted panels (the panels supplied are all slotted, any requests for blank panels must be integrated separately).

The Frame/Panels/Rack kit must be selected for each individual compartment



For Code specific informations and standard ordering Kit abbreviations for panels with modular accessories, see the catalog in the Accessories section of the following series:

**Grafı5** Top unit pag. 12; 1compartment-1compartment with integrated plinth pag. 20; 2compartments-2compartments with integrated plinth pag. 26; 3compartments-3compartments with integrated plinth pag. 32; 4compartments-4compartments with integrated plinth-5compartments pag. 38.

**Grafı7** Top unit pag. 60; 1compartment-1compartment with integrated plinth pag. 70; 2compartments-2compartments with integrated plinth pag. 80; 3compartments-3compartments with integrated plinth pag. 88.

**Grafı9** Top unit pag. 106; 1compartment-1compartment with integrated plinth pag. 116; 2compartments-2compartments with integrated plinth pag. 126; 3compartments-3compartments with integrated plinth-4compartments pag. 134.

## Accessories for creating RACK 19" equipments

### Uprights kit and brackets kit for 19" Rack



#### Characteristics

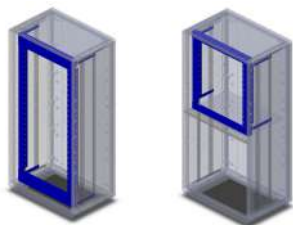
Set up with holes for fastening of frame/framework and shelves for 19" RACK. To be used together with uprights support brackets. The selection of the kit must be made based on the overall height of the enclosure, regardless of the number and layout of the various compartments. Order 2 uprights kits and 1 brackets kit. In multiple compartment enclosures, the same uprights and brackets kit can be used to fit out one or more compartments with 19" racks, so as to create, in the remaining compartments, panels with modular equipment or based on customized installations defined by the customer.

#### Materials

Steel uprights and brackets.

Enclosures series	Overall height mm	Uprights (2 pieces)		No. upright kit request	Uprights support brackets (4 pieces)			
		Model	Code		Depth 330 mm		Depth 460 mm	
					Model	Code	Model	Code
Graf 7	490	G-2/MT	095770020	2	G/SM	095770905	GH/SM	095770913
	715	G-4/MT	095770046					
	940	G-5/MT	095770053					
	1180	G-7/MT	095770079					
	1390	G-8/MT	095770087					
	1840	G-9/MT	095770095					

### Frame/framework for 19" Rack



#### Characteristics

In 4 pieces and prepared for fixing on uprights kit. To be chosen according to the useful height of the single compartment. In the case of multiple compartments, the individual compartment can also be equipped.

#### Materials

Made with metal sheet, grey RAL7035 color

Enclosures series	Useful height compartment, mm	No. max unit HE	Equipment maximum weight (Kg)	Frame/framework	
				Model	Code
Graf 7	433	6	20	G7/2/TR19	095777645
	658	12	35	G7/4/TR19	095777652
	883	16	48	G7/5/TR19	095777660
	1130	20	60	G7/7/TR19	095777678
	1340	24	80	G7/8/TR19	095777686

### Modular equipment panels for Rack 19"



#### Characteristics

Complete with DIN 46 277/3 profile and a pair of slotted fixing brackets for 24 modules of 17,5mm. Overall height 4 units HE

#### Materials

Made with metal sheet, grey RAL7035 color

Enclosures series	Dimension buttonhole	External dimension	No. unit HE	Model	Code
Graf 7	423x46	490x177	4	ACV/PM/RACK	095759247

## Closing blind panels for Rack 19"

**Materials**

Made in steel sheet, grey RAL 7032 color.

Enclosures series	External dimensions	Size	Model	Code
Graf 7	490x44	n. 1 HE unit	ACV/PC1/RACK	095759114
	490x88	n. 2 HE unit	ACV/PC2/RACK	095759122
	490x177	n. 4 HE unit	ACV/PC4/RACK	095759148
	490x355	n. 8 HE unit	ACV/PC8/RACK	095759139

## Shelves for deep equipment support for Rack 19"

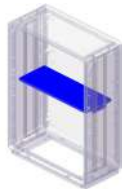

**Characteristics**

To be used with the RACK19" to frontally set and to support heavy and deep equipment.

**Materials:** Galvanized steel

Enclosures series	Shelves (2 pieces)	
	Model	Code
Graf 7	G/M/TR19	095770806

## Pre-galvanized sheet metal equipments holding shelves


**Characteristics**

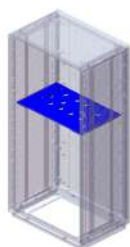
To be installed using 2 upright kits G-../MT (selected based on the overall height) and 1 brackets kit G/SM or GH/SM.

These are complete with 2 brackets for application of shelves. To be selected based on enclosure depth.

**Material:** in pre-galvanized sheet metal

Enclosures series	Enclosure depth mm	Overall shelves dimension, mm			Shelves	
		Height	Width	Depth	Model	Code
Graf5	330	225	485	17	G5/RP	095775631
	460	355	485	17	GH5/RP	095775649
Graf7	330	225	590	17	G7/RP	095777561
	460	355	590	17	GH7/RP	095777579
Graf9	330	225	815	17	G9/RP	095779633
	460	355	815	17	GH9/RP	095779641

## Fiberglass equipments holding shelves


**Characteristics**

To be installed using 2 G-../MT uprights (selected based on the overall height), 1 GH/SM brackets kit and 1 GH/SRP/A-L brackets kit.

To be chosen in width to the depth of the enclosure.

**Material:** In fiberglass

Enclosures series	Enclosure depth mm	Overall shelves dimension, mm			Max capacity, kg	Shelf		Combination with bracket (2 PCS)	
		Height	Width	Depth		Model	Code	Model	Code
Graf7	460	360	575	12	20	RPA/CVL	095751202	GH/SRP/A-L	095777397
Garfi9	460	360	675	12	20	RPL/CVL	095751251	GH/SRP/A-L	095777397

## Hinge uprights kit



Enclosure with 2 compartments with reversed door opening

Enclosure with 4 compartments with diversified door opening

### Characteristics

Enclosures in the Grafi series are designed with the option to reverse the side on which the doors open.

In the case of enclosures with one or multiple compartments, it is possible to reverse the side of door opening using the standard hinge uprights kit on the enclosure.

On the other hand, to diversify opening of the individual compartments, it is necessary to install an additional upright kit to support hinges, selected based on the overall height of the enclosure.

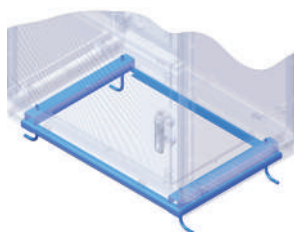
The kit includes hinge upright + fixing screws.

### Materials

Made from electrolytically galvanised steel.

Enclosure series	Hinge uprights kit		Overall height, mm
	Model	Code	
Grafi5-Grafi7-Grafi9-Grafi12	G-5/KM-CRN	095774055	940
	G-6/KM-CRN	095774063	1120
	G-8/KM-CRN	095774089	1390
	G-9/KM-CRN	095774097	1840

## Floor fixing frame



### Characteristics

AISI 304 stainless steel fasteners to guarantee accessibility over time.

Complete with brackets for masonry on concrete bases.

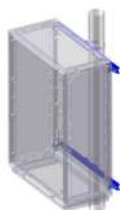
The selection must be made based on the enclosure series (Grafi5 - Grafi7 -Grafi9 -Grafi12) and relative depth (330 - 460mm).

### Materials

Made in steel with 18/24 micron black cataphoresis treatment.

Enclosures series	Depth, mm	Anchor frame	
		Model	Code
Grafi5	330	G5/TA	095775300
	460	GH5/TA	095775359
Grafi7	330	G7/TA	095777306
	460	GH7/TA	095777355
Grafi9	330	G9/TA	095779302
	460	GH9/TA	095779351
Grafi12	330	G12/TA	095771309
	460	GH12/TA	095771358

## Pole anchor frame



### Characteristics

Grafi top units 5-7-9 (height 400-490-580-715-940 mm) can be post mounted using the fixing frame made up of 4 brackets, 2 profiles and 2 collars. Minimum post diameter for application: 100 mm. Fixing to post using adjustable metal clamps or band-it tape with size up to 3/4".

### Materials

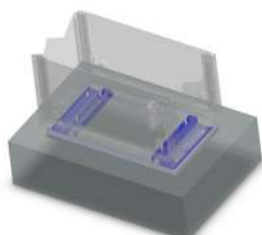
Steel profiles and brackets with 18-24 micron black cataphoresis treatment.

AISI 304 stainless steel fasteners.

Post adapter collars made from die cast aluminium alloy UNI EN 1706 AC46100DF.

Enclosures series	Model	Code
Grafi5	G5/TAP	095770970
Grafi7	G7/TAP	095770988
Grafi9	G9/TAP	095770996

## Interface brackets for fixing Grafi enclosures on CV series frame



### Characteristics

The Grafi enclosures can be installed on the frame that is already in the plinth of the CV series enclosures using 2 interface brackets to be positioned on the frame.  
The brackets has different configuration in relation to the different types of CV series enclosure.

### Materials

Made of 10/15 micron hot pre-galvanized sheet metal.

CV series enclosure	Min dimension Plinth		Enclosure	Enclosure depth, mm	Interface brackets	
	Width	Height			Model	Code
CVT	590	350	Grafi5	330	G-SIFT/5	095776506
CVL	860	460	Grafi9	460	G-SIFT/H9	095776514
CVBL	860	350	Grafi9	330	G-SIFT/7-9	095776530
CVBP	720	350	Grafi7	330		
CVHT	590	460	Grafi5	460	G-SIFT/H5-H7	095776522
CVHP	720	460	Grafi7	460		
CVF	1130	460	Grafi12	460	G-SIFT/H12	095776548

## Ventilation units



### Characteristics

Air diffusion area: 6500 mm<sup>2</sup>  
Protection degree IP44 according to CEI EN 60529, IK10 according to CEI EN 62262.

### Materials

External grille made of polycarbonate, intermediate and internal grid in injection molded polypropylene. Grey RAL7035 color. An anti-insects aluminum mesh was applied to the intermediate grid.

Hole, mm	Dimensions	Loose version		Applied version	
		Model	Code	Model	Code
146	160x160	G-BAF/145	095770855	G-EA/BAF/145	097770200

## Axial fan for ventilation units

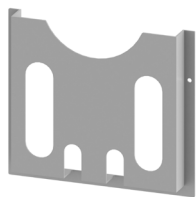


### Characteristics

Axial fan for forced aeration pre-engineered to ventilation units type G-BAF/145.  
220/240 V AC power supply voltage  
Frequency 50Hz  
Current 0.09A  
Power 19 W  
Air flow rate 28 l/s; 100 m<sup>3</sup>/h

Dimensions (mm)	Model	Code
120x120x25	G-VENTIL/BAF/145	095770863

## Drawings/documents slipcase



**Characteristics**

For drawings and documentsase. Fixing by biadhesive.

**Material:**

Plastic. RAL 7035 color

Enclosures series	Drawing/document slipcase	
	Model	Code
Graf5 - Graf7 - Graf9 - Graf12	G-PSK/A4-A	095777389

## Complete lock with handle cover



G-SSMG/Y21

**Characteristics**

Handle predisposed for DIN 18252 profile cylinder. Each lock is equipped with its own standard key.

**Materials**

Termoplastic resin handle. Operating tenon in galvanized steel.

Description / Application	Key	Enclosure	Model	Code
Controlled by retractable handle with Y21 encrypted security key	CS/21	Graf5 - Graf7 - Graf9 - Graf12	G-SSMG/Y21	095770210
Controlled by retractable handle with Y12 encrypted security key	CS/12		G-SSMG/Y12	095770129







# Special executions

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## Two-sided access to the compartments



### Characteristics

Thanks to their optimized structure, the bottom wall and door of the GRAFI enclosures are the same component since they only differ because of the lock and hinge on the door. This allow Grafi5 - Grafi7 and Grafi9 enclosure sizes to be equipped with hinged doors complete with locks on both the front and rear sides.

This version can be obtained with enclosure with:

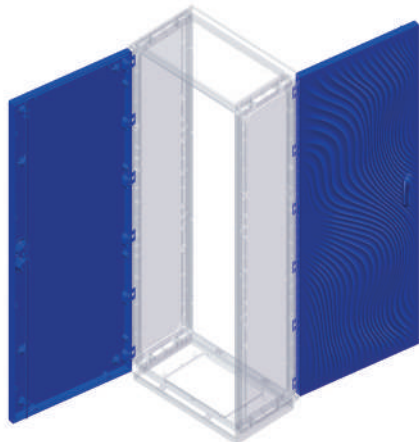
- 1 compartment/1 compartment with plinth
  - 2 compartments/2 compartments with plinth
- with the doors on the front of the standard version also applied to the back.

Description	Enclosure series	Model	Code
Double-sided with 1 compartment/ 1 compartment + plinth	Grafi5-Grafi7- Grafi9-Grafi12	G-EA/A2/1	097770069
Double-sided with 2 compartments/ 2 compartments + plinth	Grafi5-Grafi7- Grafi9-Grafi12	G-EA/A2/2	097770077

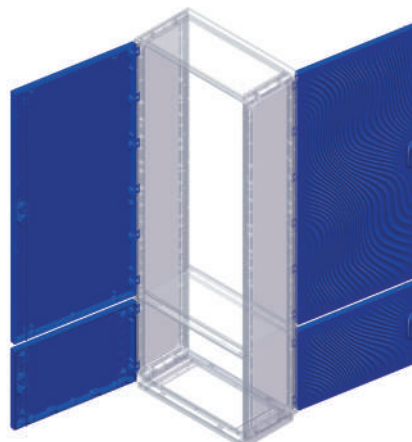
### How to order

To order the executions described above, it will be sufficient to combine the selected enclosure with the corresponding execution code. Example:

1. Double-sided enclosure with 1 compartment:  
**G5-8/8/T+G-EA A2/1**



2. Double-sided enclosure with 2 compartments:  
**G7-9/82/T-4+G-EA/A2/2**



Executions with combinations of different openings, in particular on enclosures with multiple compartments, can be evaluated on request.

## Compositions with deep development



### Characteristics

This version can only be obtained on enclosures with 1 compartment, 1 compartment + plinth and includes 2 compartments of the same height but even different depth measurements, which are joined together to form the required overall depth.

The assembled enclosures are fully communicating. They can be accessed from the two fronts or just one front and can be equipped with a bottom wall for equipment fixing.

The version can be achievable with Grafi 5 - Grafi 7 and Grafi 9 enclosures.

There are 2 combinations available:

- With front hinged door and blank bottom wall onto which a mounting plate can be fixed if required.
- With two doors, one on the front and one on the back. In this case, the equipment inside the enclosures can be installed on accessories for modular apparatus or on uprights and brackets complete with shelves (accessories to be ordered separately).

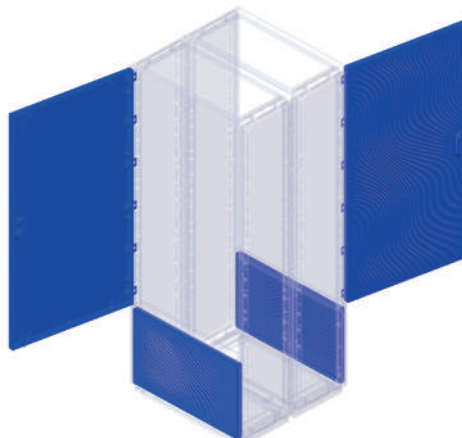
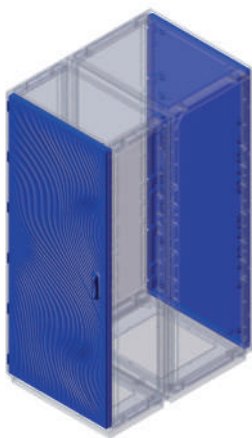
Enclosure series	Description	Model	Code
Grafi5-Grafi7-Grafi9-Grafi12	front hinged door and blank bottom wall	G-EA/DP/A1	097770085
Grafi5-Grafi7-Grafi9-Grafi12	two doors, one on the front and one on the back	G-EA/DP/A2	097770093

### How to order

To order the executions described above, add the relative execution code to the 2 enclosures to be matched. Example:

1. 790mm depth enclosure with 1 door and blank bottom wall: **G5-8/8/T+GH5-8/8/T+G-EA/DP/A1**

2. 660mm overall depth enclosure with 2 opposing doors: **G7-9/28/ZT-4+G7-9/28/ZT-4+G-EA/DP/A2**



Any further requests for compositions with in-depth development can be evaluated on request.

## Compositions with horizontal development



### Characteristics

In installations requiring separate compartments for different equipment where limited space or difficult access prevent the enclosures from being stacked, the Grafi enclosures can be arranged side by side so long as they are of the same height and depth. On request, slots or holes can be made in the two sides that stand against each other, so as to route cables from one compartment to the next. Side by side compositions are only available on request and must be assessed, as they depend on the composition required.



Description	Model	Code
Arrangement for side by side enclosure - left	G-EA/AA/SX	097770150
Arrangement for side by side enclosure - right	G-EA/AA/DX	097770168

### Type of buttonholes or holes on the two coinciding walls

Description	Model	Code
Execution of maximum opening between side-by-side enclosures	G-EA/AM/AA	097770176
Drilling (135 mm diameter) between side-by-side enclosures	G-EA/FT/AA	097770184

### How to order

To order the performances described above, it will be sufficient to integrate the relative preparation and execution codes into the composition of horizontal enclosures.

Example:

Horizontal composition of 1 G7-8/44/T and 1 G7-8/222/T with maximum opening between side-by-side enclosures:

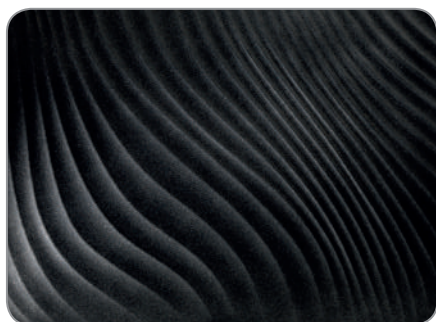
**G7-8/44/T+G7-8/222/T+G-EA/AA/SX+G-EA/AA/DX+G-EA/AM/AA**



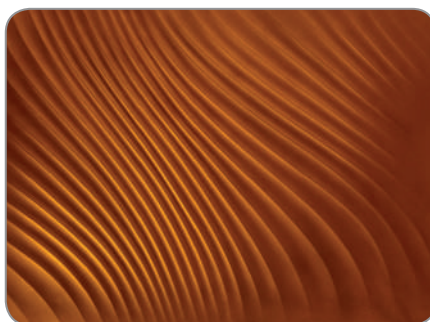
## Special paints

### Characteristics

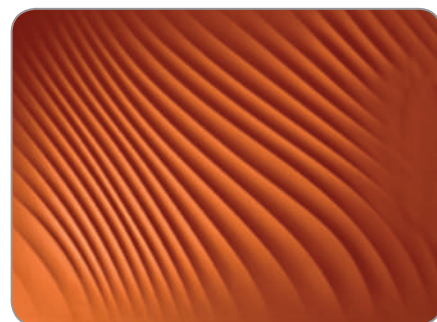
Particular attention has been paid to the visual appearance of the Grafi series. Even in their standard versions, the linear shape of the external profiles and the pattering on the doors and bottom walls of the enclosures blend perfectly with the surrounding urban design criterias. This line of products can be very easily treated with paints if the design features need to be underscored to a greater extent. The enclosures can be supplied in the following colors on request: **BLACK, COPPER** and **RUST**. Requests of specific paint colors can be assessed and estimates given for large quantities only.



Black



Copper



Rust

Painting description	Model	Code
Black	G-EA/VRN/NE	097776025
Copper	G-EA/VRN/RA	097776017
Rust	G-EA/VRN/RU	097776009

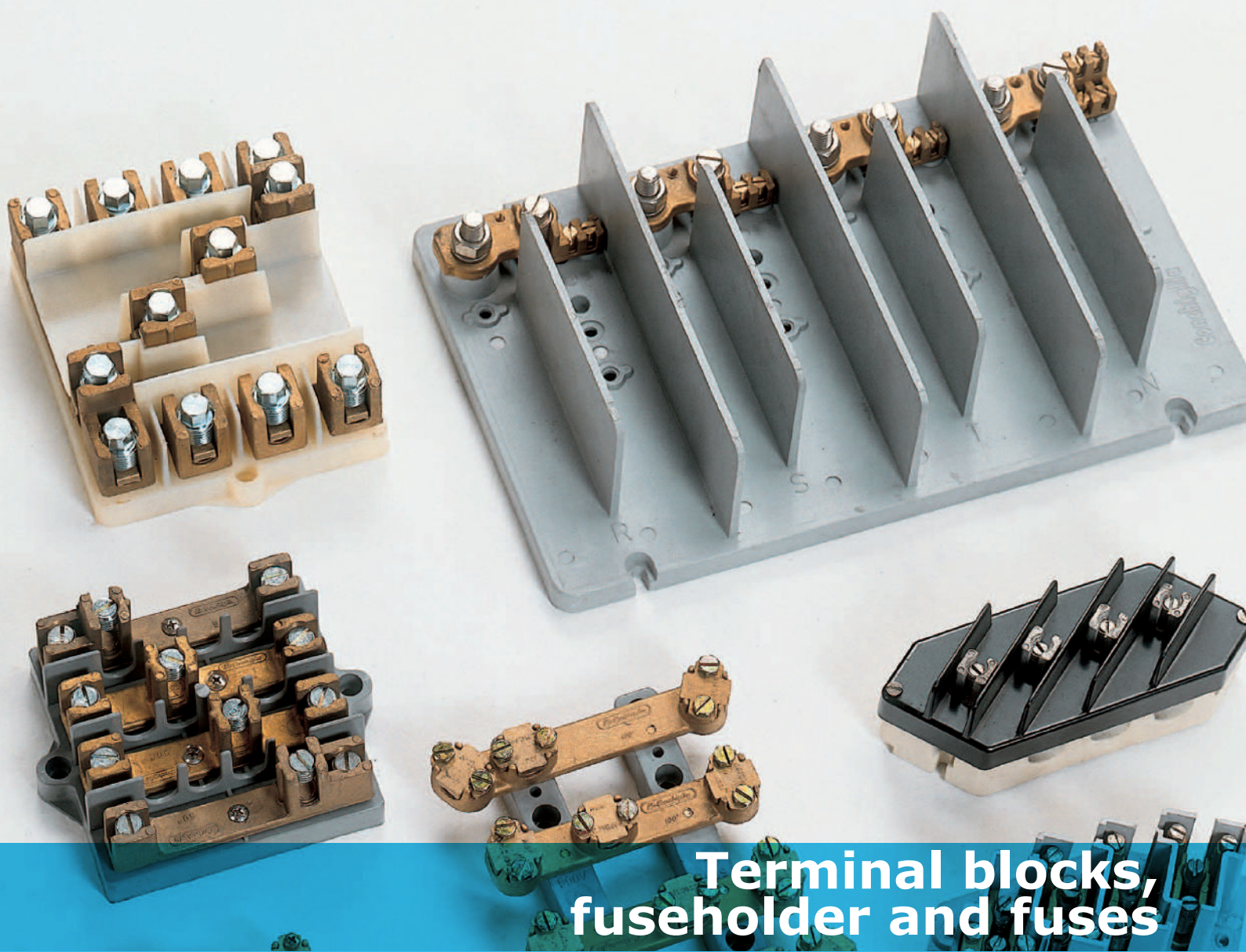






# B.T. installations and industrial





# Terminal blocks, fuseholder and fuses

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Linear sectioning terminal blocks .....	206
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## NM series - With base in plastic material



NM/416

**Materials**

Moulded insulating base in rigid polyvinyl chloride (PVC).

**Characteristics**

Through-groove and brass clamping clamps UNI EN 12165 with saw-toothed anti-loosening thread

**Protection degree**

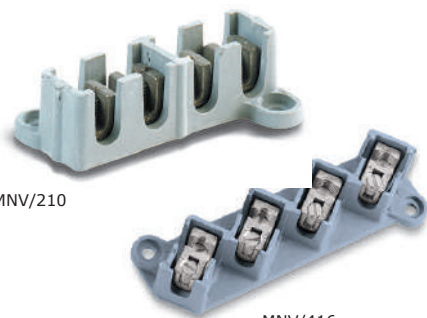
IP 10 in compliance with CEI EN 60529.

**Applications/Installations**

For junctions and shunts with uni-multipolar cables from through lines also.

External dimensions, mm			No. poles	Nominal section mm <sup>2</sup>	No. ways per pole	I max - A	Model	Code
Height	Base	Depth						
25	70	27	4	6	1	47	NM/46	011014065
37	102	33	4	16	1	80	NM/416	011014164
40	132	50	4	25	1	100	NM/425	011014255

## MN Series - With base in SMC (fiberglass)



MNV/210

MNV/416

**Materials**

Base in SMC (fiberglass).

**Characteristics**

Through-groove and brass clamping clamps UNI EN 12165 with saw-toothed anti-loosening thread. Independent tightening of the conductors for each way

**Protection degree**

IP 10 in compliance with CEI EN 60529.

**Applications/Installations**

For junctions and shunts with uni-multipolar cables from through lines also.

**Must only be installed in containers with insulated bases.**

External dimensions, mm			No. poles	Nominal section mm <sup>2</sup>	No. ways per pole	I max - A	Model	Code
Height	Base	Depth						
45	75	23	2	10	2	64	MNV/210	012022109
119	134	38	4	16	2	86	MNV/416	012024162
66	154	41	4	25	3	100	MNV/425	012024253

## MM Series - Multiple terminal blocks unipolar executions



MMC/135

**Materials**

Moulded insulating base in grey or light blue polyamide (MMC/135/N).

**Characteristics**

Terminal blocks with several independent ways in UNI EN 12165 brass and conductors locked by galvanized brass screws.

**Protection degree**

IP 20 in compliance with CEI EN 60529.

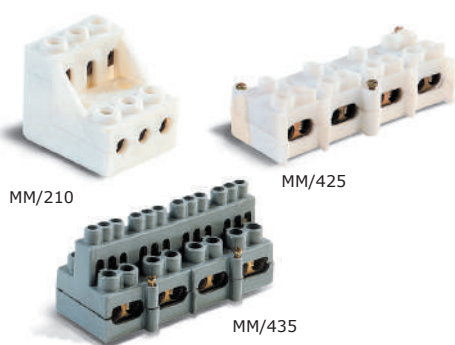
**Applications/Installations**

For junctions and shunts with several conductors per phase clamped separately.

To be mounted on profile - DIN 46277/1 - 46277/3.

External dimensions, mm			No. poles	Nominal section mm <sup>2</sup>	No. ways per pole	I max - A	Model	Code
Height	Base	Depth						
55	15	64	1	35	3	140	MMC/135	011311354
55	15	64	1	35	3	140	MMC/135/N	011311362

## MM series - Multipolar executions



**Materials**

Moulded insulating base in rigid polyvinyl chloride (PVC).

**Characteristics**

Terminal blocks with several independent ways in UNI EN 12165 brass.

**Protection degree**

IP 20 in compliance with CEI EN 60529.

**Applications/Installations**

For junctions and shunts with several conductors per phase clamped separately.

External dimensions, mm			No. poles	Nominal section mm <sup>2</sup>	No. ways per pole	I max - A	Model	Code
Height	Base	Depth						
44	36	39	2	10	3	64	MM/210	011212107
42	56	56	3	10	3	64	MM/310	011213105
37	90	32	4	16	4	86	MM/416	011214160
47	109	29	4	25	3	114	MM/425	011214251
58	122	56	4	35	7	140	MM/435	011214350

## MPZ series - Perforating unipolar terminal blocks



PZ/10-70/A

**Materials**

Moulded polyamide resin insulating base reinforced with fiberglass. Terminal in UNI EN 12165 brass. Stainless steel screws.

**Protection degree**

IP 55 in compliance with CEI EN 60529.

**Applications/Installation**

For area shunts on through backbones with perforation of the insulating material.

External dimensions, mm			No. poles	Nominal section mm <sup>2</sup>	No. ways per pole	I max - A	Model	Code
Height	Base	Depth						
42	48	56	1	10-70	3	150	MPZ/10-70/A	012051702

## MPZ series - Perforating flying derivation terminal blocks

**Materials**

Terminal insulating casing moulded in fiberglass-reinforced thermoplastic polyester resin. Upper and lower inserts in heat-resistant ceramic. Stainless steel nuts, bolts and screws.

**Protection degree**

IP 30.

**Application/Installation**

for branch connections on feed-through backbone lines where the insulation is perforated.

**Withstands a temperature of 400°C for 90 minutes (see ANAS circular prot. 7735 of 08/09/99).**

External dimensions, mm			No. poles	Nominal section mm <sup>2</sup>	No. ways per pole	I max - A	Model	Code
Height	Base	Depth						
57	44	74	1	6-35	3	80	MPZ/6-35/A	012056354



## MCM-MN Series - Tightening conductors with bearings



MCM/450

**MN Type:**
**Materials**

Moulded insulating bases in rigid polyvinyl chloride (PVC).

**Characteristics**

Two-way linear terminal block with relative conductor bearing clamps in UNI EN 12165 brass.

**Protection degree**

IP 00 in compliance with CEI EN 60529.

**Applications/Installations**

For rigid unipolar connections.

**MN Type:**
**Materials**

Moulded insulating base in rigid polyvinyl chloride (PVC) either in a single piece or strips.

**Characteristics**

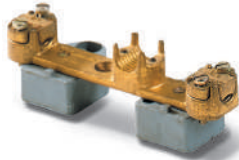
Three-way linear terminal block with one (central) through way plus relative conductor bearing clamps in UNI 5705-65 brass.

**Protection degree**

IP 00 in compliance with CEI EN 60529.

**Applications/Installations**

For nodes and single shunts of uni-multipolar conductors also through backbones.



MN/150

External dimensions, mm			No. poles	Nominal section mm <sup>2</sup>	No. ways per pole	I max - A	Model	Code
Height	Base	Depth						
132	100	35	4	25	3	114	MCM/425	013014253
158	132	48	4	50	3	180	MCM/450	013014501
185	153	53	4	70	3	210	MCM/470	013014709
142	40	43	1	70	2	210	MN/170	013091707

## MCU Series - Tightening conductors with cable terminal



MCU/495/BM

**Materials**

Moulded insulating base in SMC (fiberglass) Terminals in a single piece made of UNI EN 12165 brass.

**Characteristics**

 Conductors of up to 95 mm<sup>2</sup> clamped by means of lugs fastened by screw plugs with anti-loosening saw tooth threads (one 95 mm<sup>2</sup> shunt and two 10 mm<sup>2</sup> shunts).

**Protection degree**

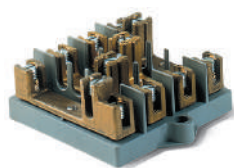
IP 00 in compliance with CEI EN 60529.

**Applications/Installations**

For nodes and single shunts of uni-multipolar conductors. Input/output connection can also be made with aluminium conductors complete with cable terminals.

External dimensions, mm			No. poles	Nominal section mm <sup>2</sup>	No. ways per pole	I max - A	Model	Code
Height	Base	Depth						
235	380	90	4	95	5	280	MCU/495/BM	017420951

## NLM Series - Tightening conductors with grub screws



NLM/450



NLM/4100/P

**NLM series:**

**Materials**

Brass printed clamps UNI EN 12165

**Characteristics**

Three-way linear terminal blocks with one (central) through way and conductor screw plugs with anti-loosening saw tooth threads.

**NLM/425 - NLM/450 Type**

**Materials**

Moulded base in polyvinyl chloride.

**NLM/4100/P Type:**

**Materials**

Moulded base in polyamide.

**Characteristics**

Complete with cover to protect the shunted wires.

**Protection degree**

IP 00 in compliance CEI EN 60529.

**Applications/Installations**

For nodes and single shunts of uni-multipolar conductors also through backbones.

External dimensions, mm			No. poles	Nominal section mm <sup>2</sup>	No. ways per pole	I max - A	Model	Code
Height	Base	Depth						
125	117	51	4	25	3	114	NLM/425	013124250
164	133	61	4	50	3	180	NLM/450	013124508
185	150	73	4	95	3	280	NLM/4100/P	013124953

### Table of flow rates and sections max (values referred to the temperature of 40°)

In	I max - A Out	Shunt	In	Section mm <sup>2</sup> Out	Shunt	Model
47	35	20	4x6	4x4	4x1,5	NM/46
80	57	27	4x16	4x10	4x2,5	NM/416
100	100	47	4x25	4x25	4x6	NM/425
64	64	27	2x10	2x10	2x2,5	MNV/210
86	86	86	4x16	4x16	4x16	MNV/416
100	100	64	4x25	4x25	4x10	MNV/425
64	64	64	2x10	2x10	2x10	MM/210
64	64	64	3x10	3x10	3x10	MM/310
86	86	47	4x16	4x16	4x6	MM/416
114	114	64	4x25	4x25	4x10	MM/425
140	140	64	4x35	4x35	4x10	MM/435
140	140	47	1x35	4x35	1x6	MMC/135
210	210	-	1x70	1x70	-	MN/170
114	114	114	4x25	4x25	4x25	MCM/425
180	180	180	4x50	4x50	4x50	MCM/450
210	210	210	4x70	4x70	4x70	MCM/470
114	114	114	4x25	4x25	4x25	NLM/425
180	180	180	4x50	4x50	4x50	NLM/450
280	280	280	4x95	4x95	4x95	NLM/4100/P
280	180	64	4x96	4x96	2-4x10	MCU/495/BM



## Linear sectioning terminal blocks

The modern technology of electricity distribution systems in underground cable is oriented towards grid structures which involve emergency connections between the various cabins, or towards fixed parallel interconnections of secondary windings of distribution transformers. It is therefore indispensable, in both cases, to adopt suitable terminal blocks at the joining points (nodes) to make suitable electrical connection and disconnections layouts, rationally conceived in such a way as to reduce interruption times and thereby the cost per kW interrupted to the minimum. All the types are realized using the latest moulding and machining techniques. Specifically, the terminal blocks are moulded in UNI 5705-65 brass using the hot moulding procedure to ensure compactness: the contact surfaces are machined mechanically to get rid of differences in thickness and deformation due to moulding and to reduce contact resistance. The terminal blocks are provided with sockets and plugs upline and downline of the disconnect jumper for load break opening by means of shunt switches and/or earthing for work in progress. The conductors are normally secured using brass grub screws with saw-tooth thread, complete with anti-loosening swivel plate to avoid shearing torques of the conductors.

### MMS Series



MMS/425

#### Materials



Insulating base moulded in modified fiberglass-reinforced Polyphenylene Oxide (PPOS). Terminals die-cast in zinc alloy, copper-coated. Sectioning plate made of tinned phosphor bronze. Screws made of galvanized brass.

#### Characteristics

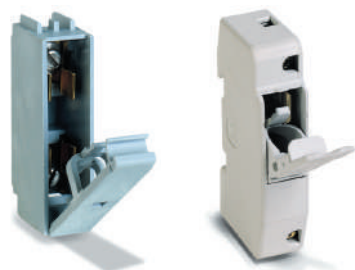
Flexible tightening of jumper with blocking device after sectioning. 3 sectioning ways for pole.

#### Protection degree

IP 00 in compliance with CEI EN 60529.

Wiring diagram	External dimensions, mm			I max - A			No. Poles	Section (mm <sup>2</sup> ) conductors cross-section mm <sup>2</sup>			Model	Code
	Height	Base	Depth	Shunt	In	Out		Shunt	In	Out		
	58	67	50	64	114	114	2	10	25	25	MMS/225	011222254
	58	136	50	64	114	114	4	10	25	25	MMS/425	011224250

## VS Series



VS/120

VS/125

### Materials

Sectioning fuse holder made of polyamide with spring brass contacts.

### Characteristics

Separable fuseholder

### Protection degree

IP 20 in compliance CEI EN 60529.

### Applications/Installations:

**Type VS/120** screws fitting.

**Type VS/125** Din Bar fitting DIN 46277/3. Configuration DIN 43880.

**Type VS/125/B** Din Bar fitting DIN 46277/3

External dimensions, mm			Reach A	Fuse dimension	Type of fuse	Model	Code
Height	Base	Depth					
65	16	27	20	8,5x31,5	FV/S..	VS/120	019201201
80	17,5	60	25	10,3x38	FT/S..	VS/125	019201250
80	17,5	38	25	10,3x38	FT/S..	VS/125/B	019201268

## VT Series



VT/125/D

### VT/125/D Type:

#### Materials

Base, cap and locking cap fuse in transparent polycarbonate. Clamps in electrolylax of diecast zinc and copper.

#### Characteristics

Screw the non-stick screw leads

#### Protection degree

IP 20 in compliance with CEI EN 60529.

### VT/160 Type:

#### Materials

Base, ring and fuse tightening cap in enamelled porcelain. Clamps in enamelled brass.

#### Characteristics

Screw the screw leads

#### Protection degree

IP 00 in compliance with CEI EN 60529.

Amp.	Fuse dimension	Type of fuses	Model	Code
25	8,5x32-9x36	FT/R..	VT/125/D*	019251263
60	28x50	FT/GO	VT/160	019251602

\* VT/125/D in confezione da 100 pz

## Spare parts for VT series

Description / Applications	Model	Code
Screw and top for fuseholder VT/125/D	TV/125/D	095080263
Screw and top for fuseholder VT/160	TV/60	095080602

## VM Series



VM/120

**Materials**

Base and shell in polyamide. Nickel-plated brass contacts

**Characteristics**

Nickel plated contacts. Screws fitting.

**Protection degree**

IP 30 in compliance with CEI EN 60529.

Amp.	Fuse dimension	Type of fuse	Model	Code
20	5x20	FM/..	VM/120	019311257

## VV Series



VV/108

**Materials**

Bakelite body with bayonet mount. Brass terminals.

**Characteristics**

For temporary protections.

**Protection degree**

IP 20 in compliance with CEI EN 60529.

Amp.	Fuse dimension	Type of fuse	Model	Code
10	5x20	FM/..	VV/108	019101104

## BFM Series



BFM/MVY/2

**Materials**

Brass terminals.

**Characteristics**

Bakelite body with bayonet mount on insulating base.

**Applications/Installations**

Mainly used on MVY junction boxes.

**Protection degree**

IP 20 in compliance with CEI EN 60529.

Amp.	Fuse dimension	Type of fuse	No. poles	Model	Code
10	5x20	FM/..	1	BFM/MVY/1	019320019
10	5x20	FM/..	2	BFM/MVY/2	019320027

## BNH Series



BNH/2

**Materials/Characteristics**

Base in steatite in single plinth (00-0 gr) or in two pieces (1-2 gr) mounted on metal support. Contact clamps in silver-plated brass with steel pressure springs. Wire-guided greenhouse clamps.

**Applications/Installations**

For high power "knife type" fuses (100 KA-500 V).

**Protection degree**

IP 00 according with CEI EN 60529.

Amp.	Fuse dimension	Type of fuse	Model	Code
36-125	00	NH/00	BNH/00	019301001
63-160	0	NH/0	BNH/0	019301100
100-250	1	NH/1	BNH/1	019301118
200-400	2	NH/2	BNH/2	019301126

## Rapid cartridge fuses

### Mod. FM/...

Glass body, brass contacts, dimensions 5 x 20, nominal voltage 250V. Breaking power 50 A according with CEI 32.6- IEC 127 - VDE 0820

### Mod. FV/S...

Ceramic body, brass contacts, dimensions 8,5 x 31,5, nominal voltage 400V. Breaking power >20kA according with CEI 32.1.5 - IEC 269.1.3 - VDE 0636

### Mod. FT/R...

Ceramic body, brass contacts with fusion indicator, dimensions 9 x 36, nominal voltage 400V. Breaking power >20kA according with CEI 32.1.5 - IEC 269.1.3

### Mod. FT/S...

Ceramic body, brass contacts, dimensions 10.3 x 38, nominal voltage 500V. Breaking power >120kA according with CEI 32.1.5 - IEC 269.1.3 - VDE 0636

### Mod. FT/GO/...

Ceramic body, brass contacts with fusion indicator, dimensions 28 x 50, nominal voltage 500V. Breaking power >50kA according with CEI **32.1.5 - IEC 269.1.3** - VDE 0636.

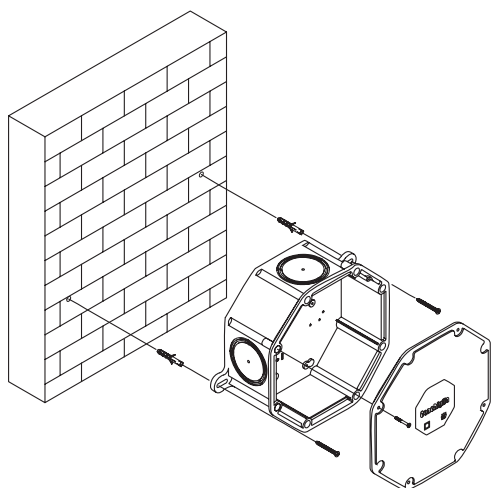
Amp.	Fuse dimension	Type of fuse	Model	Code
2	9x36	VT/125/D	FT/R2	019750025
4	9x36	VT/125/D	FT/R4	019750041
6	9x36	VT/125/D	FT/R6	019750066
10	9x36	VT/125/D	FT/R10	019750108
16	9x36	VT/125/D	FT/R16	019750165
25	9x36	VT/125/D	FT/R25	019750256
30	28x50	VT/160	FT/GO30	019752302
40	28x50	VT/160	FT/GO40	019752401
60	28x50	VT/160	FT/GO60	019752609
4	10,3x38	VS/125 - VS/125/B	FT/S4	019753045
6	10,3x38	VS/125 - VS/125/B	FT/S6	019753060
10	10,3x38	VS/125 - VS/125/B	FT/S10	019753102
16	10,3x38	VS/125 - VS/125/B	FT/S16	019753169
25	10,3x38	VS/125 - VS/125/B	FT/S25	019753250
2	8,5x31,5	VS/120	FV/S2	019754027
4	8,5x31,5	VS/120	FV/S4	019754043
6	8,5x31,5	VS/120	FV/S6	019754068
10	8,5x31,5	VS/120	FV/S10	019754100
16	8,5x31,5	VS/120	FV/S16	019754167
20	8,5x31,5	VS/120	FV/S20	019754209
4	5x20	VV/108-VM/120-BFM/MVY/..	FM/4	019800044
6	5x20	VV/108-VM/120-BFM/MVY/..	FM/6	019800069
10	5x20	VV/108-VM/120-BFM/MVY/..	FM/10	019800101



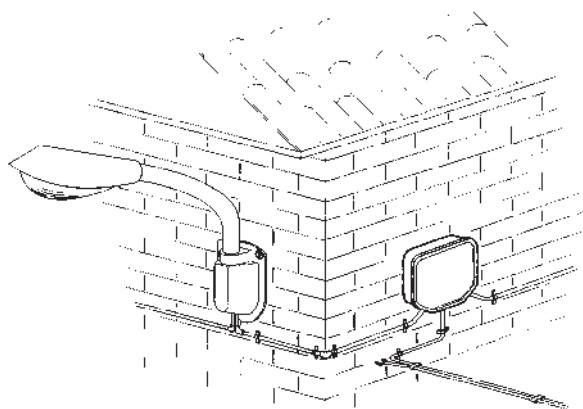


## Plastic-fiberglass material derivation boxes

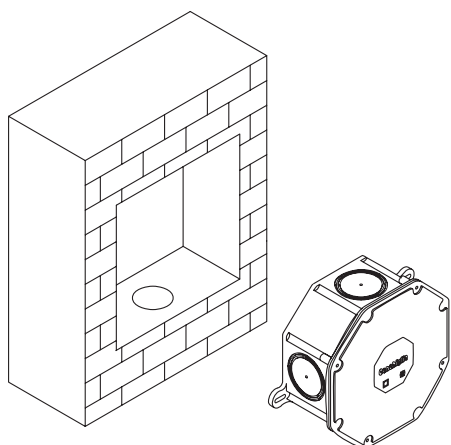
Plastic material octagonal derivation boxes .....	213
Fiberglass derivation boxes (SMC) .....	215
Accessories for octagonal derivation boxes .....	217



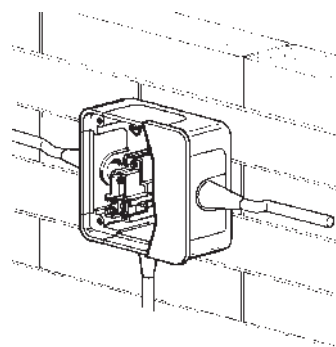
Installation on wall - UPM boxes



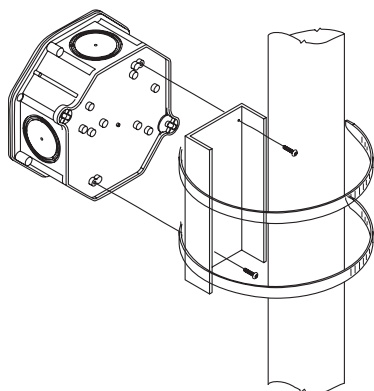
ASV boxes



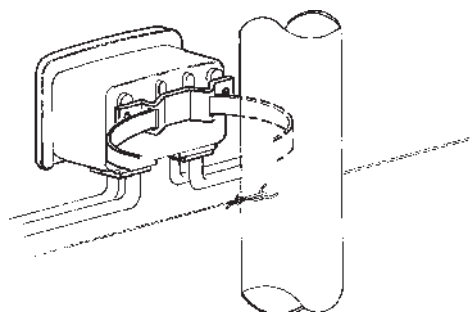
Installation into wall - UPM boxes



ASV boxes



Pole installation - UPM boxes



USV../.. boxes



## UPM Series Empty versions



UPM10



UPM25

### Materials

Pull box body and cover in polyamide thermoplastic material PA6V0+30% glass fiber. Grey RAL 7035 color. Cover with anti losing screws. Thermoplastic rubber seal able to withstand the weather conditions.

### Characteristics

Can be bored in order to install accessories for cable inlet/outlet/shunts such as: pipe/pull box unions; fairleads; tapered fairleads, 4 of which are positioned square to each other at 90° in relation to the perimeter of the pull box or, alternatively, 3 at 45° in the lower part of the box\*. Cover with anti losing screws.

### Applications/Installations

For industrial systems, for public lighting, to power distribution panels with uni/multicore cables. For outdoor installation on walls fixed by means of nails or plugs, built into walls or fixed to poles with the fixing bracket (to be ordered separately) in systems with pre-wired overhead cables.

### Class II empty versions.. Protection degree

IP 54 in compliance with CEI EN 60529, IK09 according to CEI EN 62262.

**\*The Octagonal plastic boxes are furnished complete of 3 tapered fairleads.**

External dimensions, mm			Internal dimensions, mm			Model	Code
Height	Base	Depth	Height	Base	Depth		
128	128	63	94	94	50	UPM10	027100007
156	156	67	130	130	53	UPM16	027160001
183	183	82	156	156	70	UPM25	027250000

## Versions equipped with quadricore nodal terminal strip



UPM16/1



UPM25/1

### Materials

Pull boxes complete with quadricore nodal terminal strip with base made of thermoplastic material. Pull box body and cover in polyamide thermoplastic material PA6V0+30% glass fiber. Grey RAL 7035 color. Cover with anti losing screws. Thermoplastic rubber seal able to withstand the weather conditions.

### Characteristics

Can be bored in order to install accessories for cable inlet/outlet/shunts such as: pipe/pull box unions; fairleads; tapered fairleads, 4 of which are positioned square to each other at 90° in relation to the perimeter of the pull box or, alternatively, 3 at 45° in the lower part of the box\*. Cover with anti losing screws.

### Applications/Installations

For industrial systems, for public lighting, to power distribution panels with uni/multicore cables. For outdoor installation on walls fixed by means of nails or plugs, built into walls or fixed to poles with the fixing bracket (to be ordered separately) in systems with pre-wired overhead cables.

### Class II versions. Protection degree

IP 54 in compliance with CEI EN 60529, IK09 according to CEI EN 62262.

**\*The Octagonal plastic boxes are furnished complete of 3 tapered fairleads.**

External dimensions, mm			No. poles	Nominal section mm <sup>2</sup>	Type of terminal strip	Model	Code
Height	Base	Depth					
156	156	67	4	16	NM/416	UPM16/1	027161009
183	183	82	4	25	NM/425	UPM25/1	027251008

## UPM series

### Versions equipped with quadricore multiple terminal strip



UPM10/10



UPM16/10



UPM25/10

#### Materials

Pull box complete with quadricore multiple terminal strip made of PA6V0 thermoplastic material, protection degree IP20. Pull box body and cover in polyamide thermoplastic material PA6V0+30% glass fiber. Grey RAL 7035 color. Cover with anti losing screws. Thermoplastic rubber seal able to withstand the weather conditions.

#### Characteristics

Can be bored in order to install accessories for cable inlet/outlet/shunts such as: pipe/pull box unions; fairleads; tapered fairleads, 4 of which are positioned square to each other at 90° in relation to the perimeter of the pull box or, alternatively, 3 at 45° in the lower part of the box\*. Cover with anti losing screws.

#### Applications/Installations

For industrial systems, for public lighting, to power distribution panels with uni/multicore cables. For outdoor installation on walls fixed by means of nails or plugs, built into walls or fixed to poles with the fixing bracket (to be ordered separately) in systems with pre-wired overhead cables.

**Class II versions. Protection degree.** Multiple terminal strip IP20

Boxes: IP 54 in accordance with CEI EN 60529, IK09 according to CEI EN 62262.

**UPM10/10:** quadricore terminal board, insulation voltage 250/500 V current 65 A max; main line wiring 2.5 - 16 mmq shunt 2.5 - 4 mmq.

**UPM16/10:** quadricore terminal board, insulation voltage 400 V current 65 A max; main line wiring 1.5 - 16 mmq shunt 1.5 - 4 mmq.

**UPM25/10:** quadricore terminal board, insulation voltage 400 V current 90 A max; main line wiring 1.5 - 25 mmq shunt 1.5 - 6 mmq

**\*The Octagonal plastic boxes are furnished complete of 3 tapered fairleads**

External dimensions, mm			No. Poles	Nominal section mm <sup>2</sup>	Model	Code
Height	Base	Depth				
128	128	63	4	10	UPM10/10	027101005
156	156	67	4	16	UPM16/10	027161108
183	183	82	4	25	UPM25/10	027251107

### Versions equipped with quadricore multiple terminal strip and fuseholder



UPM16/10/V



UPM25/10/V

#### Materials

Pull box complete with quadricore multiple terminal strip made of PA6V0 thermoplastic material, protection degree IP20. Pull box body and cover in polyamide thermoplastic material PA6V0+30% glass fiber. Grey RAL 7035 color. Cover with anti losing screws. Thermoplastic rubber seal able to withstand the weather conditions.

#### Characteristics

Can be bored in order to install accessories for cable inlet/outlet/shunts such as: pipe/pull box unions; fairleads; tapered fairleads, 4 of which are positioned square to each other at 90° in relation to the perimeter of the pull box or, alternatively, 3 at 45° in the lower part of the box\*. Cover with anti losing screws.

#### Applications/Installations

For industrial systems, for public lighting, to power distribution panels with uni/multicore cables. For outdoor installation on walls fixed by means of nails or plugs, built into walls or fixed to poles with the fixing bracket (to be ordered separately) in systems with pre-wired overhead cables.

**Class II version. Protection degree**

IP 54 in compliance with CEI EN 60529, IK09 according to CEI EN 62262.

**UPM16/10/V:** with sectionable fuse holder for 8.5x31.5 fuse.

**UPM25/10/V:** with sectionable fuse holder for 10.3x38 fuse.

**\*The Octagonal plastic boxes are furnished complete of 3 tapered fairleads.**

External dimensions, mm			No. poles	Nominal section mm <sup>2</sup>	Fuse holder No. poles	Model	Code
Height	Base	Depth					
156	156	67	4	16	1-10A - VS/120	UPM16/10/V	027161116
183	183	82	4	25	1-32 A - VS/125	UPM25/10/V	027251115

## ASV series

### Empty versions with double isolated



ASV6



ASV16/TR



ASV95

#### Materials

Box and cover moulded in SMC (fiberglass). Grey RAL 7040 color.

#### Characteristics

For outdoor installation on poles with bracket pre-engineered for 1/2" (ASV6) and 3/4" (ASV 16) BAND-IT tape. Can be wall mounted, generally under the roof leaves or other places that cannot be accessed without adequate means, using a bracket to couple to a walled-in shank.

#### Empty versions with double isolated.

#### Protection degree

IP 43 in compliance with CEI EN 60529; IK 08 according to CEI EN 62262 for type ASV6 and ASV16; IK10 in compliance with CEI EN 62262 for type ASV95.

#### Applications/Installations

For connections and shunts from overhead lines with uni-multipolar cables.

External dimensions, mm			Internal dimensions, mm			Cover closed	Model	Code
Height	Base	Depth	Height	Base	Depth			
78	115	46	55	95	40	-	ASV6	023060007
173	200	59	143	176	53	-	ASV16	023160005
173	200	59	143	176	53	Cover with triangle head screws	ASV16/TR	023160021
257	476	91	230	445	77	Cover with flat head screws	ASV95	023500002

## Equipped versions



ASV6/A



ASV16/A



ASV95/S50

#### Materials

Box and cover moulded in SMC (fiberglass). Grey RAL 7040 color.

#### Characteristics

For outdoor installation on poles with bracket pre-engineered for 1/2" (ASV6) and 3/4" (ASV 16) BAND-IT tape. Can be wall mounted, generally under the roof eaves or other places that cannot be accessed without adequate means, using a bracket to couple to a walled-in shank.

Complete with 2 or 4 pole nodal terminal blocks for ASV6 - ASV16 and quadripolar sectioning terminal block (ASV95).

#### Protection degree

IP 43 in compliance with CEI EN 60529; IK 08 according to CEI EN 62262 for type ASV6 and ASV16; IK10 in compliance with CEI EN 62262 for type ASV95.

#### Applications/Installations

For connections and shunts from overhead lines with uni-multipolar cables.

External dimensions, mm			No. poles	Nominal section mm <sup>2</sup>	Type of terminal strip	Cover closed	Model	Code
Height	Base	Depth						
78	115	46	2	10	MNV/210	-	ASV6/A	023060106
173	200	59	4	16	MNV/416	-	ASV16/A	023160104
173	200	59	4	16	MNV/416	Cover with triangle head screws	ASV16/A/TR	023160120
257	476	91	4	50	MLZ/450	Cover with flat head screws	ASV95/S50	023501000
257	476	91	4	95	MLZ/4100	Cover with flat head screws	ASV95/S95	023501109
257	476	91	4	50	Fuseholder depth 0	Cover with flat head screws	ASV95/P50	023508104

## USV Series

### Empty versions with double isolated



USV25/3

**Materials**

Box, cover and door moulded in SMC (fiberglass). GreyRAL 7040 color. Moulded thermoplastic conical fairleads.

**Characteristics**

Doors and fairleads fixed by means of coulisse system. AISI 304 stainless steel loss proof cover fixing screws. Can be sealed. For outdoor use, wall mounting or built-in installation.

**Applications/Installations**

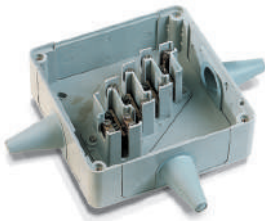
Can be used to make nodes and shunts in L.V. lines for up to 25 mmq.

**Empty versions with double isolated.**
**Protection degree**

IP 43 in compliance with CEI EN 60529; IK 08 according to CEI EN 62262.

External dimensions, mm			Internal dimensions, mm			Notes	Model	Code
Height	Base	Depth	Height	Base	Depth			
200	200	70	185	185	60	With 3 Conical fairleads	USV25/3	021820030

### Equipped versions



USV25/A/3

**Materials**

Box, cover and door moulded in SMC (fiberglass). Grey RAL 7040 color. Moulded thermoplastic conical fairleads.

**Characteristics**

Doors and fairleads fixed by means of coulisse system. AISI 304 stainless steel loss proof cover fixing screws. Can be sealed. For outdoor use, wall mounting or built-in installation.

Complete with nodal terminal blocks.

**Applications/Installations**

Can be used to make nodes and shunts in L.V. lines for up to 25 mmq.

**Protection degree**

IP 43 in compliance with CEI EN 60529; IK 08 according to CEI EN 62262.

External dimensions, mm			Notes	No. poles	Nominal section mm <sup>2</sup>	Type of terminal strip	Model	Code
Height	Base	Depth						
200	200	70	With 3 Conical fairleads	4	25	MNV/425	USV25/A/3	021820139

## Pole fixing bracket



SF/UPM

**Materials**

Corrosion-proof anodized aluminium section metal.

**Applications**

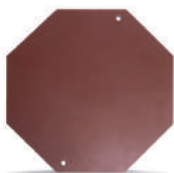
To fasten boxes to poles at least 70 mm in diameter using Band-IT tape.

**Characteristics**

To be used in conjunction with UPM16-UPM25.

Model	Code
SF/UPM	095531000

## Bottom plates



PB/UPM25

**Materials**

in bakelite.

**Characteristics**

3 mm thick.

Dimensions	Type of pull box	Model	Code
117x3	UPM16	PB/UPM16	095680161
141x3	UPM25	PB/UPM25	095680252

## Fittings for cable/pipe



IRT/28

**Materials**

Head body and ring nut in polyamide PA6V0. Grey RAL 7035 color. Retention ring in flexible thermo-plastic material.

**Characteristics**

Consisting of union and ring nut to clamp the pipe plus check nut to fix the union.

**Protection degree**

IP67 in compliance with CEI EN 60529.

Pipe hole diameter	Cable hole diameter	External diameter	Type of pull box	Versions	Model	Code
28	22	41x23	UPM..	sciolta	IRT/28	095500013
34	28	47x30	UPM25..	sciolta	IRT/34	095500054
28	22	41x23	UPM..	applicata	EA/IRT/28	097500011
34	28	47x30	UPM25	applicata	EA/IRT/34	097500052

## Tapered fairleads



MC/34

**Materials**

Made of PVC-P flexible thermoplastic material.

**Characteristics**

Shear line on a level with internal hole.

**Protection degree**

IP55 in compliance with CEI EN 60529.

Hole diameter	Cable/pipe through diameter	Type of pull box	Versions	Model	Code
33	7-30	UPM10 - UPM16	sciolta	MC/34	095010344
49	10-46	UPM25	sciolta	MC/50	095010500
33	7-30	UPM10 - UPM16	applicata	EA/MC/34	097010342
49	10-46	UPM25	applicata	EA/MC/50	097010508

## PG cable glands fairleads



BPG/21

**Materials**

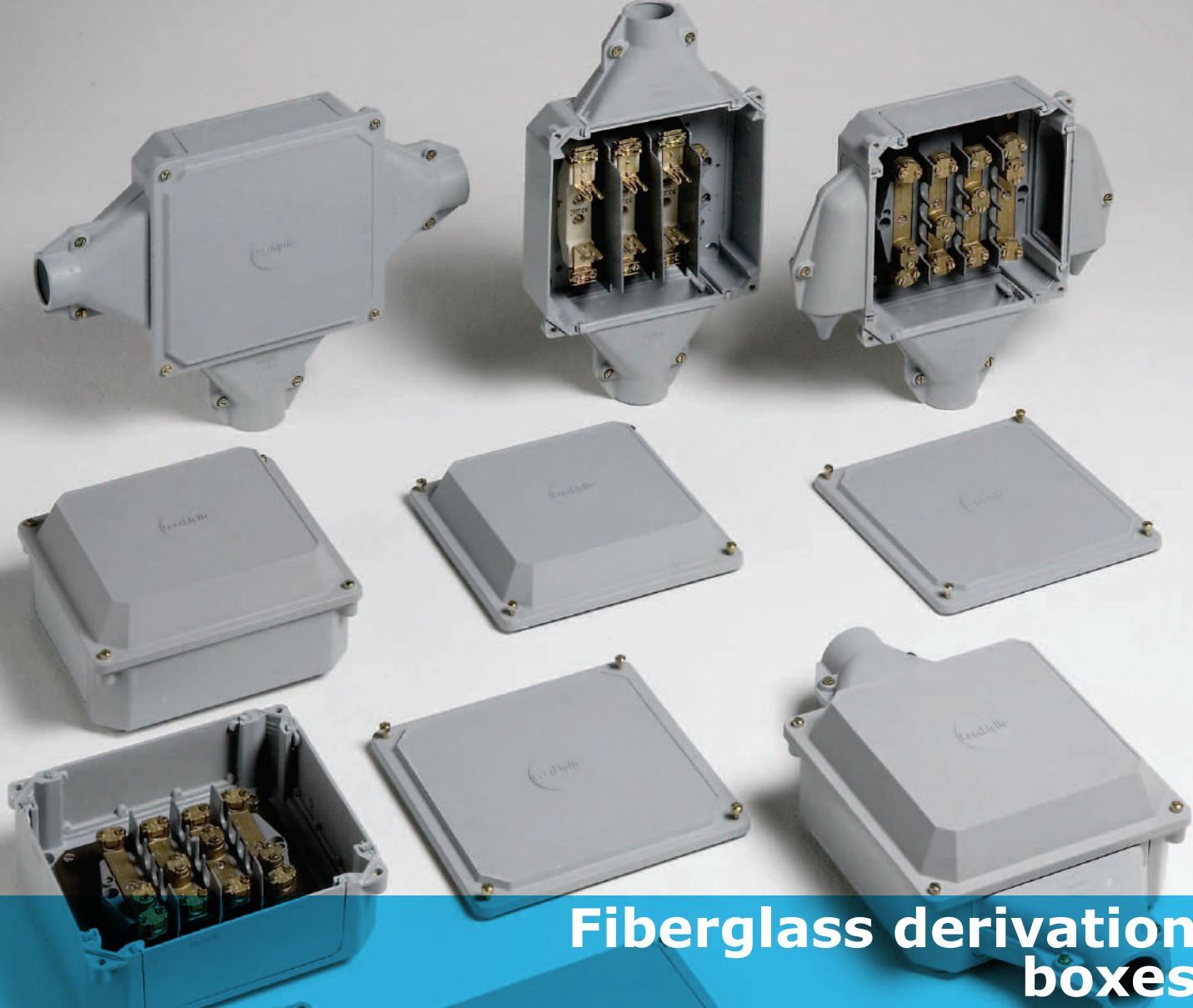
Body, end and ring nut in polyamide PA6. Retention ring in flexible thermoplastic material.

**Protection degree**

IP55 in compliance with CEI EN 60529.

Hole diameter	Cable/pipe through diameter	Type of pull box	Versions	Model	Code
29	10-20	UPM10	Loose	BPG/21	095030219
37	15-26	UPM16	Loose	BPG/29	095030292
48	20-34	UPM25	Loose	BPG/36	095030367
29	10-20	UPM10	Applied	EA/BPG/21	097030217
37	15-26	UPM16	Applied	EA/BPG/29	097030290
49	20-34	UPM25	Applied	EA/BPG/36	097030365





## Fiberglass derivation boxes

SMC derivation boxes (fiberglass) .....	220
Accessories and spare parts for derivation boxes in SMC ...	222



## VQ/VQH Series

### Empty executions in double insulation - IP54



VQ70/13



VQH70/42-11



VQH70/13

#### Materials

Box, cover, doors and conical couplings moulded in SMC (fiberglass). Grey RAL 7040 color. Cover and window seals moulded in flexible polyvinyl chloride (PVC-P). Cover closed by loss proof screws in tropicalized steel acting on brass inserts.

#### Characteristics

Conical couplings and closing door can be fitted to box, on open window using seal. Double coulisse fitting for considerable mechanical rigidity. No screws are needed to fix the accessories with the coulisse system, thus speeding up the time required for assembly.

The conical couplings are made in two pieces to facilitate connections inside, allowing this box series to be used with passing main cables.

#### Empty versions with double isolated.

#### Applications/Installations

For industrial systems, connections in buildings with overhead uni-multipolar cables on metal supports or clinched to walls. On walls; for outdoor use, also in strongly corrosive and damp environments. Fixing in the box interior using nails or expansion plugs.

Insulating plugs seal the fixing holes and ensure the box is totally insulated towards the outside.

#### Protection degree

IP 54 in compliance with CEI EN 60529; IK 10 according to CEI EN 62262

External dimensions, mm			Internal dimensions, mm			Versions	Model	Code
Height	Base	Depth	Height	Base	Depth			
259	259	99	223	223	81	With 4 doors closed	VQ70	035700004
362	466	99	223	223	81	With 3 single way conical couplings and 1 door closed	VQ70/13	035700038
259	392	99	223	223	81	With 2 single way square angle couplings and 2 doors closed	VQ70/42	035700426
362	392	99	223	223	81	With 2 single way square angle couplings 1 conical single way coupling and 1 door closed	VQ70/42-11	035700434
259	259	129	223	223	111	With 4 doors closed	VQH70	035710003
466	259	129	223	223	111	Con 2 raccordi a cono	VQH70/12	035710029
362	466	129	223	223	111	With 3 single way conical couplings and 1 door closed	VQH70/13	035710037
259	392	129	223	223	111	With 2 single way square angle couplings and 2 doors closed	VQH70/42	035710425
362	392	129	223	223	111	With 2 single way square angle couplings 1 conical single way coupling and 1 door closed	VQH70/42-11	035710433

## Equipped versions

With 3-ways per pole linear connector terminal for pole



VQ70/100-MA/13

Wiring diagram	External dimensions, mm			Versions	Wire section	Type of terminal block	Model	Code
	Height	Base	Depth					
	259	259	99	With 4 doors closed	4x70	MCM/470	VQ70/MA	035700103
	362	466	99	With 3 single way conical couplings and 1 door closed	4x70	MCM/470	VQ70/MA/13	035700137
	259	392	99	With 2 single way square angle couplings and 2 doors closed	4x70	MCM/470	VQ70/MA/42	035701424
	362	392	99	With 2 single way square angle couplings 1 conical single way coupling and 1 door closed	4x70	MCM/470	VQ70/MA/42-11	035701432
	259	259	99	With 4 doors closed	4x50	MCM/450	VQ70/50-MA	035701507
	362	466	99	With 3 single way conical couplings and 1 door closed	4x50	MCM/450	VQ70/50-MA/13	035701531

with 3-way terminal block and 2 pole disconnectors



VQH70/50-MA

Wiring diagram	External dimensions, mm			Versions	Wire section	Type of terminal block	Model	Code
	Height	Base	Depth					
	259	259	129	With 4 doors closed	4x50	MSP/350	VQH70/50-MA	035711506
	362	466	129	With 3 single way conical couplings and 1 door closed	4x50	MSP/350	VQH70/50-MA/13	035711530
	259	259	129	With 4 doors closed	4x70	MSP/3100	VQH70/100-MA	035711902
	362	466	129	With 3 single way conical couplings and 1 door closed	4x70	MSP/3100	VQH70/100-MA/13	035711936

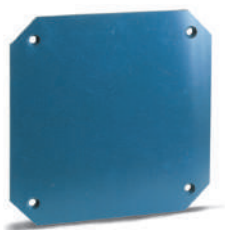
With a set of knife fuse holders and a neutral clamp



VQH70/WB

Wiring diagram	External dimensions, mm			Versions	Wire section	Type of fuseholder	Model	Code
	Height	Base	Depth					
	259	259	129	With 4 doors closed	3½x50	BNH00 (125A)	VQH70/VB	035718204
	466	259	129	With 2 single way square angle couplings and 2 doors closed	3½x50	BNH00 (125A)	VQH70/VB/12	035718220
	259	259	129	With 4 doors closed	3½x95	BNH0 (160A)	VQH70/WB	035718303
	466	259	129	With 2 single way square angle couplings and 2 doors closed	3½x95	BNH0 (160A)	VQH70/WB/12	035718329

## Mounting plates



PP/VQ70

**PB/VQ70** in bakelite 5 mm thickness.  
**PP/VQ70** in thermoplastic material (PVC) **5 mm thickness.**

Dimensions	Type of plate	Model	Code
210x210	In bakelite	PB/VQ70	095680708
210x210	In PVC	PP/VQ70	095690707

## Closing doors



PVQ70

**Materials**  
 Moulded in SMC (fiberglass). Grey RAL 7040 color. Seal made of flexible thermoplastic material.  
**Characteristics**  
 Coulisse closing system with double fitting.

Model	Code
PVQ70	095330700

## Cone fittings



C1/VQ70

**Materials**  
 Moulded in SMC (fiberglass). Grey RAL 7040 color. Seal made of flexible thermoplastic material.  
**Characteristics**  
 Coulisse closing system with double fitting. In two pieces to facilitate internal connections and for use with passing main cables. 1-way model.

Nominal diameter	Optional diameter	Model	Code
46	35-39-49	C1/VQ70	095341707

## Team fittings



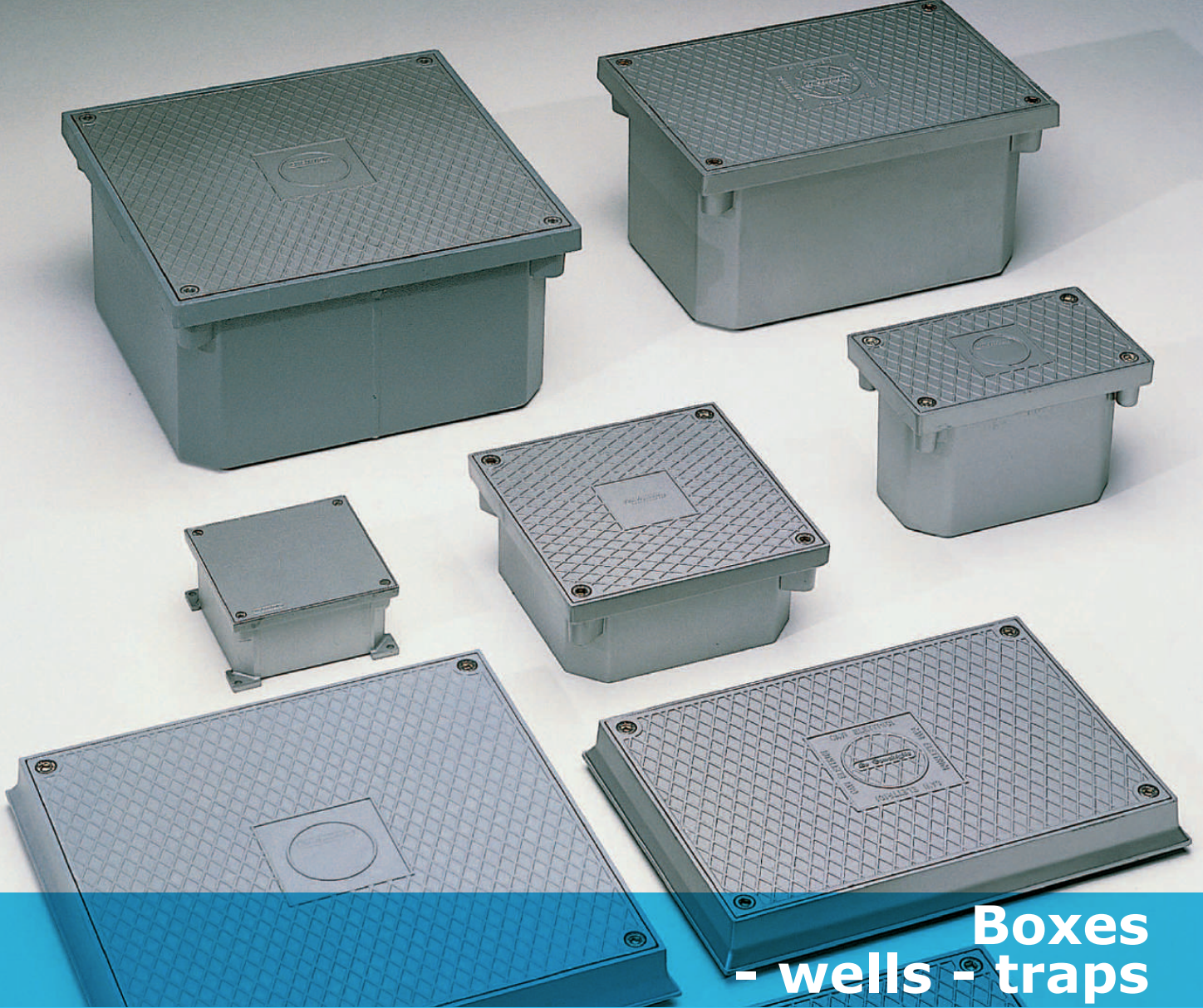
CSD/VQ70



CSS/VQ70

**Materials**  
 Moulded in SMC (fiberglass). Grey RAL 7040 color. Seal made of flexible thermoplastic material.  
**Characteristics**  
 Coulisse closing system with double fitting. In two pieces to facilitate internal connections and for use with passing main cables. Right and left versions with conical fairlead indicating shearing section.

Nominal diameter	Versions	Model	Code
46	right	CSD/VQ70	095344719
46	left	CSS/VQ70	095344727

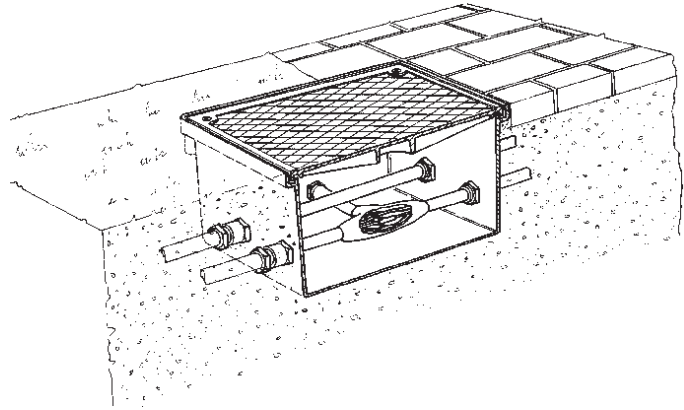


## Boxes - wells - traps

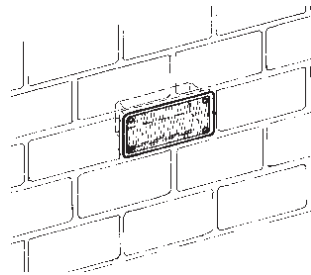
Alluminium alloy boxes.....	225
Alluminium alloy wells .....	226
Trap covers for aluminum wells.....	227
Trap covers for masonry wells .....	228



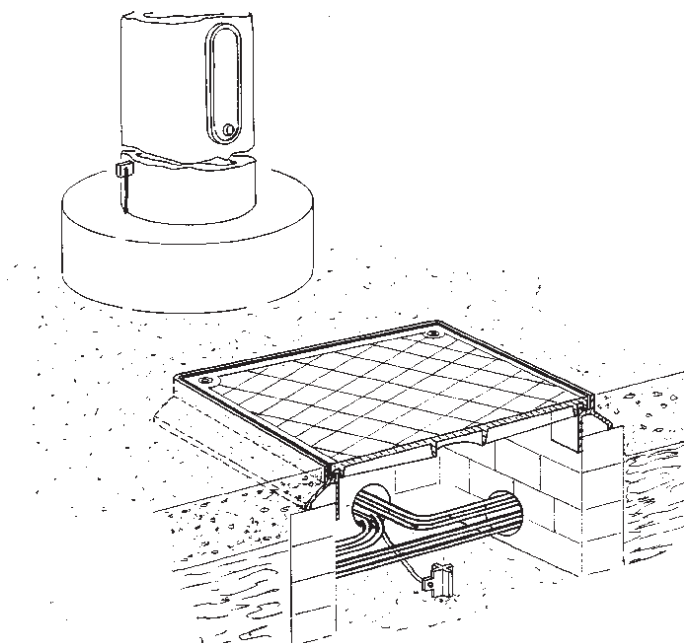
Wells PP series



Boxes PP series



Trap PZ-PZV series



## PP Series - IP55

### Materials

In UNI EN 1706 AC - 46100 DF die-cast aluminium alloy. Cover closed with anti-loosening screws in AISI 304 stainless steel. Seal in moulded non-ageing flexible vinyl chloride.

### Characteristics

Metal grit blasted surface finish. The box sizes correspond to the measurements of the more common ceramic tiles.

### Applications/Installations

Suitable for installation of socket holders and for shunts in systems with moderate power ratings with uni-multipolar cables and conductor inputs-outputs to be made with fairleads or cable glands; in floor mounted systems which need to be inspected, especially in offices, workshops, etc.

For outdoor and indoor installations.

### Protection degree

IP 55 in compliance CEI EN 60529 and IK 10 according to CEI EN 62262.

## Rectangular types (built-in)



PP2

External dimensions, mm			Internal dimensions, mm			Model	Code
Height	Base	Depth	Height	Base	Depth		
98	196	70	80	178	58	PP2	046020095

## Square types (wall mounting and recessed)



PP4

External dimensions, mm			Internal dimensions, mm			Model	Code
Height	Base	Depth	Height	Base	Depth		
98	98	56	83	83	43	PP3	046030094

## PP Series - IP55

### Materials

In UNI - EN 1706 AC - 46100 DF die-cast aluminium alloy. Cover closed with anti-loosening screws in AISI 304 stainless steel. Seal in moulded non-ageing flexible vinyl chloride.

### Characteristics

Able to bear the weight of light vehicles in transit (static bearing capacity approx. 1200 Kg). Conductor inputs and outputs must be made with fairleads or cable glands.

### Applications/Installations

For high power shunts and junctions in under-floor systems.

### Protection degree

IP 55 in compliance with CEI EN 60529 and IK 10 according to CEI EN 62262.

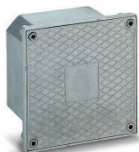
## Rectangular types



PP6

External dimensions, mm			Internal dimensions, mm			Model	Code
Height	Base	Depth	Height	Base	Depth		
149	246	153	113	212	121	PP5	046050001
271	400	206	230	359	162	PP6	046060000

## Square types



PP7

External dimensions, mm			Internal dimensions, mm			Model	Code
Height	Base	Depth	Height	Base	Depth		
245	245	153	207	207	128	PP7	046070009
245	245	97	212	212	76	PP7/R	046070033



## PZ Series - aluminium alloy types

### Materials

In UNI EN 1706 AC - 46100 DF die-cast aluminium alloy. Cover closed with anti-loosening Allen screws in AISI 304 stainless steel. Seal in moulded non-ageing flexible vinyl chloride.

### Characteristics

Able to bear the weight of light vehicles in transit (static bearing capacity approx. 1200 Kg).

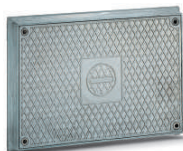
### Applications/Installations

To cover brick or concrete wells in workshops, warehouses, pavements. For shunts and junctions in electric lines, grounding systems, underground telephone lines.

### Protection degree

IP 55 in compliance with CEI EN 60529 and IK 10 according to CEI EN 62262.

## Rectangular types



PZ2

External dimensions, mm			Internal well dimensions	Trap light dimensions	Model	Code
Height	Base	Depth				
266	169	40	130x230	119x215	PZ1	046210001
414	285	40	250x380	234x363	PZ2	046220000

## Square types



PZ4

External dimensions, mm			Internal well dimensions	Trap light dimensions	Model	Code
Height	Base	Depth				
266	266	40	230x230	215x215	PZ3	046230009
413	413	40	380x380	363x363	PZ4	046240008

## PZV Series - in SMC (Fiberglass)

### Materials

Moulded in SMC (fiberglass). Cover closed with anti-loosening Allen screws in AISI 304 stainless steel. Seal in moulded non-ageing flexible vinyl chloride.

### Characteristics

Able to bear the weight of light vehicles in transit (static bearing capacity approx. 1000 Kg).

### Applications/Installations

To cover masonry wells in workshops, warehouses, pavements. For shunts and junctions in electric lines, grounding systems, underground telephone lines, where insulation and/or protection against corrosive substances is required.

### Protection degree

IP 55 in compliance with CEI EN 60529 and IK 10 according to CEI EN 62262.

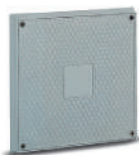
### Rectangular types



PZV2

External dimensions, mm			Internal well dimensions	Trap light dimensions	Model	Code
Height	Base	Depth				
414	285	40	250x380	234x363	PZV2	046320008

### Square types



PZV4

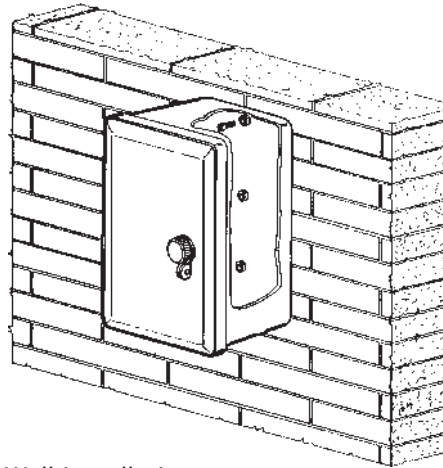
External dimensions, mm			Internal well dimensions	Trap light dimensions	Model	Code
Height	Base	Depth				
266	266	40	230x230	215x215	PZV3	046330007



# Boxes

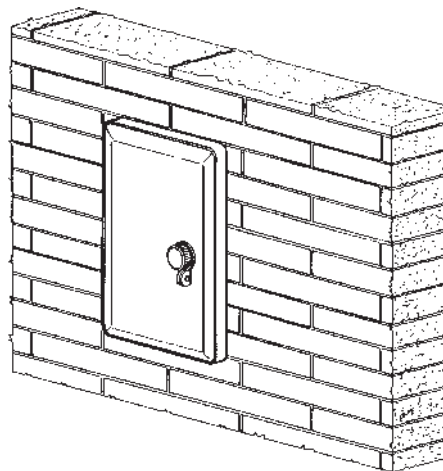
Boxes in SMC (fiberglass) for measuring group .....231  
Accessories and spare parts boxes for measuring group ..... 234

CPMI/C - CPTI/C  
CPRM/C - CPRT/C



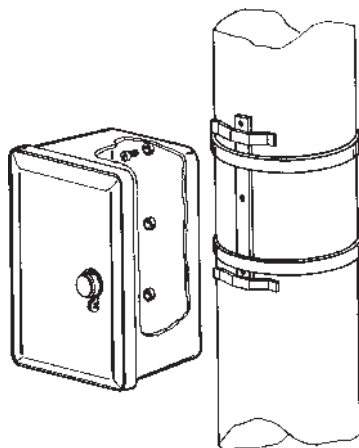
Wall installation

CPMI/C - CPTI/C



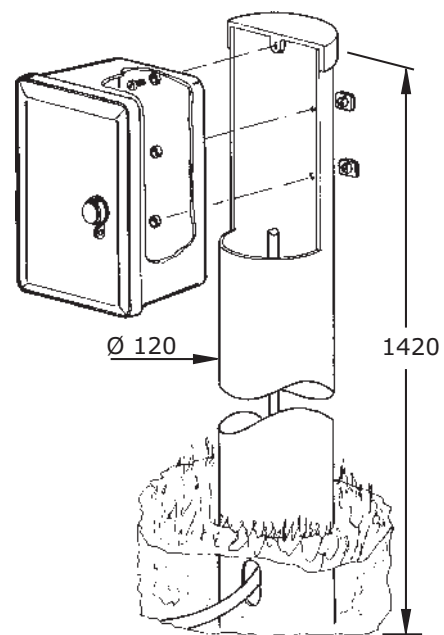
Recessed installation

CP.../C + TAP/CPMI



Pole installation

CPMI/ST  
CPTI/ST



Installation with support

The boxes for metering in the CP series have been sized to suit the standard meter holder boards used by Enel (Italian Electricity Board) and integrated single-three phase units. The available versions meet the most varied installation requirements, including installation on the boundary line between two properties.

## CPHX Series - For single-phase boards up to 40A



CPHX/C

### Materials

Moulded in SMC (fiberglass), grey RAL 7040 color.

### Characteristics

Hinged cover closed by a safety lock which can be opened with a Y21 cipher key. Lower fairleads made of flexible thermoplastic material. Internal ventilation obtained by means of a labyrinth around the perimeter of the cover.

### Protection degree

IP43 in compliance with CEI EN 60529; IK 10 according to CEI EN 62262.

**Version - WL = without lock (to order separately).**

External dimensions, mm			Internal dimensions, mm			Versions	Model	Code
Height	Base	Depth	Height	Base	Depth			
500	200	225	484	175	200	Wall fixing or enclosed	CPHX/C	075110007
500	200	225	484	175	200	Wall fixing or enclosed without lock	CPHX/C-WL	075110106

## CPMI Series - In compliance with ENEL DS4551 specifications



CPMI/C



CPMI/ST

### Materials

Moulded in SMC (fiberglass), grey RAL 7040 color.

### Characteristics

Hinged cover closed by a lock opened by a triangular key. Pre-engineered for use of a padlock.

Internal ventilation obtained by means of a labyrinth around the perimeter of the cover.

Metering unit fixed straight inside.

### Protection degree

IP43 in compliance with CEI EN 60529; IK 10 according to CEI EN 62262.

**Version - WL = without lock (to order separately).**

Suitable for direct mounting of electronic meters:

- **Max. 1 meter unit integrated single-phase type GMI-GMY**

- **Max. 1 single-phase power up to 10 kW and type GEM and GISM.** Fixing with n. 1 base T5 A2 (serial 286103)

- **Max. n. 1 three phase power up to 16.5 kW GET2A type, up to 30kW type GIST.** Fixing with n. 1 T5 base A4 (serial 286142)

External dimensions, mm			Internal dimensions, mm			Versions	Model	Code
Height	Base	Depth	Height	Base	Depth			
420	230	243	375	182	182	Wall fixing or enclosed	CPMI/C	075150003
1420	230	243	375	182	182	With fibreglass support 120 mm diam.	CPMI/ST	075150045
420	230	243	375	182	182	Wall fixing or enclosed without lock	CPMI/C-WL	075150102

**CPRM series - with striped cover. In compliance with ENEL DS4555 specification**


CPRM/C



CPRM/CO

**Materials**

SMC moulded (fibreglass) - grey RAL 7040 color.

**Characteristics**

Cover striped and hinged to enclosure body complete with closure by means of ENEL standard lock which can be opened using double key: triangular key to be used exclusively by ENEL and with safety cylinder with different encryption for user. Internal aeration obtained by means of labyrinth on cover perimeter. Direct fixing of metering unit (old type); mounting on ENEL standard board in case of new electronic meter.

**Protection degree**

IP44 in compliance with CEI EN 60529; IK 10 according to CEI EN 62262.

Suitable for direct mounting of electronic meters:

**- Max. 1 meter unit integrated single-phase type GMI-GMY**
**- Max. 1 single-phase power up to 10 kW and type GEM and GISM.** Fixing with n. 1 base T5 A2 (serial 286103).

**- Max. n. 1 three phase power up to 16.5 kW GET2A type, up to 30Kw type GIST.** Fixing with n. 1 T5 base A4 (serial 286142).

External dimensions, mm			Internal dimensions, mm			Versions	Model	Code
Height	Base	Depth	Height	Base	Depth			
420	230	211	375	182	176	On wall	CPRM/C	075160002
420	230	211	375	182	176	On wall with inspection window	CPRM/CO	075160101
420	230	211	375	182	176	Without lock	CPRM/WL	075160200

**CPTI series - In compliance with ENEL DS 4552 specification**


CPTI/C

**Materials**

SMC moulded (fibreglass) - grey RAL 7040 color.

**Characteristics**

Hinged cover closed by means of locking mechanism that can be opened with triangular key and provision for padlock. Internal aeration obtained by means of labyrinth on cover perimeter.

**Protection degree**

IP43 in compliance with CEI EN 60529; IK 10 according to CEI EN 62262.

**Executions - WL = without lock (to be ordered separately).**

Suitable for direct mounting of electronic meters:

**- Max. 1 meter unit integrated single-phase type GTI-GTY**
**- Max n°2 single-phase power up to 10Kw type GEM and GISM.** Fixing with n°2 base T5 A2 (serial 286103).

**- Max n°1 single-phase + n°1 three phase power up to 10Kw (single-phase) type GEM and GISM E**
**20Kw (Three phase) type GET2A and GIST.** Fixing with base T5 A2 (serial 286103) and n°1 base T5 A4 (serial 286142).

**- Max n°2 three phase for power up to 16.5Kw type GET2A, up to 30Kw type GIST.** Fixing with n°2 base T5 A4 (serial 286142).

External dimensions, mm			Internal dimensions, mm			Versions	Model	Code
Height	Base	Depth	Height	Base	Depth			
420	390	268	375	342	215	Wall fixing or enclosed	CPTI/C	075170001
1420	390	268	375	342	215	With fiberglass support 120 mm diam.	CPTI/ST	075170043
420	390	268	375	342	215	Wall fixing or enclosed without lock	CPTI/C-WL	075170100

## CPRT series - with striped cover. In compliance with ENEL DS 4556 specifications



CPRT/C

**Materials**

SMC moulded (fibreglass) - grey RAL 7040 color.

**Characteristics**

Cover striped and hinged to enclosure body complete with closure by means of ENEL standard lock which can be opened using double key: triangular key to be used exclusively by ENEL and with safety cylinder with different encryption for user.

Internal aeration obtained by means of labyrinth on cover perimeter. Direct fixing of metering unit (old type); mounting on ENEL standard board in case of new electronic meter.

**Protection degree**

IP44 in compliance with CEI EN 60529; IK 10 according to CEI EN 62262.

Suitable for direct mounting of electronic meters:

- **Max n°2 meter unit integrated single-phase type GMI-GMY**

- **n°1 meter unit integrated three phase type GTI-GTY**

- **Max n°2 single-phase for power up to 10Kw type GEM and GISM.** Fixing with n°1 base T5 A2 (serial 286103).

- **Max n°1 single-phase +n°1 three phase for power up to 10Kw (single-phase) type GEM E GISM and 20Kw (three phase) type GET2A and GIST.** Fixing with n°1 base T5 A2 (serial 286103) e T5 A4 (serial 286142).

- **Max n°2 three phase for power up to 16.5Kw type GET2A, up to 30Kw type GIST.** Fixing with n°2 bases T5 A4 (serial 286142).

External dimensions, mm			Internal dimensions, mm			Versions	Model	Code
Height	Base	Depth	Height	Base	Depth			
420	390	239	375	342	198	On wall	CPRT/C	075180000
420	390	239	375	342	198	On wall with inspection window	CPRT/CO	075180109
420	390	239	375	342	198	Without lock	CPRT/WL	075180208

## CPYK Series - For generic metering units



CPYK/C

**Materials**

SMC moulded (fibreglass) - grey RAL 7040 color.

**Characteristics**

Dome shaped removable cover with coulisse sliding attachment; closure by means of triangular imprint key. Lower fairlead made of flexible thermoplastic material. Internal aeration obtained by means of labyrinth on cover perimeter. Measurement unit fixed by means of bottom plate (to be ordered separately).

**Protection degree**

IP43 in compliance with CEI EN 60529; IK 10 according to CEI EN 62262.

External dimensions, mm			Internal dimensions, mm			Versions	Model	Code
Height	Base	Depth	Height	Base	Depth			
431	311	208	406	277	186	Wall fixing or enclosed	CPYK/C	075700005

## Versions for pole mounting

For installation on pole, at the time of placing the order, match the enclosure for wall installation (.../C) and the relative fixing frame.



## Mounting plates



PB/CPMI

Dimensions	Type of box	In sheet steel th. 2 mm		In bakelite tn. 5 mm		In PVC th. 5 mm	
		Model	Code	Model	Code	Model	Code
164x270	CPHX	PCP/X	095705109	PB/CPX	095685103	PP/CPX	095695102
161x305	CPMI - CPRM	PCP/MI	095705158	PB/CPMI	095685152	PP/CPMI	095695151
321x305	CPTI - CPRT	PCP/TI	095705174	PB/CPTI	095685178	PP/CPTI	095695177
270x401	CPYK	PCP/Y	095705703	PB/CPY	095685707	PP/CPY	095695706

## Inspection window



OC/120

### Materials

In transparent polycarbonate complete with polyvinyl chloride seal.

### Characteristics

To conduct inspections and take readings with the cover closed (always state the position).

### Protection degree

IP 44 in compliance with CEI EN 60529; IK 09 according to CEI EN 62262.

External diameter	Useful watching area	Type of box	Versions	Model	Code
164	117	CPHX-CPMI-CPTI-CPYK	loose	OC/120	095750915
164	117	CPMI-CPTI-CPYK	applied	EA/OC/120	097750913
164	117	CPHX	applied	EA/OC/120/XT	097750921

## Tubular support. In compliance with ENEL DS 4553 specifications



ST/CPMI

### Materials

In grey RAL 7040 color extruded fiberglass.

### Characteristics

Diameter 120 x 1420 in length.

### Applications/Installations

To hold CPMI-CPTI-CPRM-CPRT bins in town and country areas where there are no fixed supports.

Model	Code
ST/CPMI	095730925

**Pole anchor frame. In compliance with ENEL DS 4557 specifications**



TAP/CPMI

**Materials**

In steel section metal hot-dip galvanized in accordance with CEI 7-6. Has slots for fixing to the post with BAND-ITmax tape. 3/4".

**Characteristics**

To use in conjunction with wall boxes in order to obtain versions for installing on posts.

Minimum pole diameter	Type of box	Model	Code
76	CPYK/C	TAP/CPYK	095730016
194	CPMI/C-CPTI/C-CPRM/C-CPRT/C	TAP/CPMI	095730024
140	CPHX/C	TAP/CPHX	095730107

**Locks**



SCI35/TR9/L



SCX86/Y21/L



SCR87/2C

**Materials**

Components moulded in polyamide resin reinforced with fiberglass. Brass cylinder/rotor.

Type of box	Description / Application	Type of key	Type of lock	Model	Code
CPMI - CPTI	With double locking system Operate by triangle key and possibility of padlock application	CHP/TR9/CPMI	standard	SCI35/TR9/L	095717914
CPHX	Operate by key cfr Y12	CS/12	on request	SCX86/Y12	095718151
CPHX	Operate by key cfr Y21	CS/21	standard	SCX86/Y21	095718250
CPHX	Operate by triangle key	CHP/TR9	on request	SCX86/TR9	095718953
CPHX	With double locking system operate by triangle key and possibility of padlock application	CHP/TR9	on request	SCX86/TR9/L	095718961
CPHX	With double locking system operate by triangle key and possibility of padlock application	CS/21	on request	SCX86/Y21/L	095718268
CPYK	With triangle head screw	CH/TR9	standard	-	-
CPRM - CPRT	With double locking system unified ENEL type according to DS4541	-	standard	SCR87/2C*	090956004
CPRM - CPRT	With double locking system unified ENEL type according to DS4541	CS/12	on request	SCR87/Y12	095717955
CPRM - CPRT	With double locking system unified ENEL type according to DS4541	CS/21	on request	SCR87/Y21	095717930

\* Enel key not supplied and users' key with diversified chipers

**For boxes CPMI CPMI locks are available with special encryption for specific areas ENEL (key not included)**

Description	Model	Code
Operated with key safety needle supplied ENEL and predisposition for padlock. ENEL Friuli / Venezia Giulia	SCI35/X/FV	090950353
Operated with key safety needle supplied ENEL and predisposition for padlock. ENEL Lazio - Marche - Umbria	SCI35/X/RM	090950361
Operated with key safety needle supplied ENEL and predisposition for padlock. ENEL Veneto	SCI35/X/VE	090950387
Operated with key with triangular print supplied ENEL and predisposition for padlock. ENEL Toscana Emilia/Romagna	SCI35/TR9/L/FI	090950395

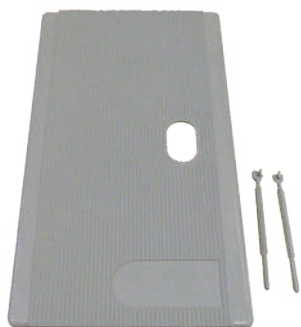
## Hinges for boxes


**Characteristics**

Packs with pair of hinges.

Type of box	Model	Code
CPMI-CPTI	K-CR/CPMI	095741021
CPRM-CPRT	K-CR/CPRM	095741039

## Doors complete with pillars


**Characteristics**

Lock and hinges not included.

Type of box	Model	Code
CPMI	K-SPT/CPMI	095741328
CPRM	K-SPT/CPRM	095741336
CPTI	K-SPT/CPTI	095741351
CPRT	K-SPT/CPRT	095741369



## CVD series road enclosures

CVD series enclosures conversion table - IP55 DIN standard in the Grafi series ..... 238

**CVD series**
**Grafi series**

Model	Code	External dimensions, mm			Internal dimensions, mm			Model	Code	External dimensions, mm			Internal dimensions, mm		
		Height	Base	Depth	Height	Base	Depth			Height	Base	Depth	Height	Base	Depth
CVD/2853/0	072000003	855	465	320	765	430	260	G5-4/4/T	077504108	715	580	330	658	562	298
								G5-5/5/T	077505105	940	580	330	883	562	298
CVD/2113/0	072000102	1100	465	320	1010	430	260	G5-5/5/T	077505105	940	580	330	883	562	298
								G5-7/7/T	077507101	1180	580	330	1130	562	298
CVD/2850/0	072010002	855	590	320	765	555	260	G5-4/4/T	077504108	715	580	330	658	562	298
								G5-5/5/T	077505105	940	580	330	883	562	298
CVD/2110/0	072010101	1100	590	320	1010	555	260	G5-5/5/T	077505105	940	580	330	883	562	298
								G5-7/7/T	077507101	1180	580	330	1130	562	298
CVD/2120/0	072010200	1245	590	320	1155	555	260	G5-7/7/T	077507101	1180	580	330	1130	562	298
								G5-8/8/T	077508109	1390	580	330	1340	562	298
CVD/2851/0	072110000	855	785	320	765	750	260	G7-4/4/T	077704104	715	685	330	658	667	298
								G7-5/5/T	077705101	940	685	330	883	667	298
CVD/2111/0	072110109	1100	785	320	1010	750	260	G7-5/5/T	077705101	940	685	330	658	667	298
								G7-7/7/T	077707107	1180	685	330	1130	667	298
CVD/2121/0	072110208	1245	785	320	1155	750	260	G7-7/7/T	077707107	1180	685	330	658	667	298
								G7-8/8/T	077718104	1390	685	330	1340	667	298
CVD/2852/0	072220007	855	1115	320	765	1080	260	G12-4/4A/T	077124113	715	1150	330	658	1132	298
								G12-5/5A/T	077125110	940	1150	330	883	1132	298
CVD/2112/0	072220106	1100	1115	320	1010	1080	260	G12-5/5A/T	077125110	940	1150	330	658	1132	298
								G12-7/7A/T	077127116	1180	1150	330	1130	1132	298
CVD/2122/0	072220205	1245	1115	320	1155	1080	260	G12-7/7A/T	077127116	1180	1150	330	658	667	298
								G12-8/8A/T	077128114	1390	1150	330	1340	1132	298



## CV-BV series road enclosures

### Characteristic of CV-BV series enclosure

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## Empty casings for assembled protection and operating equipment for low voltage

The subject of the standard is to formulate definitions, classifications, characteristics and tests for empty casings, as supplied by the manufacturer, designed to contain, at the user's charge, the protection and operating equipment that form electric boards in compliance with the standards of the EN 60439 series, the rated voltage of which does not exceed 1000 V.a.c. for frequency values of not more than 1000 Hz, or 1500 V.d.c., and fit for general use for both indoor and outdoor applications.

IMQ certification confirms the suitable protection of the cabinets CV-BV against the weather, approaching or contact with live parts, shocks from the outside.

### IMQ enclosures characteristics



The cubicle parts are snap-fitted together and use of seals guarantees the IP44 protection degree.



The metal inserts buried in the cubicles during the moulding phase are subjected to axial and static load tests. This guarantees the maximum loads the bottom plates are able to bear for the different cubicle sizes.



Locks with three-point closing mechanisms ensure that the door adheres perfectly to the body of the cubicle. Furthermore, the flush handle door is a safety against vandalism.



Besides ensuring the IP44 protection degree, the lattice structure under the roof provides natural ventilation for the compartment in which the equipment is installed.



The steel accessories used for outdoor installation (on floors, walls and posts) are given a double protection treatment: galvanic treatment coated with a layer of epoxy paint.



Internal hinges in polyarylamide-based fiberglass-reinforced thermoplastic resin (IXEF). Advantages:

- Resistance to weather, aging and corrosion.
- Possibility to stop the door when the door is opened.
- Increase of the opening door of +10° (from ~ 105° to 115°).



## Locking system for roadside cubicles



### + functionality

The key serves as a handle lock and not by lock.

### + effectiveness

Ensures a perfect closure with the swivel handle

### + versatility

Easy to open, both right and left

### + strength

Greater mechanical seal in the tightening thanks to the steel poles.

### + safety

No continuity metallic interior / exterior enclosure and flush handle door is a guarantee against vandalism.

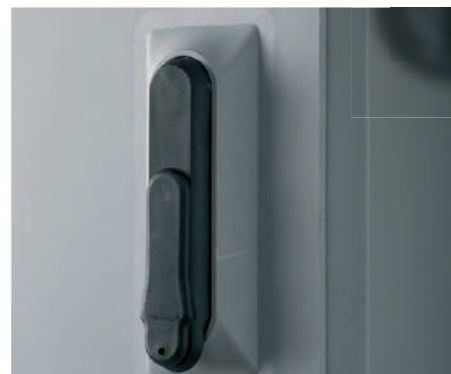
### + aesthetics

Retractable handle.



### Characteristics

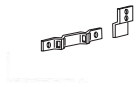
- Lock with retractable handle and closing at three points to ensure a perfect adherence of the door.
- Lock integrated in the door for good functional and aesthetic impact.
- Perfect closure thanks to the grip of swivel handle and opening on the right and left reversible a simple and fast way.
- Handle set for profile cylinder DIN 18252 security key ciphers Y12 - Y21.
- Keyhole cover front in polyamide resin for protection footprint key and for protection from external bodies.
- Rods and poles interiors made of steel with 321 GEOMET treatment ensuring a high resistance to corrosion.
- Brass cylinder directly embedded in the handle.
- Polyamide resin handle.
- Maneuvering pivot lock aluminum alloy.



**Executions WL-WLP (without lock) are designed exclusively for use with locks series SCS-SCM.**

546 mm widths enclosures - palletized versions

CVT/0-P  
073500902



SCV/CVTN  
095760500



**Wall installation**



CVT/PT-P  
073500944

**Installation with pedestal**

CVT/0-P  
073500902

TAP/CVT  
095730057



SCV/CVTN  
095760500



**Pole installation**



CVT/ZZ-P  
073501942

**Installation with base for inspection**

CVT/0-P  
073500902



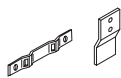
TA/CVT  
095735007



**Floor installation**

714 mm widths enclosures - palletized versions

CV4M/0-P  
073700908



SCV/CV4M  
095760708



Wall installation



CV4M/0-P  
073700908

BVR/55/C  
095731139

TA/CP  
095734604

Installation with pedestal

CV4M/0-P  
073700908

TAP/CVT  
095730057



SCV/CV4M  
095760708



Pole installation

CV4M/0-P  
073700908

TA/CV4M  
095737003



Floor installation

CV4M/ZZ-P  
073701906



Installation with base for inspection

## Enclosure with one compartment



CVA/T



CVA/PT

### Materials

Moulded in SMC (fiberglass) - grey RAL 7040 color.

### Characteristics

Interlocking door complete with cremone-type lock type accessible with security key with single cipher (cod. 21). Lower air intakes and attic for natural inside ventilation. External metal parts made of stainless steel or hot-dip galvanized steel according to standard CEI 7-6, electrically insulated from the inside.

### Protection degree

IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

External dimensions, mm			Internal dimensions, mm			Type of installation	Model	Code
Height	Base	Depth	Height	Base	Depth			
455	462	220	435	410	180	For wall installation	CVA/C	073400004
455	462	220	435	410	180	For floor installation with frame	CVA/T	073400038
1005	462	220	435	410	180	With pedestal (H=550) with frame	CVA/PT	073400046

## Mounting plates



Compatible enclosure	Dimensions	In sheet steel th.2 mm		In bakelite th. 5 mm		In PVC th. 5 mm		Wood (for marine use) sp. 15 mm	
		Model	Code	Model	Code	Model	Code	Model	Code
CVA/...	316x336	PCV/A	095703401	PB/CVA	095683405	PP/CVA	095693404	PL/CVA	095673406

## Closing bottom plates

Complete with conical fairleads in thermoplastic material.  
In bakelite.

Compatible enclosure	Model	Code
CVA/T	SI/CVA	095763009

## Pedestals - Anchor frames (for PT version)



BVP/55



TA/BVP

### Pedestals:

- with components in SMC, snap fastened and fixed with screws - grey RAL 7040 color
- to fix to flat surfaces using expansion plugs or the special frame to wall-in (to be ordered separately)

### Frames:

- in hot-dip galvanized steel section metal as per standard CEI 7/6.
- AISI 304 stainless steel screws to guarantee fail-safe operation.
- to wall into the floor.

Height from ground	Typology	Model	Code
550	Pedestal	BVP/55	095731105
-	Frame	TA/BVP	095735064

## Floor anchor frames (for/T version)



TA/CVA

Screws in AISI 304 stainless steel to guarantee fail-safe operation to wall into the floor.  
In hot-dip galvanized steel section metal as per standard CEI 7/6.

Model	Code
TA/CVA	095733002

## Top units



SVT



SVHN-WL

### Materials

Moulded in SMC (fiberglass) - grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside. Fiberglass lock body built into the door. Polyamide resin handle. Lock pivot pin in aluminium alloy. Rods and poles interiors made of steel with 321 GEOMET treatment.

### Characteristics

Cubicle conforming to CEI EN 62208 standard. Rated insulation voltage  $U_i$  690V. Hinged door complete with cremone-type bolt operated by a retracting handle with three-point closing mechanism to ensure that the door adheres perfectly. Handle pre-engineered for profile cylinder to DIN 18252 standards with Y21 individually-keyed safety lock. Partition complete with fairleads. Mounting plate equipped with brass inserts buried in the moulding so as to allow equipment to be applied directly or through the mounting plate itself.

### Protection degree

IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

**Standard version** complete with lock with retractable lever.

**WL executions** - Without lock and suitable exclusively for use of locks series SCS-SCM.

The effective dimensions shown in the Table indicate the maximum space available for the equipment in compliance with the features specified by standard CEI EN 62208 (effective protected space).

External dimensions, mm			Internal dimensions, mm			Max load Kg applicable on bottom wall	Compatible enclosure	Model	Code
Height	Base	Depth	Height	Base	Depth				
381	544	296	365	515	260	30	CVT-CVN-BVT-BVN-BVNT-BVTN	SVT	073540007
								SVT-WL	073540015
550	544	296	535	515	260	65	CVT-CVN-BVT-BVN-BVNT-BVTN	SSVT	073541005
								SSVT-WL	073541013
880	544	296	865	515	260	75	CVT-CVN-BVT-BVN-BVNT-BVTN	SVN	073940025
								SVN-WL	073940017
381	544	412	365	515	375	30	CVHT-CVHN-BVHT-BVHN-BVHNT-BVHTN	SVHT	073550006
								SVHT-WL	073550014
550	544	412	535	515	375	65	CVHT-CVHN-BVHT-BVHN-BVHNT-BVHTN	SSVHT	073551004
								SSVHT-WL	073551012
880	544	412	865	515	375	75	CVHT-CVHN-BVHT-BVHN-BVHNT-BVHTN	SVHN	073950024
								SVHN-WL	073950016

## Plinths



ZVT

### Materials

Moulded in SMC (fiberglass) - grey RAL 7040 color. External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside.

### Characteristics

Conforming to CEI EN 62208. Rated insulation voltage  $U_i$  690V.

Plinth ZZVT inspectable with the front wall removable alternative to BVR/55/C.

### Protection degree

IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

External dimensions, mm			Internal dimensions, mm			Compatible enclosure	Model	Code
Height	Base	Depth	Height	Base	Depth			
381	546	296	365	515	260	CVT-CVN-BVT-BVN-BVNT-BVTN	ZVT	073580003
381	546	412	365	515	375	CVHT-CVHN-BVHT-BVHN-BVHNT-BVHTN	ZVHT	073590002
550	546	296	365	515	260	CVT-CVN-BVT-BVN-BVNT-BVTN	ZZVT	073580102





## Enclosure with one compartment



CVT/0-P



CVT/ZZ-P

### Materials

Moulded in SMC (fiberglass) - grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside. Fiberglass-reinforced plastic lock body built into the door. Polyamide resin handle. Lock pivot pin in aluminium alloy. Rods and poles interiors made of steel with 321 GEOMET treatment.

### Characteristics

Cabinet conforming to CEI EN 62208 standard. Rated insulation voltage  $U_i$  690V. Hinged door complete with cremone-type bolt operated by a retracting handle with three-point closing mechanism to ensure that the door adheres perfectly. Pre-engineered for profile cylinder to DIN 18252 standards with Y21 individually-keyed safety lock. Air intakes below and under the roof for natural internal ventilation. Bottom plate equipped with brass inserts buried in the moulding so as to allow equipment to be applied directly or through the bottom plate itself. The cubicle is supplied on a pallet in a standard pack containing 4 pieces, except for CVT/0-WL and CVT/PT-WL.

Installation accessories to be ordered separately.

### Protection degree

IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

**Standard executions** complete with lock with retractable lever.

**WL executions** – Without lock and suitable exclusively for use of locks series SCS-SCM.

The effective dimensions shown in the Table indicate the maximum space available for the equipment in compliance with the features specified by standard CEI EN 62208 (effective protected space).

External dimensions, mm			Internal dimensions, mm			Max load Kg applicable on bottom wall	Type of installation	Model	Code
Height	Base	Depth	Height	Base	Depth				
570	546	308	543	515	260	65	On wall, on pole, on floor	CVT/0-P	073500902
570	546	308	543	515	260	65		CVT/0-WLP	073500910
570	546	308	543	515	260	65		CVT/0-WL	073500928
1115	714	308	543	515	260	65	With pedestal and floor anchor frames	CVT/PT-P	073500944
1115	714	308	543	515	260	65		CVT/PT-WLP	073500951
1115	714	308	543	515	260	65		CVT/PT-WL	073500977
1110	546	308	543	515	260	65	With base for inspection and floor anchor frame	CVT/ZZ-P	073501942
1110	546	308	543	515	260	65		CVT/ZZ-WLP	073501959

## Installation accessories

Type of installation	Basic enclosure		Installation accessories	Model	Code
	Model	Code			
On wall	CVT/0-P	073500902	Closing bottom plate	SCV/CVTN	095760500
On pole	CVT/0-P	073500902	Closing bottom plate + Floor anchor frames	SCV/CVTN + TAP/CVT	095760500+095730057
On floor	CVT/0-P	073500902	Floor anchor frames	TA/CVT	095735007
On wall	CVT/0-WL	073500910	Closing bottom plate	SCV/CVTN	095760500
On pole	CVT/0-WL	073500910	Closing bottom plate + Floor anchor frames	SCV/CVTN + TAP/CVT	095760500+095730057
On floor	CVT/0-WL	073500910	Floor anchor frames	TA/CVT	095735007
With inspectable base	CVT/0-P	073500902	With base floor inspection + Floor anchor frames	ZZVT + TA/CVT	073580102+095735007



CVT/0-P+SCV/CVTN



TAP/CVT+CVT/0-P+SCV/CVTN



CVT/0-P+TA/CVT



## Enclosure with one compartment



CVN/0+TA/CVT



CVN/PT

### Materials

Moulded in SMC (fiberglass) - grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside. Fiberglass lock body built into the door. Polyamide resin handle. Lock pivot pin in aluminium alloy. Rods and poles interiors made of steel with 321 GEOMET treatment.

### Characteristics

Cubicle conforming to CEI EN 62208 standard. Rated insulation voltage  $U_i$  690V. Hinged door complete with cremone-type bolt operated by a retracting handle with three-point closing mechanism to ensure that the door adheres perfectly. Handle pre-engineered for profile cylinder to DIN 18252 standards with Y21 individually-keyed safety lock. Air intakes below and under the roof for natural internal ventilation. Bottom wall equipped with inserts embedded molding brass for application equipment directly or through the mounting plate.

The basic designs CVN/0-P is supplied on pallets in standard packs of 4 pieces.

Installation accessories to be ordered separately.

### Protection degree

IP 44 compliance CEI EN 60529, IK 10 according to CEI EN 62262.

**Standard version** complete with lock with retractable lever.

**WL Version** – Without lock and suitable exclusively for use of locks series SCS-SCM.

The effective dimensions shown in the Table indicate the maximum space available for the equipment in compliance with the features specified by standard CEI EN 62208 (effective protected space).

External dimensions, mm			Internal dimensions, mm			Max load Kg applicable on bottom wall	Type of installation	Model	Code
Height	Base	Depth	Height	Base	Depth				
1445	714	308	873	515	260	75	With base for inspection and floor frame	CVN/PT	073900045
900	546	308	873	515	260	75	On wall, on pole, on floor	CVN/0	073900904
900	546	308	873	515	260	75		CVN/0-WL	073900912
900	546	308	873	515	260	75		CVN/0-P	073900946
570	546	424	543	515	375	65		CVHT/0	073510901
570	546	424	543	515	375	65		CVHT/0-WL	073510919
900	546	424	873	515	375	75		CVHN/0	073910903
900	546	424	873	515	375	75		CVHN/0-WL	073910911

## Installation accessories

Type of installation	Basic cabinet		Installation accessories	Model	Code
	Model	Code			
On wall	CVHT/0	073510901	Closing bottom plate	SC/CVHTN	095760609
On wall	CVHT/0-WL	073510919			
On pole	CHVHT/0	073510901	Closing bottom plate + Floor anchor frames	SC/CVHTN+TAP/CVT	095760609+095730057
On pole	CVHT/0-WL	073510919			
On floor	CVHT/0	073510901	Frame	TA/CVHT	095735106
On floor	CVHT/0-WL	073510919			
On wall	CVN/0	073900904	Closing bottom plate	SCV/CVTN	095760500
On wall	CVN/0-WL	073900912			
On wall	CVN/0-P	073900946			
On pole	CVN/0	073900904	Closing bottom plate + Floor anchor frames	SCV/CVTN+TAP/CVN	095760500+095730099
On pole	CVN/0-WL	073900912			
On pole	CVN/0-P	073900946			
On floor	CVN/0	073900904	Floor anchor frames	TA/CVT	095735007
On floor	CVN/0-WL	073900912			
On floor	CVN/0-P	073900946			
On wall	CVHN/0	073910903	Closing bottom plate	SC/CVHTN	095760609
On wall	CVHN/0-WL	073910911			
On pole	CVHN/0	073910903	Closing bottom plate + Floor anchor frames	SC/CVHTN+TAP/CVN	095760609+095730099
On pole	CVHN/0-WL	073910911			
On floor	CVHN/0	073910903	Floor anchor frames	TA/CVHT	095735106
On floor	CVH/0-WL	073910911			

## Enclosure with one compartment with plinth



CVN/0+TA/CVT+ZVT  
(supplied separately)

### Materials

Moulded in SMC (fiberglass-reinforced plastic) - grey RAL 7040 color. Internal hinges in polyarylamide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside. Fiberglass lock body built into the door. Polyamide resin handle. Lock pivot pin in aluminium alloy. Rods and poles interiors made of steel with 321 GEOMET treatment.

### Characteristics

Cubicle conforming to CEI EN 62208 standard. Rated insulation voltage Ui 690V. Hinged door complete with cremone-type bolt operated by a retracting handle with three-point closing mechanism to ensure that the door adheres perfectly. Handle pre-engineered for profile cylinder to DIN 18252 standards with Y21 individually-keyed safety lock. Air intakes below and under the roof for natural internal ventilation. For self-standing floor installation with fixing frame. Bottom wall equipped with inserts embedded molding brass for application equipment directly or through the mounting plate.

### Protection degree

IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

### Cubicle and plinth (H365mm) to be ordered separately.

NOTE: The same Cubicle + Plinth combinations are also valid for the equivalent versions without locks (WL-WLP). The versions with plinths can be extended to other cubicle combinations (e.g. stacked) so long as they have the same plinth measurements.

External dimensions, mm			Internal dimension, mm lower compartment			Ordering enclosure codes		Ordering frame codes		Ordering plinth codes	
Height	Base	Depth	Height	Base	Depth	Model	Code	Model	Code	Model	Code
937	546	308	543	515	260	CVT/0-P	073500902	TA/CVT	095735007	ZVT	073580003
900	546	308	873	517	260	CVN/0	073900904	TA/CVT	095735007	ZVT	073580003
570	546	424	543	517	375	CVHT/0	073510901	TA/CVHT	095735106	ZVHT	073590002
900	546	424	873	517	375	CVHN/0	073910903	TA/CVHT	095735106	ZVHT	073590002

## Enclosure with two compartments



CVT/ST

### Materials

Moulded in SMC (fiberglass) - grey RAL 7040 color. Internal hinges in polyarylamide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside. Fiberglass lock body built into the door. Polyamide resin handle. Lock pivot pin in aluminium alloy. Rods and poles interiors made of steel with 321 GEOMET treatment.

### Characteristics

Cubicle conforming to CEI EN 62208 standard. Rated insulation voltage Ui 690V. Hinged door complete with cremone-type bolt operated by a retracting handle with three-point closing mechanism to ensure that the door adheres perfectly. Handle pre-engineered for profile cylinder to DIN 18252 standards with Y21 individually-keyed safety lock (for both compartments). Partition dividing compartments complete with cable glands. Air intakes below and under the roof for natural internal ventilation. For self-standing floor installation with fixing frame (included in the supply). Bottom wall equipped with inserts embedded molding brass for application equipment directly or through the mounting plate. For choice accessories, refer to the enclosure single constituent compartment.

### Protection degree

IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

Standard executions complete with locks with retractable lever.

The effective dimensions shown in the Table indicate the maximum space available for the equipment in compliance with the features specified by standard CEI EN 62208 (effective protected space).

## Different height - higher at bottom

External dimensions, mm			Internal dimension, mm lower compartment			Internal dimension, mm higher compartment			Max load Kg. Applicable on bottom wall		Composition		Model	Code
Height	Base	Depth	Height	Base	Depth	Height	Base	Depth	Top	Bot.	Top	Bot.		
939	546	308	535	515	260	375	515	260	30	65	SVT	CVT	CVT/ST	073500084
1269	546	308	865	515	260	375	515	260	30	75	SVT	CVN	CVN/ST	073900086
939	546	424	535	515	375	375	515	375	30	65	SVHT	CVHT	CVHT/ST	073510083
1269	546	424	865	515	375	375	515	375	30	75	SVHT	CVHN	CVHN/ST	073910085

## Enclosures with two compartments



BVN/T

BVNT/T

### Materials

Moulded in SMC (fiberglass) - grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside. Fiberglass lock body built into the door. Polyamide resin handle. Lock pivot pin in aluminium alloy. Rods and poles interiors made of steel with 321 GEOMET treatment.

### Characteristics

Cubicle conforming to CEI EN 62208 standard. Rated insulation voltage Ui 690V. Hinged door complete with cremone-type bolt operated by a retracting handle with three-point closing mechanism to ensure that the door adheres perfectly. Handle pre-engineered for profile cylinder to DIN 18252 standards with Y21 individually-keyed safety lock. Air intakes below and under the roof for natural internal ventilation. Bottom wall equipped with inserts embedded molding brass for application equipment directly or through the mounting plate. For self-standing floor installation with anchor frame (included in the supply).

Products BVT / TP and BVT / T-WLP define the battery supplied on pallets in standard packs of 4 pcs. The installation accessories (floor anchor frames) are included in the pack.

**Refer to the single cubicle forming the compartment when choosing the accessories**

### Protection degree

IP 44 in compliance CEI EN 60529, IK 10 according to CEI EN 62262.

**Standard version** complete with lock with retractable lever.

**WL Version** - Without lock and suitable exclusively for use of locks series SCS-SCM.

## Of equal height

External dimensions, mm			Internal dimension, mm lower compartment			Internal dimension, mm higher compartment			Max load Kg. Applicable on bottom wall		Compartment composition		Model	Code
Height	Base	Depth	Height	Base	Depth	Height	Base	Depth	Top	Bot.	Top	Bot.		
1110	546	308	543	515	260	543	515	260	65	65	CVT	CVT	BVT/T-P	074105578
1110	546	308	543	515	260	543	515	260	65	65	CVT	CVT	BVT/T-WLP	074105594
1770	546	308	873	515	260	873	515	260	75	75	CVN	CVN	BVN/T-WL	074109919
1770	546	308	873	515	260	873	515	260	75	75	CVN	CVN	BVN/T	074109935
1110	546	424	543	515	375	543	515	375	65	65	CVHT	CVHT	BVHT/T-WL	074115510
1110	546	424	543	515	375	543	515	375	65	65	CVHT	CVHT	BVHT/T	074115536
1770	546	424	873	515	375	873	515	375	75	75	CVHN	CVHN	BVHN/T-WL	074119918
1770	546	424	873	515	375	873	515	375	75	75	CVHN	CVHN	BVHN/T	074119934

## Different height - higher at top

External dimensions, mm			Internal dimension, mm lower compartment			Internal dimension, mm higher compartment			Max load Kg. Applicable on bottom wall		Compartment composition		Model	Code
Height	Base	Depth	Height	Base	Depth	Height	Base	Depth	Top	Bot.	Top	Bot.		
1460	546	308	543	515	260	873	515	260	75	65	CVN	CVT	BVTN/T-WL	074105917
1460	546	308	543	515	260	873	515	260	75	65	CVN	CVT	BVTN/T	074105933
1460	546	424	543	515	375	873	515	375	75	65	CVHN	CVHT	BVHTN/T-WL	074115916
1460	546	424	543	515	375	873	515	375	75	65	CVHN	CVHT	BVHTN/T	074115932

## Different height - higher at bottom

External dimensions, mm			Internal dimension, mm lower compartment			Internal dimension, mm higher compartment			Max load Kg. Applicable on bottom wall		Compartment composition		Model	Code
Height	Base	Depth	Height	Base	Depth	Height	Base	Depth	Sup.	Inf.	Sup.	Inf.		
1460	546	308	865	515	260	543	515	260	65	75	CVT	CVN	BVNT/T-WL	074109513
1460	546	308	865	515	260	543	515	260	65	75	CVT	CVN	BVNT/T	074109539
1460	546	424	865	515	375	543	515	375	65	75	CVHT	CVHN	BVHNT/T-WL	074119512
1460	546	424	865	515	375	543	515	375	65	75	CVHT	CVHN	BVHNT/T	074119538

Enclosures with two compartments with plinth BVT/T-P+ZVT  
(forniti separatamente)BVTN/T+ZVT  
(forniti separatamente)**Materials**

Moulded in SMC (fiberglass) - grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside. Fiberglass lock body built into the door. Polyamide resin handle. Lock pivot pin in aluminium alloy. Rods and poles interiors made of steel with 321 GEOMET treatment.

**Characteristics**

Cubicle conforming to CEI EN 62208 standard. Rated insulation voltage Ui 690V. Hinged door complete with cremone-type bolt operated by a retracting handle with three-point closing mechanism to ensure that the door adheres perfectly. Handle pre-engineered for profile cylinder to DIN 18252 standards with Y21 individually-keyed safety lock (for bottom compartment) and Y12 (for top compartment). Partition dividing compartments complete with cable glands. Air intakes below and under the roof for natural internal ventilation. Bottom wall equipped with inserts embedded molding brass for application equipment directly or through the mounting plate. For self-standing floor installation with anchor frame (included in the supply).

**Refer to the single cubicle forming the compartment when choosing the accessories**

**Protection degree**

IP 44 in compliance CEI EN 60529, IK 10 according to CEI EN 62262.

**Standard version** complete with lock with retractable lever.

**WL Version** - Without lock and suitable exclusively for use of locks series SCS-SCM.

## Of equal height

External dimensions, mm			Internal dimension, mm lower compartment			Internal dimension, mm higher compartment			Enclosure composition		Codes for ordering battery		Codes for ordering plinth	
Height	Base	Depth	Height	Base	Depth	Height	Base	Depth	Top	bot.	Model	Code	Model	Code
1476	546	308	543	515	260	543	515	260	CVT	CVT	BVT/T-P	074105578	ZVT	073580003
2136	546	308	873	515	260	873	515	260	CVN	CVN	BVN/T	074109935	ZVT	073580003
1476	546	424	543	515	375	543	515	375	CVHT	CVHT	BVHT/T	074115536	ZVHT	073590002
2136	546	424	873	515	375	873	515	375	CVHN	CVHN	BVHN/T	074119934	ZVHT	073590002

## Different height - higher at top

External dimensions, mm			Internal dimension, mm lower compartment			Internal dimension, mm higher compartment			Enclosure composition		Codes for ordering battery		Codes for ordering plinth	
Height	Base	Depth	Height	Base	Depth	Height	Base	Depth	Top	Bot.	Model	Code	Model	Code
1806	546	308	543	515	260	873	515	260	CVN	CVT	BVTN/T	074105933	ZVT	073580003
1806	546	424	543	515	375	873	515	375	CVHN	CVHT	BVHTN/T	074115932	ZVHT	073590002

## Different height - higher at bottom

External dimensions, mm			Internal dimension, mm lower compartment			Internal dimension, mm higher compartment			Enclosure composition		Codes for ordering battery		Codes for ordering plinth	
Height	Base	Depth	Height	Base	Depth	Height	Base	Depth	Top	Bot.	Model	Code	Model	Code
1806	546	308	865	515	260	543	515	260	CVT	CVN	BVNT/T	074109539	ZVT	073580003
1806	546	424	865	515	375	543	515	375	CVHT	CVHN	BVHN/T	074119538	ZVHT	073590002

## Mounting plates



PB/CVT



PP/CVN

Compatibles enclosures	Dimensions	In sheet steel th.2 mm		In bakelite th. 5 mm		In PVC th. 5 mm		Wood (for marine use) th. 15 mm	
		Model	Code	Model	Code	Model	Code	Model	Code
SVT/..., SVHT/...	436x355	PSV/T	095704508	PB/SVT	095684502	PP/SVT	095694501	-	-
CVT/..., SSVT/..., CVHT/..., SSVHT/..., BVT/..(inf+sup.), BVHT/.. (inf+sup), BV TN/..(inf), BVHTN/..(inf), BVNT/.. (sup), BVHNT/..(sup)	436x495	PCV/T	095703500	PB/CVT	095683504	PP/CVT	095693503	PL/CVT	095673505
CVN/..., SVN/..., CVHN/..., SVHN/..., BVN/.. (inf.+sup), BVHN/.. (inf+sup), BVTN/..(sup), BVHTN/..(sup.), BVNT/.. (inf), BVHNT/..(inf)	436x797	PCV/N	095703906	PB/CVN	095683900	PP/CVN	095693909	PL/CVN	095673901

## Closing bottom plates

### For CV.../T versions (floor installation).

Complete with conical fairleads in thermoplastic material.

SI/CV... in bakelite.

SIV/CV... in SMC (fiberglass).

### For CV.../C versions (wall fixing).

Completely closed Model - holes for fairleads/cable glands to make on site.

SC/CV... - in bakelite (including bracket).

SCV/CV... - in SMC (fiberglass - including bracket)



SCV/CVTN



SIV/CVTN

Compatible enclosures	Model	Code
CVT/0-P, CVN/0	SCV/CVTN	095760500
CVHT/0, CVHN/0	SC/CVHTN	095760609
CVT/0-P, CVN/0, BVN/T, BVTN/T	SIV/CVTN	095765005
CVHT/0, CVHN/0, BVHT/T, BVHN/T, BVHNT/T, BVHTN/T	SI/CVHTN	095765104

## Tubular support



ST/CVTN

### Materials

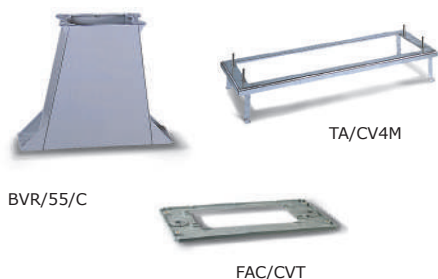
In grey RAL 7035 color coated steel.

### Characteristics

Diam. 3" (89 mm) length 1200 mm, complete with walling shanks.

Compatible enclosures	Model	Code
CVT, CVN	ST/CVTN	095730958

## Pedestals - anchor frames (for/PT versions)



**Pedestals:**

- with components in SMC, snap fastened and fixed with screws - grey RAL 7040 color.
- to fix to flat surfaces using expansion plugs or the special frame to wall-in (to be ordered separately)

Flange FAC/CVT-095751525 is required for CVT-CVN size cubicles.

**Frames:**

- In steel with double protection treatment: galvanic treatment covered with a layer of epoxy paint.
- AISI 304 stainless steel screws to guarantee fail-safe operation.
- for wall into the floor.

BVR/55/C

Compatible enclosures	Type	Model	Code
CVT-CVN	Pedestal	BVR/55/C	095731139
CVT-CVN	Frame	TA/CV4M	095737003
CVT-CVN	Flange	FAC/CVT	095751525

## Inspection plinth



**Base:**

with removable lower front part.

**Frames:**

- In steel with double protection treatment: galvanic treatment covered with a layer of epoxy paint.
- AISI 304 stainless steel screws to guarantee fail-safe operation.
- for wall into the floor.

Compatible enclosures	Type	Model	Code
CVT-CVN	Inspection plinth	ZZVT	073580102
CVT-CVN	Frame	TA/CVT	095735007

## Floor anchor frames (for/T version)



- Screws in AISI 304 stainless steel to guarantee fail-safe operation to wall into the floor.
- In steel with double protection treatment: galvanic treatment covered with a layer of epoxy paint.

Compatible enclosures	Model	Code
CVT-CVN-BVT-BVN-BVNT-BVTN	TA/CVT	095735007
CVHT-CVHN-BVHT-BVHN-BVHTN-BVHNT	TA/CVHT	095735106

## Pole anchor frame



**Materials:** In steel with double protection treatment: galvanic treatment covered with a layer of epoxy paint.

**Characteristics:** Slots to fix with 3/4" BAND-IT strap for poles with diameters of not less than 230 mm.

Compatible enclosures	Model	Code
CVT-CVHT	TAP/CVT	095730057
CVN-CVHN	TAP/CVN	095730099

## Top units



SV4M-WL

### Materials

Moulded in SMC (fiberglass) - grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside. Fiberglass lock body built into the door. Polyamide resin handle. Lock pivot pin in aluminium alloy. Rods and poles interiors made of steel with 321 GEOMET treatment.

### Characteristics

In compliance with CEI EN 62208 standards. Rated insulation voltage Ui 690V. Hinged door complete with cremone-type bolt operated by a retracting handle with three-point closing mechanism to ensure that the door adheres perfectly. Handle pre-engineered for profile cylinder to DIN 18252 standards with Y21 individually-keyed safety lock. Partition complete with fairleads. Air intakes below and under the roof for natural internal ventilation. Mounting plate equipped with brass inserts buried in the moulding so as to allow equipment to be applied directly or through the mounting plate itself.

### Protection degree

IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

### Standard version complete with lock with retractable lever.

**WL Version** – Without lock and suitable exclusively for use of locks series SCS-SCM.

The effective dimensions shown in the Table indicate the maximum space available for the equipment in compliance with the features specified by standard CEI EN 62208 (effective protected space).

External dimensions, mm			Internal dimensions, mm			Max load Kg. Applicable on bottom wall	Compatible enclosures	Model	Code
Height	Base	Depth	Height	Base	Depth				
660	714	271	630	685	240	80	CV4M-BV4M	SV4M-WL	073750010
660	714	271	630	685	240	80	CV4M-BV4M	SV4M	073750028

## Plinths



ZZ4M

### Materials

Moulded in SMC (fiberglass) - grey RAL 7040 color. External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside.

### Characteristics

Conforms to CEI EN 62208 standards.

### Protection degree

IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262

External dimensions, mm			Internal dimensions, mm			Compatible enclosures	Model	Code
Height	Base	Depth	Height	Base	Depth			
640	710	210	617	685	190	CV4M-BV4M	ZZ4M	073791006



## Enclosures with one compartment



CV4M/0-P



### Materials

Moulded in SMC (fiberglass) - grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside. Fiberglass lock body built into the door. Polyamide resin handle. Lock pivot pin in aluminium alloy. Rods and poles interiors made of steel with 321 GEOMET treatment.

### Characteristics

In compliance with CEI EN 62208 standards. Rated insulation voltage  $U_i$  690V. Hinged door complete with cremone-type bolt operated by a retracting handle with three-point closing mechanism to ensure that the door adheres perfectly. Handle pre-engineered for profile cylinder to DIN 18252 standards with Y21 individually-keyed safety lock. Air intakes below and under the roof for natural internal ventilation. Mounting plate equipped with brass inserts buried in the moulding so as to allow equipment to be applied directly or through the mounting plate itself.

Products BVT / TP and BVT / T-WLP define the battery supplied on pallets in standard packs of 4 pcs. The installation accessories (floor fixing frames) are included in the pack.

### Protection degree

IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

**Standard versions** complete with lock with retractable lever.

**WL Version** – Without lock and suitable exclusively for use of locks series SCS-SCM.

The effective dimensions shown in the Table indicate the maximum space available for the equipment in compliance with the features specified by standard CEI EN 62208 (effective protected space).

External dimensions, mm			Internal dimensions, mm			Max load Kg. Applicable on bottom wall	Versions	Model	Code
Height	Base	Depth	Height	Base	Depth				
660	714	271	630	685	240	80	Wall or pole or floor with pedestal	CV4M/0-P	073700908
660	714	271	630	685	240	80	Wall or pole or floor with pedestal	CV4M/0-WLP	073700916
660	714	271	630	685	240	80	Wall or pole or floor with pedestal	CV4M/0-WL	073700932

## Installation accessories



CV4M/0-P+BVR/55/C+TA/CP  
(supplied separately)

Type of installation	Basic enclosure		Installation accessories	Model	Code
	Model	Code			
On wall	CV4M/0-P	073700908	Bottom closing partitions	SCV/CV4M	095760708
On pole	CV4M/0-P	073700908	Bottom closing partitions + floor fixing frames	SCV/CV4M + TAP/CVT	095760708 + 095730057
On floor	CV4M/0-P	073700908	Floor fixing frames	TA/CV4M	095737003
With pedestal	CV4M/0-P	073700908	Pedestal + floor fixing frames	BVR/55/C + TA/CP	095731139 + 095734604
With base for inspection	CV4M/0-P	073700908	Base for inspection + floor fixing frames	ZZ4M + TA/CV4M	073791006 + 095737003
On wall	CV4M/0-WL	073700916	Bottom closing partitions	SCV/CV4M	095760708
On pole	CV4M/0-WL	073700916	Bottom closing partitions + floor fixing frames	SCV/CV4M + TAP/CVT	095760708 + 095730057
On floor	CV4M/0-WL	073700916	Floor fixing frames	TA/CV4M	095737003
With pedestal	CV4M/0-WL	073700916	Pedestal + floor fixing frames	BVR/55/C + TA/CP	095731139 + 095734604

## Enclosure with one compartment with plinth



CV4M/ZZ-P

### Materials

Moulded in SMC (fiberglass) - grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside. Fiberglass lock body built into the door. Polyamide resin handle. Lock pivot pin in aluminium alloy. Rods and poles interiors made of steel with 321 GEOMET treatment.

### Characteristics

Conforms to CEI EN 62208 standards. Rated insulation voltage Ui 690V. Hinged door in relief complete with cremone-type bolt operated by a retracting handle with three-point closing mechanism to ensure that the door adheres perfectly. Handle pre-engineered for profile cylinder to DIN 18252 standards with Y21 individually-keyed safety lock. Air intakes below and under the roof for natural internal ventilation. For self-standing floor installation with anchor frame (supplied included). Cubicle supplied on pallet in standard pack containing four pieces. Base for inspection.

### Protection degree

IP 44 in compliance with CEI EN 605299, IK 10 according to CEI EN 62262.

The effective dimensions shown in the Table indicate the maximum space available for the equipment in compliance with the features specified by standard CEI EN 62208 (effective protected space).

External dimensions, mm			Internal dimensions, mm			Max load Kg. Applicable on bottom wall	Type of installation	Model	Code
Height	Base	Depth	Height	Base	Depth				
1290	714	271	630	685	240	80	For floor installation with frame	CV4M/ZZ-P	073701906
1290	714	271	630	685	240	80	For floor installation with frame	CV4M/ZZ-WLP	073701914

Enclosure and plinth (H=660 mm) to be ordered separately

External dimensions, mm			Internal dimensions, mm			Enclosure ordering codes		Plinth ordering codes		Frame ordering codes	
Height	Base	Depth	Height	Base	Depth	Model	Code	Model	Code	Model	Code
1290	714	271	630	685	240	CV4M/0-P	073700908	ZZ4M	073791006	TA/CV4M	095737003
1290	714	271	630	685	240	CV4M/0-WLP	073700916	ZZ4M	073791006	TA/CV4M	095737003

## Enclosures with two compartments



BV4M/T-P

### Materials

Moulded in SMC (fiberglass) - grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside. Fiberglass lock body built into the door. Polyamide resin handle. Lock pivot pin in aluminium alloy. Rods and poles interiors made of steel with 321 GEOMET treatment.

### Characteristics

In compliance with CEI EN 62208 standards. Rated insulation voltage Ui 690V. Hinged door in relief complete with cremone-type bolt operated by a retracting handle with three-point closing mechanism to ensure that the door adheres perfectly. Handle pre-engineered for profile cylinder to DIN 18252 standards with Y21 individually-keyed safety lock (for bottom compartment) and Y12 (for top compartment). Partition dividing compartments complete with cable glands. Air intakes below and under the roof for natural internal ventilation. Mounting plate equipped with brass inserts buried in the moulding so as to allow equipment to be applied directly or through the mounting plate itself. For choice accessories, refer to the enclosure single constituent compartment. Cubicle supplied on pallet in standard pack containing four pieces. For self-standing floor installation with anchor frame (supplied included).

### Protection degree

IP 44 in compliance with CEI 60529, IK 10 according to CEI EN 62262.

**Standard version** complete with lock with retractable lever.

**WL Version** - Without lock and suitable exclusively for use of locks series SCS-SCM..

The effective dimensions shown in the Table indicate the maximum space available for the equipment in compliance with the features specified by standard CEI EN 62208 (effective protected space).

External dimensions, mm			Internal dimensions bottom, mm			Internal dimensions top, mm			Max load Kg. Applicable on bottom wall		Composition		Model	Code
Height	Base	Depth	Height	Base	Depth	Height	Base	Depth	Top	Bot.	Top	Bot.		
1290	714	271	630	685	240	630	685	240	80	80	CV4M	CV4M	BV4M/T-P	074107772
1290	714	271	630	685	240	630	685	240	80	80	CV4M	CV4M	BV4M/T-WLP	074107798

## Enclosure 1 compartment for measuring three phase groups - complies specific ENEL DS 4559



CV4M/E

Made in fiberglass - grey RAL 7040 color  
Double lock closure type unified according Enel DS 4541  
Protection degree IP43 in compliance with CEI EN 60529, IK10 according to CEI EN 62208.

Suitable for installation of electronic meters:

- **max n°1 three phase integrated type GTWD** for power from 15 to 30Kw
- **max n°1 three phase for power up to 30Kw type GET3A**; fixing by base DS 4464/2 (serial 280012).

Be integrated with installation accessories for wall, pole, floor (frame, pedestal, base)

External dimensions, mm			Internal dimensions, mm			Description	Model	Code
Height	Base	Depth	Height	Base	Depth			
660	714	271	630	685	240	To be completed with installation accessories	CV4M/E	070730965

## Enclosure with two compartments for measuring three phase groups - complies specific ENEL DS 4559



BV4M/E

Made in fiberglass - grey RAL 7040 color  
Double lock closure type unified according Enel DS 4541  
Anchorage frame made of steel, complete with electrolytic zinc coating + RAL7001 epoxy paint finish. Protection degree IP43 in compliance with CEI EN 60529, IK10 according to CEI EN 62208.

Suitable for installation of electronic meters:

- **max n°1 three phase integrated type GTWD** for power from 15 to 30Kw
- **max n°1 three phase for power up to 30Kw type GET3A**; fixing by base DS 4464/2 (serial 280012).

External dimensions, mm			Internal dimensions upper and lower compartment, mm			Description	Model	Code
Height	Base	Depth	Height	Base	Depth			
1290	714	271	630	685	240	For floor installation with frame	BV4M/E	070731005

## Mounting plates



PCV/4M

Compatible enclosures	Dimensions	In sheet steel th.2 mm		In bakelite th. 5 mm		In PVC th. 5 mm		Wood (for marine use) th. 15 mm	
		Model	Code	Model	Code	Model	Code	Model	Code
CV4M/..., SV4M...BV4M/.. (Bottom+top)	607x570	PCV/4M	095703708	PB/CV4M	095683702	PP/CV4M	095693701	PL/CV4M	095673703

## Closing bottom plates

**For executions ... CV/T (for floor installation).**

Complete with cable glands conical thermoplastic material.

SIV/CV ... in SMC (fiberglass).

**For executions hp./C (wall mounting).**

Running completely closed - holes cable glands/gland to be practiced in work.

SCV/CV ... - SMC (fiberglass)

Compatible enclosures	Model	Code
CV4M/0-P	SCV/CV4M	095760708
CV4M/0-P, BV4M/T-P	SIV/CV4M	095767003

## Floor anchor frames (for/T versions)



TA/CV4M

Screws in AISI 304 stainless steel to guarantee fail-safe operation to wall into the floor.

In steel with double protection treatment: galvanic treatment covered with a layer of epoxy paint.

Compatible enclosures	Model	Code
CV4M-BV4M	TA/CV4M	095737003

## Pedestals - Anchor frames (for/PT versions)



**Pedestals:**

- with components in SMC, snap fastened and fixed with screws - grey RAL 7040 color
- to fix to flat surfaces using expansion plugs or the special frame to wall-in (to be ordered separately)

**Frames:**

- In steel with double protection treatment: galvanic treatment covered with a layer of epoxy paint.
- AISI 304 stainless steel screws to guarantee fail-safe operation.
- to wall into the floor.

Compatible enclosures	Height from ground	Type	Model	Code
CV4M	550	Pedestal	BVR/55/C	095731139
CV4M		Frame	TA/CP	095734604

## Inspectionable basement



**Pedestals:**

Execution with the front wall removable for inspection.

**Frames:**

- In steel with double protection treatment: galvanic treatment covered with a layer of epoxy paint.
- AISI 304 stainless steel screws to guarantee fail-safe operation.
- to wall into the floor.

Compatible enclosures	Height from ground	Type	Model	Code
CV4M	640	Pedestal (frame)	ZZ4M	073791006
CV4M		Frame	TA/CV4M	095737003

## Pole anchor frames



TAP/CVT

**Materials:**

In steel with double protection treatment: galvanic treatment covered with a layer of epoxy paint.

**Characteristics:**

Slots to fix with 3/4" BAND-IT strap for poles with diameters of not less than 230 mm.

Compatible enclosures	Model	Code
CV4M	TAP/CVT	095730057

## Top units - depth 375 mm



SVHP

### Materials

Moulded in SMC (fiberglass) - grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside.

### Characteristics

In compliance with CEI EN 62208 standards. Rated insulation voltage Ui 690V. Hinged door complete with cremone-type bolt operated by a retracting handle with Y21 individually-keyed safety lock. Partition complete with fairleads. Lower and under-roof air vents for natural ventilation inside. Mounting plate equipped with brass inserts buried in the moulding so as to allow equipment to be applied directly or through the mounting plate itself.

The effective dimensions shown in the Table indicate the maximum space available for the equipment in compliance with the features specified by standard CEI EN 62208 (effective protected space).

### Protection degree

IP44 in compliance with CEI EN 60529; IK 10 according to CEI EN 62262.

**WL versions** - without lock. Pre-engineered for installation of series SCS86/.. - SCM86/.. locks to order separately.

External dimensions, mm			Internal dimensions, mm			Max load Kg. Applicable on bottom wall	Compatible enclosures	Model	Code
Height	Base	Depth	Height	Base	Depth				
565	677	412	550	640	375	50	CVHP-CVHP2	SMVHP-WL	073350902
381	677	412	366	640	375	45	CVHP-CVHP2	SVHP-WL	073350019
709	677	412	694	640	375	65	CVHP-CVHP2	SSVHP-WL	073351017

## Conversion top units not available - new *Grafi* series

External dimensions, mm			Internal dimensions, mm			Top units not availables		Conversion Grafi top units	
Height	Base	Depth	Height	Base	Depth	Model	Code	Model	Code
381	677	412	366	640	375	SVHP	073350001	GH7-2/2/S-4	078712908
709	677	412	694	640	375	SSVHP	073351009	GH7-4/4/S-4	078714904

## Plinths - depth 375 mm



ZVHP

### Materials

Moulded in SMC (fiberglass) - grey RAL 7040 color.

### Characteristics

In compliance with CEI EN 62208 standards. Rated insulation voltage Ui 690V. External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside.

### Protection degree

IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

External dimensions, mm			Internal dimensions, mm			Compatible enclosures	Model	Code
Height	Base	Depth	Height	Base	Depth			
381	676	412	366	640	375	CVHP-CVHP2-CVHY	ZVHP	073390007

**Enclosures Width 720, Depth 260 are available in the Grafi 7 series see pag. 59**

## Enclosure with one compartment - depth 375 mm



CVHP/T

**Materials**

Moulded in SMC (fiberglass) - grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside.

**Characteristics**

In compliance with CEI EN 62208 standards. Rated insulation voltage  $U_i$  690V. Hinged door complete with cremone-type bolt operated by a retracting handle with Y21 individually-keyed safety lock. Air intakes below and under the roof for natural internal ventilation. Mounting plate equipped with brass inserts buried in the moulding so as to allow equipment to be applied directly or through the mounting plate itself. Anchor frame is included in the supply.

**Protection degree**

IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

**Esecuzioni WL** - without lock. Provision for applications SCS 86/..- SCM86/.. series locks to be ordered separately.

The effective dimensions shown in the Table indicate the maximum space available for the equipment in compliance with the features specified by standard CEI EN 62208 (effective protected space).

External dimensions, mm			Internal dimensions, mm			Max load Kg. Applicable on bottom wall	Versions	Model	Code
Height	Base	Depth	Height	Base	Depth				
1394	720	450	1365	640	375	90	For floor installation with frame	CVHP/T	073301004
1394	720	450	1365	640	375	90	For floor installation with frame without lock	CVHP/T-WL	073301103

Conversion enclosures not available - new *Grafi* series

External dimensions, mm			Internal dimensions, mm			Enclosures not available		Conversion Grafi enclosures	
Height	Base	Depth	Height	Base	Depth	Model	Code	Model	Code
753	720	450	715	640	375	CVHP/S2/C	073302002	GH7-4/4/S-4	078714904
								G-EA/SFP	097770028
753	720	450	715	640	375	CVHP/S2/T	073302036	GH7-4/4/T-4	078714102
								GH7-8/8/T-4	078718103
1394	720	450	1365	640	375	CVHP/T-ACV*	073303000	G-8/MT	095770087
								GH/SM	095770913
								G7/8/TPM	095777744

\*Predisposed for panel modular equipment. Max 168 modules arranged in 6 rows. Consisting of upright + frame and profiled metal DIN rail.



## Enclosures with meter compartment



CVHP/GMI/T

### Materials

Moulded in SMC (fiberglass) - grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside.

### Characteristics

**Hinged door complete with cremone-type bolt operated by a retracting handle with Y21 individually-keyed safety lock. Air intakes below and under the roof for natural internal ventilation. For floor installation with masonry Frame**

**With built-in contact box on the right-hand side - independent access with a diversified lock (standard triangular lockable version).**

**Suitable for direct mounting of electronic meters:**

- max n ° 1 integrated single-phase measuring group, GMI-GMY type.

- max n ° 1 single phase for powers up to 10Kw GEM-GISM type. Fixing with n. 1 base T5 A2 (serial number 286103).

- max n ° 1 three-phase for powers up to 16.5Kw type GET2A, up to 30Kw type GIST. Fixing with n ° 1 base T5 A4 (Serial number 286142).

### Degree of protection

IP 44 according to CEI EN 60529, IK 10 according to CEI EN 62262.

External dimensions, mm			Internal dimensions, mm			Useful dimensions compartment counter, mm			Model	Code
Height	Base	Depth	Height	Base	Depth	Height	Base	Depth		
1394	720	450	1365	640	375	375	182	182	CVHP/GMI/T	073301137

## Enclosure with one compartment with plinth



CVHP/T+ZVHP

### Materials

Moulded in SMC (fiberglass) - grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside.

### Characteristics

In compliance with CEI EN 62208 standards. Rated insulation voltage Ui 690V. Hinged door complete with cremone-type bolt operated by a retracting handle with Y21 individually-keyed safety lock. Air intakes below and under the roof for natural internal ventilation. For self-standing floor installation with anchor frame (included in the supply). Mounting plate equipped with brass inserts buried in the moulding so as to allow equipment to be applied directly or through the mounting plate itself.

### Protection degree

IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

Enclosure and plinth (H=365 mm) to be ordered separately.

External dimensions, mm			Internal dimensions enclosure, mm			Enclosure code		Plinth code	
Height	Base	Depth	Height	Base	Depth	Model	Code	Model	Code
1761	720	450	1365	640	375	CVHP/T	073301004	ZVHP	073390007
1761	720	450	660	640	375**	CVHP2/T	073341000	ZVHP	073390007
1761	720	450	1365	640	375	CVHP/GMI/T*	073301137	ZVHP	073390007

\*For groups of measurements

## Enclosure with two compartments with plinth

External dimensions, mm			Internal dimensions enclosure, mm			Enclosure code		Plinth code	
Height	Base	Depth	Height	Base	Depth	Model	Code	Model	Code
1761	720	450	660	640	375**	CVHP2/T	073341000	ZVHP	073390007

\*\* Enclosure with two compartments, useful dimensions relating to each individual compartment.

Enclosures with two compartments of the same size - depth 375 mm 

CVHP2/T

**Materials**

Moulded in SMC (fiberglass) grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside.

**Characteristics**

In compliance with CEI EN 62208 standards. Rated insulation voltage  $U_i$  690V. PHinged door complete with cremone-type bolt operated by a retracting handle with Y21 individually-keyed safety lock. Air intakes below and under the roof for natural internal ventilation. Mounting plate equipped with brass inserts buried in the moulding so as to allow equipment to be applied directly or through the mounting plate itself. Partition complete with fairleads. For self-standing floor installation with anchor frame (included in the supply).

**Protection degree**

IP 44 in compliance with CEI EN 60529, IK 10 CEI EN 62262.

**WL versions** - without lock. Provision for applications SCS 86/..- SCM86/.. series locks to be ordered separately.

Or installation independent floor frame anchor included in the supply. (CV./ T).

The effective dimensions shown in the Table indicate the maximum space available for the equipment in compliance with the features specified by standard CEI EN 62208 (effective protected space).

External dimensions, mm			Internal dimensions, mm lower compartment			Internal dimensions, mm higher compartment			Max load Kg. Applicable on bottom wall	Model	Code
Height	Base	Depth	Height	Base	Depth	Height	Base	Depth			
1394	720	450	660	640	375	660	640	375	90	CVHP2/T	073341000
1394	720	450	660	640	375	660	640	375	90	CVHP2/T-WL	073341109

## Enclosures with two compartments - higher in the bottom



CVHP/SST

### Materials

Moulded in SMC (fiberglass) grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside.

### Characteristics

In compliance with CEI EN 62208 standard. Rated insulation voltage  $U_i$  690V. Hinged door complete with cremone-type bolt operated by a retracting handle individually-keyed safety lock.

**CVHP/ST:** manufacture with a single cipher safety key code 21 cipher for both compartments.

**CVHP/SST executions** manufacture with a single cipher safety key code 21 cipher for the bottom compartment, code 12 cipher for the top compartment.

Partition complete with fairleads. Front and under-roof air vents with protecting labyrinth.

For self-standing floor installation with anchor frame. (included in the supply). Mounting plate equipped with brass inserts buried in the moulding so as to allow equipment to be applied directly or through the mounting plate itself.

### Protection degree

IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

Refer to the single cubicle forming the compartment when choosing the accessories.

The effective dimensions shown in the Table indicate the maximum space available for the equipment in compliance with the features specified by standard CEI EN 62208 (effective protected space).

External dimensions, mm			Internal dimensions, mm lower compartment			Internal dimensions, mm higher compartment			Max load Kg. Applicable on bottom wall		Composition		Model	Code
Height	Base	Depth	Height	Base	Depth	Height	Base	Depth	Top	Bot.	Top.	Bot.		
2091	720	450	1365	640	375	694	640	375	45	90	SSVHP	CVHP	CVHP/SST	073300097
1763	720	450	1365	640	375	366	640	375	65	90	SVHP	CVHP	CVHP/ST	073300089

## Enclosure for measuring three phase groups - Complies with ENEL specification DS4558



Enclosure made of fiberglass - grey RAL 7040 color  
 Double lock closure type unified according Enel DS 4541  
 Complete with frame for floor installation and plinth h = 381mm.  
 Protection degree IP34D according to EN 60529, IK10 according to IEC 62208. Complies with specific ENEL DS 4558.

Suitable for installation of electronic meters:

- **Max N. 1 three phase integrated type GTWS** for powers from 30 to 200kW
- **Max N. 1 three phase power from 30 to 200kW type GISS**; fixing with No. 1 overall TA BT (serial 530015)

External dimensions, mm			Internal dimensions, mm			Description	Door lock	Model	Code
Height	Base	Depth	Height	Base	Depth				
1763	720	450	1365	640	375	Complete with frame and plinth	SCR/87/2C	CVHP/RZT/E	070730957

## Enclosure for measuring three phase groups



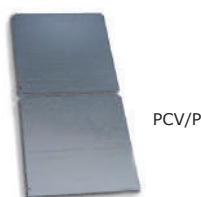
Enclosure made of fiberglass - grey RAL 7040 color  
 Double lock closure unified type ENEL second DS 4541  
 Complete with frame for floor installation  
 Protection degree IP34D according to EN 60529, IK10 according to IEC 62262.

Suitable for installation of electricity meters:

- **Max N. 1 three phase integrated type GTWS** for powers from 30 to 200kW
- **Max N. 1 for three phase power from 30 to 200kW type GISS**; fixing with No. 1 overall TA BT (serial 530015)

External dimensions, mm			Internal dimensions, mm			Description	Door lock	Model	Code
Height	Base	Depth	Height	Base	Depth				
1394	720	450	1365	640	375	Completo di Frameo	SCR/87/2C	CVHP/RT/E	070730981

## Mounting plates



PCV/P

Compatible enclosures	Dimensions	In sheet steel th.2 mm		In bakelite th. 5 mm		In PVC th. 5 mm		Wood (for marine use) th. 15 mm	
		Model	Code	Model	Code	Model	Code	Model	Code
CVBP, CVHP/..., CVHP/RZT/E, CVHP/RT/E	576x1248 (in 2 pz)	PCV/P	095703302	PB/CVP	095683306	PP/CVP	095693305	PL/CVP	095673307
CVHY/...	576x1356 (in 2 pz)	PCV/HY	095703351	PB/CVHY	095683355	PP/CVHY	095693354	PL/CVHY	095673356
SMVHP	576x490	PSMV/P	095703385	PB/SMVP	095683389	PP/SMVP	095693388	-	-
SSVBP, SSVHP, CVHP/S2/...CVBP2/..., CVHP2/... (top comp.), CVBP2/..., CVHP2/..(bottom comp.)	576x623	PSSV/P	095703393	PB/SSVP	095683397	PP/SSVP	095693396	-	-
SVBP, SVHP	576x324	PSV/P	095704300	PB/SVP	095684304	PP/SVP	095694303	-	-

## Closing bottom plates



SI/CVHP

Complete with conical fairleads in thermoplastic material.  
SI/CV... in bakelite.

Compatible enclosures	Model	Code
CVHP/T, CVHP2/T, CVHY/T, CVHP/GMI/T, CVHP/S2/...	SI/CVHP	095766507
CVBP/T, CVBP2/T	SI/CVBP	095766606

## Floor anchor frames (for/T versions)



TA/CVHP

Screws in AISI 304 stainless steel to guarantee fail-safe operation to wall into the floor.  
In steel with double protection treatment: galvanic treatment covered with a layer of epoxy paint.

Compatible enclosures	Model	Code
CVHP/S2, CVHP, CVHP2, CVHP/GMI, CVHY	TA/CVHP	095736500
CVBP, CVBP2	TA/CVBP	095736609

## Wall fixing support



SAP/CVHP

**Materials:** In steel with double protection treatment: galvanic treatment covered with a layer of epoxy paint.  
Screw in AISI 304 stainless steel.

External dimensions, mm			Max capacity in Kg	Compatible enclosures	Model	Code
Height	Base	Depth				
500	740	435	120	CVHP - CVHY and derivatives	SAP/CVHP	095730560

## Top units - Depth 375mm



SVL

**Materials**

Moulded in SMC (fiberglass) - grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside.

**Characteristics**

In compliance with CEI EN 62208 rule. Rated insulation voltage Ui 690V. Hinged door complete with cremone-type bolt operated by a retracting handle with Y21 individually-keyed safety lock. Dividing partition complete with core hitches. Lower and under-roof air vents for natural ventilation inside. Mounting plate equipped with brass inserts buried in the moulding so as to allow equipment to be applied directly or through the mounting plate itself.

**Protection degree**

IP 44 in compliance with CEI EN 60529; IK 10 according to CEI EN 62262.

**WL versions** = without lock (to order separately). Pre-engineered for installation of series SCS86/.. - SCM86/.. locks to order separately.

The effective dimensions shown in the Table indicate the maximum space available for the equipment in compliance with the features specified by standard CEI EN 62208 (effective protected space). \*Max load Kg applicable on bottom wall.

External dimensions, mm			Internal dimensions, mm			Max load Kg. Applicable on bottom wall	Compatible enclosures	Model	Code
Height	Base	Depth	Height	Base	Depth				
381	817	412	366	780	375	50	CVL-CVL2-CVL3-CVU-CVU2	SVL-WL	073250011
709	817	412	694	780	375	65	CVL-CVL2-CVL3-CVU-CVU2	SSVL-WL	073251019

Conversion top units not available - new *Grafi* series

External dimensions, mm			Internal dimensions, mm			Top units not available		Conversion Grafi top units	
Height	Base	Depth	Height	Base	Depth	Model	Code	Model	Code
381	817	412	366	780	375	SVL	073250003	GH9-2/2/S-4	078912904
709	817	412	694	780	375	SSVL	073251001	GH9-4/4/S-4	078914900

## Plinths - Depth 375mm



ZVL

**Materials**

Moulded in SMC (fiberglass) - grey RAL 7040 color. External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside.

**Characteristics**

In compliance with CEI EN 62208 rule. Rated insulation voltage Ui 690V.

**Protection degree**

IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262

External dimensions, mm			Internal dimensions, mm			Compatible enclosures	Model	Code
Height	Base	Depth	Height	Base	Depth			
381	812	412	366	780	375	CVL-CVL2	ZVL	073290009

## Enclosures with one compartment - Depth 375mm



CVL/T

### Materials

Moulded in SMC (fiberglass) - grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside.

### Characteristics

In compliance with CEI EN 62208 rule. Rated insulation voltage  $U_i$  690V. Hinged door complete with cremone-type bolt operated by a retracting handle with Y21 individually-keyed safety lock. Air intakes below and under the roof for natural internal ventilation. Mounting plate equipped with brass inserts buried in the moulding so as to allow equipment to be applied directly or through the mounting plate itself.

### Protection degree

IP 44 in compliance with CEI 60529, IK 10 according to CEI EN 62262.

For independent installation floor anchor frame (supplied only for executions CVL / T - CVL / T-WL).

**WLP executions** - without lock and prepared for application locks series SCS86/.. - SCM86/.. to be ordered separately.

The effective dimensions shown in the table indicate the maximum space available for the equipment in compliance with the features specified by standard CEI EN 62208 (effective protected space). \*Max load kg applicable on bottom wall.

External dimensions, mm			Internal dimensions, mm			Max load Kg. Applicable on bottom wall	Type of installation	Model	Code
Height	Base	Depth	Height	Base	Depth				
1394	860	450	1365	780	375	100	For floor installation with frame	CVL/T	073200032
1394	860	450	1365	780	375	100	For floor installation with frame. Without lock	CVL/T-WL	073200230

## Conversion enclosures not available - new *Grafi* series

External dimensions, mm			Internal dimensions, mm			Enclosures not available		Conversion Grafi enclosures	
Height	Base	Depth	Height	Base	Depth	Model	Code	Model	Code
401	860	450	365	780	375	CVL/S1/C	073201006	GH9-2/2/S-4	078912904
								G-EA/SFP	097770028
753	860	450	715	780	375	CVL/S2/C	073202004	GH9-4/4/S-4	078914900
								G-EA/SFP	097770028
753	860	450	715	780	375	CVL/S2/T	073202038	GH9-4/4/T-4	078914108
1394	860	450	1365	780	375	CVL/T-ACV*	073203002	GH9-8/8/T-4	078918109
								G-8/MT	095770087
								G/SM	095770905
								G9/8/TPM	095779740

\* N°1 compartment for housing panel modular equipment max 204 modules placed in 6 rows. Consists of upright + frame and profiled metal DIN rail



## Enclosures with meter compartment



CVL/GMI/T

**Materials**

Moulded in SMC (fiberglass) - grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside.

**Characteristics**

**Hinged door complete with cremone-type bolt operated by a retracting handle with Y21 individually-keyed safety lock. Air intakes below and under the roof for natural internal ventilation. For floor installation with masonry Frame**

**With built-in contact box** on the right-hand side - independent access with a diversified lock (standard triangular lockable version).

**Suitable for direct mounting of electronic meters:**

- max n ° 1 integrated single-phase measuring group, GMI-GMY type.

- max n ° 1 single phase for powers up to 10Kw GEM-GISM type. Fixing with n. 1 base T5 A2 (serial number 286103).

- max n ° 1 three-phase for powers up to 16.5Kw type GET2A, up to 30Kw type GIST. Fixing with n ° 1 base T5 A4 (Serial number 286142).

**Degree of protection**

IP 44 according to CEI EN 60529, IK 10 according to CEI EN 62262.

External dimensions compressive, mm			Internal enclosure dimensions, mm			Internal dimensions of meter comp.			Model	Code
Height	Base	Depth	Height	Base	Depth	Height	Base	Depth		
1394	860	450	1365	780	375	375	182	182	CVL/GMI/T	073200131

## Enclosure for measuring groups of over 30 KW



CVL3/GM-WL

**Materials**

Moulded in SMC (fiberglass) - grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside.

**Characteristics**

Hinged door complete with cremone-type bolt operated by a retracting handle with Y21 individually-keyed safety lock. Air intakes below and under the roof for natural internal ventilation.

**Protection degree**

IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

**Complete with table fixing brackets for threephase power supplies and semi-direct insertion metering (TTA) - for users of over 30 kW and up to 150 kW** (active and reactive power metering). Complete with partition closed lower.

WL versions = without lock. Prearrangement locks application series SCS 86/... - SCM 86/....to order separately

External dimensions, mm			Internal dimensions, mm			Type of installation	Model	Code
Height	Base	Depth	Height	Base	Depth			
1394	860	450	1365	780	375	For floor installation with frame	CVL3/GM-WL	073230138

## Enclosures with one compartment with plinth



CVL/T + ZVL  
(supplied separately)

### Materials

Moulded in SMC (fiberglass) - grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside.

### Characteristics

In compliance with CEI EN 62208 rule. Rated insulation voltage  $U_i$  690V. Hinged door complete with cremone-type bolt operated by a retracting handle with Y21 individually-keyed safety lock. Air intakes below and under the roof for natural internal ventilation. Mounting plate equipped with brass inserts buried in the moulding so as to allow equipment to be applied directly or through the mounting plate itself.

### Protection degree

IP 44 in compliance with CEI 60529, IK 10 according to CEI EN 62262.  
For self-standing floor installation with anchor frame (include in the supply).

**Enclosure and plinth (H=365mm) to be ordered separately.**

External dimensions, mm			Internal dimensions, mm			Enclosure ordering codes		Plinth ordering codes	
Height	Base	Depth	Height	Base	Depth	Model	Code	Model	Code
1761	860	450	1365	780	375	CVL/T	073200032	ZVL	073290009
1761	860	450	1365	780	375	CVL/GMI/T	073200131	ZVL	073290009

## Conversion cabinet not available - new *Grafi* series

External dimensions, mm			Internal dimensions, mm			Enclosure not available		Conversion Grafi enclosure	
Height	Base	Depth	Height	Base	Depth	Model	Code	Model	Code
1394	860	450	1365	780	375	CVL3/T	073230039	GH9-8/25/ZT-4	078918190
1744	860	450	1715	780	375	CVU/T	073220030	GH9-9/28/ZT-4	078919198

## Enclosure with two compartments of same size - Depth 375mm



CVL2/T-WL

**Materials**

Moulded in SMC (fiberglass) grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside.

**Characteristics**

In compliance with CEI EN 62208 rule. Rated insulation voltage Ui 690V. Hinged door complete with cremone-type bolt operated by a retracting handle with Y21 individually-keyed safety lock on both compartments. Partition complete with fairleads. Single structure model. Air intakes below and under the roof for natural internal ventilation. For self-standing floor installation with anchor frame (included). Mounting plate equipped with brass inserts buried in the moulding so as to allow equipment to be applied directly or through the mounting plate itself.

**Protection degree**

IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

**WLP executions** - without lock and prepared for application locks series SCS86/.. - SCM86/.. to be ordered separately.

The effective dimensions shown in the table indicate the maximum space available for the equipment in compliance with the features specified by standard CEI EN 62208 (effective protected space).

External dimensions, mm			Internal dimensions, mm lower compartment			Internal dimensions,mm higher compartment			Max load Kg. Applicable on bottom wall	Model	Code
Height	Base	Depth	Height	Base	Depth	Height	Base	Depth			
1394	860	450	660	780	375	660	780	375	100	CVL2/T-WL	073240137

Conversion enclosures not available - new *Grafi* series

External dimensions, mm			Internal dimensions, mm lower compartment			Internal dimensions,mm higher compartment			Enclosure not available		Conversion Grafi enclosure	
Height	Base	Depth	Height	Base	Depth	Height	Base	Depth	Model	Code	Model	Code
1394	860	450	660	780	375	660	780	375	CVL2/T	073240038	GH9-8/44/T-4	078918208

## Enclosures with two compartments - higher at bottom



CVL/SST



### Materials

Moulded in SMC (fiberglass) - grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside.

### Characteristics

In compliance with CEI EN 62208 rule. Rated insulation voltage Ui 690V. Hinged door complete with cremone-type bolt operated by a retracting handle to ensure that the door adheres perfectly. CVL/SST manufacture with a single cipher safety key code 21 cipher for the bottom compartment, code 12 cipher for the top compartment. Partition complete with fairleads. Air intakes below and under the roof for natural internal ventilation. For self-standing floor installation with anchor frame (included). Mounting plate equipped with brass inserts buried in the moulding so as to allow equipment to be applied directly or through the mounting plate itself. Refer to each single cubicle data sheet when choosing the accessories.

### Protection degree

IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262

The effective dimensions shown in the Table indicate the maximum space available for the equipment in compliance with the features specified by standard CEI EN 62208 (effective protected space).

External dimensions, mm			Internal dimensions, mm lower compartment			Internal dimensions, mm higher compartment			Max load Kg. Applicable on bottom wall	Compartment composition		Model	Code
Height	Base	Depth	Height	Base	Depth	Height	Base	Depth		Top.	Bot.		
2091	860	450	1365	780	375	694	780	375	100	SSVL	CVL	CVL/SST	073200099

External dimensions, mm			Internal dimensions, mm lower compartment			Internal dimensions, mm higher compartment			Max load Kg. Applicable on bottom wall		Model	Code
Height	Base	Depth	Height	Base	Depth	Height	Base	Depth	Top comp.	Bottom comp.		
1763	860	450	1365	780	375	366	780	375	50	100	CVL/ST	073200081

## Conversion enclosures not available - new *Grafi* series

External dimensions, mm			Internal dimensions, mm lower compartment			Internal dimensions, mm higher compartment			Enclosure not available		Conversion Grafi enclosure	
Height	Base	Depth	Height	Base	Depth	Height	Base	Depth	Model	Code	Model	Code
1394	860	450	1000	780	375	370	780	375	CVL32/ST	073200073	GH9-8/52/T-4	078918216

## Enclosures with two compartments with plinth



CVL2/T-WL + ZVL



### Materials

Moulded in SMC (fiberglass) - grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or tropicalized steel painted grey and electrically insulated from the inside.

### Characteristics

In compliance with CEI EN 62208 rule. Rated insulation voltage Ui 690V. Hinged door complete with cremone-type bolt operated by a retracting handle with Y21 individually-keyed safety lock on both compartments (code 21). Partition complete with fairleads. For self-standing floor installation with anchor frame. Air intakes below and under the roof for natural internal ventilation. Mounting plate equipped with brass inserts buried in the moulding so as to allow equipment to be applied directly or through the mounting plate itself.

### Protection degree

IP 44 in compliance with CEI EN 60529; IK 10 according to CEI EN 62262.

**WL versions** = without lock. Provision for applications SCS86/..- SCM86/.. series locks to be ordered separately.

The effective dimensions shown in the table indicate the maximum space available for the equipment in compliance with the features specified by standard CEI EN 62208 (effective protected space).

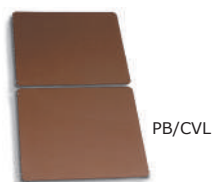
External dimensions, mm			Internal dimensions, mm			Enclosure ordering codes		Plinth ordering codes	
Height	Base	Depth	Height	Base	Depth	Model	Code	Model	Code
1761	860	450	660	780	375*	CVL2/T-WL	073240137	ZVL	073290009

\*2 compartments cubicle, the dimensions rif. a single compartment.

## Conversion enclosure not available - new *Grafi* series

External dimensions, mm			Internal dimension, mm lower compartment			Internal dimension, mm higher compartment			Enclosure not available		Conversion Grafi enclosure	
Height	Base	Depth	Height	Base	Depth	Height	Base	Depth	Model	Code	Model	Code
1744	860	450	660	780	375	660	780	375	CVU2/T	073260036	GH9-9/244/ZT-4	078919297

## Mounting plates



Compatible enclosures	Dimensions	In sheet steel th. 2 mm		In bakelite th. 5 mm		In PVC th. 5 mm		Wood (for marine use) sp. 15 mm	
		Model	Code	Model	Code	Model	Code	Model	Code
CVL/..., CVL3/..., CVL/ST...(bottom comp.)	720x1248 (in 2 pz)	PCV/L	095703203	PB/CVL	095683207	PP/CVL	095693206	PL/CVL	095673208
CVL/32 (bottom comp.)	720x900 (in 2 pz)	PCV/L32	095703237	PB/CVL32	095683231	PP/CVL32	095693230	-	-
CVL/S2/..., SSVL, SSVBL - CVL2/..., CVU2/... (bottom comp.) - CVL2/..., CVU2/... (top comp.)	720x623	PSSV/L	095703294	PB/SSVL	095683298	PP/SSVL	095693297	-	-
CVL/S1/..., SVL, SVBL - CVL/ST... (top comp.) - CVL32 (top comp.)	720x324	PSV/L	095704201	PB/SVL	095684205	PP/SVL	095694204	-	-
CVL - CVU (counter box)	655x430	-	-	-	-	PP/CVL/PC	095693214	-	-

## Closing bottom plates



### For CV.../T versions (floor installation).

Complete with conical fairleads in thermoplastic material. SI/CV... in bakelite.

Compatible enclosures	Model	Code
CVL/S2/T, CVL/T, CVL32/ST, CVL/ST, CVL2/T, CVL/GMI/T, CVU/T,	SI/CVLU	095768008
CVBL/T, CVBL2/T	SI/CVBL	095768107

## Floor anchor frames (for/T versions)



Screws in AISI 304 stainless steel to guarantee fail-safe operation to wall into the floor. Made with steel with double protection treatment: galvanic treatment covered with a layer of epoxy paint.

Compatible enclosures	Model	Code
CVL/S2-CVL-CVL2-CVL3-CVL/GMI-CVU-CVU2-CVU/GMI	TA/CVL	095738001
CVBL-CVBL2	TA/CVBL	095738100

## Wall fixing support



### Materials

Made of steel with double protection treatment: galvanic treatment covered with a layer of epoxy paint. Screw in AISI 304 stainless steel.

External dimensions, mm			Max load Kg	Compatible enclosures	Model	Code
Height	Base	Depth				
500	880	435	120	CVL - CVL3 - CVU e derivati	SAP/CVL	095730529

**Opening on two fronts (front/rear)**


DVN/T

*Every two-sided double-depth in SMC are replaced by the new line Graf.*

**Conversion enclosure not available - new Graf series**
**Width 546mm**

External dimensions, mm			Useful dimensions, mm single compartment			Enclosure not available		Conversion Graf enclosure	
Height	Base	Depth	Height	Base	Depth	Model	Code	Model	Code
900	546	632	873	515	570	DVN/T	074209933	G5-5/5/T-4	078505104
								G5-5/5/T-4	078505104
								G-EA/DP/A2	097770093
900	546	861	873	515	800	DVHN/T	074219932	GH5-5/5/T-4	078515103
								GH5-5/5/T-4	078515103
								G-EA/DP/A2	097770093

**Width 720mm**

External dimensions, mm			Useful dimensions, mm single compartment			Enclosure not available		Conversion Graf enclosure	
Height	Base	Depth	Height	Base	Depth	Model	Code	Model	Code
1394	720	908	1365	640	830	DVHP/T	074203233	GH7-8/8/T-4	078718103
								GH7-8/8/T-4	078718103
								G-EA/DP/A2	097770093
1394	720	678	1365	640	600	DVBP/T	074203274	G7-8/8/T-4	078708104
								G7-8/8/T-4	078708104
								G-EA/DP/A2	097770093
1394	720	793	1365	640	720	DVBHP/T	074203357	GH7-8/8/T-4	078718103
								G7-8/8/T-4	078708104
								G-EA/DP/A2	097770093

**Width 860mm**

External dimensions, mm			Useful dimensions, mm single compartment			Enclosure not available		Conversion Graf enclosure	
Height	Base	Depth	Height	Base	Depth	Model	Code	Model	Code
1394	860	908	1365	780	830	DVL/T	074202235	GH9-8/8/T-4	078918109
								GH9-8/8/T-4	078918109
								G-EA/DP/A2	097770093
1394	860	678	1365	780	600	DVBL/T	074202276	G9-8/8/T-4	078908100
								G9-8/8/T-4	078908100
								G-EA/DP/A2	097770093
1394	860	793	1365	780	720	DVBLL/T	074202359	GH9-8/8/T-4	078918109
								G9-8/8/T-4	078908100
								G-EA/DP/A2	097770093
1744	860	908	1715	780	830	DVU/T*	074222233	GH9-9/28/ZT-4	078919198
								GH9-9/28/ZT-4	078919198
								G-EA/DP/A2	097770093

\* With built-in plinth H365 mm

Width 1134mm

External dimensions, mm			Useful dimensions, mm single compartment			Enclosure not available		Conversion Grafi enclosure	
Height	Base	Depth	Height	Base	Depth	Model	Code	Model	Code
1394	1134	908	1365	1055	830	DVF/T	074201138	GH12-8/8A/T-4	078138112
								GH12-8/8A/T-4	078138112
								G-EA/DP/A2	097770093
1744	1134	908	1715	1055	830	DVR/T*	074221136	GH12-9/28A/ZT-4	078139193
								GH12-9/28A/ZT-4	078139193
								G-EA/DP/A2	097770093

\* With built-in plinth H365 mm

Opening only on one side (front)



Conversion enclosure not available - new *Grafi* series

Width 720mm

External dimensions, mm			Internal dimensions, mm			Enclosure not available		Conversion Grafi enclosure	
Height	Base	Depth	Height	Base	Depth	Model	Code	Model	Code
1394	720	678	1365	640	600	DVBP/T/A1	074203290	G7-8/8/T-4	078708104
								G7-8/8/T-4	078708104
								G-EA/DP/A1	097770085
1394	720	793	1365	640	720	DVBHP/T/A1	074203399	GH7-8/8/T-4	078718103
								G7-8/8/T-4	078708104
								G-EA/DP/A1	097770085

Width 860mm

External dimensions, mm			Internal dimensions, mm			Enclosure not available		Conversion Grafi enclosure	
Height	Base	Depth	Height	Base	Depth	Model	Code	Model	Code
1394	860	678	1365	780	600	DVBL/T/A1	074202292	G9-8/8/T-4	078908100
								G9-8/8/T-4	078908100
								G-EA/DP/A1	097770085
1394	860	793	1365	780	720	DVBLL/T/A1	074202391	GH9-8/8/T-4	078918109
								G9-8/8/T-4	078908100
								G-EA/DP/A1	097770085



## Width 1088mm

Conversion modular cabinet not available - new *Grafi* series

External dimensions, mm			Internal dimensions, mm			Modular cabinet not available		Conversion Grafi enclosures	
Height	Base	Depth	Height	Base	Depth	Model	Code	Model	Code
570	1088	308	543	1044	260	CMT/21/A1	074612110	G12-3/3A/T-4	078123114

## Width 1396mm



CMHP/22/A2

### Materials

Moulded in SMC (fiberglass) - grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiber-glass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or hot-dip galvanized steel according to standard CEI 7-6, electrically insulated from the inside.

### Characteristics

Hinged 2 wings doors complete with cremone-type bolt operated by a retracting handlee with Y21 individually keyed safety lock. Lower and under-roof air vents for natural ventilation inside.

For self-standing floor installation with anchor frame. Lifting eyebolts.

**Protection degree** IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

**Models CM.../..A2 cannot be fitted with mounting plates. Internal compartment open. Possibility to access to the equipment on both sides (front and rear).**

**Applications: to ensure protection to the bulky equipment by encapsulation.**

External dimensions, mm			Internal dimensions, mm			Type	Model	Code
Height	Base	Depth	Height	Base	Depth			
1394	1396	900	1365	1360	830	With 2 front elements and 2 deep front opening	CMHP/22/A1	074562216
1394	1396	900	1365	1360	830	With 2 front elements and 2 deep front opposite opening	CMHP/22/A2	074562224

Conversion modular cabinet not available - new *Grafi* series

External dimensions, mm			Internal dimensions, mm			Modular cabinet not available		Conversion Grafi enclosures	
Height	Base	Depth	Height	Base	Depth	Model	Code	Model	Code
1394	1396	450	1365	1360	375	CMHP/21/A1	074562117	GH7-8/8/T-4	078718103
								GH7-8/8/T-4	078718103
								G-EA/AA/SX	097770150
								G-EA/AA/DX	097770168
753	1396	450	724	1360	375	CMSHP/21/A1	074622119	GH7-4/4/T-4	078714102
								GH7-4/4/T-4	078714102
								G-EA/AA/SX	097770150
								G-EA/AA/DX	097770168
660	1360	375	660	1360	375	CMHP2/21/A1	074622218	GH7-8/44/T-4	078718202
								GH7-8/44/T-4	078718202
								G-EA/AA/SX	097770150
								G-EA/AA/DX	097770168
								G-EA/AM/AA	097770176

Width 1676mm



CML/22/A1

**Materials**

Moulded in SMC (fiberglass) - grey RAL 7040 color. Internal hinges in polyaryla-mide-based fiberglass-reinforced thermoplastic resin (IXEF). External metal parts made of stainless steel or hot-dip galvanized steel according to standard CEI 7-6, electrically insulated from the inside.

**Characteristics**

Hinged 2 wings doors complete with cremone-type bolt operated by a retracting handle Y21 individually keyed safety lock. Lower and under-roof air vents for natural ventilation inside. For self-standing floor installation with anchor frame. Lifting eyebolts.

**Protection degree** IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

**Models CM.../..A2 cannot be fitted with mounting plates. Internal compartment open. Possibility to access to the equipment on both sides (front and rear). Applications: to ensure protection to the bulky equipment by encapsulation.**

External dimensions, mm			Internal dimensions, mm			Type	Model	Code
Height	Base	Depth	Height	Base	Depth			
1394	1676	900	1365	1640	830	With 2 front elements and 2 deep front opening	CML/22/A1	074512211
1394	1676	900	1365	1640	830	With 2 front elements and 2 deep front opposite opening	CML/22/A2	074512229

Conversion modular cabinet not available - new *Grafi* series

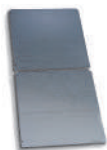
External dimensions, mm			Internal dimensions, mm			Modular cabinet not available		Conversion Grafi enclosures	
Height	Base	Depth	Height	Base	Depth	Model	Code	Model	Code
1394	1676	450	1365	1640	375	CML/21/A1	074512112	GH9-8/8/T-4	078918109
								GH9-8/8/T-4	078918109
								G-EA/AA/SX	097770150
								G-EA/AA/DX	097770168
								G-EA/AM/AA	097770176

External dimensions, mm			Internal dimensions, mm			Modular cabinet not available		Conversion Grafi enclosures	
Height	Base	Depth	Height	Base	Depth	Model	Code	Model	Code
1744	1676	450	1715	1640	375	CMU/21/A1*	074522111	GH9-9/28/ZT-4	078919198
								GH9-9/28/ZT-4	078919198
								G-EA/AA/SX	097770150
								G-EA/AA/DX	097770168
								G-EA/AM/AA	097770176

\* with built-in plinth (H=365)

## Mounting plates for modular cabinets

### Width 1396mm



PCV/P

Compatible enclosures	Dimensions	In sheet steel th.2 mm		In bakelite th. 5 mm		In PVC th. 5 mm		Wood (for marine use) sp. 15 mm	
		Model	Code	Model	Code	Model	Code	Model	Code
CMHP/.../A1 (right comp.) - CMHP/.../A1 (left comp.)	576x1248 (in 2 pcs)	PCV/P	095703302	PB/CVP	095683306	PP/CVP	095693305	PL/CVP	095673307

### Width 1676mm



Compatible enclosures	Dimensions	In sheet steel th.2 mm		In bakelite th. 5 mm		In PVC th. 5 mm		Wood (for marine use) sp. 15 mm	
		Model	Code	Model	Code	Model	Code	Model	Code
CML/... (right and left comp.)	720x1248 (in 2 pcs)	PCV/L	095703203	PB/CVL	095683207	PP/CVL	095693206	PL/CVL	095673208

## Max Power dissipation (Pmax.W) in the enclosures in SMC (fiberglass)

Calculations made according to standard CEI 17-43. Method for determining over-temperatures by extrapolation, for nonstandard (ANS) low voltage assembled protection and manoeuvring equipment (LV panels).  
The max power dissipation values for the cubicles given in the tables are valid for the most common installation conditions (exposure on all sides) and for the medium height ( $\Delta T 0,5$ ) and top height ( $\Delta T 1,0$ ) over-temperature values given in the table. Reference 35°C ambient temperature.

Enclosure width	Type of enclosure	Internal dimensions, mm			$\Delta T 0,5$ (K)	$\Delta T 1,0$ (K)	Pmax W
		Base	Height	Depth			
410	CVA	410	435	180	24,81	30	53,4
515	SVT	515	374	260	26,35	30	75,3
515	CVT – SSVT	515	550	260	24,87	30	85,8
515	CVN – SSVT	515	880	260	20,46	30	112,3
515	SVHT	515	374	375	26,33	30	90,5
515	CVHT – SSVHT	515	550	375	25,07	30	109,8
515	CVHN – SSVHN	515	880	375	21,39	30	143,3
640	SSVHP	640	715	375	22,81	30	150,1
640	CVHP	640	1365	375	20,44	30	230,8
640	CVHY	640	1490	375	20,13	30	245,5
685	CV4M – SV4M	685	630	240	25,23	30	120,4
780	SVL	780	365	375	27,53	30	125,0
780	SSVL	780	715	375	23,20	30	178,0
780	CVL	780	1365	375	20,98	30	273,2
1360	CMHP/22	1360	1365	830	23,88	30	643,8
1640	CML/22	1640	1365	830	23,14	30	769,8

We are available on request to provide the calculation of the power dissipated for each combination of battery enclosures both horizontal and vertical.

Serie CV		Grafi 5	
Width 546 mm		Width 580 mm	
Code	Model	Code	Model
073500084	CVT/ST	078505211	G5-5/31/T-4
073500902	CVT/0-P	078503109	G5-3/3/T-4
095735007	TA/ CVT		
073501942	CVT/ZZ-P	078506193	G5-6/33/ZT-4
073510083	CVHT/ST	078515210	GH5-5/31/T-4
073510901	CVHT/0	078513109	GH5-3/3/T-4
095735106	TA/ CVHT		
073510901	CVHT/0	078513900	GH5-3/3/S-4
095765104	SC/ CVHTN	095770939	G/ SFP
073900086	CVN/ST	078508215	G5-8/52/T-4
073900904	CVN/0	078505104	G5-5/5/T-4
095735007	TA/ CVT		
073910085	CVHN/ST	078518214	GH5-8/52/T-4
073910903	CVHN/0	078515103	GH5-5/5/T-4
095735106	TA/ CVHT		
073910903	CVHN/0	078515905	GH5-5/5/S-4
095765104	SC/ CVHTN	095770939	G/ SFP
074105578	BVT/T-P	078506201	G5-6/33/T-4
074105933	BVTN/T	078503109	G5-3/3/T-4
		078505906	G5-5/5/S-4
		097770002	G-EA/MS/I
		097770010	G-EA/MS/S
074105933	BVTN/T	078508215	G5-8/52/T-4
074109539	BVNT/T	078505104	G5-5/5/T-4
		078503901	G5-3/3/S-4
		097770002	G-EA/MS/I
		097770010	G-EA/MS/S
074109539	BVNT/T	078508215	G5-8/52/T-4
074109935	BVN/T	078509205	G5-9/55/T-4
074115536	BVHT/T	078516200	GH5-6/33/T-4
074115932	BVHTN/T	078513109	GH5-3/3/T-4
		078515905	GH5-5/5/S-4
		097770002	G-EA/MS/I
		097770010	G-EA/MS/S
074115932	BVHTN/T	078518214	GH5-8/52/T-4
074119538	BVHNT/T	078515103	GH5-5/5/T-4
		078513900	GH5-3/3/S-4
		097770002	G-EA/MS/I
		097770010	G-EA/MS/S
074119538	BVHNT/T	078518214	GH5-8/52/T-4
074119934	BVHN/T	078519204	GH5-9/55/T-4
073550006	SVHT	078512902	GH5-2/2/S-4
073551004	SSVHT	078514908	GH5-4/4/S-4
073950024	SVHN	078515905	GH5-5/5/S-4
074209933	DVN/T*	078505104	G5-5/5/T-4
		078505104	G5-5/5/T-4
		097770093	G-EA/DP/A2
074219932	DVHN/T*	078515103	GH5-5/5/T-4
		078515103	GH5-5/5/T-4
		097770093	G-EA/DP/A2

CV Series		Grafi 7	
Width 720 mm		Width 685 mm	
Code	Model	Code	Model
073300089	CVHP/ST	078719218	GH7-9/82/T-4
073300097	CVHP/SST	078718103	GH7-8/8/T-4
		078714904	GH7-4/4/S-4
		097770002	G-EA/MS/I
		097770010	G-EA/MS/S
073301004	CVHP/T	078718103	GH7-8/8/T-4
073302002	CVHP/S2/C*	078714904	GH7-4/4/S-4
073302036	CVHP/S2/T*	097770028	G-EA/SFP
		078714102	GH7-4/4/T-4
073341000	CVHP2/T	078718202	GH7-8/44/T-4
073370033	CVBP/T*	078708104	G7-8/8/T-4
073370538	CVBP2/T*	078708203	G7-8/44/T-4
073373003	CVBP/T-ACV*	078708104	G7-8/8/T-4
		095770087	G-8/MT
		095770905	G/SM
		095777744	G7/8/TPM
073303000	CVHP/T-ACV*	078718103	GH7-8/8/T-4
		095770087	G-8/MT
		095770913	GH/SM
		095777744	G7/8/TPM
073350001	SVHP*	078712908	GH7-2/2/S-4
073351009	SSVHP*	078714904	GH7-4/4/S-4
073371007	SVBP*	078702909	G7-2/2/S-4
073371106	SSVBP*	078704905	G7-4/4/S-4
074203233	DVHP/T*	078718103	GH7-8/8/T-4
		078718103	GH7-8/8/T-4
		097770093	G-EA/DP/A2
074203274	DVBP/T*	078708104	G7-8/8/T-4
		078708104	G7-8/8/T-4
		097770093	G-EA/DP/A2
074203290	DVBP/T/A1*	078708104	G7-8/8/T-4
		078708104	G7-8/8/T-4
		097770085	G-EA/DP/A1
074203357	DVBHP/T*	078718103	GH7-8/8/T-4
		078708104	G7-8/8/T-4
		097770093	G-EA/DP/A2
074203399	DVBHP/T/A1*	078718103	GH7-8/8/T-4
		078708104	G7-8/8/T-4
		097770085	G-EA/DP/A1

\* Products not availables

CV Series		Grafi 9	
Width 860 mm		Width 910 mm	
Code	Model	Code	Model
073200032	CVL/T	078918109	GH9-8/8/T-4
073200073	CVL32/ST*	078918216	GH9-8/52/T-4
073200081	CVL/ST	078919214	GH9-9/82/T-4
073200099	CVL/SST	078918109	GH9-8/8/T-4
		078914900	GH9-4/4/S-4
		097770002	G-EA/MS/I
		097770010	G-EA/MS/S
073201006	CVL/S1/C*	078912904	GH9-2/2/S-4
		097770028	G-EA/SFP
073202004	CVL/S2/C*	078914900	GH9-4/4/S-4
		097770028	G-EA/SFP
073202038	CVL/S2/T*	078914108	GH9-4/4/T-4
073220030	CVU/T*	078919198	GH9-9/28/ZT-4
073230039	CVL3/T*	078918190	GH9-8/25/ZT-4
073240038	CVL2/T*	078918208	GH9-8/44/T-4
073260036	CVU2/T*	078919297	GH9-9/244/ZT-4
073270035	CVBL/T*	078908100	G9-8/8/T-4
073270530	CVBL2/T*	078908209	G9-8/44/T-4
073273005	CVBL/T-ACV*	078908100	G9-8/8/T-4
		095770087	G-8/MT
		095770905	G/SM
		095779740	G9/8/TPM
073203002	CVL/T-ACV*	078918109	GH9-8/8/T-4
		095770087	G-8/MT
		095770905	G/SM
		095779740	G9/8/TPM
073250003	SVL*	078912904	GH9-2/2/S-4
073251001	SSVL*	078914900	GH9-4/4/S-4
073271009	SVBL*	078902905	G9-2/2/S-4
073271108	SSVBL*	078904901	G9-4/4/S-4
074202235	DVL/T*	078918109	GH9-8/8/T-4
		078918109	GH9-8/8/T-4
		097770093	G-EA/DP/A2
074202276	DVBL/T*	078908100	G9-8/8/T-4
		078908100	G9-8/8/T-4
		097770093	G-EA/DP/A2
074202292	DVBL/T/A1*	078908100	G9-8/8/T-4
		097770085	G-EA/DP/A1
074202359	DVBL/T*	078918109	GH9-8/8/T-4
		078908100	G9-8/8/T-4
		097770093	G-EA/DP/A2
074202391	DVBL/T/A1*	078918109	GH9-8/8/T-4
		097770085	G-EA/DP/A1
074222233	DVU/T*	078919198	GH9-9/28/ZT-4
		078919198	GH9-9/28/ZT-4
		097770093	G-EA/DP/A2

CV Series		Grafi 12	
Width 1134 mm		Width 1150 mm	
Code	Model	Code	Model
073100034	CVF/T*	078138112	GH12-8/8A/T-4
073100091	CVF/SST*	078138112	GH12-8/8A/T-4
		078134194	GH12-4/4A/S-4
		097770002	G-EA/MS/I
		097770010	G-EA/MS/S
073102006	CVF/S2/C*	078134194	GH12-4/4A/S-4
		097770028	G-EA/SFP
073102030	CVF/S2/T*	078134111	GH12-4/4A/T-4
073120032	CVR/T*	078139193	GH12-9/28A/ZT-4
073140030	CVF2/T*	078138229	GH12-8/44A/T-4
073151003	SSVF*	078134194	GH12-4/4A/S-4
073160038	CVR2/T*	078139292	GH12-9/244A/ZT-4
074201138	DVF/T*	078138112	GH12-8/8A/T-4
		078138112	GH12-8/8A/T-4
		097770093	G-EA/DP/A2
074221136	DVR/T*	078139193	GH12-9/28A/ZT-4
		078139193	GH12-9/28A/ZT-4
		097770093	G-EA/DP/A2

\* Products not availables

## ACV2000 Accessories (Patented) – For panel construction

The new ACV 2000 accessories can be used to form electric panels in TN-4M-P-L series fiberglass road cubicles. Made of self-extinguishing thermoplastic material. The structure includes for T-N-4M series a base frame on which panels can be installed for modular equipment or protective insulating inner doors (opaque or transparent).

Both versions guarantee an IP30 protection degree towards the live parts and allow class II electric panels to be made. The accessories are easy to install without the cubicle structure needing to be modified as it is pre-engineered to match side bosses (inserts).

### for CVT-CVHT-CVN-CVHN-CV4M enclosures



Description	Type	Model
Made of grey RAL 7035 color self-extinguishing thermoplastic material. Supplied in packs containing 2 uprights and 2 frames.	Uprights and bearing frame	ACV2000/MTC/..

Description	Type	Model
Made of thermoplastic material complete with slots for modular equipment and DIN 46277/3 (omega) sections.	Slotted panels	ACV2000/PM/...
Made of thermoplastic material	Closed panels	ACV2000/PC/...

Description	Type	Model
Made of transparent thermoplastic material. Quick-closing hinges. Safety signs.	Controporta trasparente	ACV2000/CNT/..
Made of opaque thermoplastic material. Quick-closing hinges. Safety signs.	Controporta opaca	ACV2000/CNP/...

**Accessories for realization enclosures with modular equipment for cabinets overall width 685 and 910 mm are available exclusively in the new series Grafi.**



## Modularity

### Opaque or transparent protective inner insulating door



Type of enclosures	Description	N° max	Model	Code
CVT-SSVT-CVHT-SSVHT	Upright and bearing frame	1	ACV2000/MTC/T	095756359
	Transparent insulating inner door	1	ACV2000/CNT/T	095756961
	Opaque insulating inner door	1	ACV2000/CNP/T	095756862
CVN-SVN-CVHN-SVHN	Upright and bearing frame	1	ACV2000/MTC/N	095756375
	Transparent insulating inner door	1	ACV2000/CNT/N	095757001
	Opaque insulating inner door	1	ACV2000/CNP/N	095756904
CV4M-SV4M	Upright and bearing frame	1	ACV2000/MTC/4M	095756391
	Transparent insulating inner door	1	ACV2000/CNT/4M	095756987
	Opaque insulating inner door	1	ACV2000/CNP/4M	095756888

### Number of panels



Type of enclosures	Description	N° max	Model	Code
CVT -SSVT CVHT - SSVHT	Upright and bearing frame	1	ACV2000/MTC/T	095756359
	slotted or close panels DIN 43880. Max 24 modules,17,5 mm	3	ACV2000/PM/TN	095756664
			ACV2000/PC/TN	095756565
CVN-SVN- CVHN-SVHN	Upright and bearing frame	1	ACV2000/MTC/N	095756375
	slotted or close panels DIN 43880. Max 24 modules,17,5 mm	5	ACV2000/PM/TN	095756664
			ACV2000/PC/TN	095756565
CV4M-SV4M	Upright and bearing frame	1	ACV2000/MTC/4M	095756391
	slotted or close panels DIN 43880. Max 24 modules,17,5 mm	3	ACV2000/PM/4M	095756680
			ACV2000/PC/4M	095756581

## Single components for panel construction - patent application pending

### Uprights and bearing frame



ACV2000/MTC/T

Compatible enclosures	Model	Code
CVT, SSVT, CVHT, SSVHT	ACV2000/MTC/T	095756359
CVN, SVN, CVHN, SVHN	ACV2000/MTC/N	095756375
CV4M, SV4M	ACV2000/MTC/4M	095756391

### Conversion in the new *Grafi* series

Compatible enclosures	Accessories not availables		New Grafi series
	Model	Code	
CVBP, CVHP	ACV2000/MTC/HP	095756417	See Grafi series
CVBP2, CVHP2, SSVHP, SSVBP, CVHP/S2	ACV2000/MTC/HP2	095756433	
CVBL, CVL, CVU	ACV2000/MTC/L	095756474	
CVBL2, CVL2, CVU2, SSVL, SSVB	ACV2000/MTC/L2	095756490	

### Slotted panels



ACV2000/PM/TN

Compatible enclosures	Model	Code
CVT, SSVT, CVHT, SSVHT, CVN, SVN, CVHN, SVHN	ACV2000/PM/TN	095756664
CV4M, SV4M	ACV2000/PM/4M	095756680

### Conversion in the new *Grafi* series

Compatible enclosures	Accessories not availables		New Grafi series
	Model	Code	
CVBP, CVHP, CVBP2, CVHP2, SSVHP, SSVBP, CVHP/S2	ACV2000/PM/HP	095756706	See Grafi series
CVBL, CVL, CVBL2, CVL2, CVU, CVU2, SSVL, SSVBL	ACV2000/PM/L	095756722	

### Close panels



ACV2000/PC/TN

Compatible enclosures	Model	Code
CVT, SSVT, CVHT, SSVHT, CVN, SVN, CVHN, SVHN	ACV2000/PC/TN	095756565
CV4M, SV4M	ACV2000/PC/4M	095756581

### Conversion in the new *Grafi* series

Compatible enclosures	Accessories not availables		New Grafi series
	Model	Code	
CVBP, CVHP, CVBP2, CVHP2, SSVHP, SSVBP, CVHP/S2	ACV2000/PC/HP	095756607	See Grafi series
CVBL, CVL, CVBL2, CVL2, CVU, CVU2, SSVL, SSVBL	ACV2000/PC/L	095756623	

Single components for panel construction - patent application pending

Transparent insulating inner door

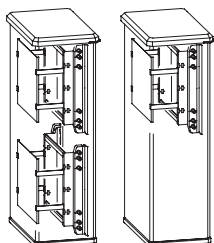


ACV2000/CNT/T

Compatible enclosures	Model	Code
CVT, SSVT, CVHT, SSVHT	ACV2000/CNT/T	095756961
CV4M, SV4M	ACV2000/CNT/4M	095756987
CVN, SVN, CVHN, SVHN	ACV2000/CNT/N	095757001
CVL	KACV/CNT/L*	095757217

\* Upright and frame included

Equipment rack



ACV2000/CP/HP

Conversion in the new *Grafi* series

Compatible enclosures	Accessories not availables		New Grafi series
	Model	Code	
CVHP, CVHP2, SSVHP	ACV2000/CP/HP	095757308	See Grafi series
CVBP, CVBP2, SSVBP	ACV2000/CP/BP	095757357	
CVL, CVU, CVL2, CVU2, SSVL	ACV2000/CNT/N	095757001	
CVBL, CVBL2, SSVBL	ACV2000/CP/BL	095757456	

Opaque insulating inner door



ACV2000/CNP/T

Compatible enclosures	Model	Code
CVT, SSVT, CVHT, SSVHT	ACV2000/CNP/T	095756862
CV4M, SV4M	ACV2000/CNP/4M	095756581
CVN, SVN, CVHN, SVHN	ACV2000/CNP/N	095756904

## Examples of equivalence between components for realization enclosures size P-L and new Grafi series

### Enclosure with 1 compartment with modular equipment

CV series		New Grafi 7 series	
Description	Model	Description	Model
• Road cabinet	• CVHP/T	Road enclosure	GH7- 8/8/T-4
• Uprights and frames	• ACV2000/MTC/HP	Bracket kit support uprights	GH/SM
• N°4 slotted panels	• ACV2000/PM/HP	Uprights kit support components for modular panels	G-8/MT
• N°2 closed panels	• ACV2000/PC/HP	Frame/Frame support panel modular equip.	G7/8/TPM
		Rack	G7/4-8/CST
		N°4 slotted panels	G7/PM29
		N°2 closed panels	G7/PC



G-8/MT



G7/8/TPM

### Enclosure with 2 compartments with modular equipment only in the upper compartment

CV series		Nw Grafi 9 series	
Description	Model	Description	Model
• Road enclosure	• CVL2/T	Road enclosure	GH9-8/44/T-4
• Uprights and frames	• ACV2000/MTC/L2	Bracket kit support uprights	GH/SM
• N°2 slotted panel	• ACV2000/PM/L	Uprights kit support components for modular panels	G-8/MT
• N°1 closed panel	• ACV2000/PC/L	Frame/Frame support panel modular equip.	G9/4/TPM
		Rack	G9/4-8/CST
		N°2 slotted panel	G9/PM40
		N°1 closed panel	G9/PC



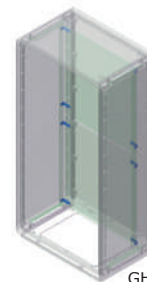
G9/PM40 e G9/PC

**Enclosure with 2 compartments with modular equipment and equipment rack rear enclosure with mounting plate in the upper compartment**

CV series		Nw <i>Graf 7</i> series	
Description	Model	Description	Model
• Road enclosure	• CVHP2/T	Road enclosure	GH7-8/44/T-4
• Uprights and frames	• ACV2000/MTC/HP2	Bracket kit support uprights	GH/SM
• N° 2 slotted panels	• ACV2000/PM/HP	Uprights kit support components for modular panels	G-8/MT
• N° 1 closed panel	• ACV2000/PC/HP	Frame/Frame support panel modular equip.	G7/4/TPM
• Rack	• ACV2000/CP/HP	Rack	G7/4-8/CST
		N° 2 slotted panels	G7/PM29
		N° 1 closed panel	G7/PC
		Bracket kit/mounting plate for rack	GH7/4-8/PACST



G7/.../CST



GH7/.../PACST

### Locks - series SC..86/..



SCR86/X/630

**Materials:** Components moulded in fiberglass reinforced polyamide resin.  
Brass cylinder/rotor.  
**Characteristics:** 3-point latch operation. Each lock has its own standard key.

**Locks series SCS-SCM can only be used with CV enclosure running without lock (WL - WLP).**

**In the standard version, all enclosures and top units are complete with lock with retractable lever useable with key encryption Y21 for the cabinets with one compartment - lower Y21, Y12 upper enclosures with 2 compartments.**

On enclosures in standard execution can not be used locks series SCS-SCM.



SCS86/L



SCS86/Y21



SCS86/TR9

Description / Applicazioni	Type	Type of key	Model	Code
Operated by safety key cod.21	A	CS/21	SCS86/Y21	095718219
Operated by safety key cod.12	B	CS/12	SCS86/Y12	095718128
Operated by safety key cod 21 with vandal proof handle (free rotating when closed)	C	CS/21	SCM86/Y21	095719217
Operated by safety key cod 12 with vandal proof handle (free rotating when closed)	D	CS/12	SCM86/Y12	095719126
Operated by safety pin key cod.630 prearrangement for padlock	E	CSP/630	SCR86/X/630	095717617
Operated by rotating knob without key	F	-	SCS86/P	095718029
Operated by levers, prearrangement for padlock	G	-	SCS86/L	095718011
Operated by triangle key	H	CHP/TR9	SCS86/TR9	095718904
Operated by triangle key and prearrangement for padlock	I	CHP/TR9	SCS86/TR9/L	095718912
Double locking device operated by safety key cod 21 prearrangement for padlock	L	CS/21	SCS86/Y21/L	095718227
Double locking device operated by safety key cod 12 prearrangement for padlock	M	CS/12	SCS86/Y12/L	095718136
Prearrangement for customized pin key cylinder lock	N	-	SCR86/PC	095717518

### Keyrings tin



BPC/Y12

Made of thermoplastic material for applications on 35mm diameter hole

Description	Model	Code
With cylinder yale cfr. Y12	BPC/Y12	095714127
With cylinder yale cfr. Y21	BPC/Y21	095714218
With spiked key cylinder cfr. 630	BPC/630	095714304

## Keys



CHP/TR9



CSP/630

Description	Model	Code
Thermoplastic material for screws triangular	CHP/TR9	091503292
nickel plated brass - cfr 12	CS/12	091505123
nickel plated brass - cfr 21	CS/21	091505214
brass safety locks stiked cfr 630	CSP/630	091505305

## Locks SSCM105/Y... Series locks



SSCM105/Y21

**Materials:**

Body and handle in polyamide resin. Brass turning spindle: Galvanized steel latch.

**Characteristics:**

Handle pre-engineered for cylinder with DIN 18252 profile. Each lock comes complete with its own set of keys.

Description / Applicazioni	Type	Type of key	Type of cabinets	Model	Code
Operated by retracting handle accessible with Y21 cipher safety key	O	CS/21	CVHP - CVHP2 CVHP/SST - CVHP/ST inf. - CVL - CVL2	SSCM105/Y21	095715215
Operated by retracting handle accessible with Y12 cipher safety key	P	CS/12	CVHP/SST - CVHP/ST sup.	SSCM105/Y12	095715124
Operated by retracting handle accessible with Y21 cipher safety key	Q	CS/21	CVT - CVN- CV4M-CVHT - CVHN - BVT - BVN - BVHT - BVHN - BV4M inf.	SSCM070/Y21	095717211
Operated by retracting handle accessible with Y12 cipher safety key	R	CS/12	BVT sup. - BVN sup. - BVHT sup. - BVHN sup. - BV4M sup.	SSCM070/Y12	095717120

## Spares for SSCM105/Y21 series locks



CMY/21

Description / Applicazioni	Type	Type of lock	Model	Code
Y21 cipher DIN 18252 cylinder	O	SSCM105/Y21	CMY/21	095713210
Y12 cipher DIN 18252 cylinder	P	SSCM105/Y12	CMY/12	095713129



## Summary table enclosures locks application

### Enclosures with one compartment

Type of cubicle	Standard locks	Optional lock WL-WLP versions
CVA/...	A	A÷N
CVT/...	Q	A÷N
CVHT/...	Q	A÷N
CVN/...	Q	A÷N
CVHN/...	Q	A÷N
CV4M/...	Q	A÷N
CVHP/..., CVHY	O	C-D-F-G-H-I-L-M
CVL/...	O	C-D-F-G-H-I-L-M
CVF/...	O	C-D-F-G-H-I-L-M
SVT	Q	A÷N
SSVT	Q	A÷N
SVHT	Q	A÷N
SSVHT	Q	A÷N
SVN	Q	A÷N
SVHN	Q	A÷N
SV4M	Q	A÷N
SVHP	O	C-D-F-G-H-I-L-M
SMVHP	O	C-D-F-G-H-I-L-M
SSVHP	O	C-D-F-G-H-I-L-M
SVL	O	C-D-F-G-H-I-L-M
SSVL	O	C-D-F-G-H-I-L-M

Note: The locks for WL and WLP enclosures are supplied separately

## Summary table enclosures locks application

## Enclosures with several compartments

Type of enclosure	Standard locks		Optional lock WL-WLP versions
	Bottom front compartment	Top rear compartment	
BVT/...	O	P	A÷N
BVN/...	O	P	A÷N
BVNT/...	O	P	A÷N
BVTN/...	O	P	A÷N
BVHT/...	O	P	A÷N
BVHN/...	O	P	A÷N
BVHNT/...	O	P	A÷N
BVHTN/...	O	P	A÷N
BV4M/...	O	P	A÷N
CVT/ST	O	O	A÷N
CVN/ST	O	O	A÷N
CVHT/ST	O	O	A÷N
CVHN/ST	O	O	A÷N
CVHP/ST	O	O	C-D-F-G-H-I-L-M
CVHP/SST	O	P	C-D-F-G-H-I-L-M
CVHP2/...	O	O	C-D-F-G-H-I-L-M
CVL/ST	O	O	C-D-F-G-H-I-L-M
CVL/SST	O	P	C-D-F-G-H-I-L-M
CVL2/...	O	O	C-D-F-G-H-I-L-M
CM/...	O	-	C-D-F-G-H-I-L-M

Note: The locks for WL and WLP enclosures are supplied separately

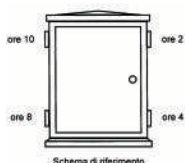
## Air vents



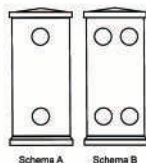
BAF/160



EA/BAF/160



EA/BAF/160



### Materials

External cover in SMC. Grey RAL 7030 color.

Internal protection grid made of polyamide resin (PA6 V2) grey RAL 7040 color.

### Characteristics

Ventilation area:

wall thickness mm 2,5 min: 2200 mmq

wall thickness mm 5 min: 2240 mmq.

### Protection degree

IP44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

Note: Executions applications as scheme B are carry out only on enclosures depth 375 mm.

**Applicable to all the series, with the exception of CVA**

Bore diameter	Outer diameter	Versions	Model	Code
140	160	loose	BAF/160	095431169
140	160	applied	EA/BAF/160	097431167

## Air vents for forced ventilation

Axial fan for forced ventilation vents of BAF/160.

Voltage rating: 220/240 Vac.

Frequency: 50/60 Hz. Current: 0.06 A

Power rating: 13 W

Air flow: 13.6 l/s

The data are referred to the fan not applied.

Dimensions	Model	Code
92x92x25	VENTIL/BAF/160	095432001

## Inspection window



OC/120

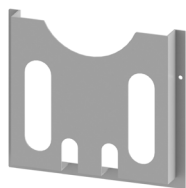
**Materials:** In transparent polycarbonate complete with polyvinyl chloride seal.  
**Characteristics:** To conduct inspections and take readings with the cover closed (always state the position).  
**Protection degree** IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.  
**Can be applied to the entire series of CV-BV**

Outer diameter	Reading diameter	Model	Versions	Model	Code
164	117	CPHX-CPMI-CPTI-CPYK	oose	OC/120	095750915
164	117	CPMI-CPTI-CPYK	applied	EA/OC/120	097750913

## Pocket/drawing holder



PSK/A4



G-PSK/A4-A

**Materials:**  
 PSK/A4: Moulded in PVC (polyvinyl chloride)  
 G-PSK/A4-A: Plastic. RAL 7035 color  
**Characteristics:** for housing drawings and documents.  
 PSK/A4: applied inside the door on CVT - CVHT - CVN - CVHN - CVL - CVU size enclosures and sub-versions.  
 G-PSK/A4-A: Fastening with double-sided adhesive.

Model	Code
PSK/A4	095750204
G-PSK/A4-A	095777389

## Lifting eyebolts



GS/CVL

**Materials:** In galvanized steel section metal with M8 thread.

**Characteristics:** Max carrying capacity 120 Kg.

To transport and install enclosures - can be applied to the entire series of CV - BV - CM.

Versions	Model	Code
Loose	GS/CVL	095750501
Applied	EA/GS/CVL	097750509

## Shelf runners



GL/CVL

**Materials:** Made of die-cast UNI EN 1706 AC - 46100 DF aluminium alloy.

**Characteristics:** Can be applied to HP - L size CV series cubicles and sub-versions or to any other pre-engineered flat surface.

Max carrying capacity of each runner (calculated with safety coefficient 3).

Dimensions	Max capacity in Kg	Model	Code
242x48	25	GEC/CVL	095752002
242x68	60	GC/CVL	095752010
242x168	60	GL/CVL	095752028

## Shelves for equipment



RPL/CVL



RPA/CVT

**Materials:** Moulded in SMC (fiberglass)

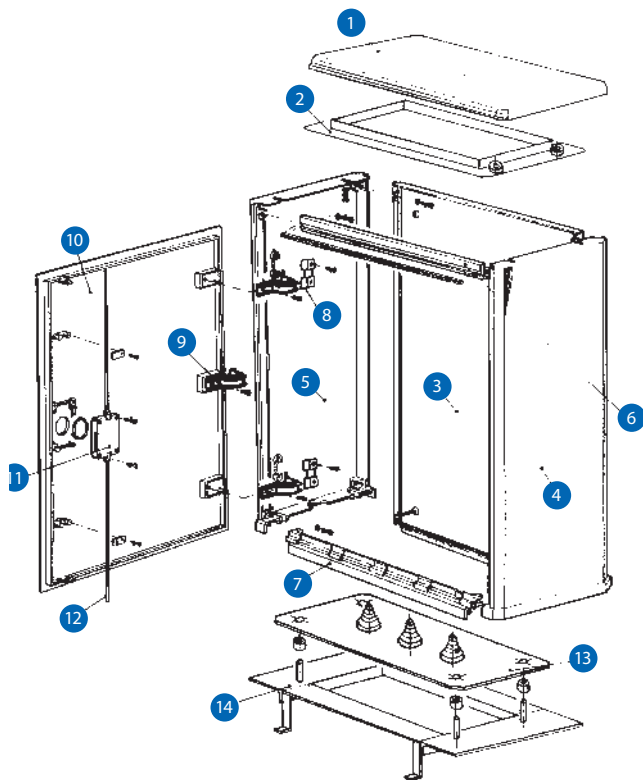
**Characteristics:** types RPA/CVL - RPL/CVL can be applied to pre-engineered enclosures with pairs of runners; type RPA/CVT - RPA/CVHT can be positioned on the base or middle of pre-engineered enclosures.

External dimensions, mm			Max capacity in Kg	Compatible enclosures	Model	Code
Height	Base	Depth				
360	575	12	20	CVHP - CVL and derivatives	RPA/CVL	095751202
360	675	12	20	CVL and derivatives	RPL/CVL	095751251
265	503	12	20	CVT - CVN and derivatives	RPA/CVT	095751509
373	503	12	20	CVHT - CVHN and derivatives	RPA/CVHT	095751517

## Table application guides and shelves

Enclosures models	Max number of shelves				Number of runners per shelf			Max number of runner (points)	
	RPA/CVL	RPL/CVL	RPA/CVT	RPA/CVHT	GEC/CVL	GC/CVL	GL/CVL	right	left
CVT	-	-	1	-	-	-	-	-	-
CVN	-	-	1	-	-	-	-	-	-
CVHT	-	-	-	1	-	-	-	-	-
CVHN	-	-	-	2	-	-	-	-	-
SVT	-	-	1	-	-	-	-	-	-
CVHP	5	-	-	-	2	-	-	5	5
CVHY	5	-	-	-	2	-	-	5	5
CVL	5	-	-	-	-	1	1	5	5
CVL	-	5	-	-	-	2	-	5	5
CVF	-	-	-	-	-	-	-	5	5

## Enclosures composition scheme



### Legend:

1. Roof
2. Under roof air frame
3. Back
4. Right side
5. Left side
6. Upper traverse
7. Lower traverse
8. Pivot side
9. Pivot door
10. Door
11. Door lock
12. Locking door poles
13. Bottom plate to close\* (on request)
14. Anchor frame

\* The lower partition is supplied as standard in the wall and pole versions. It can be supplied, on request, complete with fairleads in the execution for floor installation.

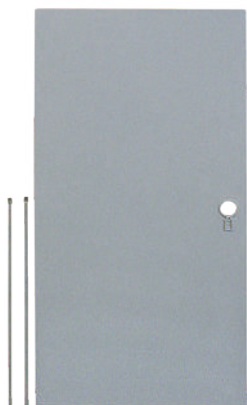
## Enclosures hinges


**Characteristics**

Pack with pairs of hinges.

Type of enclosures	Model	Code
For all enclosures CV (T-HT-N-HN-4N-HP-BP-L-BL-U-F-R)	K-CR/CV	095741005
CVHP/RZT/E-CV4M/E	K-CR/CVE	095741013

## Doors complete with poles


**Characteristics**

Lock and hinge not included.

Type of enclosures	Model	Code
CVT-CVHT-SSVT-SSVHT-BVT	K-SPT/T	095741500
CVT-CVHT-SSVT-SSVHT-BVT Version without lock (WL)	K-SPT/T-WL	095741526
CVN-CVHN-SSVN-SSVHN-BVN	K-SPT/N	095741542
CVN-CVHN-SSVN-SSVHN-BVN Version without lock (WL)	K-SPT/N-WL	095741567
CV4N-BV4M	K-SPT/4M	095741583
CV4N-BV4M Version without lock (WL)	K-SPT/4M-WL	095741609
SVT-SVHT	K-SPT/ST	095741625
SVT-SVHT Version without lock (WL)	K-SPT/ST-WL	095741641
CVL-CVU	K-SPT/LU	095741666
CVL-CVBL-CVU Version without lock (WL)	K-SPT/LU-VL	095741682
CVHP-CVBP	K-SPT/HP	095741716
CVHP-CVBP Version without lock (WL)	K-SPT/HP-WL	095741724
CV4M/E	K-SPT/4ME	095741617

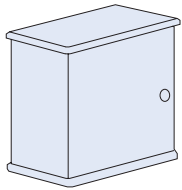


## Enclosures roofs

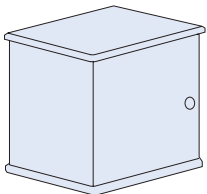
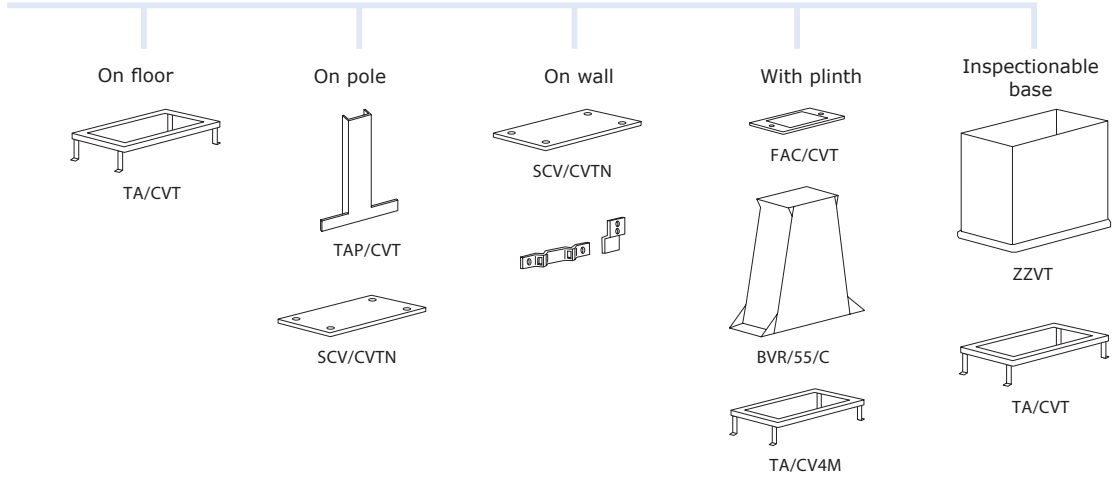


Type of enclosures	Model	Code
CVT-CVN-BVT-BVM	K-T/TN	095742003
CVHT-CVHN-BVHT-BVHM	K-T/HTN	095742029
CV4M-BV4M	K-T/4M	095742045
CVL-CVU	K-T/LU	095742060
CVBL	K-T/BL	095742086
CVHP	K-T/HP	095742102
CVBP	K-T/BP	095742128

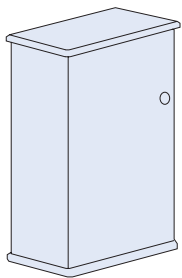
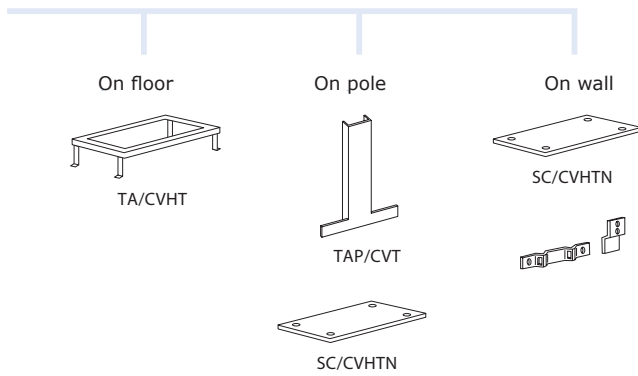
### Enclosures modularity



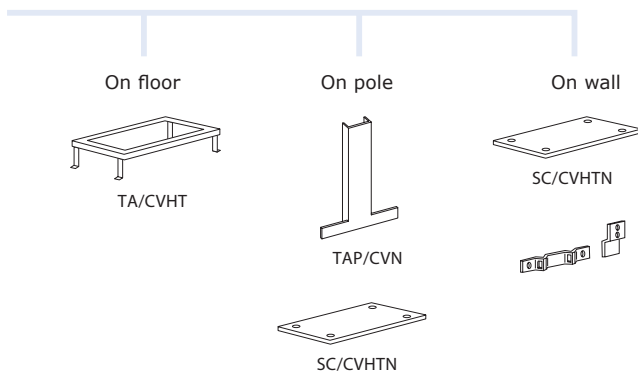
Base enclosure  
CVT/0-P



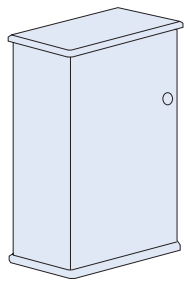
Base enclosure  
CVHT/0



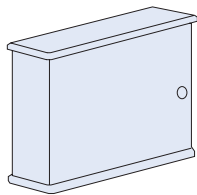
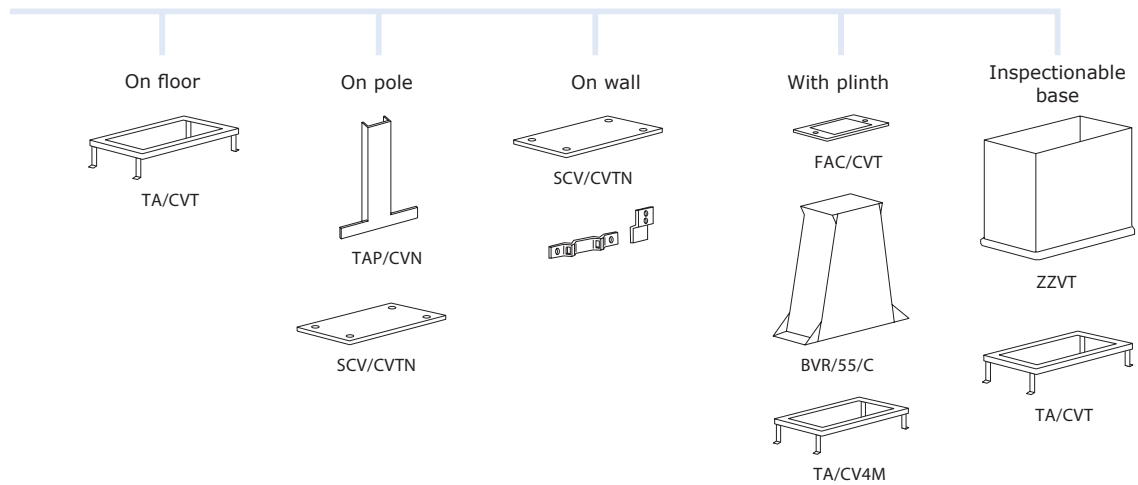
Base enclosure  
CVHN/0



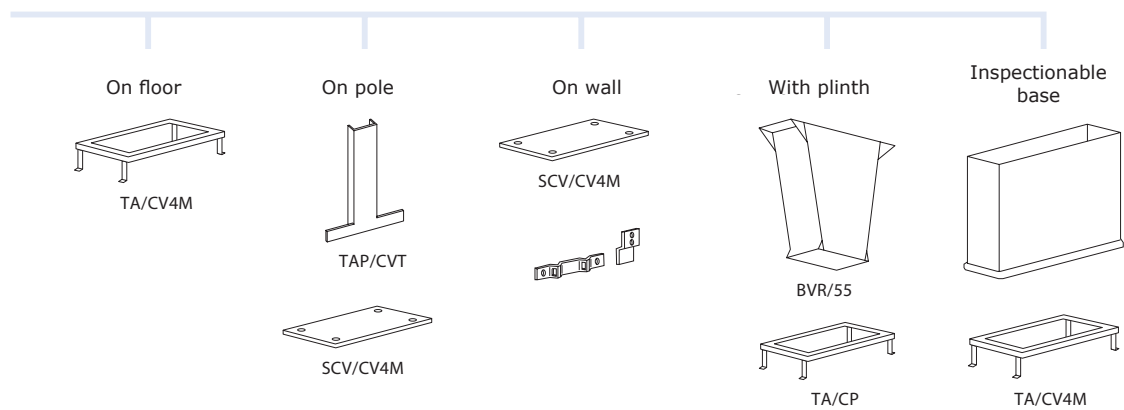
Enclosures modularity



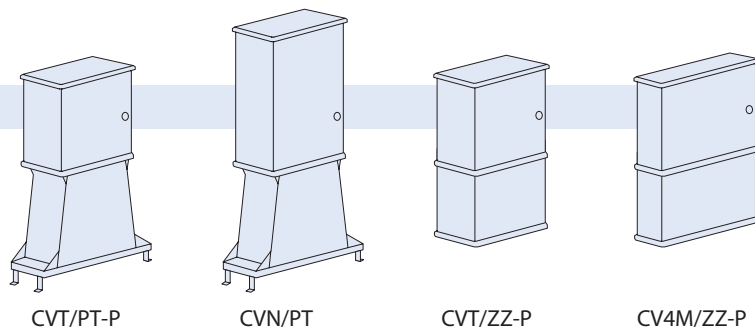
Base enclosure  
CVN/0



Base enclosure  
CV4M/0-P



The base enclosures CVT/0-P and CVN/0 in pedestal version can be supplied pre-assembled (enclosure + basement + anchor frame). The CVT/ZZ-P and CV4M/ZZ-P versions are with pre-assembled inspection base



## Electrical counters single-phase for powers up to 10 kw type GEM and GISM

Counters ENEL	Execution/Mounting	Installation	Enclosures	Accessories
n. 1 single-phase	n. 1 base T5 A2 (serial 286103)	on wall or build in	CPMI/C-WL - CPMI/C	
		for pole mounting	CPMI/C-WL - CPMI/C	TAP/CPMI
		with fiberglass support	CPMI/ST	
		on wall	CPRM/C	
		wall with portholes	CPRM/CO	
n. 2 single-phase	n. 2 base T5 A2 (serial 286103)	on wall or build in	CPTI/C-WL - CPTI/C	
		for pole mounting	CPTI/C-WL - CPTI/C	TAP/CPMI
		with fiberglass support	CPTI/ST	
		on wall	CPRT/C	
		wall with portholes	CPRT/CO	
n. 3 single-phase	n. 1 Base B3M (serial 286108) n. 1 Mounting plate (PB/CVT - PP/CVT)	on wall	CVT/O-WL - CVT/0-P	SCV/CVTN
		on pole	CVT/O-WL - CVT/0-P	SCV/CVTN + TAP/CVT
		on floor	CVT/O-WL - CVT/0-P	TA/CVT
		with pedestal	CVT/PT-WL - CVT/PT-P	
		floor with risers	CVT/O-WL - CVT/0-P	SVT + TA/CVT
		floor with plinth	CVT/O-WL - CVT/0-P	ZVT + TA/CVT
		with base inspection	CVT/ZZ-P	

## Electrical counters single-phase for powers up to 10 kw type GEM and GISM and 20Kw (three-phase) type GET2A and GIST

Counters ENEL	Execution/Mounting	Installation	Enclosures	Accessories
n. 1 single-phase + n. 1 three-phase	n. 1 base T5 A2 (serial 286103) n. 1 base T5 A4 (serial 286142)	on wall or build in	CPTI/C-WL - CPTI/C	
		for pole mounting	CPTI/C-WL - CPTI/C	TAP/CPMI
		with fiberglass support	CPTI/ST	
		on wall	CPRT/C	
		wall with portholes	CPRT/CO	
n. 2 single-phase + n. 1 three-phase	n. 1 Base B3M (serial 286113) n. 1 Mounting plate (PB/CVT - PP/CVT)	on wall	CVT/O-WL - CVT/0-P	SCV/CVTN
		on pole	CVT/O-WL - CVT/0-P	TAP/CVT
		on floor	CVT/O-WL - CVT/0-P	TA/CVT
		with pedestal	CVT/PT-WL - CVT/PT-P	
		floor with risers	CVT/O-WL - CVT/0-P	SVT + TA/CVT
		floor with plinth	CVT/O-WL - CVT/0-P	ZVT + TA/CVT
		with base inspection	CVT/ZZ-P	

For every base enclosure (executions -WL) are available ENEL lock to be requested when ordering.

## Electrical counters three-phase for powers up to 16.5 kw type GET2A, up to 30 Kw type GET3A and GIST

Counters ENEL	Execution/Mounting	Installation	Enclosures	Accessories
n. 1 three-phase GET2A GIST	n. 1 base T5 A4 (serial 286142)	on wall or build in	CPMI/C-WL - CPMI/C	
		for pole mounting	CPMI/C-WL - CPMI/C	TAP/CPMI
		with fiberglass support	CPMI/ST	
		on wall	CPRM/C	
		wall with portholes	CPRM/CO	
n. 2 three-phase GET2A GIST	n. 2 base T5 A4 (serial 286142)	on wall or build in	CPTI/C-WL - CPTI/C	
		for pole mounting	CPTI/C-WL - CPTI/C	TAP/CPMI
		with fiberglass support	CPTI/ST	
		on wall	CPRT/C	
n. 3 three-phase GET2A GIST	n. 1 Base B3T (serial 286113) n. 1 Bottom plate (PB/CVT - PP/CVT)	wall with portholes	CPRT/CO	
		on wall	CVT/O-WL - CVT/0-P	SCV/CVTN
		on pole	CVT/O-WL - CVT/0-P	SCV/CVTN + TAP/CVT
		on floor	CVT/O-WL - CVT/0-P	TA/CVT
		with pedestal	CVT/PT-WL - CVT/PT-P	
		floor with risers	CVT/O-WL - CVT/0-P	SVT + TA/CVT
		floor with plinth	CVT/O-WL - CVT/0-P	ZVT + TA/CVT
n. 1 three-phase GET3A	n. 1 Base DS4464/2 (serial 280012) n. 1 Mounting plate (PB/CVT - PP/CVT)	with base inspection	CVT/ZZ-P	
		on wall	CVT/O-WL - CVT/0-P	SCV/CVTN
		on pole	CVT/O-WL - CVT/0-P	SCV/CVTN + TAP/CVT
		on floor	CVT/O-WL - CVT/0-P	TA/CVT
		with pedestal	CVT/PT-WL - CVT/PT-P	
		floor with risers	CVT/O-WL - CVT/0-P	SVT + TA/CVT
		floor with plinth	CVT/O-WL - CVT/0-P	ZVT + TA/CVT
n. 1 three-phase GET3A	n. 1 Base DS4464/2 (serial 280012) n. 1 Mounting plate (exclude CV4M/E)	with base inspection	CV4M/ZZ-P	
		on wall	CV4M/O-WL - CV4M/0-P	SCV/CV4M
		on pole	CV4M/O-WL - CV4M/0-P	SCV/CV4M + TAP/CVT
		on floor	CV4M/O-WL - CV4M/0-P	TA/CV4M
		with pedestal	CV4M/O-WL - CV4M/0-P	BVR55/C - TA/CP
		floor with risers	CV4M/O-WL - CV4M/0-P	SV4M-WL + TA/CV4M
		floor with plinth	CV4M/O-WL - CV4M/0-P	ZZ4M
		on floor	CV4M/E	TA/CV4M
on wall	CV4M/E	SCV/CV4M		

## Electrical counters three for power from 30 to 200 Kw type GISS

Counters ENEL	Execution/Mounting	Installation	Enclosures	Accessories
n. 1 three-phase	n. 1 complex TA BT (serial 530015)	on floor - without lock	CVHP/T-WL	ZVHP
		on floor - with plinth	CVHP/RZT/E*	
		on floor - without plinth	CVHP/RT/E*	

\* with ENEL lock



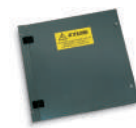
Enclosures	Back plates				Closing bottom plate			SMC cosed
	Steel	Bakelite	PVC	Wood	Bakelite with holes	SMC with holes	Bakelite closed	
CVT/0-P	PCV/T	PB/CVT	PP/CVT	PL/CVT	-	SIV/CVTN	-	SCV/CVTN
CVN/0	PCV/N	PB/CVN	PP/CVN	PL/CVN	-	SIV/CVTN	-	SCV/CVTN
CVHT/0	PCV/T	PB/CVT	PP/CVT	PL/CVT	SI/CVHTN	-	SC/CVHTN	-
CVHN/0	PCV/N	PB/CVN	PP/CVN	PL/CVN	SI/CVHTN	-	SC/CVHTN	-
CVHP/T	PCV/P	PB/CVP	PP/CVP	PL/CVP	SI/CVHP	-	-	-
CVHP2/T	PSSV/P*	PB/SSVP*	PP/SSVP*	-	SI/CVHP	-	-	-
CVBP/T-WL	PCV/P	PB/CVP	PP/CVP	PL/CVP	SI/CVBP	-	-	-
CVBP2/T-WL	PSSV/P*	PB/SSVP*	PP/SSVP*	-	SI/CVBP	-	-	-
CV4M/O-P	PCV/4M	PB/CV4M	PP/CV4M	PL/CV4M	-	SIV/CV4M	-	SCV/CV4M
CVL/T	PCV/L	PB/CVL	PP/CVL	PL/CVL	SI/CVLU	-	-	-
CVL2/T-WL	PSSV/L*	PB/SSVL*	PP/SSVL*	-	SI/CVLU	-	-	-



Enclosures	Pole frame**	Floor frame	Top units	Base	Plinth*
CVT/0-P	TAP/CVT	TA/CVT	SVT - SVT-WL - SSVT - SSVT-WL - SVN - SVN-WL	ZVT - ZZVT	BVR/55/C - ZZVT
CVN/0	TAP/CVN	TA/CVT	SVT - SVT-WL - SSVT - SSVT-WL - SVN - SVN-WL	ZVT - ZZVT	BVR/55/C - ZZVT
CVHT/0	TAP/CVT	TA/CVHT	SVHT - SVHT-WL - SSVHT - SSVHT-WL - SVHN - SVHN-WL	ZVHT	-
CVHN/0	TAP/CVN	TA/CVHT	SVHT - SVHT-WL - SSVHT - SSVHT-WL - SVHN - SVHN-WL	ZVHT	-
CVHP/T	-	•	SVHP-WL - SMVHP-WL - SSVHP-WL	ZVHP	-
CVHP2/T	-	•	SVHP-WL - SMVHP-WL - SSVHP-WL	ZVHP	-
CV4M/O-P	TAP/CVT	TA/CV4M	SV4M - SV4M-WL	ZZ4M	BVR/55/C - ZZ4M
CVL/T	-	•	SVL-WL - SSVL-WL	ZVL	-
CVL2/T-WL	-	•	SVL-WL - SSVL-WL	ZVL	-

• Included.

\*\* The anchor frame to pole is to be completed with the closing bottom plate.



Frame	Slotted panel	Close panels	Transparent inner door	Opaque inner door
ACV2000/MTC/T	ACV2000/PM/TN	ACV2000/PC/TN	ACV2000/CNT/T	ACV2000/CNP/T
ACV2000/MTC/N	ACV2000/PM/TN	ACV2000/PC/TN	ACV2000/CNT/N	ACV2000/CNP/N
ACV2000/MTC/T	ACV2000/PM/TN	ACV2000/PC/TN	ACV2000/CNT/T	ACV2000/CNP/T
ACV2000/MTC/N	ACV2000/PM/TN	ACV2000/PC/TN	ACV2000/CNT/N	ACV2000/CNP/N
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
ACV2000/MTC/4M	ACV2000/PM/4M	ACV2000/PC/4M	ACV2000/CNT/4M	ACV2000/CNP/4M
-	-	-	KACV/CNT/L	-
-	-	-	-	-

\* Accessories pedestals see compatibility:

Type of enclosures	Type of plinth	Frame	Flange assembly
CVT/CVN	BVR/55/C	TA/CV4M	FAC/CVT
CVT/CVN	ZZVT	TA/CVT	-
CV4M	BVR/55/C	TA/CP	-
CV4M	ZZ4M	TA/CV4M	-



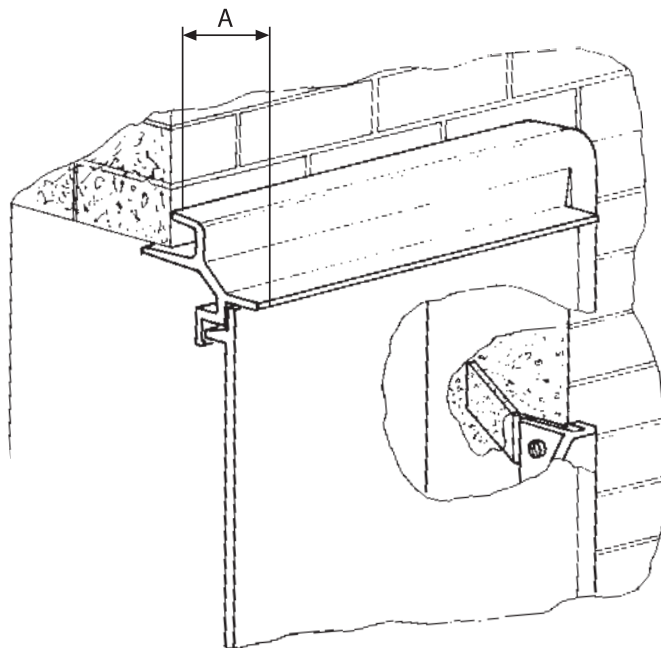




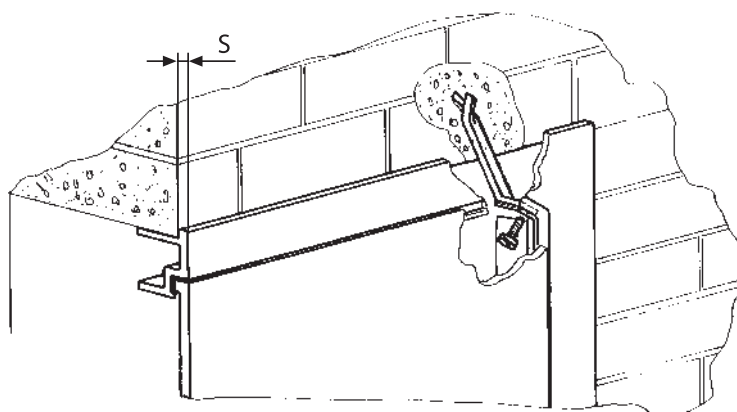
# Doors

SMC doors for masonry niches .....	307
Accessories and spare parts for doors .....	310

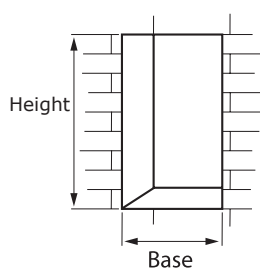
	<b>A</b>
TPV/70	43
TPV/71	43
TPV/75	43
TPV/4M	95
TPV/70/2	43
TPV/71/2	43
TPV/75/2	43



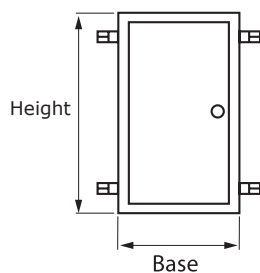
	<b>S</b>
TPV/35/..	4
TPV/43	5
TPV/50/..	4
TPVE/50	4
TPV/60	4
TPV/X	30



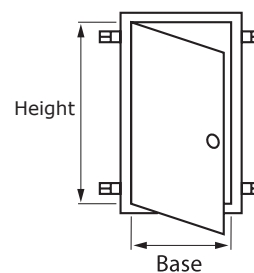
Niche light



Frame external dimension



Door dimensions



## TPV Series - Masonry niches doors with 1 wing



TPV/35

TPVE/50

### Materials

Door and frame moulded in SMC (fiberglass) - grey RAL 7040 color.

### Characteristics

Hinged door complete 3 points latch operated by key. Opening angle over 90°.

Ventilation labyrinth around door perimeter.

Complete with galvanized and passivated door fixing supports to wall in or fix with expansion plugs.

**Types TPV/71 - TPV/74 - TPV/75** and derived versions complete with locks with retracting handle accessible by means of safety lock and Y21 cipher.

**Granite colours available on request:** light grey - dark grey - antique pink.

**Protection degree** IP 43 in compliance with CEI EN 60529 and IK 10 according to CEI EN 50102.

**Executions WL** = without lock.

Prearrangement locks application series SCS 86/... - SCM 86/...to order separately

### For square niches

Niche dimensions		Outer frame dimensions		Door dimensions		Type	Type of lock		Model	Code
Height	Base	Height	Base	Height	Base		WL (on req.)	Standard		
425	425	435	435	357	357	Cover with joint hinges and triangle lock		O	TPV/35	076350008
425	425	435	435	357	357	Cover with joint hinges and key Y21	B-C-D-E-F-GH-I-L-M-N-U	A	TPV/35S	076350016
578	578	588	588	505	505	Cover with joint hinges and triangle lock	-	O	TPV/50	076500008
578	578	588	588	505	505	Cover with joint hinges and key Y21	-	A	TPV/50S	076500016
550	550	560	560	488	488	Cerniere esterne, serratura SCS../ Y21	B-C-D-E-F-GH-I-L-M-N-U	A	TPVE/50	076500107
550	550	560	560	488	488	Cerniere esterne. Senza serratura	B-C-D-E-F-GH-I-L-M-N-U	-	TPVE/50-WL	076500206
578	578	588	588	505	505	Coperchio con linguetta ad incastro. Senza serratura	B-C-D-E-F-GH-I-L-M-N-U	-	TPV/50S-WL	076500155



TPV/4M

TPV/74

### For rectangular niches with longer horizontal side

Niche dimensions		Outer frame dimensions		Door dimensions		Type	Type of lock		Model	Code
Height	Base	Height	Base	Height	Base		WL (n req.)	Standard		
630	710	660	740	535	615	Internal hinges, Lock with hidden lever (body integrated in the door)	-	-	TPV/4M	076650001
630	710	660	740	535	615	Internal hinges without lock	A-B-C-D-E-F-G-H-I-L-M-N-U	-	TPV/4M-WL	076650100
670	800	720	850	574	703	Internal hinges on the right side and lock with lever retractable safety key Y21	-	K	TPV/74/D	076740059


**For rectangular niches with longer vertical side**

Niche dimensions		Outer frame dimensions		Door dimensions		Type	Type of lock		Model	Code
Height	Base	Height	Base	Height	Base		WL (on req)	Standard		
510	200	552	242	489	179	Internal hinges with safety key SCX../ Y21	-	P	TPV/X	076100007
510	200	552	242	489	179	Internal hinges without lock	Q-R-S-T	-	TPV/X-WL	076100106
500	360	530	390	455	315	External hinges with safety key SY/21/F	-	V	TPV/43	076430008
500	360	530	390	455	315	External hinges with square key 7 mm	-	U	TPV/43/Q7	076430107
592	442	636	486	544	394	External hinges with safety key SCS../ Y21	-	A	TPV/60	076600006
592	442	636	486	544	394	External hinges without lock	B-C-D-E-F-G-H-I-L-M-N-U	-	TPV/60-WL	076600105
870	540	900	570	775	445	Internal hinges, Lock with hidden lever (body integrated in the door)	-	-	TPV/70	076700004
870	540	900	570	775	445	Internal hinges without lock	A-B-C-D-E-F-G-H-I-L-M-N-U	-	TPV/70-WL	076700103
1331	660	1381	710	1234	565	Internal hinges with safety key Y21	-	K	TPV/71	076710003
1331	660	1381	710	1234	565	Internal hinges without lock	C-D-F-G-H-I-L-M-U	-	TPV/71-WL	076710102
1331	800	1381	850	1234	703	Internal hinges with safety key Y21	-	K	TPV/75	076750009
1331	800	1381	850	1234	703	Internal hinges without lock	C-D-F-G-H-I-L-M-U	-	TPV/75-WL	076750108

## TPV Series - Masonry niche doors with 2 wings



TPV/71/2

### Materials

Door and frame moulded in SMC (fiberglass) - grey RAL 7040 color.  
Hinged door openable beyond 90°, complete with 3 points latch with key. Internal hinges in aluminium alloy turning on self-locking pads made of thermoplastic material.

### Characteristics

Complete with galvanized and passivated door fixing supports to wall in or fix with expansion plugs.  
Ventilation labyrinth around door perimeter.

**On request:** Granite colours light grey - dark grey - antique pink.

**Protection degree** IP 43 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

**Executions WL** = without lock.

Prearrangement locks application series SCS 86/... - SCM 86/....to order separately.

## For rectangular niches with longer vertical side

Niche dimensions		Outer frame dimensions		Door dimensions		Type	Type of locks		Model	Code
Height	Base	Height	Base	Height	Base		WL (on req)	Standard		
1331	1285	1381	1335	1234	1188	Internal hinges with safety key Y21	-	K	TPV/71/2	076712009
1331	1285	1381	1335	1234	1188	Internal hinges without lock	D-F-G-H-I-L-M-U	-	TPV/71/2-WL	076712108



TPV/70/2

## For rectangular niches with longer horizontal side

Niche dimensions		Outer frame dimensions		Door dimensions		Type	Type of locks		Model	Code
Height	Base	Height	Base	Height	Base		WL (on req)	Standard		
870	1045	900	1075	775	944	Internal hinges with safety key Y21	-	-	TPV/70/2	076702000
870	1045	900	1075	775	944	Internal hinges without lock	A-B-C-D-E-FG-H-I-L-M-NU	-	TPV/70/2-WL	076702109
1331	1565	1381	1615	1234	1468	Internal hinges with safety key Y21	-	K	TPV/75/2	076752005
1331	1565	1381	1615	1234	1468	Internal hinges without lock	C-D-F-G-H-IL-M-U	-	TPV/75/2-WL	076752104

## Locks series SC..86/..

**Materials**

Components moulded in fiberglass reinforced polyamide resin. Brass cylinder/rotor.

**Characteristics**

Cremone type functioning.

**Each lock has its own standard key.**


SCR86/X/630



SCS86/P



SCS86/Y21/L



SCS86/TR9

Description / Applications	Type of key	Type	Model	Code
Operated by safety key cod.Y21	CS/21	A	SCS86/Y21	095718219
Operated by safety key cod.Y12	CS/12	B	SCS86/Y12	095718128
Operated by safety key cod Y21 with vandal proof handle (free rotating when closed)	CS/21	C	SCM86/Y21	095719217
Operated by safety key cod Y12 with vandal proof handle (free rotating when closed)	CS/12	D	SCM86/Y12	095719126
Operated by safety pin key cod.630 prearrangement for padlock	CSP/630	E	SCR86/X/630	095717617
Operated by rotating knob without key	-	F	SCS86/P	095718029
Operated by levers, prearrangement for padlock	-	G	SCS86/L	095718011
Operated by triangle key	CHP/TR9	H	SCS86/TR9	095718904
Double locking device. Operated by triangle key and prearrangement for padlock	CHP/TR9	I	SCS86/TR9/L	095718912
Double locking device Operated by safety key cod Y21 prearrangement for padlock	CS/21	L	SCS86/Y21/L	095718227
Double locking device Operated by safety key cod Y12 prearrangement for padlock	CS/12	M	SCS86/Y12/L	095718136
Prearrangement for customized pin key cylinder lock.	-	N	SCR86/PC	095717518
Operated by triangle key and prearrangement for padlock	CHP/TR6	O	SCR76/TR6	095718607
Operated by safety key cod.Y21	CS/21	P	SCX86/Y21	095718250
Operated by safety key cod.Y12	CS/12	Q	SCX86/Y12	095718151
Double locking device. Operated by triangle key and prearrangement for padlock	CHP/TR9	R	SCX86/TR9/L	095718961
Operated by triangle key	CHP/TR9	S	SCX86/TR9	095718953
Operated by safety key cod Y21	CS/21	T	SCX86/Y21/L	095718268
Operated by square key 7mm	CH/Q7	U	SCS86/Q7	095718805
Operated by safety key cod Y21	CS/21	V	SY/21/F	095711263
Operated by square key 7mm	CH/Q7	Z		

**NB: The above locks Series SCS - SCM can only be used with doors without lock execution(WL)**



## Locks series SSCM105/Y..



SSCM105/Y21

**Materials**

Body and handle in polyamide resin.  
Brass turning spindle: Galvanized steel latch.

**Characteristics**

Handle pre-engineered for cylinder with DIN 18252 profile.  
Each lock comes complete with its own set of keys.

Description / Applicazioni	Tipo chiave	Tipo	Model	Code
Operated by retracting handle accessible with Y12 cipher safety key	CS/12	Y	SSCM105/Y12	095715124
Operated by retracting handle accessible with Y12 cipher safety key	CS/21	K	SSCM105/Y21	095715215

## Spare parts for locks series SSCM105/Y..



CMY/21

Description / Applications	Type	Type of lock	Model	Code
Cylinder DIN 18252 cfr. Y12	Y	SSCM105/Y12	CMY/12	095713129
Cylinder DIN 18252 cfr. Y21	K	SSCM105/Y21	CMY/21	095713210

## Inspection window



OC/120

**Materials**

Transparent polycarbonate shield complete with polyvinyl chloride seal.

**Characteristics**

To check and read the values inside with the cover closed (always state the position).

**Protection degree**

IP 44 degree of protection in compliance with CEI EN 60529, IK 10 according to CEI EN 50102.  
Can be applied to the entire series.

External diameter	Reading dial diameter	Versions	Model	Code
164	117	loose	OC/120	095750915
164	117	applied	EA/OC/120	097750913

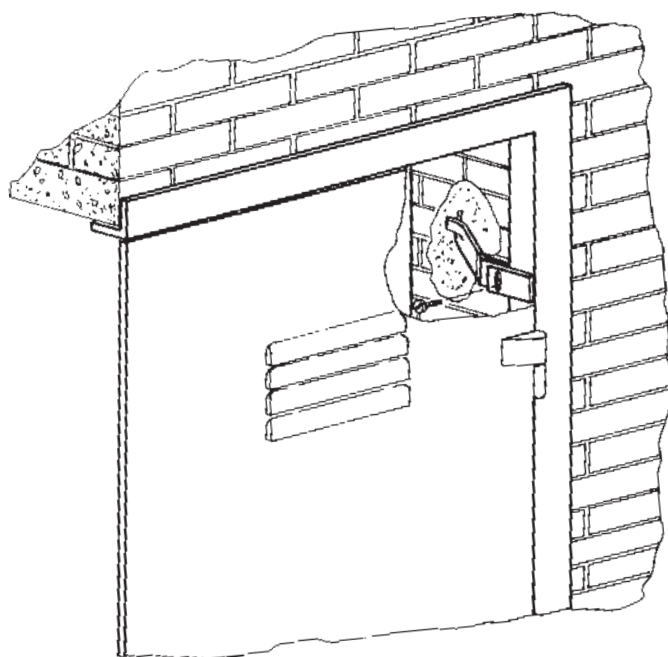




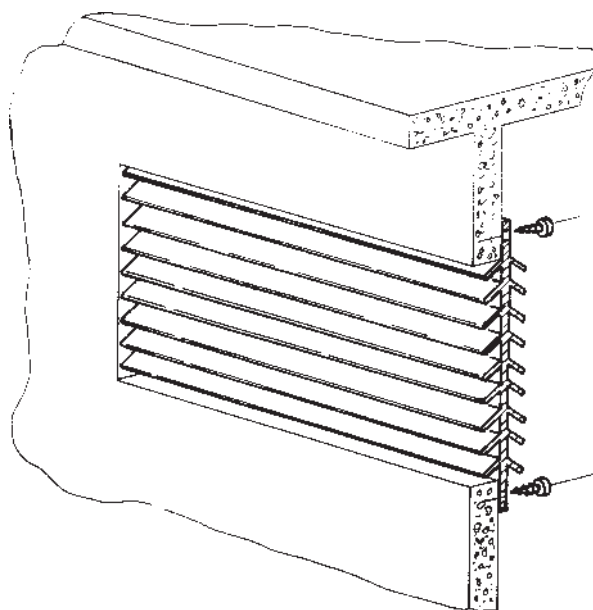
# Doors and grids

- Doors and grids installations ..... 314
- Doors for electric cabins MT ..... 315
- Accessories and spare parts for SMC doors ..... 315
- Grids in rectangular fiberglass ..... 316

PV/126 • PV226 • PV326



GV/14/DR



## Door for electrical cabins MT - Complies with ENEL DS919 standard



PV/126

PV/226

Moulded in SMC (fiberglass) - grey RAL 7040 color. Hinged door complete with 3 points latch operable with single cipher safety pin key (640).  
Protection degree IP33 in compliance CEI EN 60529, IK10 in according to CEI EN 62262.  
Versions in compliance with ENEL (Italian Electricity Board) standard tables.

Wall slot dimensions		Door dimensions		Type	Model	Code
Height	Base	Height	Base			
2149	621	2126	608	1 wing ventilation surface 160 cm <sup>2</sup>	PV/126	076981265
2149	1197	2126	1171	2 wings ventilation surface 320 cm <sup>2</sup>	PV/226	076982263
2149	1790	2126	1765	3 wings ventilation surface 480 cm <sup>2</sup>	PV/326	076983261

## Accessories and spare parts for doors in SMC (fiberglass)



CM/PV26

Description	Model	Code
Latch rods kit - (standard equipment for doors PV/226 and PV/326)	KA/PV	091505502
Aluminium painted warning signal conforming to ENEL DS990 specification	CM/PV26	091760009
3 Point latch operated by pin key cod.640 conforming to ENEL DS988 specification	SCS/PV	095715009
Pin key cod. 640	CSP/PV	091505404
3 Point latch operated by pin key cod.640	SCS/PV/UT	095715017

## Locks with special encryption for specific ENEL areas (keys not provided)

Can be used with a pin key conforming to ENEL specification DS988 with customized encryption for ex ENEL compartments

Description	Model	Code
For ENEL Veneto	SCS/PV/VE	095715041
For ENEL Trentino Alto Adige	SCS/PV/TAA	095715058
For ENEL Friuli Venezia Giulia	SCS/PV/FVG	095715066
For ENEL Piemonte, Valle D'Aosta	SCS/PV/TO	095715033
ENEL unified	SCS/PV/E	095715025

## Grids in rectangular fiberglass



Grids GV/14/DR complies to ENEL Table 2253A (Lombardia)  
Grids GV/15/R complies to ENEL DS927 standards.

Window dimensions		Grids dimensions		Ventilation area cm <sup>2</sup>	Type	Model	Code
Height	Base	Height	Base				
410	870	540	900	2500	With insect mesh stainless steel	GV/14/DR	076980143
465*	1165	500	1200	2800	With insect mesh stainless steel	GV/15/R	076980168

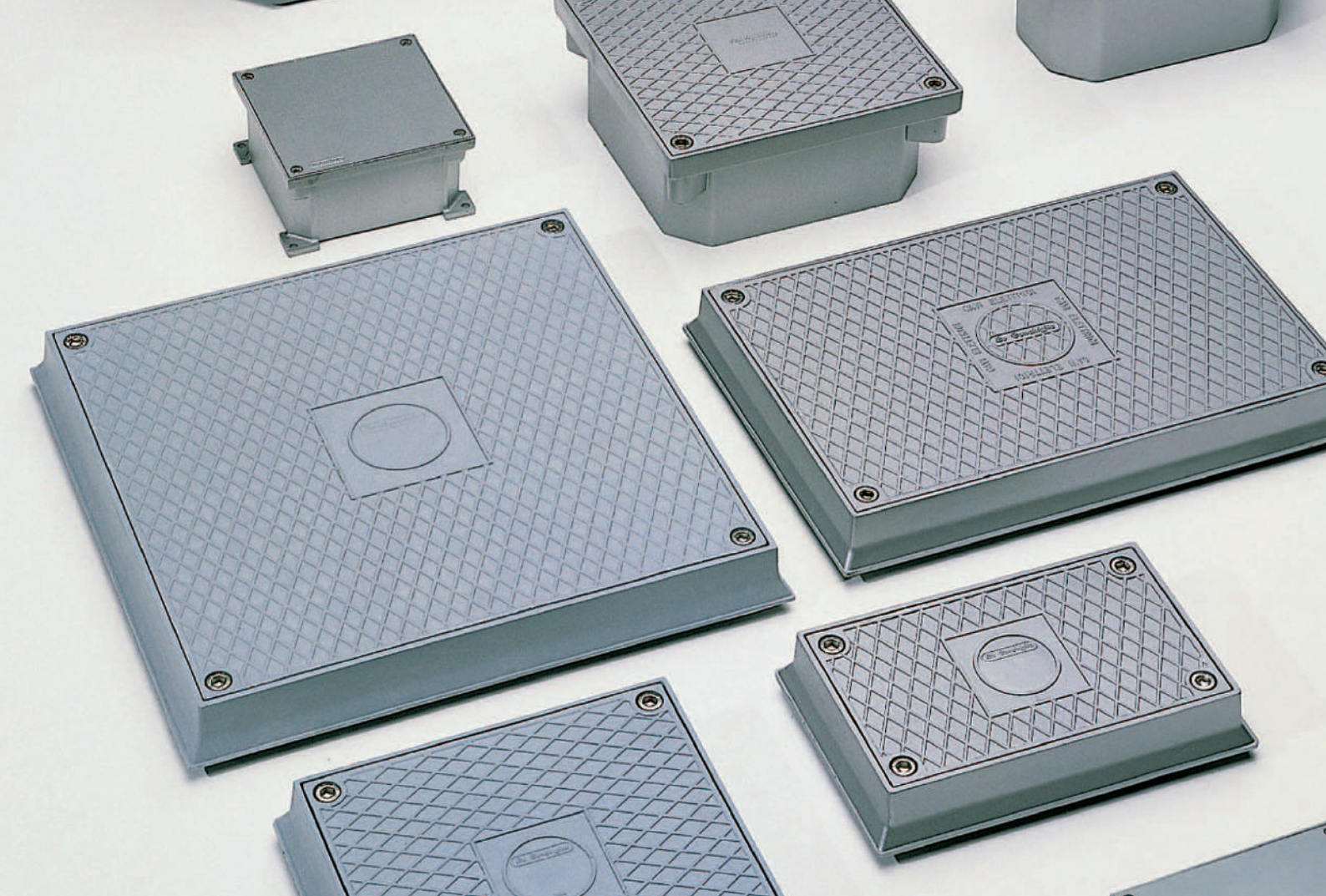
\* Window with double doors that allows grid does not protrude beyond the outer edge of the cabin structure.



# Public Lighting

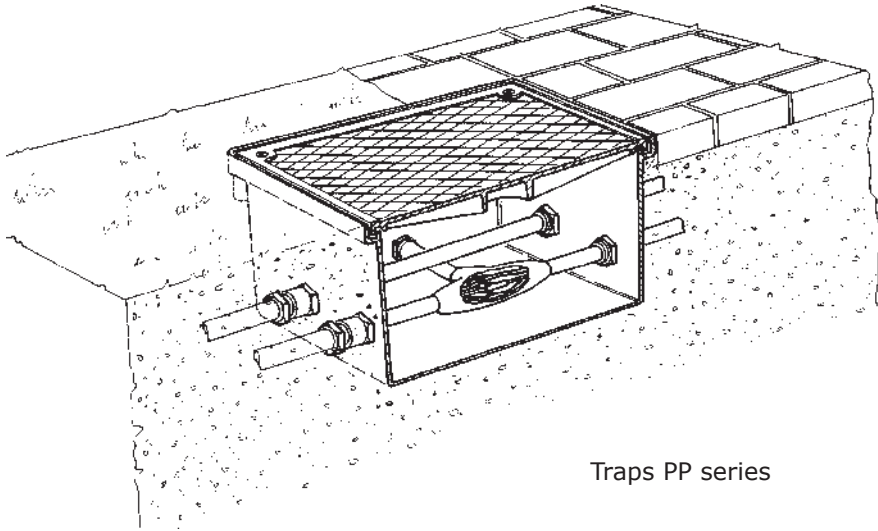




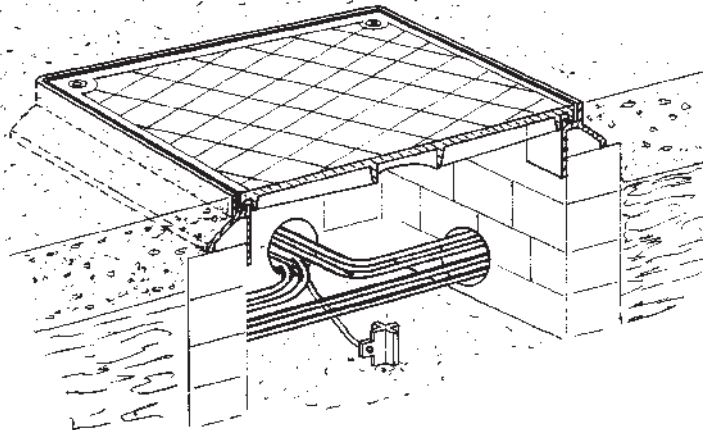
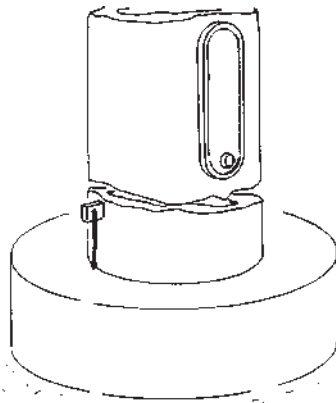


## Wells and traps

Wells and traps installations .....	320
Wells road for masonry wells .....	321
Alluminium alloy wells .....	323



Traps PP series



Wells PZ - PZV series

## PZ Series - In aluminium alloy



PZ2

### Materials

In die-cast UNI EN 1706 AC - 46100 DF aluminium alloy. Seal moulded in anti-ageing flexible vinyl chloride.

### Characteristics

Cover closed with anti-loosening allen screws in AISI 304 stainless steel.

Able to bear the weight of light vehicles in transit (static bearing capacity approx. 1200 Kg).

### Applications

To cover brick or concrete wells in workshops, warehouses, pavements.

For shunts and junctions in electricity, grounding, telephone lines.

### Protection degree

IP 55 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

## Rectangular types

External dimensions			Internal well dimensions	Cover span dimensions	Model	Code
Height	Base	Depth				
266	169	40	130x230	119x215	PZ1	046210001
414	285	40	250x380	234x363	PZ2	046220000



PZ4

## Square types

External dimensions			Internal well dimensions	Cover span dimensions	Model	Code
Height	Base	Depth				
266	266	40	230x230	215x215	PZ3	046230009
413	413	40	380x380	363x363	PZ4	046240008

## PZV Series - In fiberglass



PZV2

**Materials**

Moulded in SMC (fiberglass). Seal moulded in anti-ageing flexible vinyl chloride.

**Characteristics**

Cover closed with anti-loosening allen screws in AISI 304 stainless steel.

Able to bear the weight of light vehicles in transit (static bearing capacity approx. 1000 Kg).

**Application**

To cover brick or concrete wells in workshops, warehouses, pavements.

For shunts and junctions in underground electricity, grounding, telephone lines, where insulation and/or protection against corrosive agents is required.

**Protection degree**

IP 55 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

### Rectangular type

External dimensions			Internal dimensions well	Cover Span dimensions	Model	Code
Height	Base	Depth				
414	285	40	250x380	234x363	PZV2	046320008



PZV4

### Square type

External dimensions			Internal dimensions well	Cover Span dimensions	Model	Code
Height	Base	Depth				
266	266	40	230x230	215x215	PZV3	046330007



## PP Series - In aluminium alloy



PP6

### Materials

In die-cast UNI EN 1706 AC - 46100 DF aluminium alloy. Seal moulded in anti-ageing flexible vinyl chloride.

### Characteristics

Cover closed with anti-loosening screws in AISI 304 stainless steel.

Able to bear the weight of light vehicles in transit (static bearing capacity approx. 1200 Kg).

### Applications

For high power shunts and junctions in underground systems.

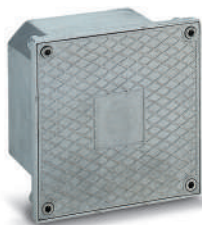
Conductor inputs and outputs to be made with fairleads or cable glands.

### Protection degree

IP 55 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

## Rectangular type

External dimensions			Internal dimensions			Model	Code
Height	Base	Depth	Height	Base	Depth		
149	246	153	113	212	121	PP5	046050001
271	400	206	230	359	162	PP6	046060000



PP7

## Square type

External dimensions			Internal dimensions			Model	Code
Height	Base	Depth	Height	Base	Depth		
245	245	153	207	207	128	PP7	046070009
245	245	97	212	212	76	PP7/R	046070033



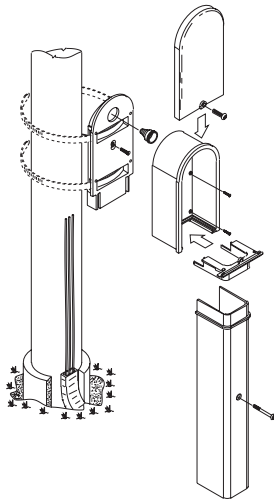




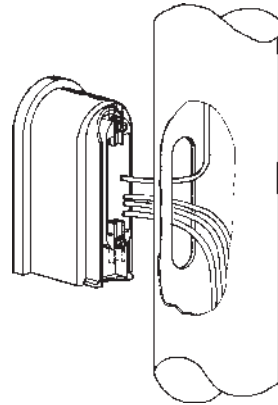
## Pole derivation boxes

Pole derivation boxes installation.....	326
Pole derivation boxes in SMC .....	327
Pole derivation boxes in SMC equipment .....	334
Accessories and spare parts for pole derivation boxes .....	337

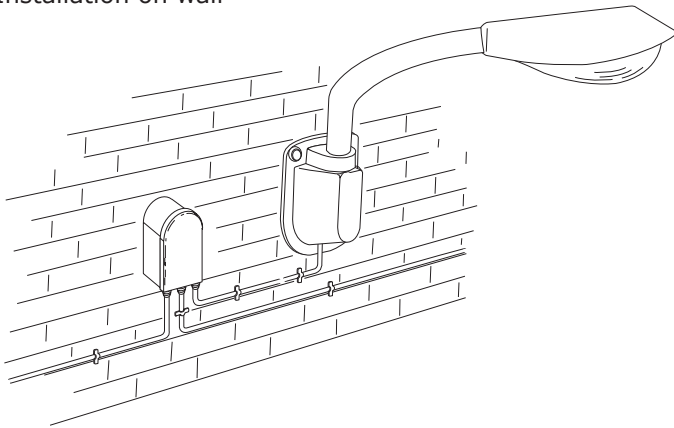
Pole installation with cable cover



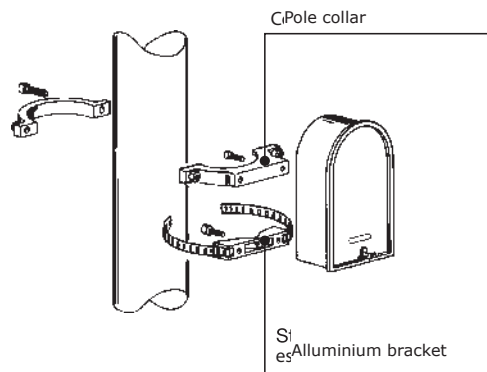
SCF3 / AF



Installation on wall

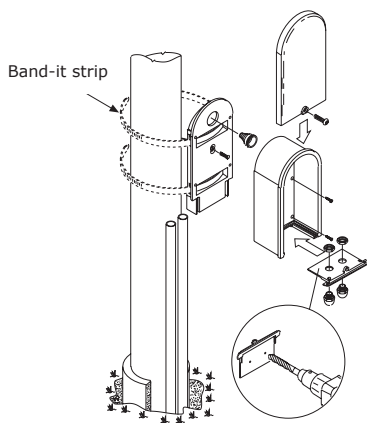


COL/1/...  
SCB ../ P  
CB/...

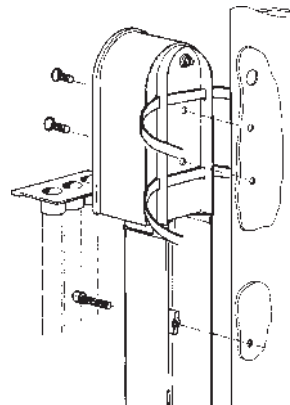


Pole installation

Closed base plate.  
Connections application prior drilling



SCF3 / CN  
SCF3 / T2



## SCF series

The SCF series pull boxes with IP 43 - IP 44 protection degree in compliance with CEI EN 60529 and IK 10 according to CEI EN 50102, can be used to make systems in Class II as per CEI EN 64-8.

The body, pull box and cover are made of SMC (fiberglass) while the base and plaque to adapt to the pole are made of thermoplastic material reinforced with fiberglass and the plant mounting plates are in PVC. The adapter plaque allows the basic Model pre-engineered for wall mounting to be installed on a pole, with or without cable cover piece. It is also compatible with the pole fixing devices of the previous versions allowing them to be replaced when necessary. These characteristics, combined with a vast range of accessories to suit different uses, provide quality solutions to the requirements of planners and installers when Public Lighting systems are built.

## Production List

### Materials

Pull box and cover in SMC (fiberglass) in grey RAL 7040 color. Base plate and pole adapting plaque in thermoplastic material.

### Characteristics

Cover and base plate joined by coulisse sliding attachment and locked together with a single screw in AISI 304 stainless steel.

The cover is closed with a padlock (not included) for the SCF9 series.

For the SCF1 - SCF2 and SCF3 series, the internal equipment is fixed by means of a base plate in thermoplastic material to be ordered separately.

Type	ø pole	Pole hatch	No. max tube inlets	ø nominal inlets	ø small inlet	Plant mounting plates	Cable guard	Band-it tape
*SCF1/CN	89-140		**	**		PSC/F1	KTPF/70/1	Da 1 / 2" a 3 / 4"
SCF1/P			**	**		PSC/F1		Da 1 / 2" a 3 / 4"
*SCF2/CN	89-140		2	**		PSC/F2	KTPF/70/2	Da 1 / 2" a 3 / 4"
SCF2/P			2	**		PSC/F2		Da 1 / 2" a 3 / 4"
*SCF3/CN	114-194		3	34	28	PSC/F3		3 / 4"
SCF3/P			3	34	28	PSC/F3		
SCF3/AF45	114-168	45X186				PSC/F3/AF		
SCF3/AF70	114-195	70X200				PSC/F3/AF		
*SCF3/T2	114-194					PSC/F3	compreso	3 / 4"

\*The adapter palque can be fixed to the pole with either AISI 201 stainless stel screws or Band-It tape.

\*\*Closed base plate. Connections application prior drilling.

## SCF1 series

### Materials

Base and pole adapter plaque made of thermoplastic material reinforced with fiberglass (Pa6-R). Grey RAL 7035 color.

### Characteristics

Closed bottom base which can be drilled in order to apply two diameter 32 mm tube locking unions. Base pre-engineered for connection to cover piece, in order to route cables.

**The base can be used in case of replacement of old aluminium boxes of equal size, because the existing fixing on pole coincide.**

Wiring can be made in Class II CEI 64-8.

### Protection degree:

IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

### Version /CN:

For 89 to 140 mm diameter poles. Cable input/output from bottom base pre-engineered for tubes with max. 2 diameter 32 mm inlets. Fixed to the pole with screws or 1/2" to 3/4" Band-it tape using plaque.

### Version /P:

For installation on flat surfaces (walls, square and rectangular section poles, flat side of polygonal poles). Cable input/output from bottom base pre-engineered for tubes with max. 2 diameter 32 mm inlets. Fixed to walls with plugs and screws and to poles with M5 metric screws.

### Versions with cover piece:

Versions made by combining the SCF1/CN pull box with the relative Kit for use with the KTPF/70/1 cover piece.



SCF1/CN



SCF1/P

## Empty versions with double insulation

External dimensions			Internal dimensions			Type of installation	Model	Code
Height	Base	Depth	Height	Base	Depth			
226	122	80	188	98	51	One pole with closed bottom base	SCF1/CN	054110036
211	122	76	188	98	51	Wall-mounted with closed bottom case	SCF1/P	054110044



KTPF/70/1

## Empty versions with double insulation and cover piece

External dimensions			Internal dimensions			Type of installation	SCF		Tile kit	
Height	Base	Depth	Height	Base	Depth		Model	Code	Model	Code
705	122	80	188	98	51	A palo	SCF1/CN	054110036	KTPF/70/1	095540811

## Equipment



PSC/F1/1



PSC/F1/2

### Materials

Mounted on a plate in thermoplastic material reinforced with fiberglass (Pa6-R), fixed to the bottom of the pullbox with screws.

### Characteristics

Quadripolar terminal block. Insulation voltage 450V - current 63A max.

1.5 - 16 sq.mm main wiring - shunt 1.5 - 4 sq.mm

Fuse holder for 8.5x31.5 mm - 450V - 10A cartridge fuse.

1.5 - 4 sq.mm wire clamping.

### Protection degree

IP 20.

Input terminal block	Fuse holder N./I Max	Shunt terminal box	Model	Code
4x16 mm <sup>2</sup>	1-10 A - VS/120	-	PSC/F1/1	054141015
4x16 mm <sup>2</sup>	2-10 A - VS/120	-	PSC/F1/2	054141023

## SCF2 Series

### Materials

Base and pole adapter plaque made of thermoplastic material reinforced with fiberglass (Pa6-R). Grey RAL 7035 color.

### Characteristics

Closed bottom base which can be drilled in order to apply two diameter 32 mm tube locking unions. Base pre-engineered for connection to cover piece, in order to route cables.

**The base can be used in case of replacement of old aluminium boxes of equal size, because the existing fixing on pole coincide.**

Wiring can be made in Class II CEI 64-8

### Protection degree

IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

### Version/CN:

For 89 to 140 mm diameter poles. Cable input/output from bottom base pre-engineered for tubes with max. 2 diameter 32 mm inlets. Fixed to the pole with screws or 1/2" to 3/4" Band-it tape using plaque.

### Version/P:

For installation on flat surfaces (walls, square and rectangular section poles, flat side of polygonal poles). Cable input/output from bottom base pre-engineered for tubes with max. 2 diameter 32 mm inlets. Fixed to walls with plugs and screws and to poles with M5 metric screws.

### Versions with cover piece:

Versions made by combining the SCF2/CN pull box with the relative Kit for use with the KTPF/70/2 cover piece.



SCF2/CN



SCF2/P

## Empty versions with double insulation

External dimensions			Internal dimensions			Type of installation	Model	Code
Height	Base	Depth	Height	Base	Depth			
224	154	100	181	128	70	One pole with closed bottom base	SCF2/CN	054120035
205	154	95	181	128	70	Wall-mounted with closed bottom case	SCF2/P	054120043



KTPF/70/2

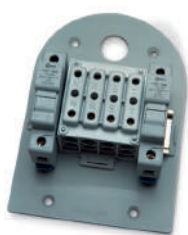
## Empty versions with double insulation and cover piece

External dimensions			Internal dimensions			Type of installation	SCF		Tile kit	
Height	Base	Depth	Height	Base	Depth		Model	Code	Model	Code
699	154	100	181	128	70	One pole	SCF2/CN	054120035	KTPF/70/2	095540829

## Equipment



PSC/F2/1



PSC/F2/2

### Materials

Mounted on a plate in thermoplastic material reinforced with fiber glass (Pa6-R), fixed to the bottom of the pullbox with screws.

### Characteristics

Quadripolar terminal block. Insulation voltage 450V - current 80A max.

1.5 - 25 sq.mm main wiring - shunt 1.5 - 4 sq.mm

Fuse holder for 10x38 mm - 660V - 32A cartridge fuse.

1.5 - 4 sq.mm wire clamping.

### Protection degree

IP 20.

Input terminal block	Fuse holder N./I Max	Shunt terminal box	Model	Code
4x35 mm <sup>2</sup>	1-32 A - VS/125	-	PSC/F2/1	054142013
4x35 mm <sup>2</sup>	2-32 A - VS/125	-	PSC/F2/2	054142021



## SCF3 series

### Materials

Bottom base pre-engineered, in SCF3/CN and SCF3/P versions, for insertion of diameter 34 tubes, in grey RAL 7040 color thermoplastic material. Plaque to adapt to the pole made of grey RAL 7040 color thermoplastic material.

### Characteristics

Base pre-engineered for connection of cover piece for cable routing. The /T Model is already complete with cover piece.

### Protection degree

IP 43 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

### Version/CN:

For 114-194 diam. poles

Cable input/output from bottom base for tubes pre-engineered with 3 diam. 34 or 28 break-through inlets.

Fixed to the poles by means of screws or 3/4" Band-It tape.

### Version/T:

For 114-194 diam. poles

Cable input/output protected by modular lower cover piece (length 500 mm).

Fixed to the poles by means of screws or 3/4" Band-It tape.

### Version/P:

To fix to walls and flat surfaces.

Cable input/output from bottom base for tubes pre-engineered with 3 diam. 34 or 28 break-through inlets.

Fixed to the pole by means of screws or plugs.

### Version/AF:

SCF3/AF45 Model for 114-168 diameter poles

SCF3/AF70 Model for 114-194 diameter poles

Cable input/output from inside the pole.



SCF3/T2



SCF3/AF45

## Empty versions with double insulation

External dimensions			Internal dimensions			Type of installation	Model	Code
Height	Base	Depth	Height	Base	Depth			
818	168	124	287	138	81	Pole fitting, complete of vertical protection cover 100 mm	SCF3/T2	054130026
327	168	124	287	138	81	Pole fitting, bottom with pipe holes	SCF3/CN	054130034
327	168	124	287	138	81	Wall fitting, bottom with pipe holes	SCF3/P	054130042
316	168	124	287	138	81	Slot fitting 70x200	SCF3/AF70	054130059
316	168	124	287	138	81	Slot fitting 45x186	SCF3/AF45	054130067

### Outfitted version - without internal wiring



SCF3/65/T2



SCF3/65/AF70

**Characteristics**

Input/output terminal block with 3 sectionable ways for pole.  
 Fuseholder VT/125/D for fuses up to 25 A  
 Terminal block 2 x 10 sq.mm. (MM/210) with multiple shunts.

### For single-lamp circuits

Wiring diagram	External dimensions			Input terminal block	Type of installation	Model	Code
	Height	Base	Depth				
	818	168	124	4x25 mm <sup>2</sup> (MMS/425)	Pole fitting, complete of vertical protection cover 100 mm	SCF3/61/T2	054136122
	327	168	124	4x25 mm <sup>2</sup> (MMS/425)	Pole fitting, bottom with pipe holes	SCF3/61/CN	054136130
	316	168	124	4x25 mm <sup>2</sup> (MMS/425)	Slot fitting 70x200	SCF3/61/AF70	054136155
	818	168	124	2x25 mm <sup>2</sup> (MMS/225)	Pole fitting, complete of vertical protection cover 100 mm	SCF3/65/T2	054136528
	327	168	124	2x25 mm <sup>2</sup> (MMS/225)	Pole fitting, bottom with pipe holes	SCF3/65/CN	054136536
	316	168	124	2x25 mm <sup>2</sup> (MMS/225)	Slot fitting 70x200	SCF3/65/AF70	054136551



SCF3/62/CN

**Characteristics**

Input/output terminal block with 3 sectionable ways for pole.  
 N. 2 Fuseholders VT/125/D for fuses up to 25 A  
 Terminal block 4 x 10 sq.mm. (N.2 MM/210) with multiple shunts.

### For two-lamp circuits

Wiring diagram	External dimensions			Input terminal block	Type of installation	Model	Code
	Height	Base	Depth				
	818	168	124	4x25 mm <sup>2</sup> (MMS/425)	Pole fitting, complete of vertical protection cover 100 mm	SCF3/62/T2	054136221
	327	168	124	4x25 mm <sup>2</sup> (MMS/425)	Pole fitting, bottom with pipe holes	SCF3/62/CN	054136239
	316	168	124	4x25 mm <sup>2</sup> (MMS/425)	Slot fitting 70x200	SCF3/62/AF70	054136254

## Equipments

Mounted on a polyvinyl chloride (PVC) plaque for a quick snap fit into empty boxes. With or without wiring.

### For SCF3/... boxes Model .../CN-.../T2-.../P without internal wiring

Nodal (NM) - multiple (MM) - sectionable multiple (MMS) input terminal blocks.



PSC/F3/10

### For single-lamp circuits

Wiring diagram	Input terminal block	Fuse holder No./I Max	Shunt terminal block	Model	Code
	4x25 mm <sup>2</sup> (NM/425)	1-25 A (VT/125/D)	-	PSC/F3/1	054143011
	4x25 mm <sup>2</sup> (MM/425)	1-25 A (VT/125/D)	-	PSC/F3/10	054143102
	4x25 mm <sup>2</sup> (MMS/425)	1-25 A (VT/125/D)	2X10 mm <sup>2</sup> (MM/210)	PSC/F3/61	054143615
	2x25 mm <sup>2</sup> (MMS/225)	1-25 A (VT/125/D)	2X10 mm <sup>2</sup> (MM/210)	PSC/F3/65	054143656



PSC/F3/62

### For two-lamp circuits

Wiring diagram	Input terminal block	Fuse holder No./I Max	Shunt terminal block	Model	Code
	4x25 mm <sup>2</sup> (NM/425)	2-25 A (VT/125/D)	-	PSC/F3/2	054143029
	4x25 mm <sup>2</sup> (MM/425)	2-25 A (VT/125/D)	-	PSC/F3/11	054143110
	4x25 mm <sup>2</sup> (MMS/425)	2-25 A (VT/125/D)	4X10 mm <sup>2</sup> (2- MM/210)	PSC/F3/62	054143623


**For SCF3/... boxes Model .../CN-.../T2-.../P with internal wiring**

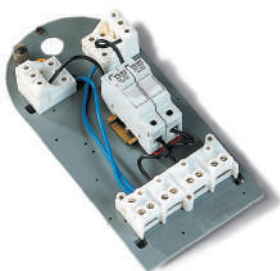
Multiple shunt input terminal blocks.  
Complete with 4 A fuse.



PSC/F3/70


**For single-lamp circuits**

Wiring diagram	Input terminal block	Fuse holder No./I Max	Shunt terminal block	Model	Code
	4x25 mm <sup>2</sup> (NM/425)	1-20 A (VS/125)	2X10 mm <sup>2</sup> (MM/210)	PSC/F3/70	054143706



PSC/F3/80

**For two-lamp circuits**

Wiring diagram	Input terminal block	Fuse holder No./I Max	Shunt terminal block	Model	Code
	4x25 mm <sup>2</sup> (NM/425)	2-20 A (VS/125)	4X10 mm <sup>2</sup> (2- MM/210)	PSC/F3/80	054143805

**For SCF3/... boxes Model .../AF45-.../AF70 without internal wiring**

Input/output terminal block with 3 sectionable ways for pole



PSC/F3/AF65

**For single-lamp circuits**

Wiring diagram	Input terminal block	Fuse holder No./I Max	Shunt terminal block	Model	Code
	4x25 mm <sup>2</sup> (NM/425)	1-25 A (VT/125/D)	2X10 mm <sup>2</sup> (MM/210)	PSC/F3/AF61	054145610
	2x25 mm <sup>2</sup> (MMS/225)	1-25 A (VT/125/D)	2X10 mm <sup>2</sup> (MM/210)	PSC/F3/AF65	054145651



PSC/F3/AF62

**For two-lamp circuits**

Wiring diagram	Input terminal block	Fuse holder No./I Max	Shunt terminal block	Model	Code
	4x25 mm <sup>2</sup> (MMS/425)	2-25 A (VT/125/D)	4X10 mm <sup>2</sup> (2- MM/210)	PSC/F3/AF62	054145628

## Back plates

**Materials:**

SCF1 and SCF2 series: the bottom plates are made of thermoplastic material reinforced with fiberglass (Pa6-R).

SCF3 and SCF9 series: the bottom plates are made of rigid polyvinyl chloride (PVC).

**Characteristics:**

For the SCF3 series, they are engineered to quick fixing to the pull box while for the SCF1 - SCF2 - SCF9 series, they are designed to be fixed with screws.

**Type PSC/F3 - PSC/F1 - PSC/F2**

With hole for cables shunted from inside the pole.

**Type PSC/F3/AF**

With 60x190 central slot for cable input/output from inside the pole.



PSC/F1



PSC/F2



PSC/F3



PSC/F3/AF

Dimensions	Type of pull box	Model	Code
90X150	SCF1/CN - SCF1/P	PSC/F1	095554101
122X141,5	SCF2/CN - SCF2/P	PSC/F2	095554200
134X276	SCF3/CN - SCF3/T2 - SCF3/P	PSC/F3	095554333
134X276	SCF3/AF45 - SCF3/AF70	PSC/F3/AF	095554358

## Pole fixing elements

**Materials:**

AISI 201 stainless steel metal strap.

AISI 201 stainless steel clips.

**Characteristics:**

Metal strap 0.76 mm thick in AISI 201 stainless steel supplied in 30 m reels.

Metal strap supplied in packs containing 100 pcs.

**Applications:**

Metal strap: Used to fix boxes to poles along with brackets (CB/..) or pre-engineered frames.

Steel clip: to join metal strap.

Universal turnbuckle to cut metal strap and clinch clips.



EFR/1230



EFR/12/G

Nominal length	Type	Model	Code
1/2" - 12,7 mm	Universal take-up	EFR/TRM	092800002
1/2" - 12,7 mm	Metal strap (m.30)	EFR/1230	092801232
3/4" - 19,5 mm	Metal strap (m.30)	EFR/3430	092803436
5/8" - 15,8 mm	Metal strap (m.30)	EFR/5830	092805837
1/2" - 12,7 mm	Metal clips (n.100 pcs)	EFR/12/G	092801208
3/4" - 19,5 mm	Metal clips (n.100 pcs)	EFR/34/G	092803402
5/8" - 15,8 mm	Metal clips (n.100 pcs)	EFR/58/G	092805803
5/8" - 15,8 mm	Universal take-up	EFR/TRM	092800002
3/4" - 19,5 mm	Universal take-up	EFR/TRM	092800002

## Cable guard cover piece



TPF/100

### Materials

In SMC (fiberglass), grey RAL 7040 color.  
Allen screw for fixing in AISI 304 stainless steel.

### Characteristics

In 500 mm modular elements. Possibility to overlay two elements of TPF/70. Used instead of pull box entrance and exit tubes for rapid installations which can also be inspected.  
Needs the special bottom base.

### Protection degree

Series SCF3: IP43 in compliance with CEI EN 60529, IK 20 according to CEI EN 62262.  
Series SCF1 and SCF2: IP44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

Dimensions	Type of pull box	Model	Code
78x474	SCF1 - SCF2	TPF/70	095540803
100x486	SCF3	TPF/100	095541108

## Cable guard raceway



CPP/100

### Materials

In flexible thermoplastic material that can be curved in any way required.

### Characteristics

Protects cables routed through pole foundation plinths. Allows the cables to be inspected even after sealing. In 550 mm elements.

Dimensions	Type of pull box	Model	Code
60X550	SCF1 - SCF2	CPP/70	095542072
90X550	SCF3	CPP/100	095542106



## Pole fixing collars



COL/1/140



COL/1/60

### Materials

In die-cast UNI - EN 1706 AC - 46100 DF aluminium alloy. COL/1/48 in hot-dip galvanized steel. Countersunk hex screws in AISI 304 stainless steel.

### Characteristics

Suitable only for -SCB5 boxes .../P Model  
2 pcs per box.

Notes	Pole diameter (mm)	Model	Code
2 pieces assembled	96-101	COL/1/101	095511010
2 pieces assembled	128-133	COL/1/133	095511333
2 pieces assembled	135-140	COL/1/140	095511408
2 pieces assembled	148-153	COL/1/153	095511531

## Universal pole fixing brackets



CB/19

### Materials

In UNI EN 1706 AC - 46100 DF die-cast aluminium alloy.

### Characteristics

To fix boxes to poles with diameters of at least 60.  
To fix with up to 3/4" (19.5 mm) BAND-IT strap or other adjustable clamps.  
Applicable on boxes execution ... / P.

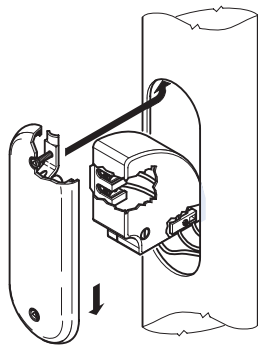
Type of pull box	No. fixing brackets for box	Max. width Band-it strap	Model	Code
SCB5	2	3/4"	CB/19	095530192



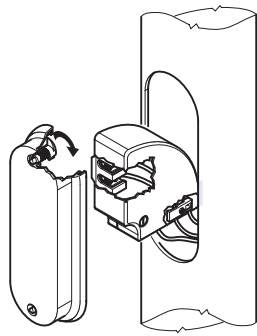


# Doors and terminal blocks for pole

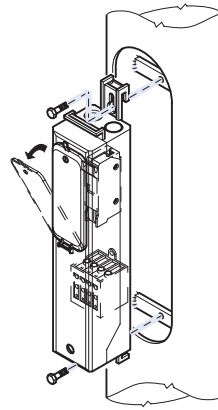
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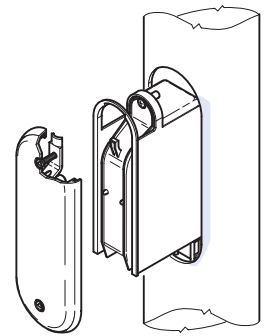
SMW/...  
MGW/416/-



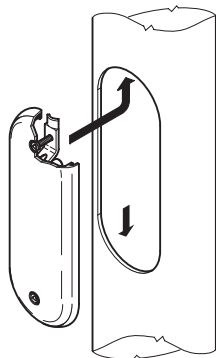
SGV/114-153  
MGW/416/-



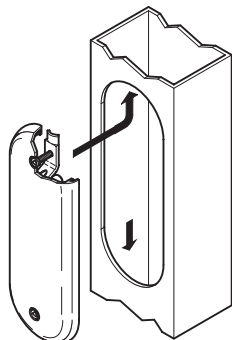
MVE/416/-



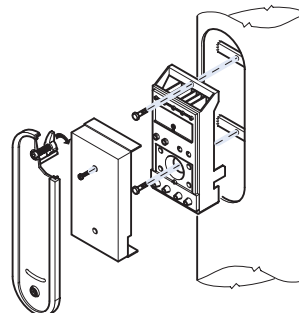
SMW/...  
MMW/416/-



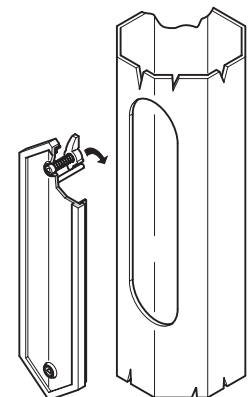
SMY/...



SMW/P



MVS/435/-  
CP/MVS  
SMS/..



SMV/OTT

## Manufacturing prospectus

### Application

Hatch dimension	∅ min - max
38x132	76-114
38x132	76-101
38x132	Flat surface
45x186	101-300
45x186	101-300
45x186	133-300
45x186	114-153
45x186	114-317
45x186	114-317
45x186	133-317
45x186	Flat surface
45x186	Flat surface
45x186	Octagonal poles
45x186	Octagonal poles
81x202*	127-140
85x200	110-200
100x300*	140-146
100x300*	140-146
100x350	153-168
100x350	153-168

Alluminium	Reinforc. Plastic	Protection degree	Pag.
SMY/...		IP 54	348
	SPY/...	IP 54	352
SMY/P		IP 54	348
SMW/...		IP 54	349
SMW/...		IP 54	349
SMW/...		IP 54	349
SGV/...		IP 54	350
	SPW/...	IP 54	352
	SPW/...	IP 54	352
	SPW/...	IP 54	352
SMW/P		IP 54	349
SMW/P		IP 54	349
SMV/OTT		IP 54	350
SMV/OTT		IP 54	350
SMR/...		IP 43	351
SMT/...		IP 30	351
SML/...		IP 43	351
SML/...		IP 43	351
SMS/...		IP 54	351
SMS/...		IP 54	351

Series	IMQ	Insulation class Protection degree	Pag.
MVY	•	□	354
MVY	•	□	354
MVY	•	□	354
MMW	•	□	355
MGN		□	355
MGV		□	356
MGV		□	356
MMW	•	□	355
MGN		□	355
MGV		□	356
MMW	•	□	355
MGV-MGN		□	356
MMW	•	□	355
MGV-MGN		□	356
-			
-			
MVE		□	357
MVL-MVS		IP 20	359
MVE-MVF		□	357
MVL-MVS		IP 20	359

\* Not with semicircular head

## RESET - For 45x186mm slot

Patented 

RESET is an innovative system which allows the total elimination of the protrusions of the pole cover plate, or its full place within the outline of the pole. An optimal aesthetic result, but especially a further advantage in terms of passive safety, made possible by a terminal block of new generation, designed to combine efficacy, safety and practicality.

Integrated system of shunt lamp wire pole complies with EN 40-2 (09/2003).  
IMQ certificate.

For recess conical poles and tapered diameter min. 88mm - max. 168mm (relief at the height of the slot) with slot 45x186mm semicircular head. Maximum thickness of 3-4mm poles.



### Advantages

**Better protection the parts under tension inside the pole.**

Protection degree IP66, terminal block installed inside the pole and not near the slot.

**Best passive safety.**

The Reset system, thanks to the position of the cover plate inside the pole, ensures greater resistance to vandalism.

**Complete insulation of the system.**

Obtained thanks to the screws in thermoplastic material reinforced with glass fibers selflocking nut, also present in the version with cover plate in thermoplastic resin.

**Aesthetic improvement**

Because completely free of protrusions, thanks to the placement within the overall width of the pole.

**Better protection even in the event of damage of cover plate**

The terminal block does not exit from inside of the pole providing increased protection against accidental contact and electrical contacts. The cables are not accessible.



Reset system

Traditional system



Reset system

Traditional system

### Applications conical poles, tapered and cylindrical

Reset system	Conical poles $\varnothing$ to the base	Tapered/cylindrical pole $\varnothing$ to the base	Internal min. $\varnothing$
RESET10/... - RESET20/...	102 - 105	89	82
RESET11/... - RESET21/...	110 - 115	102	89
RESET12/... - RESET22/...	128	115	100
RESET19/...	138 - 178	116 - 168	113 - 142

## For 45x186 slot - aluminium alloy light pole cover plates

Patented



RESET10/B

### Materials

Cover plate body made of die-cast aluminium alloy UNI EN 1706 AC - 46100 DF with rounded tops. Treatment of surfaces by means of metal grit-blasting. Terminal block container, specific for the realization of the entire system, moulded in self-extinguishing fiberglass reinforced polyamide resin (Standards UL-94) and anti-tracking CTI 600 (in accordance with IEC 112). Locking screws made of fiber-reinforced thermoplastic material with special saw toothed thread, with patented triangular imprint, can be activated using the special key provided for the purpose. Sealing gasket made of polyurethane foam resistant to atmospheric agents and UV rays. Terminal block container, specific for the realization of the entire system, moulded in self-extinguishing fiberglass reinforced polyamide resin (standards UL-94) and anti-tracking CTI 600 (in accordance with IEC 112).

OT 58 (UNI 5705) terminals with 3 ways for pole

### Characteristics

For 45x186 slots with half-rounded tops.

Class II enclosure (double insulation) in accordance with CEI 64-8/4.

Conductors screwed in separately with AISI 304 stainless steel screws (countersunk hex type). The terminal block is fixed to the pole by means of screws that project from the terminal block body and block it against the front wall of the pole.

### For $\phi$ 88 - 116 poles (RESET 10-11-12):

Rated voltage 450V - maximum current 30A. Fuse holder for 5x20 mm micro glass fuses, voltage 250V, capacity 10A. Wire tightening 1.5 - 2.5 mm<sup>2</sup>.

### For $\phi$ 118 - 168 poles (RESET 15-16-17-18):

Rated voltage 450V - maximum current 63A. Disconnect type fuse holder for 8.5x31.5 mm cartridge fuses, voltage 450V, capacity 10A. Wire tightening 1.5 - 4 mm<sup>2</sup>.

**Protection degree:** IP43 of enclosure installed; system RESET installed: IP66 in compliance with CEI EN 60529, IK08 according to CEI EN 62262 in compliance with standard EN 40-2 (09/2003).

**For flush mounting on conical and tapered poles** min. diameter 88 mm - max 168 mm (measured from height of slot) with 45x186 mm slot with half-rounded heads. Max. thickness of poles 3-4 mm.

## Outer pole diameter at height of slot 88 - 94 mm

Dimensions housing diameter	No. poles	Nominal section mm <sup>2</sup>	Fuse holder No./I Max	Model	Code
45x186	4	10	1-10A	RESET10/A	052501012
45x186	4	10	2-10A	RESET10/B	052501020
45x186	2	10	1-10A	RESET10/F	052501038

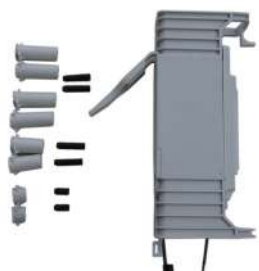
## Outer pole diameter at height of slot 95 - 105 mm

Dimensions housing diameter	No. poles	Nominal section mm <sup>2</sup>	Fuse holder No./I Max	Model	Code
45x186	4	10	1-10A	RESET11/A	052501111
45x186	4	10	2-10A	RESET11/B	052501129
45x186	2	10	1-10A	RESET11/F	052501137

## Outer pole diameter at height of slot 106 - 116 mm

Dimensions housing diameter	No. poles	Nominal section mm <sup>2</sup>	Fuse holder No./I Max	Model	Code
45x186	4	10	1-10A	RESET12/A	052501210
45x186	4	10	2-10A	RESET12/B	052501228
45x186	2	10	1-10A	RESET12/F	052501236

## Outside pole diameter at the Height of the slot from 118 to 168 mm



RESET19/A

**New optimized version with interchangeable studs.**

Dimensions housing diameter	No. poli	Nominal section mm <sup>2</sup>	Fuse holder No./I Max	Model	Code
45x186	4	16	1-10A	RESET19/A	052511912
45x186	4	16	2-10A	RESET19/B	052511920
45x186	2	16	1-10A	RESET19/F	052511938



## For 45x186 slot - plastic light pole cover plates

Patented



### Materials

Cover plate body moulded in reinforced plastic (Pa6-R V12). Terminal block container, specific for the realization of the entire system, moulded in self-extinguishing fiberglass reinforced polyamide resin (Standards UL-94) and anti-tracking CTI 600 (in accordance with IEC 112).

Locking screws made of fiber-reinforced thermoplastic material with special saw toothed thread.

Sealing gasket made of polyurethane foam resistant to atmospheric agents and UV rays.

Insulating base moulded in CTI 600 arc-resistant (in accordance with IEC 112) and self-extinguishing polyamide 6 (UL-94 standards). OT 58 (UNI 5705) terminals with 3 ways for pole.

### Characteristics

For 45x186 slots with half-rounded tops.

Locking screws with patented triangular head to imprint operated with specific key supplied. Class II enclosure (double insulation) in accordance with CEI 64-8/4.

Conductors screwed in separately with AISI 304 stainless steel screws (countersunk hex type). The terminal block is fixed to the pole by means of screws that project from the terminal block body and block it against the front wall of the pole.

### For $\phi$ 88 - 116 poles (RESET 20-21-22):

Rated voltage 450V - maximum current 30A. Fuse holder for 5x20 mm micro glass fuses, voltage 250V, capacity 10A. Wire tightening 1.5 - 2.5 mm<sup>2</sup>.

**Protection degree:** IP43 of enclosure installed; system RESET installed: IP66 in compliance with CEI EN 60529, IK08 according to CEI EN 62262 in compliance with standard EN 40-2 (09/2003).

### Installation:

**For flush mounting on conical and tapered poles** min. diameter 88 mm - max 168 mm (measured from height of slot) with 45x186 mm slot with half-rounded heads. Max. thickness of poles 3-4 mm.

### Outer pole diameter at height of slot 88 - 94 mm

Dimensions housing diameter	No. poles	Nominal section mm <sup>2</sup>	Fuse holder No./I Max	Model	Code
45x186	4	10	1-10A	RESET20/A	052502010
45x186	4	10	2-10A	RESET20/B	052502028
45x186	2	10	1-10A	RESET20/F	052502036

### Outer pole diameter at height of slot 95 - 105 mm

Dimensions housing diameter	No. poles	Nominal section mm <sup>2</sup>	Fuse holder No./I Max	Model	Code
45x186	4	10	1-10A	RESET21/A	052502119
45x186	4	10	2-10A	RESET21/B	052502127
45x186	2	10	1-10A	RESET21/F	052502135

### Outer pole diameter at height of slot 106 - 116 mm

Dimensions housing diameter	No. poles	Nominal section mm <sup>2</sup>	Fuse holder No./I Max	Model	Code
45x186	4	10	1-10A	RESET22/A	052502218
45x186	4	10	2-10A	RESET22/B	052502226
45x186	2	10	1-10A	RESET22/F	052502234



## For 38 x 132 slot - Patented

### SMY Series



SMY/76-89

#### Materials

Cover plate in die-cast UNI EN 1706 AC - 46100 DF aluminium alloy with rounded shape and edges. Minimum thickness 2.5 mm.

Surfaces subjected to metal grit blasting treatment.

Bracket fastening made of AISI 304 stainless steel.

Rust-inhibiting treatment in the bracket fastening screw zone by means of sleeve in RAL 7035 grey coloured thermoplastic material.

Polyurethane foam seal able to withstand the weather conditions and UV solar radiation.

#### Characteristics

For 38 x 132 hatches with semi-rounded ends. Bracket fastening screws with special hemispherical triangular shaped heads and semi-rounded sides (trademark application pending), tightened with the special supplied key. Polyurethane foam seal able to withstand the weather conditions and UV solar radiation.

#### Protection degree

IP 54 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

External dimensions			Pole diameter min-max	Model	Code
Height	Base	Depth			
158	65	11	76-89	SMY/76-89	052100104
158	65	11	101-114	SMY/101-114	052100153



SMY/76-89/V

Cover plates as described above but coated with grey RAL 7000 color powder paint with 6 micron thick anodic oxidation as rust-inhibiting pretreatment.

### Coloured Model

External dimensions			Pole diameter min-max	Model	Code
Height	Base	Depth			
158	65	11	76-89	SMY/76-89/V	052110103
158	65	11	101-114	SMY/101-114/V	052110152

### SMY/P Series (flat surfaces)



SMY/P

#### Materials

Rectangular post door in pressure die-cast aluminium alloy UNI EN 1706AC - 46100DF with rounded edges. Minimum thickness 2.5 mm.

Surfaces subjected to metal grit blasting treatment.

Bracket fastening screws made of AISI 304 stainless steel.

Rust prevention in the part where the bracket fastening screws turns, with thermoplastic sleeve.

Polyurethane foam seal able to withstand the weather conditions and UV solar radiation.

#### Characteristics

For flat surfaces with over 80mm side measurement. For 38 x 132 hatches with semi-rounded ends. Used with MVY series junction boxes with double insulation.

Bracket fastening screws with special hemispherical triangular shaped heads and semi-rounded sides (trademark application pending), and tightened with the special supplied key. Screw mounting after drilling of 2 holes M6 164mm wheelbase.

#### Protection degree

IP 54 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

External dimensions			Pole diameter min-max	Model	Code
Height	Base	Depth			
210	74	10	Flat surfaces	SMY/P	052100252

## For 45 x 186 slot - Patented

### SMW Series



SMW/127-168

#### Materials

Cover plate in die-cast UNI EN 1706 AC - 46100 DF aluminium alloy with rounded shape and edges. Minimum thickness 2.5 mm.

Surfaces subjected to metal grit blasting treatment.

Bracket fastening made of AISI 304 stainless steel.

Rust prevention in the part where the bracket fastening screws turns, with thermoplastic sleeve.

Polyurethane foam seal able to withstand the weather conditions and UV solar radiation.

#### Characteristics

For 45 x 186 hatches with semi-rounded ends.

Used with MVV - MGN - MGV insulation (for diameters of more than 133 mm) series junction boxes with double insulation. Bracket fastening screws with special hemispherical triangular shaped heads and semi-rounded sides (trademark application pending), tightened with the special supplied key.

#### Protection degree

IP 54 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

External dimensions			Pole diameter min-max	Model	Code
Height	Base	Depth			
213	72	11	101-114	SMW/101-114	052300100
213	72	11	127-168	SMW/127-168	052300159
213	72	11	178-300	SMW/178-300	052300209

### SMW Series - Coloured model



SMW/127-168/V

Cover plates as described above but coated with grey RAL 7000 color powder paint with 6 micron thick anodic oxidation as rust-inhibiting pretreatment.

External dimensions			Pole diameter min-max	Model	Code
Height	Base	Depth			
213	72	11	101-114	SMW/101-114/V	052310107
213	72	11	127-168	SMW/127-168/V	052310159
213	72	11	178-300	SMW/178-300/V	052310207

### SMW/P Series (flat surfaces)



SMW/P

#### Materials

Rectangular post door in pressure die-cast aluminium alloy UNI EN 1706AC - 46100DF with rounded edges. Minimum thickness 2.5 mm. Surfaces subjected to metal grit blasting treatment.

Bracket fastening screws made of AISI 304 stainless steel.

Rust prevention in the part where the bracket fastening screws turns, with thermoplastic sleeve.

Polyurethane foam seal able to withstand the weather conditions and UV solar radiation.

#### Characteristics

For flat surfaces with over 80mm side measurement. For 45 x 186 hatches with semi-rounded ends.. Used with MMW-MGN-MVV-MGV series junction boxes with double insulation (for diameters above 133 mm).

Bracket fastening screws with special hemispherical triangular shaped heads and semi-rounded sides (trademark application pending), and tightened with the special supplied key.

#### Protection degree

IP 54 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

External dimensions			Pole diameter min-max	Model	Code
Height	Base	Depth			
210	74	10	Per superfici piane	SMW/P	052300258

### Coloured model

Cover plates as described above but coated with grey RAL 7000 color powder paint with 6 micron thick anodic oxidation as rust-inhibiting pretreatment

External dimensions			Pole diameter min-max	Model	Code
Height	Base	Depth			
210	74	10	Flat surfaces	SMW/P/V	052310257

**For 45 x 186 slot**
**SGV Series**


SGV/114-153

**Materials**

Cover plate in die-cast UNI EN 1706 AC - 46100 DF aluminium alloy. Bracket fastening screws made of AISI 304 stainless steel.

Fixing brackets in die-cast UNI EN 1706 AC - 46100 DF with non-tarnishing spring type turning system. Seal in flexible polyvinyl chloride (PVC).

**Characteristics**

For 45 x 186 hatches with semi-rounded ends. Used along with MGV series junction boxes with double insulation.

Bracket fastening screws with special hemispherical triangular shaped heads and semi-rounded sides (trademark application pending), and tightened with the special supplied key.

**Protection degree**

IP 54 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

External dimensions			Pole diameter min-max	Model	Code
Height	Base	Depth			
208	62	25	114-153	SGV/114-153	052600012

**SMV/OTT series for octagonal poles**


SMV/OTT

**Materials**

Cover plate in die-cast UNI EN 1706 AC - 46100 DF aluminium alloy. Bracket fastening screws made of AISI 304 stainless steel. Fixing brackets in die-cast UNI EN 1706 AC - 46100 DF with non-tarnishing spring type turning system. Seal in flexible polyvinyl chloride (PVC).

**Characteristics**

For 45 x 186 hatches with semi-rounded ends. For installation in octagonal poles with a circumscribed diameter of at least 105 mm. Angle of adaptation to pole 135°.

Used along with MVV - MGN - MGV (for pole diameters of more than 133 mm) series junction boxes with double insulation.

Bracket fastening screws with special hemispherical triangular shaped heads and semi-rounded sides (trademark application pending), and tightened with the special supplied key.

**Protection degree**

IP 54 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

External dimensions			Pole diameter min-max	Model	Code
Height	Base	Depth			
212	62	12	Octagonal poles	SMV/OTT	052300001

**Materials**

Cover plate in die-cast UNI EN 1706 AC - 46100 DF aluminium alloy. Bracket fastening screws made of AISI 304 stainless steel. Surfaces subjected to metal grit blasting treatment or coated in grey RAL 7000 color stove-enamelled epoxy paint (SMS series).

**Characteristics**

Bracket fastening screws with special hemispherical triangular shaped heads and semi-rounded sides (patented), tightened with the special supplied key. Fixed to pole with easily operated non-tarnishing mechanism.

**SMR Series - For 81x202 slot**



SMR/127-140

External dimensions			Pole diameter min-max	Model	Code
Height	Base	Depth			
226	93	8	127-140	SMR/127-140	052800042

**SMT Series - For 85x200 slot**



SMT/110-145

**Protection degree**

IP 30 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

External dimensions			Pole diameter min-max	Model	Code
Height	Base	Depth			
219	95	19*	110-145	SMT/110-145	052700036
219	95	10**	145-200	SMT/145-200	052700077

\* with remarked profile.

\*\* with plane profile.

**SML Series - For 100x300 slot**



SML/140-146

**Protection degree**

IP 43 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

External dimensions			Pole diameter min-max	Model	Code
Height	Base	Depth			
318	112	9	140-146	SML/140-146	052900057

**SMS Series - For 100x350 slot**



SMS/153-168

**Materials**

Bracket fastening screws made of AISI 304 stainless steel. Rust prevention in the part where the bracket fastening screws turns, with thermoplastic sleeve.

Polyurethane foam seal able to withstand the weather conditions and UV solar radiation.

**Characteristics**

Bracket fastening screws featuring patented semispherical head with triangular impression and half-rounded side operated with the special key provided.

**Protection degree**

IP 54 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

External dimensions			Pole diameter min-max	Model	Code
Height	Base	Depth			
384	134	15	153-168	SMS/153-168	052400074

## Patented

### Materials

Cover plate body moulded in reinforced plastic (Pa6-R V12) with rounded shape and edges. Color RAL 7040. Bracket fastening screws in acciaio inox AISI 304. Fail-safe clamping bracket in OT 63 - UNI 4892. Polyurethane foam seal able to withstand the weather conditions and UV solar radiation.

### Characteristics

Used with MVY (38x132mm), MMW, MGN, MGV (45X186mm) series junction boxes with double insulation.

Bracket fastening screws with special hemispherical triangular shaped heads and semi-rounded sides (patented), and tightened with the special supplied key.

### Protection degree

IP 54 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

## SPY Series - For 38x132 slot



SPY/76-114

External dimensions			Pole diameter min-max	Model	Code
Height	Base	Depth			
158	65	14	76-114	SPY/76-114	052150109

## Colored model

Black RAL 9011 color.

External dimensions			Pole diameter min-max	Model	Code
Height	Base	Depth			
158	65	14	76-114	SPY/76-114/N	052152006

## SPW Series - For 45x186 slot



SPW/114-178

External dimensions			Pole diameter min-max	Model	Code
Height	Base	Depth			
212	71	14	114-178	SPW/114-178	052350105
212	71	14	178- flat surfaces	SPW/178-P	052350154

## Colored model

Black RAL 9011 color.

External dimensions			Pole diameter min-max	Model	Code
Height	Base	Depth			
212	71	14	114-178	SPW/114-178/N	052352002
212	71	14	178- flat surfaces	SPW/178-P/N	052352200

## Locking key



MPCH/SMW

**Materials**

Supplied with a hand-piece in thermoplastic material and a steel insert of special shape (patented).

**Characteristics**

The insert, which can also be supplied separately from the hand-piece (order code 091501155 - CH/SMW) can also be used with commercially available tools (drivers, etc.) so long as they are equipped with twisting force regulators.

Description	Model	Code
hand-piece and insert	MPCH/SMW	091501106
insert	CH/SMW	091501155

## MVY Series - For 38x132 slot (Patented)



MVY/210/1



MVY/406/2

Used with series SMY/...-SPP/... cover plates

**Materials**

Container moulded in self-extinguishing polyamide resin, VO at 0.75 mm (UL-94 standards) and CTI 600 (according to IEC 112). Insulating base moulded in self-extinguishing polyamide 6, VO at 0.75 mm (UL-94) and CTI 600 (according to IEC 112). Terminals in Ot 58 (UNI 5705) with 3-ways for pole.

**Characteristics**

Conductors locked separately with AISI 304 stainless steel notched screws. Voltage rating 450 V; max current 30 A. Fuseholder on printed circuit for 5 x 20 fuses, UL CSA VDE approved, voltage rating 250 V, max capacity 10A. Takes max 4 mm<sup>2</sup> cable. To recess into poles with a diameter of at least 76 mm (at hatches level) using 38 x 132 mm hatches with semirounded ends. Class II (double isolated) container in compliance with CEI 64-8/4.

**Protection degree**

IP 43 degree of protection on cover perimeter; IP23B in cable inlet zone (in compliance with CEI EN 60529 standards); IK 08 according to standard CEI EN 62262.

Dimensions hatch	Minimum pole diameter	No. poles	Nominal section mm <sup>2</sup>	Fuseholder No./I Max	Model	Code
38x132	76	2	10	1-10A	MVY/210/1	052192010
38x132	76	2	10	2-10A	MVY/210/2	052192028
38x132	76	4	6	1-10A	MVY/406/1	052194016
38x132	76	4	6	2-10A	MVY/406/2	052194024

## MVV Series - For 45x186 slot (Patented)



MVV/416/2



MVV/416/1

Used with series SMW/...-SPW/.. cover plates

**Materials**

Container in moulded self-extinguishing polyamide resin V2 natural color. Insulating base moulded in self-extinguishing polyamide 6, VO at 0.75 mm (UL-94) and CTI 600 (according to IEC 112). Terminals in Ot 58 (UNI 5705) with 3-ways per pole. Base and cover moulded in self-extinguishing VO (UL-94) polyamide resin reinforced with fiberglass.

**Characteristics**

Conductors locked separately with AISI 304 stainless steel notched screws. Voltage rating 450 V; max current 63 A. Sectionable fuseholder for 8.5 x 31.5 cartridge fuses - 380 V - max 20 A. Voltage rating 500 V. Fuse clips in Ot 58 (UNI 5705) with spring. To recess into poles with a diameter of at least 101 mm using 45 x 186 mm hatches with semi-rounded ends. Class II (double isolated) container in compliance with CEI 64-8/4.

**Protection degree**

IP 43 degree of protection on cover perimeter; IP23B in cable inlet zone (in compliance with CEI EN 60529 standards); IK 08 according to standard CEI EN 62262.

Dimensions hatch	Minimum pole diameter	No. poles	Nominal section mm <sup>2</sup>	Fuseholder No./I Max	Model	Code
45X186	101	2	16	1-10A	MVV/216/1	052392412
45X186	101	2	16	2-10A	MVV/216/2	052392420
45X186	101	4	16	1-10A	MVV/416/1	052394418
45X186	101	4	16	2-10A	MVV/416/2	052394426
45X186	101	without equipment - With DIN rail 46277/3	-	-	MVV/00/DIN	052394491



## MMW Series - For 45x186 slot (Patented)



MMW/216/2

Used with SMW/..-SPW/.. series doors

### Materials

Holder moulded in natural coloured V2 self-extinguishing polypropylene. Insulating base moulded in CTI 600 non-arc producing (in accordance with IEC 112) 0,75 mm VO natural coloured self-extinguishing polyamide 6 (UL-94). Terminal for backbone connection in brass (UNI EN 12165). Terminals for backbone connection in brass (UNI EN 12165).

Plates in AISI 304 stainless steel for fastening shunt cable.

Hooking clamp fuse Ot 58 (UNI 4892 - EN 1652) with elastic spring.

Base and cover moulded in polyamide resin reinforced with VO self-extinguishing glass fiber (UL-94).

### Characteristics

Quadripolar terminal board with 3 ways per pole. Max connection capacity 2 (two) 16 sq mm cables (input/output).

Tightening conductors on dorsal with screws in stainless steel AISI 304 (hexagonal recessed).

Rated voltage 450 V; max current 63 A. Max. Connection n° 2 wires of 4 sqmm. Max. Connection n° 2 wires of 4 sqmm. Tightening screws on platelet-derived stainless steel X2CrNi 18.9 with hexagon socket head cap.

Disconnectable fuse holder for cartridge fuses dim. 8.5 x 31.5 - 380 V - max. 10 A. Rated voltage 450 V. For recessed installation on posts with a diameter of at least 101 mm (measured on a level with the housing) with 45 x 186 mm housing with half-round ends.

Class II holder (double insulation) in accordance with CEI 64-8/4.

### Protection degree

IP 43 protection degree around cover perimeter, IP23B in cable input zone (in accordance with CEI EN 60529 standards), IK 08 (according to CEI EN 62262).

Dimensions hatch	Minimum pole diameter	No. poles	Nominal section mm2	Fuseholder No./I Max	Model	Code
45X186	101	2	16	1-10A	MMW/216/1	052382413
45X186	101	2	16	2-10A	MMW/216/2	052382421
45X186	101	4	16	1-10A	MMW/416/1	052384419
45X186	101	4	16	2-10A	MMW/416/2	052384427

## MGN Series - For 45x186 slot



MGN/410/2

Used with SMW/....-SMV/..SPV/... cover plates

### Materials

Box, cover and terminal base moulded in polyamide resin 6.6 (self-extinguishing degree HB-UL-94). Terminals in OT 58 with conductors locked by plugs.

### Characteristics

Terminal section: 4 x 10 input/output - 4 x 2.5 shunt. Cable anchoring brackets.

Fuseholders: up to 2 for 5 x 20 - 10 A mini-fuses.

To mount on poles with a diameter of at least 80 mm using 45 x 186 hatches with semi-rounded ends. Class II (double isolated) container in compliance with CEI 64-8/4.

### Protection degree

IP 43 in compliance with CEI EN 60529, IK 02 according to CEI EN 62262.

Dimensions hatch	Minimum pole diameter	No. poles	Nominal section mm2	Fuseholder No./I Max	Model	Code
45x186	80	4	10	-	MGN/410/0	052694007
45x186	80	4	10	1-10A	MGN/410/1	052694015
45x186	80	4	10	2-10A	MGN/410/2	052694023

## MGV Series - For 45x186 Slot



MGV/416/1

**Used with series SMW/.. -SPV/..- SGV/.. cover plates**

**Materials**

Box, cover and terminal base moulded in polyamide resin reinforced with fiberglass. Terminal block zinc alloy, copper and tin.

**Characteristics**

Reaction to fire 100-UNIPLAST 228; resistance >600 V - IEC 112. Terminal section: 4 x 16 input/output - 4 x 4 shunt.

Fuseholders: up to 2 for 5 x 20 - 10 A mini-fuses.

For poles with diameters of at least 133 mm using 45 x 186 hatches with semi-rounded ends; with SGV/114 - 153 cover plate for poles with diameters of more than 114 mm.

Class II (double isolated) container in compliance with CEI 64-8/4.

**Protection degree**

IP 43 in compliance with CEI EN 60529, IK 08 according to CEI EN 62262.

Dimensions hatch	Minimum pole diameter	No. poles	Nominal section mm <sup>2</sup>	Fuse holder No./I Max	Model	Code
45x186	133	4	16	-	MGV/416/0	052684107
45x186	133	4	16	1-10A	MGV/416/1	052684115
45x186	133	4	16	2-10A	MGV/416/2	052684123

## Junction boxes for 45x186 slot



SGV/A/114-127

**Characteristics**

Series MGN - MGV junction box versions in pre-engineered combination with cover plates made of aluminium or plastic material.

SGV/...114-153 versions with door in relief.

Class II (double isolated) container in compliance with CEI 64-8/4.

**Protection degree**

Junction box with IP 43 degree of protection in compliance with CEI EN 60529; IK 02 according to CEI EN 62262 for MGN; IK 08 according to CEI EN 62262 for MGV.

**Protection degree**

Cover plate with IP 54 degree of protection in compliance with CEI EN 60529; IK 10 according to CEI EN 62262 for SGV; IK 08 according to CEI EN 62262 for SGNP.

## Aluminium alloy light pole cover plates

Pole diameter min-max	No. poles	Nominal section mm <sup>2</sup>	Fuseholder No./I Max	Type of terminal strip	Model	Code
114-153	4	16	1-10A	MGV/416/1	SGV/A/114-127	052611134
114-153	4	16	-	MGV/416/0	SGV/H/114-127	052611837

## MVE Series - IP44 Double isolation



MVE/416/1

### Materials

Box, cover and terminal base moulded in polyamide resin 6.6 (self-extinguishing degree VO-UL-94). Terminals in OT 58 (UNI 5705-65).

### Characteristics

Terminals with 3-ways per pole and conductors locked separately.

Terminal section: 4 x 16 input/output - 4 x 2.5 shunt.

To recess on poles with hatches proportional to the overall dimensions and with internal cross-pieces preengineered for fixing purposes. Besides the overall dimensions of the junction box, the hatch should also be made to suit the available cover plates.

Class II (double isolated) container in compliance with CEI 64-8/4.

### Protection degree

IP 44 in compliance with CEI EN 60529, IK 08 according to CEI EN 62262.

## With sectionable fuseholders for 8,5 x 31,5 fuses

External dimensions			Diametro minimo palo	N. poli	Nominal section mm <sup>2</sup>	Fuse holder N./I Max	Model	Code
Height	Base	Depth						
245	52	62	89	4	16	1-20A	MVE/416/1	053251617



MVE/416/E1

## With sectionable fuseholders for 10,3 x 38 fuses



External dimensions			Minimum pole diameter	No. poles	Nominal section mm <sup>2</sup>	Fuseholder No./I Max	Model	Code
Height	Base	Depth						
245	52	62	89	4	16	1-20A	MVE/416/E1	053251666
245	52	62	89	4	16	2-20A	MVE/416/E2	053251674
245	52	62	89	4	16	Equipped with DIN rail 46277/3	MVE/416/00/DIN	053251690

## Serie MVF - IP44



MVF/435/E2

### Materials

Box, cover and terminal base moulded in polyamide resin 6.6 (self-extinguishing degree VO-UL-94). Terminals in OT 58 (UNI 5705-65).

### Characteristics

Terminals with 3-ways per pole and conductors locked separately.

Terminal section: 4 x 35 input/output - 4 x 6 shunt.

To recess on poles with hatches proportional to the overall dimensions and with internal cross-pieces preengineered for fixing purposes. Besides the overall dimensions of the junction box, the hatch should also be made to suit the available cover plates.

Class II (double isolated) container in compliance with CEI 64-8/4.

### Protection degree

IP 44 in compliance with CEI EN 60529, IK 08 according to CEI EN 62262.

## Con Fuse holder a tappo per fusibile 8,5x32 - 9x36

External dimensions			Minimum pole diameter	No. pole	Nominal section mm <sup>2</sup>	Fuse holder No./I Max	Model	Code
Height	Base	Depth						
290	65	80	114	4	35	1-20A	MVF/435/1	053303517
290	65	80	114	4	35	2-20A	MVF/435/2	053303525



MVF/435/00/DIN

## With sectionable fuseholders for 10,3 x 38 fuses

External dimensions			Minimum pole diameter	No. poles	Nominal section mm <sup>2</sup>	Fuseholder No./I Max	Model	Code
Height	Base	Depth						
290	65	80	114	4	35	1-20A	MVF/435/E1	053303566
290	65	80	114	4	35	2-20A	MVF/435/E2	053303574
290	65	80	114	4	35	Equipped with DIN rail 46277/3	MVF/435/00/DIN	053303590

## MVL - MVS - IP20 series



MVS/435/2



MVL/435/1

### Materials

Body moulded in polyamide resin 6.6.

Terminals in tin-plated die-cast zinc electro-alloy. Conductors locked with OT plugs; fuseholder with contacts in die-cast copper-plated zinc electro-alloy for 8.5 x 32 or 9 x 36 fuses up to 20 A.

### Characteristics

To recess on poles with hatches proportional to the overall dimensions and with internal cross-pieces preengineered for fixing purposes. Besides the overall dimensions of the junction box, the hatch should also be made to suit the available cover plates.

### Protection degree

IP 20 in compliance with CEI EN 60529, IK 07 according to CEI EN 62262.

External dimensions			Minimum pole diameter	No. poles	Nominal section mm <sup>2</sup>	Fuseholder No./I Max	Model	Code
Height	Base	Depth						
230	95	64	127	4	35	1-20A	MVS/435/1	053443511
230	95	64	127	4	35	2-20A	MVS/435/2	053443529
230	95	64	127	4	35	3-20A	MVS/435/3	053443537
230	95	64	127	4	35	4-20A	MVS/435/4	053443545
190	70	56	101	4	35	1-20A	MVL/435/1	053843512
190	70	56	101	4	35	2-20A	MVL/435/2	053843520

## Protection MVL-MVS



CP/MVL



CP/MVS

Moulded in polyamide resin 6,6.

Protection degree	Type of junction box	Model	Code
IP 20	MVL/435/...	CP/MVL	095570198
IP 22	MVS/435/...	CP/MVS	095570206

## Table of fuse and fuseholders for built-in junction boxes for poles

Junction box	Fuseholder	Fuse size	Type of fuse
MVY/210-406/1	BFM/MVY/1	5x20	FM/...
MVY/210-406/1	BFM/MVY/2	5x20	FM/...
MMW/.. - MVV/..	VS/120	8,5x31,5	FV/S..
MGV/416/1-2	VV/108	5x20	FM/...
MGV/416/1-2	VM/120	5x20	FM/...
MVP/..	built-in	8,5x32 / 9x36	FT/R..
MVE/416/1	VS/120	8,5x31,5	FV/S..
MVE/416/E1-E2	VS/125/B	10,3x38	FT/S..
MVF/435/1-2	VT/125/D	8,5x32 / 9x36	FT/R..
MVF/435/E1-E2	VS/125	10,3x38	FT/S..
MVL/435/1-2	built-in	8,5x32 / 9x36	FT/R..
MVS/435/1-4	built-in	8,5x32 / 9x36	FT/R..

## Hexagonal inserts for terminal blocks series MVY - MMW

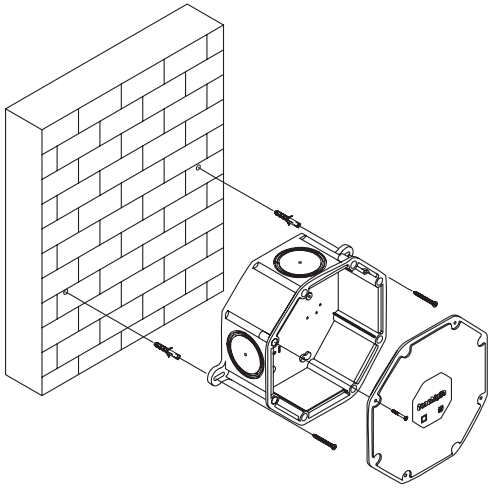
Description	Model	Code
Inserts, hexagonal sign for terminal block series-MVV MVV.	CHES/MVY-MVV	090910233
Door handle hexagonal inserts ches/MVY-MVV	IMPG/MVY-MVV	090910308



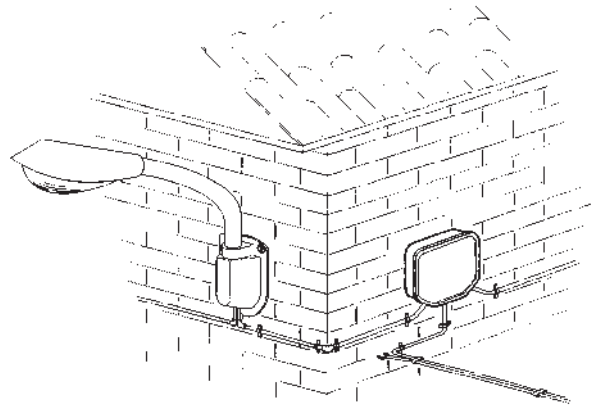
## Fiberglass-reinforced plastic derivation boxes

Installation of octagonal derivation boxes in plastic material.....	360
Octagonal derivation boxes made of plastic material.....	361
SMC derivation boxes (fiberglass).....	363
Accessories for octagonal derivation boxes .....	364

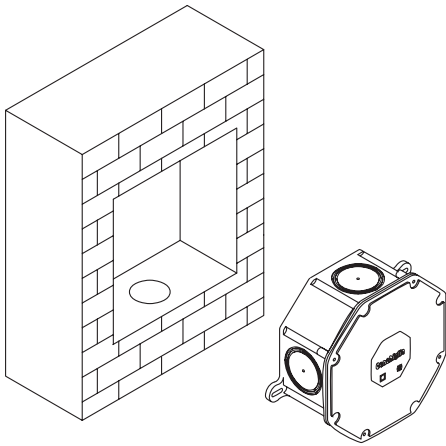




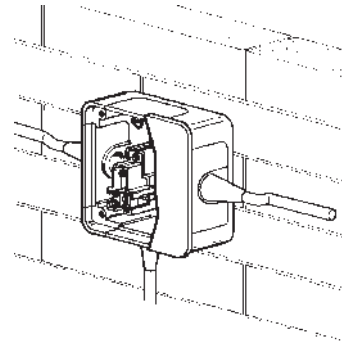
Installation on wall - UPM Boxes



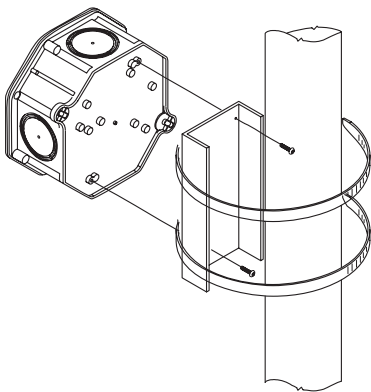
ASV Boxes



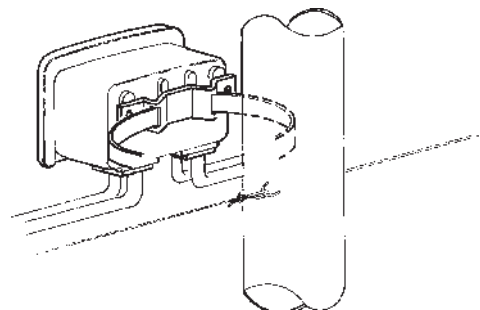
Installation into wall - UPM Boxes



ASV Boxes



Pole installation - UPM Boxes



USV./.. Boxes.

## UPM series

### Empty versions



UPM10



UPM25

#### Materials

Pull box body and cover in polyamide thermoplastic material PA6V0+30% glass fiber. Grey RAL 7035 color. Cover with anti losing screws. Thermoplastic rubber seal able to withstand the weather conditions.

#### Characteristics

Can be bored in order to install accessories for cable inlet/outlet/shunts such as: pipe/pull box unions; fairleads; tapered fairleads (3 fairleads MC series, supplied loose with each box), 4 of which are positioned square to each other at 90° in relation to the perimeter of the pull box or, alternatively, 3 at 45° in the lower part of the box.

#### Applications/Installations

For industrial systems, for public lighting, to power distribution panels with uni/multicore cables. For outdoor installation on walls fixed by means of nails or plugs, built into walls or fixed to poles with the fixing bracket (to be ordered separately) in systems with pre-wired overhead cables.

#### Class II empty versions. Protection degree

IP 54 in compliance with CEI EN 60529, IK09 according to CEI EN 62262.

**\*The Octogonal plastic derivation boxes are furnished complete of 3 tapered fairleads**

External dimensions, mm			External dimensions, mm			Model	Code
Height	Base	Depth	Height	Base	Depth		
128	128	63	94	94	50	UPM10	027100007
156	156	67	130	130	53	UPM16	027160001
183	183	82	156	156	70	UPM25	027250000

### Versions equipped with quadricore nodal terminal strip



UPM16/1



UPM25/1

#### Materials

Pull boxes complete with quadricore nodal terminal strip with base made of thermoplastic material. Pull box body and cover in polyamide thermoplastic material PA6V0+30% glass fiber. Grey RAL 7035 color. Cover with anti losing screws. Thermoplastic rubber seal able to withstand the weather conditions.

#### Characteristics

Can be bored in order to install accessories for cable inlet/outlet/shunts such as: pipe/pull box unions; fairleads; tapered fairleads (3 fairleads MC series, supplied loose with each box), 4 of which are positioned square to each other at 90° in relation to the perimeter of the pull box or, alternatively, 3 at 45° in the lower part of the box\*.

#### Applications/Installations

For industrial systems, for public lighting, to power distribution panels with uni/multicore cables. For outdoor installation on walls fixed by means of nails or plugs, built into walls or fixed to poles with the fixing bracket (to be ordered separately) in systems with pre-wired overhead cables.

#### Class II versions. Protection degree

IP 54 in compliance with CEI EN 60529, IK09 according to CEI EN 62262.

**\*The Octogonal plastic derivation boxes are furnished complete of 3 tapered fairleads**

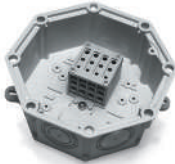
External dimensions, mm			No. Poles	Nominal section mm <sup>2</sup>	Type of terminal strip	Model	Code
Height	Base	Depth					
156	156	67	4	16	NM/416	UPM16/1	027161009
183	183	82	4	25	NM/425	UPM25/1	027251008

## UPM Series

### Versions equipped with quadricore multiple terminal strip



UPM10/10



UPM16/10



UPM25/10

#### Materials

Pull box complete with quadricore multiple terminal strip made of PA6V0 thermoplastic material. IP20 Protection degree. Pull box body and cover in polyamide thermoplastic material PA6V0+30% glass fiber. Grey RAL 7035 color. Cover with anti losing screws. Thermoplastic rubber seal able to withstand the weather conditions.

#### Characteristics

Can be bored in order to install accessories for cable inlet/outlet/shunts such as: pipe/pull box unions; fairleads; tapered fairleads (3 fairleads MC series supplied loose with each box), 4 of which are positioned square to each other at 90° in relation to the perimeter of the pull box or, alternatively, 3 at 45° in the lower part of the box.\* Anti losing cover screws.

#### Applications/Installations

For industrial systems, for public lighting, to power distribution panels with uni/multicore cables. For outdoor installation on walls fixed by means of nails or plugs, built into walls or fixed to poles with the fixing bracket (to be ordered separately) in systems with pre-wired overhead cables.

#### Class II versions.. Protection degree

Quadricore terminal board IP20

Boxes: IP 54 in compliance with CEI EN 60529, IK09 according to CEI EN 62262.

**UPM10/10:** quadricore terminal board, insulation voltage 250/500 V current 65 A max; main line wiring 1,5 - 10 mmq shunt 1,5 - 4 mmq.

**UPM16/10:** quadricore terminal board, insulation voltage 400V - current 65A max; main line wiring 1,5 -16 mmq - shunt 1,5 - 4 mmq.

**UPM25/10:** quadricore terminal board, insulation voltage 400V - current 90A max; main line wiring 1,5 - 25 mmq shunt 1,5 - 6 mmq.

**\*The Octagonal plastic derivation boxes are furnished complete of 3 tapered fairleads.**

External dimensions, mm			No. Poles	Nominal section mm <sup>2</sup>	Model	Code
Height	Base	Depth				
128	128	63	4	10	UPM10/10	027101005
156	156	67	4	16	UPM16/10	027161108
183	183	82	4	25	UPM25/10	027251107

### Versions equipped with quadricore multiple terminal strip and fuse holder



UPM16/10/V



UPM25/10/V

#### Materials

Pull box complete with quadricore multiple terminal strip in PA6V0 thermoplastic material, with 1 fuse holder. Pull box body and cover in polyamide thermoplastic material PA6V0+30% glass fiber. RAL 7035 grey colour. Cover with anti losing screws. Thermoplastic rubber seal able to withstand the weather conditions.

#### Characteristics

Can be bored in order to install accessories for cable inlet/outlet/shunts such as: pipe/pull box unions; fairleads; tapered fairleads (3 fairleads MC series supplied loose with each box), 4 of which are positioned square to each other at 90° in relation to the perimeter of the pull box or, alternatively, 2 at 45° in the lower part of the box\*. Anti losing cover screws.

#### Applications/Installations

For industrial systems, for public lighting, to power distribution panels with uni/multicore cables. For outdoor installation on walls fixed by means of nails or plugs, built into walls or fixed to poles with the fixing bracket (to be ordered separately) in systems with pre-wired overhead cables.

#### Class II versions. Protection degree

IP 54 in compliance with CEI EN 60529, IK09 according to CEI EN 62262.

**UPM16/10/V:** with sectionable fuse holder for 8.5x31.5 fuse.

**UPM25/10/V:** with sectionable fuse holder for 10.3x38 fuse.

**\*The Octagonal plastic pull boxes are furnished complete of 3 tapered fairleads.**

External dimensions, mm			No. Poles	Nominal section mm <sup>2</sup>	Fuse No. Poles	Model	Code
Height	Base	Depth					
156	156	67	4	16	1-10A - VS/120	UPM16/10/V	027161116
183	183	82	4	25	1-32 A - VS/125	UPM25/10/V	027251115

## ASV series

### Empty versions with double isolated



ASV6



ASV16/TR



ASV95

#### Materials

Box and cover moulded in SMC (fiberglass). Grey RAL 7040 color.

#### Characteristics

For outdoor installation on poles with bracket pre-engineered for 1/2' (ASV6) and 3/4' (ASV 16) BAND-IT tape. Can be wall mounted, generally under the roof eaves or other places that cannot be accessed without adequate means, using a bracket to couple to a walled-in shank. Empty versions with double isolated.

#### Protection degree

IP 43 in compliance with CEI EN 60529; IK 08 according to CEI EN 62262 for ASV6 and ASV16 types; IK10 according to CEI EN 62262 for ASV95 type.

#### Applications/Installations

**For connections and shunts from overhead lines with uni-multipolar cables.**

External dimensions, mm			External dimensions, mm			Cover closed	Model	Code
Height	Base	Depth	Height	Base	Depth			
78	115	46	55	95	40	-	ASV6	023060007
173	200	59	143	176	53	-	ASV16	023160005
173	200	59	143	176	53	Cover with triangle head screws	ASV16/TR	023160021
257	476	91	230	445	77	Cover with flat head screws	ASV95	023500002

## Outfitted versions



ASV6/A



ASV16/A



ASV95/S50

#### Materials

Box and cover moulded in SMC (fiberglass). Grey RAL 7040 color.

#### Characteristics

For outdoor installation on poles with bracket pre-engineered for 1/2' (ASV6) and 3/4' (ASV 16) BAND-IT tape. Can be wall mounted, generally under the roof eaves or other places that cannot be accessed without adequate means, using a bracket to couple to a walled-in shank. Flat fairleads Pmolded in polyvinyl chloride flexible.

Boxes as described above complete with 2 or 4 pole nodal terminal blocks for ASV6 - ASV16 and quadripolar sectioning terminal block (ASV95).

#### Protection degree

IP 43 in compliance with CEI EN 60529; IK 08 according to CEI EN 62262 for ASV6 and ASV16 types; IK10 according to CEI EN 62262 for ASV95 type.

#### Applications/Installations

**For connections and shunts from overhead lines with uni-multipolar cables.**

External dimensions, mm			No. Poles	Nominal section mm <sup>2</sup>	Type of terminal strip	Cover closed	Model	Code
Height	Base	Depth						
78	115	46	2	10	MNV/210	-	ASV6/A	023060106
173	200	59	4	16	MNV/416	-	ASV16/A	023160104
173	200	59	4	16	MNV/416	Cover with triangle head screws	ASV16/A/TR	023160120
257	476	91	4	50	MLZ/450	Cover with flat head screws	ASV95/S50	023501000
257	476	91	4	95	MLZ/4100	Cover with flat head screws	ASV95/S95	023501109
257	476	91	4	50	portafusib. Grand. 0	Cover with flat head screws	ASV95/P50	023508104

## Pole fixing bracket



SF/UPM

**Materials**

Corrosion-proof anodized aluminium section metal.

**Applications**

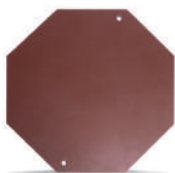
To fasten pull boxes to poles at least 70 mm in diameter using Band-IT tape.

**Characteristics**

For UPM16-UPM25

Model	Code
SF/UPM	095531000

## Mounting plates



PB/UPM25

**Materials**

in bakelite.

**Characteristics**

3 mm thick.

Dimensions	Type of box	Model	Code
117x3	UPM16	PB/UPM16	095680161
141x3	UPM25	PB/UPM25	095680252

## Cable/pipe unions



IRT/28

**Materials**

Body, ends and ring nut in polyamide PA6V0. Grey RAL 7035 color. Retention ring in flexible thermo-plastic material.

**Characteristics**

Consisting of union and ring nut to clamp the pipe plus check nut to fix the union.

**Protection degree**

IP67 in compliance with CEI EN 60529.

Pipe hole diameter	Cable hole diameter	External diameter	Type of box	Versions	Model	Code
28	22	41x23	UPM..	sciolta	IRT/28	095500013
34	28	47x30	UPM25..	sciolta	IRT/34	095500054
28	22	41x23	UPM..	applicata	EA/IRT/28	097500011
34	28	47x30	UPM25	applicata	EA/IRT/34	097500052

## Conical fairleads



MC/34

**Materials**

Made of PVC-P flexible thermoplastic material.

**Characteristics**

Shear line on a level with internal hole.

**Protection degree**

IP55 in compliance with CEI EN 60529.

Hole diameter	Cable/pipe through diameter	Type of box	Versions	Model	Code
33	7-30	UPM10 - UPM16	loose	MC/34	095010344
49	10-46	UPM25	loose	MC/50	095010500
33	7-30	UPM10 - UPM16	applied	EA/MC/34	097010342
49	10-46	UPM25	applied	EA/MC/50	097010508

## PG pitch fairleads



BPG/21

**Materials**

Body, end and ring nut in polyamide PA6. Retention ring in flexible thermoplastic material.

**Protection degree**

IP55 in compliance with CEI EN 60529.

Hole diameter	Cable/pipe through diameter	Type of box	Versions	Model	Code
29	10-20	UPM10	loose	BPG/21	095030219
37	15-26	UPM16	loose	BPG/29	095030292
48	20-34	UPM25	loose	BPG/36	095030367
29	10-20	UPM10	applied	EA/BPG/21	097030217
37	15-26	UPM16	applied	EA/BPG/29	097030290
49	20-34	UPM25	applied	EA/BPG/36	097030365

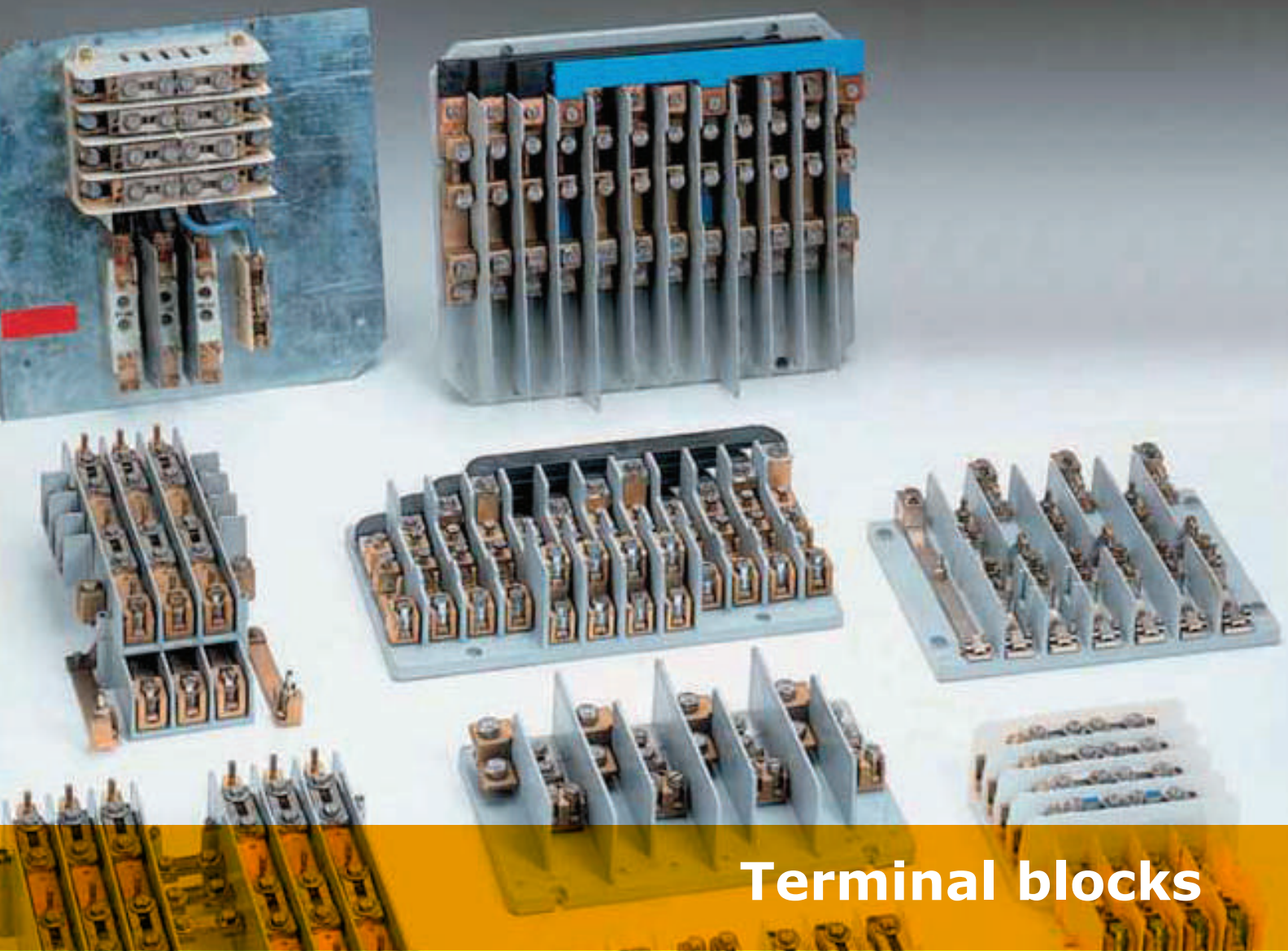






# **B.T. plants and industrial**





## Terminal blocks

Linear connector terminal blocks .....	370
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Connector terminal blocks with shunt protect by fuse holders...	374

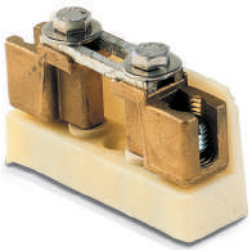
## Linear sectioning terminal blocks

The modern technology of electricity distribution systems in underground cable is oriented towards grid structures which involve emergency connections between the various cabins, or towards fixed parallel interconnections of secondary windings of distribution transformers. It is therefore indispensable, in both cases, to adopt suitable terminal blocks at the joining points (nodes) to make suitable electrical connection and disconnections layouts, rationally conceived in such a way as to reduce interruption times and thereby the cost per kW interrupted to the minimum.

All the types are realized using the latest moulding and machining techniques. Specifically, the terminal blocks are moulded in UNI 5705-65 brass using the hot moulding procedure to ensure compactness: the contact surfaces are machined mechanically to get rid of differences in thickness and deformation due to moulding and to reduce contact resistance. The terminal blocks are provided with sockets and plugs upline and downline of the disconnect jumper for load break opening by means of shunt switches and/or earthing for work in progress.

The conductors are normally secured using brass grub screws with saw-tooth thread, complete with anti-loosening swivel plate to avoid shearing torques of the conductors.

### Series SG



SG/150

#### Materials

Moulded polyamide resin insulating base (PA6-6) colorless.

Connectors with grub screws, moulded in brass UNI EN 12165. Sawtooth threads.

#### Characteristics

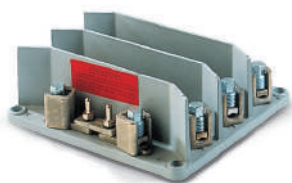
Athermal spacer between base and connector. Copper disconnect jumper E/Cu 99,9% UNI EN 13599, nickel plated with a contact surface machined. No. 2 ways for pole with intermediate isolation.

#### Protection degree

IP 00 in accordance with CEI EN 60529.

Wiring diagram	Overall dimensions			Conductors section mm <sup>2</sup>			I max - A			No. poles	Model	Code
	Height	Base	Depth	In	Out	Shunt	In	Out	Shunt			
	102	31	52	25	25	-	114	114	-	1	SG/125	013591250
	102	31	64	50	50	-	180	180	-	1	SG/150	013591508

## MLZ series



MLZ/450

### Materials

Base insulating molded in SMC (fiberglass) with dividers between the phases in a single body. Terminals molded brass EN 12165. Sectioning electrolytic copper culverts E/Cu 99.9% EN 13599 tinned.

Conductors by tightening grain steel lead to tropical conditions including back plates greenhouse conductors printed brass EN 12165 (MLZ/450).

Conductors by tightening bearing cast brass UNI 5705-65 and tinned (MLZ/4100).

### Characteristics

No. 2 ways for pole with intermediate isolation. To be mounted only in containers with insulating base.

### Protection degree

IP 00 in accordance with CEI EN 60529.

Wiring diagram	Overall dimensions			Conductors section mm <sup>2</sup>			I max - A			No. poles	Model	Code
	Height	Base	Depth	In	Out	Shunt	In	Out	Shunt			
	190	210	70	50	50	-	180	180	-	4	MLZ/450	012114500
	190	210	70	95	95	-	280	280	-	4	MLZ/4100	012114955

## MSL series



MSL/2100

### Materials

Base insulating molded polyamide resin (PA6-6) colourless. Terminals molded brass EN 12165. Sectioning electrolytic copper culverts E/Cu 99.9% EN 13599 tinned.

### Characteristics

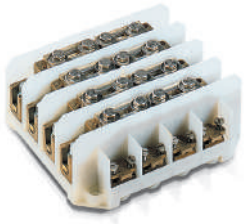
Tightening conductors using grains of nickel plated brass complete with turntable stamped-brass. N° 2 ways for pole with intermediate isolation.

### Protection degree

IP 00 in accordance with CEI EN 60529.

Wiring diagram	Overall dimensions			Conductors section mm <sup>2</sup>			I max - A			No. poles	Model	Code
	Height	Base	Depth	In	Out	Shunt	In	Out	Shunt			
	185	194	75	150	150	-	390	390	-	4	MSL/2160	017012600

## MSP series



MSP/3100

**Materials**

Insulating base molded polyamide resin (PA6-6) colourless with slits for ventilation and air separators in a single body. Terminals molded brass EN 12165. Culverts sectioning electrolytic copper UNI EN 13599 nickel.

Screws with washers culverts anti losers stainless steel AISI 304.

**Characteristics**

With clamps for clamping slot conductor through grain screw with swivel plate. Spacers athermal between base and terminals for limiting the transmission of heat. Terminal block 3-way isolator for pole.

**Protection degree**

IP 00 in accordance with CEI EN 60529.

Wiring diagram	Overall dimensions			Conductors section mm <sup>2</sup>			I max - A			No. poles	Model	Code
	Height	Base	Depth	In	Out	Shunt	In	Out	Shunt			
	167	156	74	50	50	50	180	180	180	4	MSP/350	017103508
	194	211	89	95	95	95	300	300	300	4	MSP/3100	017103102
	194	211	89	150	150	150	390	390	390	4	MSP/3160	017103607

## MST series



MST/3100

**Materials**

Insulating base molded polyamide resin (PA6-6) colourless with slits for ventilation and air separators in a single body. Terminals molded brass EN 12165. Culverts sectioning electrolytic copper UNI EN 13599 nickel.

Screws with washers culverts anti losers stainless steel AISI 304.

**Characteristics**

With clamps for clamping slot conductor through grain screw with swivel plate. Spacers athermal between base and terminals for limiting the transmission of heat. Terminal block 3-way isolator for pole.

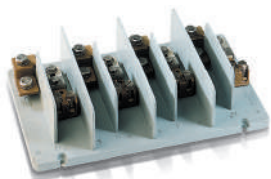
**Protection degree**

IP 00 in accordance with CEI EN 60529.

Wiring diagram	Overall dimensions			Conductors section mm <sup>2</sup>			I max - A			No. poles	Model	Code
	Height	Base	Depth	In	Out	Shunt	In	Out	Sunt			
	220	156	74	50	50	50	180	180	180	4	MST/350	017203506
	314	211	89	95	95	95	300	300	300	4	MST/3100	017203100



## MSU serie



MSU/495/B

### Materials

Insulating base molded in SMC (fiberglass) antimark with dividers in one body. Terminals molded brass EN 12165. Culverts sectioning electrolytic copper UNI EN 13599 nickel. Screws in stainless steel AISI 304.

### Characteristics

Double bolt entry for copper conductors up to 95 mm and aluminum up to 150 mm with cable lugs with 12 mm hole and double way joint sectioned for copper conductors up to 50 mm<sup>2</sup> with clamping by grub brass thread loosening.

### Protection degree

IP 00 in accordance with CEI EN 60529.

Wiring diagram	Overall dimensions			Conductors section mm <sup>2</sup>			I max - A			No. poles	Model	Code
	Height	Base	Depth	In	Out	Shunt	In	Out	Shunt			
	235	380	90	95	95	50	300	300	160	4	MSU/495/B	017421959

## MSMT series



MSMT/2100/Y



MSMT/3100/B

### Materials

Insulating base molded in SMC (fiberglass) antimark with dividers in one body. Terminals molded brass EN 12165. Cylinders sectioning brass EN 12165, tinned.

### Characteristics

**MSMT/2100/Y type:** 3-way switch disconnectors of which the derivation with double strike. Tightening conductors by means grains in brass with a sawtooth complete of brass plate, swivel antilooser.

**MSMT/3100/B type:** 3-way isolator double ended bolt. For copper conductors up to 95 mm<sup>2</sup> and aluminum up to 150 sq mm. Prepared for attack lugs with screw hole M 12.

### Protection degree

IP00 in accordance with CEI EN 60529.

Wiring diagram	Overall dimensions			Conductors section mm <sup>2</sup>			I max - A			No. poles	Model	Code
	Height	Base	Depth	In	Out	Shunt	In	Out	Shunt			
	256	456	113	95	95	95	300	300	300	4	MSMT/2100/Y	017422161
	400	456	100	95	95	95	300	300	300	4	MSMT/3100/B	017423179

## Series MSRH



MSRH/495/E

### Materials

Insulating base molded in SMC (fiberglass) antimark with dividers in one body - with cover made of polycarbonate. Terminals, plates conductor brass EN 12165 and tinned. Cylinders sectioning brass EN 12165, tinned.

### Characteristics

Section conductors up to 95 mm<sup>2</sup> for copper cables; up to 150 mm for aluminum cables. Tightening elastic conductors using spring steel C70 UNI 3545 agents on the plate conductor screws for direct clamping even of aluminum conductors.

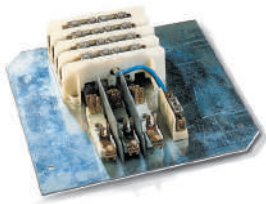
### Protection degree

IP 00 in accordance with CEI EN 60529.

Wiring diagram	Overall dimensions			Conductors section mm <sup>2</sup>			I max - A			No. poles	Model	Code
	Height	Base	Depth	In	Out	Shunt	In	Out	Shunt			
	410	310	78	95	95	95	318	318	318	4	MSRH/495/C	017394974



## MST.../V series



MST/250/V

### Materials

Insulating base molded polyamide resin (PA6-6) colorless in a single body. Terminals molded brass EN 12165 with cut-out for clamping conductors by grub screw with swivel plate. Culverts sectioning electrolytic copper UNI EN 13599 nickel.

### Characteristics

Spacers athermal between base and terminals. Screws for culverts with washer anti loser stainless steel AISI 304. Three-way including 2 sectional and a (shunt) protected by fuse.

### Protection degree

IP 00 in accordance with CEI EN 60529.

Wiring diagram	Overall dimensions			Fuse holder size	Conductors section mm <sup>2</sup>			I max - A			No. poles	Model	Code
	Height	Base	Depth		In	Out	Shunt	In	Out	Shunt			
	340	171	84	00	50	50	35	180	180	125	4	MST/250/V	017202516
	367	211	89	0	95	95	50	300	300	160	4	MST/2100/V	017202110
	466	211	98	1	150	150	95	300	390	250	4	MST/2160/V	017202615

## MSG/3120/V series



MSG/3120/V

### Materials

Insulating base molded in SMC (fiberglass) with dividers in one body. Terminals molded brass EN 12165 nickel. Cylinders sectioning brass EN 12165, tinned.

### Characteristics

Prepared for attack lugs with hole for M12 screw. A 4-way, three of which disconnectors and a (shunt) protected by fuse GR 0. Suitable exclusively for mounting on boxes with insulating base..

### Protection degree

IP 00 in accordance with CEI EN 60529.

Wiring diagram	Overall dimensions			Fuse holder size	Conductors section mm <sup>2</sup>			I max - A			No. poles	Model	Code
	Height	Base	Depth		In	Out	Shunt	In	Out	Shunt			
	296	354	73	0	120	120	120	350	350	350	4	MSG/3120/V	017523218



## Boxes and containers

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### VRP series

VRP65G/... derivation boxes made of thermoplastic material are particularly suitable for light fitting shunts in tunnel installations as they guarantee electrical continuity at a temperature of 400°C for 90 minutes. They allow rapid connection to the supply cables by means of perforation terminals without breaks in the backbone conductors.

The shunt connection to the light fitting is made through a central output between the neutral and backbone phases. The phase that supplies the light fitting is protected by means of a fuse holder (included in the VRP65G/A/1 version) fixed straight on to the base of the box.

Protection against shock and IK06 corresponding to a joule of energy, in accordance with the standard CEI EN 62262.



Derivation box composing upper and lower half-shells made of highly heat resistant thermoplastic material containing polyphenylene sulphide + fiberglass.

Automatically applied polyurethane seal.

Diaphragms in the thermoplastic rubber for 6 to 16 and 25 to 35 sq mm cables.

Plug in thermoplastic rubber for routing cables through diaphragm. Box closed with 4 stainless steel safety screws.

Perforating safety terminals featuring insulating parts made of moulded thermoplastic material, with ceramic plates and conductive parts in AISI 304 stainless steel.

Suitable for use with FTG10M1 - 06/1KV cables (fire resistance in accordance with standards EN50200) pre-engineered for holding 6 to 35 sq mm section cables for the feed-through backbone and 1,5 to 4 sq mm cables for the shunt.

### Advantages

**- Quality**

Characteristics of the material used for the enclosure (highly heat resistant thermoplastic).

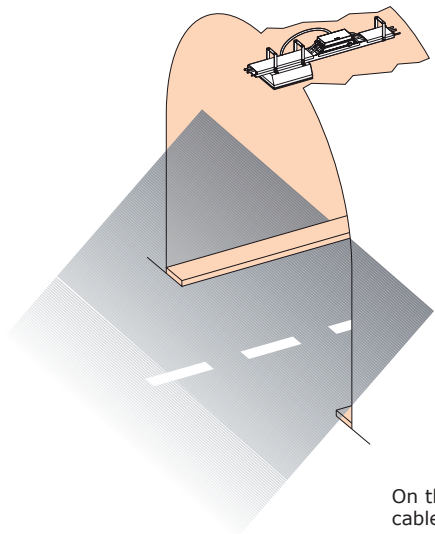
**- High degree of protection**

The extremely heat resistant material with which the enclosure is made achieves perfect insulation, thus there is no need to use an earth terminal.

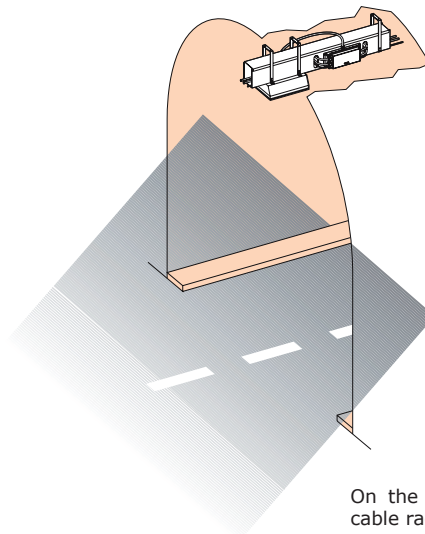
**- Fast and versatile assembly**

Direct shunt installation without having to isolate the conductors.

Application in the center of the vault

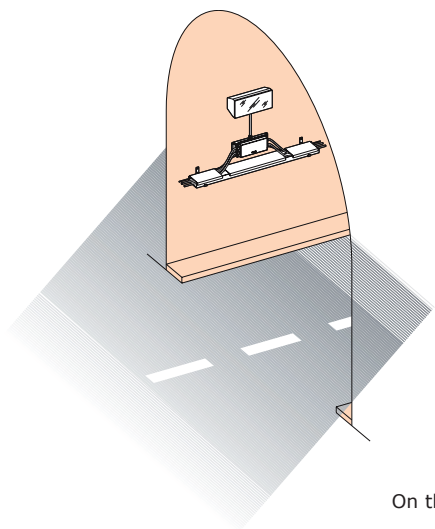


On the top of the cable raceway

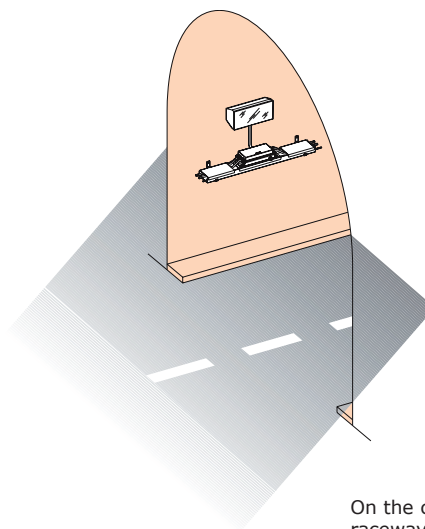


On the side of the cable raceway

Applications on side walls



On the wall



On the cable raceway

## VRP series

Withstand a temperature of 400°C for 90 minutes

### Empty versions - IP55



VRP55G/0

**Materials**

Junction box comprising upper and lower half-shells made of highly heat resistant thermoplastic material. Automatically applied polyurethane seal.

**Characteristics**

Box closed with 4 stainless steel safety screws. Diaphragms in thermoplastic rubber (40 shore) for 6 to 16 and 25 to 35 sq mm cables.

**Protection degree**

IP55 in accordance with CEI EN 60529, IK06 (corresponding to a 1 joule of energy) in compliance with standard CEI EN 50102.

Overall dimensions			Internal dimensions			Model	Code
Height	Base	Depth	Height	Base	Depth		
115	285	90	88	230	85	VRP55G/0	046550000

### Outfitted versions - IP55



VRP55G/A/1

**Materials**

Junction box comprising upper and lower half-shells made of highly heat resistant thermoplastic material. Automatically applied polyurethane seal.

**Characteristics**

Box closed with 4 stainless steel safety screws. Diaphragms in thermoplastic rubber (40 shore) for 6 to 16 and 25 to 35 sq mm cables. Pair of perforating locking terminals with insulating parts in moulded thermoplastic material, plates and conductive parts in AISI 304 stainless steel. Suitable for use with FTG10M1 - 06/KV cables (fire resistance in accordance with standard EN50200), pre-engineered for holding 6 to 35 sq mm section cables for the feed-through backbone and 1.5 to 4 sq mm cables for the shunt.

**Protection degree**

IP55 in accordance with CEI EN 60529, IK06 (corresponding to a 1 joule of energy) in compliance with standard CEI EN 50102.

Overall dimensions			Notes	Model	Code
Height	Base	Depth			
115	285	90	-	VRP55G/A	046551008
115	285	90	Complete of sectionable fuseholder with base made of polyamide and elastic contacts made of brass for fuses 8,5 x 31,5 up to 25A	VRP55G/A/1	046551016

## RP series - Empty Versions - IP55



RP20

### Materials

UNI EN 1706AC - 46100DF die-cast aluminium alloy.

### Characteristics

Surfaces treated on the inside and outside with RAL 7000 grey epoxy paint. The cables enter the boxes through fairleads, cable glands, pipe inlets or conical couplings for multipolar cables (available on request). For outdoor and indoor use; fixed to the wall with nails or expansion plugs on external feet which can be moved to obtain the best position even on irregular surfaces.

### Applications

For overhead or underground networks with uni-multipolar power distribution cables; for metering, control, monitoring and signalling panels; for telephone connections; for powering and power factor correction equipment for the projectors used in large area lighting systems; connections to temporary users.

### Protection degree

**for types RP 20÷35A** IP 55 in compliance with CEI EN 60529 and IK 09 according to CEI EN 50102;  
**for types RP 50÷1600** IP 55 in compliance with CEI EN 60529, IK 10 according to CEI EN 50102

## Square type – With epoxy paint

Overall dimensions			Internal dimensions			Notes	Model	Code
Height	Base	Depth	Height	Base	Depth			
133	133	75	115	111	62	Cover with 4 loss proof screws	RP20	042200006



RP25A



RP35

## Rectangular types – With epoxy paint

Overall dimensions			Internal dimensions			Notes	Model	Code
Height	Base	Depth	Height	Base	Depth			
208	195	83	195	155	59	Hinged cover locked with single loss proof screw	RP35	042350009
208	195	135	195	155	116	Hinged cover locked with single loss proof screw	RP35A	042351007
260	247	105	238	189	67	Hinged cover locked with loss proof knob	RP50	042500009
313	299	118	292	242	68	Hinged cover locked with loss proof knob	RP100	042950006
366	357	219	336	287	167	Hinged cover locked with loss proof knob	RP160A	042151001



RP1600

RP400

**Characteristics**

Corrosion protected by galvanic anodizing die-cast aluminium alloy - surfaces treated on the inside and outside with RAL 7000 grey epoxy paint.

**Rectangular types – with epoxy paint - anticorrosion protection of surfaces**

Overall dimensions			Internal dimensions			Notes	Model	Code
Height	Base	Depth	Height	Base	Depth			
417	407	153	387	337	98	Hinged cover locked with 2 loss proof knobs	RP250	042240002
467	457	158	435	384	100	Hinged cover locked with 2 loss proof knobs	RP400	042440008
467	457	293	435	384	234	Hinged cover locked with 2 loss proof knobs	RP400A	042441006
515	506	293	482	432	234	Hinged cover locked with 2 loss proof knobs	RP600A	042661009
389	636	137	485	664	171	Hinged cover locked with 2 loss proof knobs	RP1000	042100008
664	485	271	633	386	237	Hinged cover locked with 2 loss proof knobs	RP1000A	042101006
875	693	261	844	594	214	Hinged cover locked with 2 loss proof knobs	RP1600	042160002
875	695	361	840	590	324	Hinged cover locked with 2 loss proof knobs	RP1600A	042161000

**Special executions**
**Special version RP/..containers - treaded with anti-condensation paint**

Type of box	Model	Code
RP20, RP35, RP35, RP35A	EA/VA/35	097435002
RP50, RP100, RP160A	EA/VA/160	097435010
RP250, RP400, RP400A	EA/VA/400	097435028
RP600A, RP1000, RP1000A	EA/VA/1000	097435036
RP1600, RP1600A	EA/VA/1600	097435044



The table below shows the correspondence between previous executions../CF -../F/PC -../FS/PC and the current ones.

**Aluminium alloy boxes for centre - executions /CF**

PREVIOUS EXECUTION		CURRENT EXECUTION				
Boxes model		Boxes model		Plate pregalvanized steel model		Anti condensation model execution
RP20/CF	=	RP20	+	PRP/20	+	EA/VA/35
RP160A/CF	=	RP160A	+	PRP/160	+	EA/VA/160
RP400A/CF	=	RP400A	+	PRP/400	+	EA/VA/400
RP600A/CF	=	RP600A	+	PRP/600	+	EA/VA/1000
RP1000A/CF	=	RP1000A	+	PRP/1000	+	EA/VA/1000
RP1600A/CF	=	RP1600A	+	PRP/1600	+	EA/VA/1600

**Aluminium alloy containers - executions ..F /PC**

PREVIOUS EXECUTION		CURRENT EXECUTION				
Boxes model		Boxes model		Plate pregalvanized steel model		Pole fixing brackets model
RP35/F/PC	=	RP35	+	PRP/35	+	SFP/35
RP/35A/F/PC	=	RP35A	+	PRP/35	+	SFP/35
RP50/F/PC	=	RP50	+	PRP/50	+	SFP/50
RP160/F/PC	=	RP160	+	PRP/160	+	SFP/160
RP160A/F/PC	=	RP160A	+	PRP/160	+	SFP/160

**Aluminium alloy pole containers - execution ..FS /PC**

PREVIOUS EXECUTION		CURRENT EXECUTION						
Model cassetta		Model cassetta		Plate pregalvanized steel model		Pole fixing brackets model		Lock model
RP250/FS/PC	=	RP250	+	PRP/250	+	SFP/250	+	EA/SY/21/L
RP400/FS/PC	=	RP400	+	PRP/400	+	SFP/400	+	EA/SY/21/L
RP400A/FS/PC	=	RP400A	+	PRP/400	+	SFP/400	+	EA/SY/21/L
RP600A/FS/PC	=	RP600A	+	PRP/600	+	SFP/600	+	EA/SY/21/L





## Road columns

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## RP series - Empty versions with 1 compartment - IP55



RP1600/FS/PT

### Materials

UNI EN 1706AC - 44100DF corrosion protected by galvanic anodizing. Closed-cell neoprene rubber seals. Mounting plate in pre-galvanized steel sheet. Anchor frame in hot dip galvanized steel with nuts and bolts in AISI 304 stainless steel.

### Characteristics

Interior and exterior surfaces protected with RAL 7000 grey stove-enamelled epoxy paint. Hinged cover closed by knobs with anti-loosening brass screws acting on brass inserts and with single-cipher safety lock (Y21). Cover can be quickly demounted and mounted (only with box open) to facilitate wiring and servicing operations. Cable input-output from inside the base. For outdoor use wherever there is no fixed bearing support, such as roads, squares, pavements, etc. The supplied anchor frame allows the pillar box to be installed on the foundation casting in a rational and levelled way.

### Applications

For underground power distribution networks and systems with uni-multipolar cables, for metering, control, monitoring and signalling panels, for telephone connections.

### Protection degree

IP 55 in compliance with CEI EN 60529 and IK 10 according to CEI EN 50102.

Overall dimensions			Internal dimensions			Model	Code
Height	Base	Depth	Height	Base	Depth		
1010	407	145	387	337	98	RP250/FS/PT	043240241
1060	457	150	435	384	100	RP400/FS/PT	043440247
1060	457	285	435	384	234	RP400A/FS/PT	043441245
1103	506	285	482	432	234	RP600A/FS/PT	043661248
388	636	137	485	1260	163	RP1000/FS/PT	043100247
1260	485	263	633	386	237	RP1000A/FS/PT	043101245
1466	693	253	844	594	214	RP1600/FS/PT	043160241
1466	693	373	840	590	324	RP1600A/FS/PT	043161249

## BRP series - Empty versions with 2 compartments - IP55



BRP400A/FS/PT

### Materials

UNI EN 1706 AC - 44100 DF corrosion protected by galvanic anodizing. Closed-cell neoprene rubber seals. Mounting plate in pre-galvanized steel sheet. Anchor frame in hot dip galvanized steel with nuts and bolts in AISI 304 stainless steel.

### Characteristics

Interior and exterior surfaces protected with RAL 7000 grey stove-enamelled epoxy paint. Hinged cover closed by knobs with anti-loosening brass screws acting on brass inserts and with single-cipher safety lock (Y21 - Y12). Cover can be quickly demounted and mounted (only with box open) to facilitate wiring and servicing operations. Cable input-output from inside the base. For outdoor use wherever there is no fixed bearing support, such as roads, squares, pavements, etc. The supplied anchor frame allows the pillar box to be installed on the foundation casting in a rational and levelled way.

### Applications

For underground power distribution networks and systems with uni-multipolar cables, for metering, control, monitoring and signalling panels, for telephone connections.

### Protection degree

IP 55 in compliance with CEI EN 60529 and IK 10 according to CEI EN 50102.

## Versions with 2 stacked compartments of the same size

Overall dimensions			Internal dimensions of the lower compartment			Internal dimensions upper compartment			Model	Code
Height	Base	Depth	Height	Base	Depth	Height	Base	Depth		
1572	457	293	435	384	234	435	384	234	BRP400A/FS/PT	044451243
1673	506	293	482	432	234	482	432	234	BRP600A/FS/PT	044671246

## Mounting plates



PRP/400

Containers and columns compatible	Dimensions	In pre-galvanized steel th. from 2 to 2,5 mm		In hot-dip galvanized steel th. from 2 to 2,5 mm		In bakelite th. 6 mm (type 20-25-35 thickness 3mm)		In PVC th. 5 mm (type 20-25-35 thickness 3mm)	
		Model	Code	Model	Code	Model	Code	Model	Code
RP20	110X110	PRP/20	095420204	-	-	PB/RP20	095425203	PP/RP20	095426201
RP35 - RP35A	146X186	PRP/35	095420352	-	-	PB/RP35	095425351	PP/RP35	095426359
RP50	179X229	PRP/50	095420501	PRP/50/ZC	095424503	PB/RP50	095425500	PP/RP50	095426508
RP100	230X280	PRP/100	095420956	PRP/100/ZC	095424958	PB/RP100	095425955	PP/RP100	095426953
RP160 - RP160A	276X326	PRP/160	095420154	PRP/160/ZC	095424172	PB/RP160	095425153	PP/RP160	095426151
RP250	318X368	PRP/250	095420246	PRP/250/ZC	095424248	PB/RP250	095425245	PP/RP250	095426243
RP400 - RP400A - BRP400A	354X404	PRP/400	095420444	PRP/400/ZC	095424446	PB/RP400	095425443	PP/RP400	095426441
RP600A - BRP600A	408X458	PRP/600	095420667	PRP/600/ZC	095424669	PB/RP600	095425666	PP/RP600	095426664
RP1000A	356X603	PRP/1000	095420105	PRP/1000/ZC	095424107	PB/RP1000	095425104	PP/RP1000	095426102
RP1600 - RP1600A	536X782	PRP/1600	095420162	PRP/1600/ZC	095424164	PB/RP1600	095425161	PP/RP1600	095426169

## Locks



SX/21



SY/21/F

### Materials

In nickel plated brass.

### Characteristics

Operated with dedicated cipher key.

Can be fitted to the side or front.

Cipher 12 - For Electricity boards only.

Version	Description / Application	Type	Type of Key		Model	Code
			Model	Code		
Loose	Locked by key cfr.21 - For application on right side wall	A	CS/21	091505214	SY/21/L	095711255
Loose	Locked by key cfr.21 - For front application on cover	B	CS/21	091505214	SY/21/F	095711263
Loose	Locked by key cfr.21 - For side application (where possible)	C	CS/21	091505214	SX/21	095712204
Loose	Locked by key cfr.12 - For application on right side wall	D	CS/12	091505123	SY/12/L	095711156
Loose	Locked by key cfr.12 - For front application on cover	E	CS/12	091505123	SY/12/F	095711164
Loose	Locked by key cfr.12 - For side application (where possible)	F	CS/12	091505123	SX/12	095712105
Installed	Locked by key cfr.21 - For application on right side wall	A	CS/21	091505214	EA/SY/21/L	097711253
Installed	Locked by key cfr.21 - For front application on cover	B	CS/21	091505214	EA/SY/21/F	097711261
Installed	Locked by key cfr.21 - For side application (where possible)	C	CS/21	091505214	EA/SX/21	097712202
Installed	Locked by key cfr.12 - For application on right side wall	D	CS/12	091505123	EA/SY/12/L	097711154
Installed	Locked by key cfr.12 - For front application on cover	E	CS/12	091505123	EA/SY/12/F	097711162
Installed	Locked by key cfr.12 - For side application (where possible)	F	CS/12	091505123	EA/SX/12	097712103

## Sand proof lock guard



EA/PAS/SXY

### Materials

Ring and screw plug in galvanized brass.

### Characteristics

Plug operated with dedicated key

Available for SY/... - SX/... locks

### Protection degree

IP55 in compliance with CEI EN 60529.

Model	Code
EA/PAS/SXY	097719918

## Air vents



BAF/60

### Materials

Cover in UNI EN 1706 AC - 46100 DF die-cast aluminium alloy.

Insect-guard in AISI 304 stainless steel netting.

Treated with RAL 7000 grey paint.

### Protection degree

IP 43 in compliance with CEI EN 60529.

Overall dimensions			Version	Ventilation area mm <sup>2</sup>	Model	Code
Height	Base	Depth				
90	91	27	Loose	315	BAF/60	095430062
90	166	40	Loose	1.100	BAF/120	095430120
145	145	20	Loose	95	BAF/125	095433124
90	91	27	Installed	315	EA/BAF/60	097430060
90	166	40	Installeds	1.100	EA/BAF/120	097430128

## Pair of brackets for pole post fixing RP

Type of boxes	Model	Code
RP35-RP35A	SFP/35	095434007
RP50	SFP/50	095434015
RP100	SFP/100	095434023
RP160A	SFP/160	095434031
RP250	SFP/250	095434049
RP400-RP400A	SFP/400	095434056
RP600A	SFP/600	095434064

## Universal pole fixing bracket



CB/19

### Materials

In UNI EN 1706 AC - 46100 DF die-cast aluminium alloy.

### Characteristics

To fix boxes to poles with diameters of at least 60.

To fix with up to 3/4" (19.5 mm) BAND-IT strap or other adjustable clamps.

2 (two) pieces per box.

Fixing center distance = 85 mm.

Model	Code
CB/19	095530192



## Pole fixing elements



EFR/12/G



EFR/TRM

### Materials

0.76 mm thick metal strap in AISI 201 stainless steel.  
Clips in AISI 201 stainless steel.

### Characteristics

Metal strap supplied in 30 m reels. Used to fix boxes to poles with brackets (CB/..) or pre-engineered frames.

Clips to join the metal straps. Supplied in packs containing 100 pcs.  
Universal turnbuckle to cut metal strap and clinch clips.

Nominal width	Description	Model	Code
1/2" - 12,7 mm	Band-it - Metal strap (30 m)	EFR/1230	092801232
3/4" - 19,5 mm	Band-it - Metal strap (30 m)	EFR/3430	092803436
5/8" - 15,8 mm	Band-it - Metal strap (30 m)	EFR/5830	092805837
1/2" - 12,7 mm	Metal clip (n 100 pcs)	EFR/12/G	092801208
3/4" - 19,5 mm	Metal clip (n 100 pcs)	EFR/34/G	092803402
5/8" - 15,8 mm	Metal clip (n 100 pcs)	EFR/58/G	092805803
1/2" - 12,7 mm	Universal turnbuckle for metal strap	EFR/TRM	092800002

## Pole anchor collars



COL/1/140

### Materials

In UNI EN 1706 AC - 46100 DF die-cast aluminium alloy.  
Cheese headed countersunk screws in AISI 304 stainless steel.

Note	Sleeve diameter (mm)	Model	Code
In two assembled pieces	96-101	COL/1/101	095511010
In two assembled pieces	128-133	COL/1/133	095511333
In two assembled pieces	135-140	COL/1/140	095511408
In two assembled pieces	148-153	COL/1/153	095511531



## Base elements and frames for road columns



TA/BG

### Materials

Base element made of UNI EN 1706 AC - 44100 DF aluminium alloy die-cast in a single piece. Frame made with hot-dip galvanized steel section metal; shanks to be walled in. Screws in AISI 304 stainless steel.

Overall dimensions			Type of road column	Type	Model	Code
Height	Base	Depth				
600	390	200	RP250/FS/PT - RP400/FS/PT - RP400A/FS/PT - BRP400A/FS/PT - RP1000A/FS/PT - RP600A/FS/PT	Base element	BRM/60	095731006
600	565	250	RP1600/FS/PT - RP1600A/FS/PT	Base element	BRG/60	095731063
600	390	200	RP250/FS/PT - RP400/FS/PT - RP400A/FS/PT - BRP400A/FS/PT - RP600A/FS/PT - BRP600A/FS/PT - RP1000A/FS/PT	Frame	TA/BM	095731600
600	565	250	RP1600/FS/PT - RP1600A/FS/PT	Frame	TA/BG	095733606

## Pond passage



PSD/34

### Characteristics

1" GAS diameter straight watertight feed-through. For connecting the box rear/post interior through a sleeve welded to the post.

### Protection degree

IP 55 according to CEI EN 60529.

Sleeve diameter	Version	Model	Code
1"	Loose	PSD/34	095460341
1"	Installed	EA/PSD/34	097460349

## Conical fairleads



EA/MC/24

### Materials

In flexible thermoplastic material.

### Characteristics

Shear line corresponding to internal hole. Can be applied to a 2.5 mm thickness.

### Protection degree

IP 55 according to CEI EN 60529.

Drilling diameter	Cables/pipes-way diameter	Version	Model	Code
22	7-19	Installed	EA/MC/22	097010227
23	7-21	Installed	EA/MC/24	097010243
27	7-23	Installed	EA/MC/28	097010284
33	7-30	Installed	EA/MC/34	097010342
49	10-46	Installed	EA/MC/50	097010508
59	10-54	Installed	EA/MC/60	097010607
76	10-70	Installed	EA/MC/76	097010763

## GAS pitch cable glands



EA/BP/3

### Materials

Body, top and ring nut in nickel-plated brass.  
Rubber retention ring.

### Protection degree

IP 55 according to CEI EN 60529.

Gas "	Drilling diameter	Cables/pipes-way diameter	Version	Model	Code
1/4	10	4-7	Installed	EA/BP/1	097020101
3/8	17	7-10	Installed	EA/BP/2	097020036
1/2	21	11-13	Installed	EA/BP/3	097020200
5/8	23	13-15	Installed	EA/BP/4	097020051
3/4	27	16-18	Installed	EA/BP/5	097020309
1	34	19-21	Installed	EA/BP/6	097021000
1 1/4	42	26-36	Installed	EA/BP/7	097021109
1 1/2	48	30-37	Installed	EA/BP/8	097021208
2	60	38-45	Installed	EA/BP/9	097022008

## PG pitch cable gland



EA/BPG/16

### Materials

Body, top and ring nut in polyamide.  
Retention ring in flexible thermoplastic.

### Protection degree

IP 55 according to CEI EN 60529.

Drilling diameter	Cables/pipes-way diameter	Version	Pg	Model	Code
1,5	3,5-6	Installed	7	EA/BPG/7	097030076
16	4,5-7	Installed	9	EA/BPG/9	097030092
19,5	6-9	Installed	11	EA/BPG/11	097030118
21,5	9-12	Installed	13,5	EA/BPG/13	097030134
23,5	11-14	Installed	16	EA/BPG/16	097030167
29	10-20	Installed	21	EA/BPG/21	097030217
37	15-26	Installed	29	EA/BPG/29	097030290
48	20-34	Installed	36	EA/BPG/36	097030365
55	30-38	Installed	42	EA/BPG/42	097030423
60	38-44	Installed	48	EA/BPG/48	097030480

## Junction fitting



CDRP

### Materials

In pressure die-cast UNI EN 1706 AC - 46100 DF aluminium alloy.  
Seal made of flexible thermoplastic material.

### Characteristics

In a single piece with feed-through slot. Used for creating vertical or horizontal banks of boxes.

### Protection degree

IP 55 according to CEI EN 60529.

Dimensions	Version	Model	Code
60x146	Loose	CDRP	095490009
60x146	Installed	EA/CDRP	097490007

**Summary table for accessories application**

Box column type	Locks		Air Vents		Pair of brackets mounting on pole	Base elements	Frames
	Standard	On request	BAF/60	BAF/120			
RP35		A-B-D-E			o		
RP35A		A-D			o		
RP50		A-B-D-E			o		
RP100		A-B-D-E			o		
RP160		A-B-D-E	o		o		
RP160A		A-B-D-E	o		o		
RP250		A-B-D-E	o		o		
RP400		A-B-D-E	o		o		
RP400A		A-B-D-E	o	o	o		
RP600A		A-B-D-E	o	o	o		
RP1000		C-F	o				
RP1000A		C-F		o			
RP1600		C-F		o			
RP1600A		C-F		o			
RP250/FS/PT	A	B-D-E	o			•	•
RP400/FS/PT	A	B-D-E	o			•	•
RP400A/FS/PT	A	B-D-E	o	o		•	•
RP600/FS/PT	A	B-D-E	o			•	•
RP600A/FS/PT	A	B-D-E	o	o		•	•
RP1000/FS/PT	C	F	o			•	•
RP1000A/FS/PT	C	F		o		•	•
RP1600/FS/PT	C	F		o		•	•
RP1600A/FS/PT	C	F		o		•	•
BRP400A/FS/PT	A-D	B-E	o	o		•	•
BRP600A/FS/PT	A-D	B-E	o	o		•	•

• = standard  
o = on request



## Containers and columns

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## CP series

The CP series containers and columns are designed for L.V. distribution purposes. They are compact in size and are used for housing branch, isolating and protection terminal boards with a vast range of layouts able to meet the most demanding requirements.

### For recessed installations



CPF/DA



CPD/C



CPEE/C

#### Materials

Moulded in SMC (fiberglass), grey RAL 7040 color.

#### Characteristics

Snap-fit hinged cover removable when open. Galvanized steel shanks to fix in the wall. Internal ventilation through cover perimeter.

#### Cover lock:

**CPD - CPE types:** with triangular key.

**CPF types:** with safety lock opened with a 630-type pin key.

**CPEE types:** with safety lock opened with a Y21-type key and cover hinged on the outside.

#### Protection degree

IP 43 in accordance with CEI EN 60529, IK 10 according to CEI EN 50102.

**Versions /C:** featuring two windows opposite each other closed by flaps in thermoplastic material with pre-bored holes for routing cables.

**Versions /D-DA:** featuring two windows opposite each other, the top one closed by a door in thermoplastic material with pre-cut break-through holes for routing cables and the lower one complete with open-window cone connection, or V-cone with openable cover complete with fairleads.

### Empty Versions

Overall dimensions			Internal dimensions			Version	Model	Code
Height	Base	Depth	Height	Base	Depth			
435	435	124	342	354	102	Two closed lower doors	CPD/C	075200006
551	487	128	411	411	102	One closed lower door and one open lower connection	CPF/D	075500017
837	487	128	411	411	102	One closed lower door and one open lower connection	CPF/DA	075500066
560	560	165	477	489	142	Two closed lower doors	CPEE/C	075400093
588	588	165	489	500	142	Two closed lower doors	CPE/C	075400002

### For wall-mounted and recessed installation



#### Materials

Moulded in SMC (fiberglass), grey RAL 7040 color.

#### Characteristics

With snap-fit hinged cover that tilts back when opened (CPS) or removable cover (CPZ).

#### Cover lock:

**CPS types:** with safety lock opened by a Y21-type key.

**CPZ types:** with triangular key.

Internal ventilation through cover perimeter (additional ventilation through protected slits for model CPS with equipment section over 95 sq mm).

#### Protection degree

IP 43 in accordance with CEI EN 60529, IK 10 according to CEI EN 50102.

### Empty Versions

Overall dimensions			Internal dimensions			Version	Model	Code
Height	Base	Depth	Height	Base	Depth			
490	533	139	442	466	110	Close lower door	CPS/C	075300004
896	533	139	442	466	110	One trapezoidal lower connection	CPS/D	075300012

## Complete with pedestal



CPS/PT



CVC/PT

### Materials

Moulded in SMC (fiberglass), grey RAL 7040 color.

### Characteristics

Snap-fit hinged cover removable when open (CVC) or cover that tilts upwards (CPS).

### Cover lock:

**CPS Types:** with safety lock opened with a Y21-type key.

**CVC Types:** lock with triangular key.

Internal ventilation through cover perimeter (CPS) or under the roof (CVC).

**CVC Types:** Ridged cover surface to protect against U.V. rays and prevent bill-posting. Floor fixing frame in hot-dip galvanized steel with small metal parts in AISI 304 stainless steel.

### Protection degree

IP 43 in accordance with CEI EN 60529, IK 10 according to CEI EN 50102.

## Empty Versions

Overall dimensions			Internal dimensions			Model	Code
Height	Base	Depth	Height	Base	Depth		
1006	533	137	442	466	110	CPS/PT	075300046
1034	465	190	600	450	150	CVC/PT	073600041

## Equipped version



CPD/2100/C

### With 2-way isolating terminal board and 1 isolation for pole

Wiring diagram	Overall dimensions			Version	Conductors section mm <sup>2</sup>	Type of terminal board	Model	Code
	Height	Base	Depth					
	435	435	124	For recessed installation	4x150	MSL/2160	CPD/2160/C	075226001



CPZ/2100/Y/C

### With 3-way for pole isolating terminal board - 2 isolations and shunt protected by NH fuse holder

Wiring diagram	Overall dimensions			Version	Conductors section mm <sup>2</sup>	Type of terminal board	Model	Code
	Height	Base	Depth					
	1006	533	137	With pedestal and frame	4x95	MST/2100/V	CPS/2100/V/PT	075322149

### With 3-way (1 double) isolating terminal board and 3 isolations per pole

Wiring diagram	Overall dimensions			Version	Conductors section mm <sup>2</sup>	Type of terminal board	Model	Code
	Height	Base	Depth					
	1006	533	137	With pedestal and frame	4x95	MSMT/2100/Y	CPS/2100/Y/PT	075321844



## With 3 double-way isolating terminal board and 3 isolations for pole.

Wiring diagram	Overall dimensions			Version	Conductors section mm <sup>2</sup>	Type of terminal board	Model	Code
	Height	Base	Depth					
	896	533	139	For wall-mounted and recessed installation	4x95	MSMT/3100/B	CPS/3100/B/D	075331918
	1006	533	137	With pedestal and frame	4x95	MSMT/3100/B	CPS/3100/B/PT	075331942



CPS/3100/PT

## With 4-way isolating terminal board and 5 isolations for pole.

Wiring diagram	Overall dimensions			Version	Conductors section mm <sup>2</sup>	Type of terminal board	Model	Code
	Height	Base	Depth					
	1006	533	137	With pedestal and frame	4x95	MST/3100	CPS/3100/PT	075331041

## With 4-way for pole isolating terminal board - 3 isolations and shunt protected by NH fuse holder

Wiring diagram	Overall dimensions			Version	Conductors section mm <sup>2</sup>	Type of terminal board	Model	Code
	Height	Base	Depth					
	551	487	128	For recessed installation	4x120	MSG/3120/V	CPF/3120/V/D	075532119

## Mounting plates



PB/CPE

Type of box	Dimensions	In sheet steel th. 2 mm		In bakelite th. 6 mm		In PVC th. 5 mm	
		Model	Code	Model	Code	Model	Code
CPD	320x320	PCP/D	095705208	PB/CPD	095685202	PP/CPD	095695201
CPS	420x410	PCI/S	095701306	PB/CPS	095685301	PP/CPS	095695300
CPE	490x475	PCP/E	095705406	PB/CPE	095685400	PP/CPE	095695409
CPEE	440x440	PCP/EE	095705414	PB/CPEE	095685418	PP/CPEE	095695417
CPF	403x390	PCP/F	095705505	PB/CPF	095685509	PP/CPF	095695508
CVC	390x550	PCV/C	095705612	PB/CVC	095685616	PP/CVC	095695615

## Closing doors



PI/CPD

### Materials

In thermoplastic material with pre-cut holes for routing cables.

### Characteristics

Coulisse sliding attachment.

Dimensions	Type of box	Model	Code
310X92	CPD	PI/CPD	095725206
460X119	CPE -CPEE	PI/CPE	095725404
260X110	CPF	PI/CPF	095725503

## Cone fittings with window



CF/CPF

### Materials

Moulded in SMC (fiberglass).

### Characteristics

In two pieces assembled with locking screws.

Overall dimensions		Window dimensions		Type of box	Model	Code
Height	Base	Height	Base			
80	418	40	380	CPF	CF/CPF	095745501

## Trapezoidal cone fittings



C4/CPS

CA/CPF

**Materials**

Moulded in SMC (fiberglass) in modular parts, grey RAL 7040 color.

**Characteristics**

Cover can be removed when box is open to facilitate the wiring operations.

**CA/CPF Type:** with open window.

**C4/CPS Type:** complete with 4 fairleads.

**Protection degree**

IP43 in accordance with CEI EN 60529.

Overall dimensions			Dimensione finestra		Type of box	Model	Code
Height	Base	Depth	Base	Height			
350	416	128	320	112	CPF	CA/CPF	095745519
390	440	128	No.4 fairlead diameter max 48	-	CPS	C4/CPS	095746301

## Bases and anchor frames



TA/BVA/S

**Materials**

Base moulded in SMC (fiberglass) in modular parts, grey RAL 7040 color. Anchor frame in hot-dip galvanized steel section metal.

**Characteristics**

Removable front that covers the open box to facilitate the wiring operations - height 50 mm.

TA/BVA/S Type: complete with stiffening support.

Type of box	Description	Model	Code
CPS/PT	Bases	BVA/50	095731162
CPS/PT	Base frame	TA/BVA	095733507
CVC/PT	Base frame base	TA/BVF	095733556
CPS/PT	Frame with stiffening support	TA/BVA/S	095733515

## Locks



SCS86/Y21



SCR86/X/630



SCS86/TR9



SCS86/P

### Materials

Components moulded in polyamide resin reinforced with fiberglass. Brass cylinder/roller.

### Characteristics

Cremone-type operation.

Each lock is equipped with its own key. Y12-type key reserved to Public Utility Companies only.

Description	Type of key	Type	Model	Code
Operated by safety key cod.Y21	CS/21 - 091505214	A	SCS86/Y21	095718219
Operated by safety key cod.Y12	CS/12 - 091505123	B	SCS86/Y12	095718128
Operated by safety pin key cod.Y630	CSP/630 - 091505305	C	SCR126/630	095716304
Operated by rotating knob without key.		D	SCS86/P	095718029
Operated by rotating levers with prearrangement for padlock.		E	SCS86/L	095718011
Operated by triangle key.	CHP/TR9 - 091503292	F	SCS86/TR9	095718904
Double locking device operated by triangle key and prearrangement for padlock.	CHP/TRP - 091503292	G	SCS86/TR9/L	095718912
Double locking device operated by safety key cod.21 prearrangement for padlock.	CS/21 - 091505214	H	SCS86/Y21/L	095718227
Double locking device operated by safety key cod.12 prearrangement for padlock.	CS/12 - 091505123	I	SCS86/Y12/L	095718136
Prearrangement for customized pin key cylinder lock operated by safety pin key.		L	SCR86/PC	095717518
Operated by triangle key.	CHP/TR6 - 091503268	M	SCR76/TR6	095718607
Operated by safety pin key cod.Y630.	CSP/630 - 091505305	N	SCS86/X/630	095717625
Operated by safety pin key cod.Y630. Prearrangement for padlock	CSP/630 - 091505305	O	SCR86/X/630	095717617

## Locks table application

Type of box	Standard locks	Optional locks
CPD	M	*A-B-D-E-F-G-H-I-L-N-O
CPE	M	*A-B-C-D-E-F-G-H-I-L-N-O
CPEE	A	B-D-E-F-G-H-I-L-N-O
CPF	C	-
CPS	A	B-D-E-F-G-H-I-L-N-O
CVC	Triangle key	-

\*Locks application table SCS86/..on model CPD – CPE is practicable with replacement of the door



## Telecom enclosures

Telecom enclosures for modules container I.D.C-Line 90 ..... 400  
Accessories and spare parts for Telecom enclosures Line 90 ..... 401

## Type A (Technical document CT 1349 ed. 2/93)



CVMT/A

**Materials**

Moulded in fiberglass grey RAL 7042 color with door dark grey RAL 7037 color.

**Characteristics**

Hinged door with 120° opening and lock Unified Telecom. Ventilated roof. The lower wall arranged to input / output cables or conduit.

Front surface with knurled anti-manifest.

**Applications**

For floor installation (on concrete plinth) or wall mounting by means of dowels.

For modules containing I.D.C. plate to be ordered separately.

For distribution networks with copper cables.

For connection and disconnection multi-pair cables.

**Protection degree**

IP 23D according to CEI EN 60529.

Overall dimensions			Internal dimensions			Model	Code
Height	Base	Depth	Height	Base	Depth		
525	330	300	385	245	265	CVMT/A	073650004

## Type B (Technical document Telecom CT 1349 ed. 2/93)



CPMT/B

**Materials**

Moulded in fiberglass grey RAL 7042 color with door dark grey RAL 7037 color.

**Characteristics**

Hinged door with 120° opening and lock Unified Telecom.

The lower wall and the upper provided with fairleads at the bottom for entry of the power cable and one at the top for exit of the cables towards the user. Front surface with knurled anti-manifest.

For built-in installation in recess size mm 325x465x190. Attachment by expansion anchor bolts or anchors.

**Applications**

For modules containing I.D.C. plate to be ordered separately.

For distribution networks with copper cables.

For connection and disconnection multi-pair cables.

**Protection degree**

IP 23D according to CEI EN 60529.

Overall dimensions			Internal dimensions			Model	Code
Height	Base	Depth	Height	Base	Depth		
500	340	250	385	250	220	CPMT/B	075550004

## Type C (Technical document CT 1432 ed. 2/96)



CPMT/C

**Materials**

Moulded in fiberglass dark grey RAL 7037 color.

**Characteristics**

Hinged door with 120° opening and lock Unified Telecom. The lower wall and the upper provided with fairleads at the bottom for entry of the power cable and one at the top for exit of the cables towards the user. For built-in installation in recess. Attachment by expansion anchor bolts or anchors.

**Applications**

For modules containing I.D.C. plate to be ordered separately.

For distribution networks with copper cables.

For connection and disconnection multi-pair cables

**Protection degree**

IP 23D according to CEI EN 60529.

Overall dimensions			Internal dimensions			Model	Code
Height	Base	Depth	Height	Base	Depth		
471	318	130	385	250	105	CPMT/C	075580001

## Mounting plate



PX/CPMT/A



PX/CPMT/C

**Materials**

In stainless steel.

**Characteristics**

Complete of cable mounting accessories.

Dimensions	Type of enclosures	Model	Code
160x285	CVMT/A - CPMT/B	PX/CPMT/A*	095705950
160x285	CPMT/C	PX/CPMT/C**	095705984

\*For installation of terminals 10-30-50-100 couples IDC.

\*\* For installation of terminals 10-30-50 couples IDC.

## Extension module



AMP50/C

**Materials**

Moulded in fiberglass dark grey RAL 7037 color.

**Characteristics**

For type C enclosure (CPMT/C).

Allows to expand the available light for internal enclosure equipment type C (CPMT/C).

N.1 extension = available light 150 mm.

N. 2 extension = available light 200 mm.

N. 3 extension = available light 250 mm

Dimensions	Type of enclosures	Model	Code
318x455x52	CPMT/C	AMP50/C	075580092







# Road Signals and safety





## Signal system for guard-rail

Applications/executions led unidirectional signaling devices for guard-rail .....	406
One way signal Led system for guard-rail .....	407

## In compliance with UNI EN 12352: 2006 with CE certification according to CPD directive n° 305/2011.

The warning LSG LED series to be installed on guard-rails, represent an effective solution for the signalling of curves and to indicate exceptional situations on the road in advance, such as men at work, vehicles accidents, etc..

Its prerogative is the ability to be installed directly on guard-rail greatly reducing installation costs. It also helps reduce the inter-distance positioning, thanks to the limited costs, thus increasing the intensity and continuity of reporting line.

### Applications



Interchanges, dangerous curves and stretches

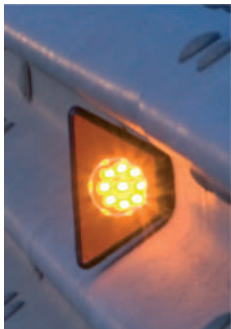


Rounds and crosses



Gangways acceleration and deceleration high-ways and expressways

### Esecuzioni



Suitable for direct fixing within the guard - rail's anchor bolts located in the column's supports (5 m fine pitch) through a M16x1,5 threaded ring, cut on the body of the indicator; threaded locking ring is made of thermoplastic (polyamide) material



In an alternative version, it can be fixed through a metal bracket inserted under the head of the fastening bolts of the guard rail itself (this bracket includes a special cable clip).



A waterproof thermoplastic box placed on the back of the guard-rail is provided to guarantee electricity powering to each indicator.

**LSG Series**

**In compliance with UNI EN 12352 certification according to CPD89/106/CEE. Approved by Ministry of Infrastructure and Transport prot. N. 4123-4416**

The warning LSG LED series to be installed on guard-rails, represent an effective solution for the signalling of curves and to indicate exceptional situations on the road in advance, such as men at work, vehicles accidents, etc..

**One way signal Led systems for guard-rail**



LSG/150/GR



LSG/150/GR/SF

**Materials**

Body realized in polyethylene and transparent screen and UV resistant polycarbonate. Orange Refractive film (one way road).

Coupling of the two half-shells by interlocking with gasket-component polyurethane filed in the machine.

**Optical device**

**LSG/150:** Comprising a board with nine (9) 30° narrow-beam amber colored LEDs in accordance with standard UNI EN 12352:2006.

Fixed light: L2L-P1-C yellow 1-R0-A0-F1-O0-M3-T1-S0.

Flashing light: L2L-P1-C yellow 1-R0-A0-F2-O1-M3-T1-S0.

Lamp diameter 50 mm. Power input 1,2VA.

**LSG/330:** Comprising a board with thirty-two (32) 30° narrow-beam amber colored LEDs in accordance with standard UNI EN 12352.

Fixed light: L2H-P1-C yellow 1-R0-A0-F1-O0-M3-T1-S0.

Flashing light: L2H-P1-C yellow 1-R0-A0-F2-O1-M3-T1-S0. Lamp diameter 50 mm. Power input 5,2VA.

**LSG/10P:** With 10 Led lamp of 1VA power, 30° narrow-beam amber colored. Power input 5VA.

**Dimensions:**

136 millimeter for greater base; 46mm for smaller base; height is 81 millimeter, 28 min and max 65 millimeter for depth.

**Power:**

Power Vac 48; operation through a gear case unit with a steady and flashing increasing 3 channels light (CSE3/220/50/..).

**Protection degree** IP55 in compliance with CEI EN 60529.

**Applications**

Interchanges, dangerous curves and stretches. Rounds and crosses. Gangways acceleration and deceleration highways and expressways.

**Executions**

- Suitable for direct fixing within the guard - rail's anchor bolts located in the column's supports (5 m fine pitch) through a M16x1,5 threaded ring, cut on the body of the indicator; threaded locking ring is made of thermoplastic (polyamide) material.

- In an alternative version, it can be fixed through a metal bracket inserted under the head of the fastening bolts of the guard rail itself (this bracket includes a special cable clip).

- A waterproof thermoplastic box placed on the back of the guard-rail is provided to guarantee electricity powering to each indicator.

Overall dimensions			Description	Model	Code
Height	Base	Depth			
81	136	65	9 led lamp - attach with ring nut	LSG/150/GR	061261509
81	136	65	9 led lamp - attach with bracket	LSG/150/GR/SF	061261517
81	136	65	32 led lamp - attach with codolo and ring nut	LSG/330/GR	061261525
81	136	65	32 led lamp - attach with bracket	LSG/330/GR/SF	061261533
81	136	65	10 led lamp - attach with codolo and ring nut	LSG/10P/GR	061261541
81	136	65	10 led lamp - attach with bracket	LSG/10P/GR/SF	061261558







## Road signal

Charatteristics road signals with two lights .....	410
Road signals with 2 concentric lights with LED lamp .....	411
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Accessories and spares road signals with 2 lights .....	413

## Signallers for roadways, road junctions and acceleration / deceleration lanes 2 lights with LED lamp: LSA23 - LSA24 series

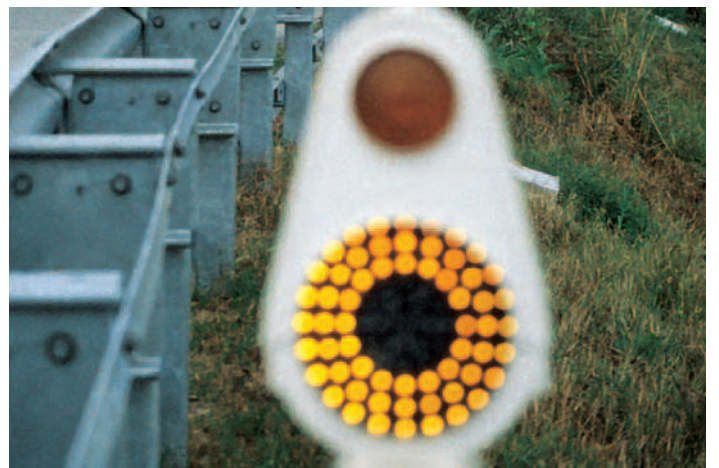
The signallers of Conchiglia for road lanes interchanges and acceleration and deceleration lanes represent an innovative solution for the improvement of road safety, particularly useful in low visibility.

Equipped with a LED lamp (In compliance with UNI EN 12352. CE certification according to CPD89/106/CEE) with 2 concentric lights (LSA23) or upper/lower lights (LSA24), the signs provide three signalling modes:

- **alternately flashing external/internal light or upper/lower light;**
- **animated, with the two lamps going on and off simultaneously;**
- **with the two lamps permanently on.**

The signallers installed on the lane way, allows three essential functions for road safety and highway:

- **delineation** of the board of the carriageway according to road legislation;
- **reporting** danger through the switch on in flashing or run-up mode of the LED lamp, particularly to indicate access road, roundabouts or road crossings.



**LSA23 SERIES with 2 concentric lights with Led lamp (Patented)**  
**Lamp in compliance with UNI EN 12352. certification according to CPD 89/106CEE.**

**Approved by Ministry of Infrastructure and Transport prot. N. 4079**



LSA33/GE/F

**Materials**

Top made of white polyamide resin. Tubular support made of high molecular density polythene with high resistance to UV rays.

AISI 304 stainless steel screws.

4 x 16 mm<sup>2</sup> terminal block supplied.

**Optical apparatus**

Lamp consisting of 47 7 cd amber colored LEDs, wavelength 592 nm distributed on two independent circuits: 36 LEDs on outer circular crown with inner diameter 95mm – outer diameter 145 mm (power input 2,4 VA) and 11 LEDs on central surface with outer diameter 60 mm (power input 1.2 VA). Orange colored upper reflex reflector (diameter 80).

Removable coulisse sliding cover for access to optical apparatus can be closed with a latch by means of a tool.

**Top dimensions**

210 x 423 x 128mm.

**Power supply**

By means of control units CSE3/220/50/13 - CSE3/220/50/23; input voltage 230 Vac; output voltage 48 Vac.

**Protection degree:** IP 43 in accordance with CEI EN 60529.

**Protection against impact:** IK 08 in accordance with CEI EN 62262.

**Protection degree of optical apparatus:** IP 67 in accordance with CEI EN 60529.

**Applications:** Exits, bends and dangerous sections. Roundabouts and cross-roads. Acceleration and deceleration lanes motorways and highways.

**Versions**

.../F - For mounting on tubular support 1 1/2" G (diam. 49) with smooth end.

Installation	Model	Code
With lower opening ø 49 mm for mounting 1 1/2" tube head	LSA33/GE/F	061332508

**Tubular support for indicator LSA33**

In hot-dip galvanized steel.

Diecast anodized aluminium flange for locking onto prefab concrete plinth.

Installation	Model	Code
From the road surface to the centre of the lamp Height 900 mm with tolerance of 100 mm	TC/48/F	095561502
From the road surface to the centre of the lamp Height 1300 mm with tolerance of 240 mm	TL/48/F	095562484

**LSA34 SERIES with 2 upper/lower lights with led lamp (Patent)**  
**Lamps that comply with the standard UNI EN 12352: 2006 with marking  $\text{CE}$  according to the European regulation no. 305/2011 (c.d. CPR).**  
**Approved by Ministry of Infrastructure and Transport prot. N. 4086**



LSA34/GE/F

**Materials**

Top made of white polyamide resin. Tubular support made of high molecular density polythene with high resistance to UV rays.  
 AISI 304 stainless steel screws.  
 4 x 16 mm<sup>2</sup> terminal block supplied.

**Optical apparatus**

Lower lamp consisting of 47 LEDs, amber coloured, 7 cd, wavelength 592 nm. Power input 3.6 VA.  
 Upper lamp consisting of 14 LEDs, amber coloured, 7 cd, wavelength 592 nm. Power input 1.2 VA.  
 Removable coulisse sliding cover for access to optical apparatus can be closed with a latch by means of a tool.

**Top dimensions**

210 x 423 x 128mm.

**Power supply**

By means of control units CSE3/220/50/13 and CSE3/220/50/23; input voltage 230 Vac; output voltage 48 Vac.

**Protection degree:** IP 43 in accordance with CEI EN 60529.

**Protection against impact:** IK 08 in accordance with CEI EN 62262

**Protection degree of optical apparatus:** IP 67 in accordance with CEI EN 60529.

**Applications:** Exits, bends and dangerous sections. Roundabouts and cross-roads. Acceleration and deceleration lanes motorways and highways.

**Versions**

.../TP - Complete with support with 1 1/2" G swivel ball joint made of anodized aluminium alloy for fixed applications on wells. Height lamp centre – support surface of joint 940 mm

.../TLP - Complete with support with 1 1/2" G swivel ball joint made of anodized aluminium alloy for fixed applications on wells. Height lamp centre – support surface of joint 1270 mm

.../F - For mounting on tubular support 1 1/2" G (diam. 49) with smooth end.

Installation	Model	Code
With lower opening diameter $\varnothing$ 49 mm for mounting 1 1/2" tube head	LSA34/GE/F	061342508

**Support pipe for signaling LSA34**

In hot-dip galvanized steel.

Anodized die-cast aluminum flange for blocking on prefabricated concrete blocks.

Installation	Model	Code
Height from the cockpit to the lower center lamp 900/940 mm	TC/48/F	095561502
Height from the cockpit to the lower center lamp 1300/1400 mm	TL/48/F	095562484

## LED Lamps

LED lamp for signals LSA23-LSA24 - Lower LED lamp for signals LSA20 – LSA21 CE

LL247/50

**Materials**

Polyamide resin body PA 6.  
Protection shield made of transparent polycarbonate resistant to UV rays.

**Characteristics**

In compliance with UNI EN 12352. CE certification according to CPD89/106/CEE, consisting of 7 cd amber coloured 47 LEDs wavelength 592 nm distributed on two independent circuits: 36 Led on outer circular crown with diameter 160 mm, power input 2.4 VA and 11 LED on central surface with outer diameter 70 mm, power input 1.2 VA.

Supply voltage 48 Vac.

**Applications**

For spares for signals LSA23/GE/... and lower lamp LSA24/GE...  
For replacement of existing optical apparatus signals LSA21/GE/... already installed.  
Protection degree of optical apparatus IP 67 in accordance with CEI EN 60529.

Signal type	Description	Model	Code
LSA33-LSA34 (inferiore)-LSA21/GE/..	47LED colore Ambra.48Vac	LL247/50*	095622908

\*Flashing classes according to UNI EN 12352:2006. External frame: L2H-P1-C Yellow-R0-A0-F2-O1-M3-T1-S0. Internal frame L2H-P1-C Yellow-R0-A0-F2-O1-M3-T1-S0

Upper LED lamp for signals LSA24 CE

LL114/50

**Materials**

Polyamide resin body PA 6.  
Protection shield made of transparent polycarbonate resistant to UV rays.

**Characteristics**

Lamp consisting of 7 cd amber colored 14 LEDs wavelength 592 nm distributed on circular surface with outer diameter 80 mm, power input 1.2 VA

Supply voltage 48 Vac.

**Applications**

For spares for signals LSA23/GE/... and lower lamp LSA24/GE...  
For replacement of existing optical apparatus signals LSA21/GE/... already installed.  
**Protection degree of optical apparatus IP67** in accordance with CEI EN 60529.

Signal type	Description	Model	Code
LSA34 (upper) - LSA21/GE/..	14 LED mber coloured 48Vac	LL114/50*	095622627

\*Flashing classes in accordance with UNI EN 12352:2006. L2L-P1-C Yellow-1-R0-A0-F2-O1-M3-T1-S0.

## Lenses

### Lenses for signals LSA20 – LSA21



LS16/A



LS8/A

**Materials:** Moulded in coloured acrylic resin.

**Characteristics:** Concentric circular internal prismatic effect and honeycombed external shaping.

Signal type	Bottom lens color	Top lens color	Model	Code
LSA20/R/.. - LSA20/RE/..	Red		LS16/R	095632212
LSA20/GEH/.. - LSA20/GH/.. - LSA20/GL/..	Yellow		LS16/G	095632220
LSA21/GE/.. - LSA20/GE/..	Orange		LS16/A	095632238
LSA21../..		Red	LS8/R	095632816
LSA21/GE/..		Orange	LS8/A	095632832

## Lamps

Signal type	Description	Model	Code
LSA20/RE/.. - LSA20/GE/.. - LSA21/GE/..**	Incandescence – E14 – 10W*	L14/50/10	095622510
LSA33-LSA34 (lower) - LSA21/GE/.. - LSA20/GE..	47 LED amber colours - 48Vac	LL247/50	095622908
LSA34 (upper) - LSA21/GE/..	14 LED amber colours - 48 Vac	LL114/50	095622627

\*The type of supply defines voltage lamp.

\*\*For supply through CSE/220/50/..and CSE3/220/50/..are available lamps 50V-10W-E14 version L14/50/10 – Code 095622510





# Anti fog signallers road markers

- Charatteristics/execution anti fog signallers road markers .....416
- anti fog signallers road markers with a led lamp ..... 417
- Accessories and spares antifog delineating road light signals ..... 419
- Electronic control units for signal lights ..... 421
- Container and blinkers for control units ..... 422
- Electronic probe for fog detection ..... 423



## LSA22 - LSA25 Series

The need to improve the safety of motorists in case of fog has always been a need for all roads and highways operators. With dense fog, traditional systems with passive mode have an extremely limited efficacy due to the rapid mitigation of the light reflection.

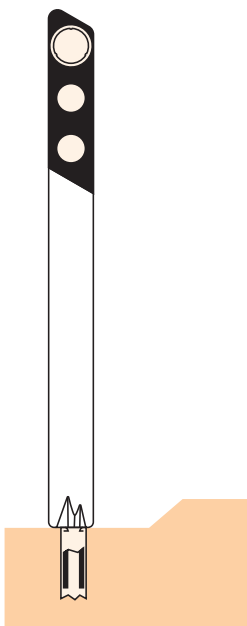
For these reasons, Conchiglia has focused on active systems for the prevention of accidents due to fog, that is, systems that emits its own light (LED), as evidenced by the system built with the LSA22 road markers in over 100 km of Modena - Affi interval of the Brenner A22 Highway.

The active anti fog road marker, placed on the sides of the road, 25 meters away from each other, can be used in the presence of:

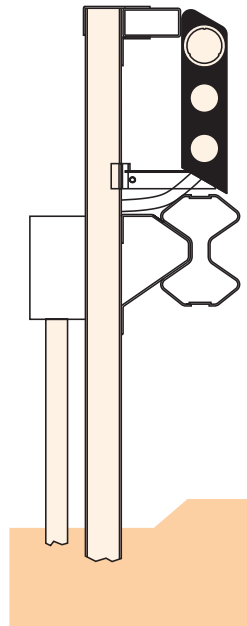
- **Fog**, which allows an immediate perception of the direction of movement and intensity of the fog, on the basis of the quantity of visible light points;
- **Vehicle accidents**, as a forewarning in the section that precedes the concerned area, of the next danger, with intermittent flash or lash;
- **Working men areas**, as a forewarning, in the section that precedes the concerned area, to integrate the ordinary regulatory signs, the next obstacle or inconvenience to the traffic, with intermittent flash or lash.



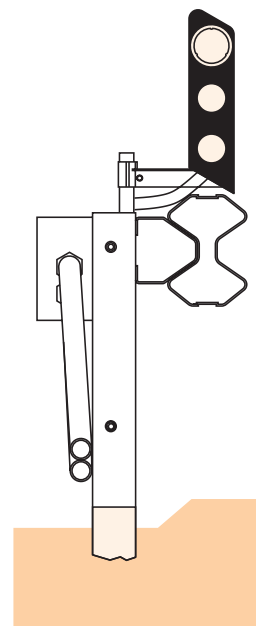
## Execution



LSA..S/DL



LSA..S/H100



LSA..S/T40

## LSA22 Series with Led lamp (Patented)

Compliant with the standard UNI EN 12352: 2006 with marking **CE** according to the European regulation no. 305/2011 (c.d. CPR). Approved by Ministry of Infrastructure and Trasport prot. N. 4082



LSA22S/DL



LSA22S/T40

### Materials

Top part made of highly resistant, high density black colored polyethylene with mineral charges. Transparent lamp screen in UV-resistant polycarbonate. Watertight multipolar connector to connect to the power cable. 3 diam. 80 mm round retroreflectors (2 on the front and 1 on the rear), orange colored in compliance with highway code regulations.

### Characteristics

Flashing classes in accordance with UNI EN 12352:2006. L2L-P1-C Yellow 1-R0-A0-F1-O0-M3-T1-S0.

### Optical apparatus

100 mm diameter LED light with 120 amber colored LEDs in a 30° narrow beam (max power 120 candles).

On the back of the head there is an appropriate horizontal and vertical adjustment system for the beam angle with +/- 5 slant.

### Power supply

12 Vac.

### Applications

• Road lanes and highways. Roundabouts, crosses, dangerous zones of roads and highways.

### Versions:

• **Left:** 3 diameter 80 mm round reflectors (2 on the front and 1 on the back) orange, according to road normative.

• **Right one-way:** 1 anterior rectangular reflector size 5x18 cm, orange, according to road normative.

• **Right two-way:** 2 reflectors (1 front color red and 1 rear color white) rectangular size 5x18 cm, according to road normative.

### Executions

• To be placed on the viable road surface, on the left or right side of the road, one way or two-way, with foot made of a high density white polyethylene, with a tang for pipe triggering, 45 x 45 mm fixed in the ground.

• For laying down on guard rail and new jersey, with metal brackets in galvanized steel and steel tightening bolts.

• Suitable for use in remote operation systems for the functioning of flashing lamps for danger signalling and continuing lamps for the realization of an anti fog luminous guide.

### The LSA22 signaller can be applied on:

- Universal pedestal made in thermoplastic material for right or left carriageway;
- Metal bracket in galvanized steel for application in guardrails with 100 mm fitting for left lane;
- Metal bracket in galvanized steel for application on pole with 40 mm diameter in a left low guardrail;

Dimensions			Installation	Model	Code
Height	Base	Depth			
510	125	100	Installation on high Guard rails by bracket for HEA-HEB profiles 100 mm. One way left side.	LSA22S/H100	061221016
510	125	100	Installation on low Guard rails by bracket for 40 mm diam. Pipe. On way left side.	LSA22S/T40	061221032
1280	125	100	Standing alone with pipe 45x45 fixed directly on ground. One way left side.	LSA22S/DL	061221107
1280	125	100	Standing alone with pipe 45x45 fixed directly on ground. One way left side	LSA22DS/DL	061222105
1280	125	100	Standing alone with pipe 45x45 fixed directly on ground. Two way right side.	LSA22DD/DL	061223103

## LSA25 Series with Led lamp (Patented)

Compliant with the standard **UNI EN 12352: 2006** with marking **CE** according to the European regulation no. **305/2011 (c.d. CPR)**. Approved by Ministry of Infrastructure and Trasport prot. N. 4088



LSA25S/DL



LSA25S/T40

### Materials

Head body made of black polyethylene with high mineral density and resistance. Polycarbonate and transparent screen lamp UV resistant. Waterproof multipolar connector for connection to the power cable. 3 round reflectors of diameter 80' mm (2 on the front and 1 in the back) orange color according to road normative.

### Characteristics

Flashing classes in accordance with UNI EN 12352:2006. Fixed light L2H-P1-C yellow 1-R0-A0-F1-00-M3-T1-S0. Flashing light L2H-P1-C yellow 1-R0-A0-F2-O1-M3-T1-S0.

### Optical apparatus

LED Lamp of 100 mm diameter with 96 amber color LED made of 2 strait beam candles to 30 degrees.

Internal light made with 72 LED - the outer ring made with 72 LED. On the back of the head there is an appropriate horizontal and vertical adjustment system for the beam angle with +/- 5°.

### Power

48 Vac Power. Operation through unit CSE3/230 /...; alternating light internal / external; fixed light; light whip.

### Applications

Road lanes and highways. Roundabouts, crosses, dangerous zones of roads and highways.

### Versions

- **Left:** 3 diameter 80 mm round reflectors (2 on the front and 1 on the back) orange, according to road normative.
- **Right one-way:** 1 anterior rectangular reflector size 5x18 cm, orange, according to road normative.
- **Right two-way:** 2 reflectors (1 front color red and 1 rear color white) rectangular size 5x18 cm, according to road normative.

### Executions

- **To be placed on the viable road surface**, on the left or right side of the road, one way or two-way, with foot made of a high density white polyethylene, with a tang for pipe triggering, 45 x 45 mm fixed in the ground.
- **For laying down on guard rail and new jersey**, with metal brackets in galvanized steel and steel tightening bolts.
- **Suitable for use in remote operation systems** for the functioning of flashing lamps for danger signalling and continuing lamps for the realization of an anti fog luminous guide.

The LSA25 signaller can be applied on:

- Universal pedestal made in thermoplastic material for right or left carriageway;
- Metal bracket in galvanized steel for application in guardrails with 100 mm fitting for left lane;
- Metal bracket in galvanized steel for application on pole with 40 mm diameter in a left low guardrail

Dimensions			Installation	Model	Code
Height	Base	Depth			
510	125	100	Installation on high guard rails by bracket for HEA-HEB profiles 100 mm. One way left side.	LSA25S/H100	061251013
510	125	100	Installation on low guard rails by bracket for 40 mm diam. Pipe. On way left side.	LSA25S/T40	061251039
1280	125	100	Standing alone with pipe 45x45 fixed directly on ground. One way left side.	LSA25S/DL	061251104
1280	125	100	Standing alone with pipe 45x45 fixed directly on ground. One way right side.	LSA25DS/DL	061252102
1280	125	100	Standing alone with pipe 45x45 fixed directly on ground. Two way right side.	LSA25DD/DL	061253100

Compliant with the standard **UNI EN 12352: 2006** with marking **CE** according to the European regulation no. **305/2011 (c.d. CPR)**.

**Top LSA22**



**Materials**

Made of black polythene with mineral fillers having high density and resistance. Transparent lamp shield made of polycarbonate resistant to UV.

**Optical apparatus**

LED lamp diameter 100 mm with amber-colored 120 LED narrow beam 30° with max. Emission of 120 candelas.

System for horizontal and vertical adjustment of lamp light beam.

3 round reflex reflectors diameter 80' mm (2 on the front and 1 at the back), orange-colored, in accordance with road regulations.

**Power supply**

12 Vac.

**Characteristics**

Suitable for connection to remote management systems for flashing operation, for danger signals and continuous signals for realization of an antifog luminous guide. Watertight multiple-pole connector for connection to power cable.

**Dimensions:** 125 x 510 x 100mm.

Description/Applications	Model	Code
LH side – one-way	LSA22S/TR	061221503
RH side	LSA22DS/TR	061222501
RH side – two-way	LSA22DD/TR	061223509



**Top LSA25**



**Materials**

Made of black polythene with mineral fillers having high density and resistance. Transparent lamp shield made of polycarbonate resistant to UV.

**Optical apparatus**

LED lamp diameter 100 mm with 96 amber-coloured LEDs 2 candelas, 30° narrow beam.

System for horizontal and vertical adjustment of lamp light beam.

3 round reflex reflectors diameter 80' mm (2 on the front and 1 at the back), orange-colored, in accordance with road regulations.

**Power supply**

48 Vac power supply, operation by means of control unit CSE3/230/...

**Characteristics**

Flashing classes in accordance with UNI EN 12352:2006. Fixed light L2H-P1-C yellow 1-R0-A0-F1-O0-M3-T1-S0. Flashing light L2H-P1-C yellow 1-R0-A0-F2-O1-M3-T1-S0.

System for horizontal and vertical adjustment of lamp light beam.

**Dimensions**

125 x 510 x 100mm.

Description/Applications	Model	Code
LH side – one-way	LSA25S/TR	061251500
RH side	LSA25DS/TR	061252508
RH side – two-way	LSA25DD/TR	061253506

## Support foot

**Materials**

Made of white high density polythene, with spigot for connecting 45 x 45 mm square tube fixed in the ground.

**Characteristics**

For signals LSA22 - LSA25.

Dimensions	Model	Code
125x770x100	LSA22/BDL	061221511

## Fixing brackets



SF/LSA22/H100

**Materials**

Made of galvanized steel and bolts made of AISI 304 stainless steel.

**Applications**

For installation on guard-rails and Jersey barriers.

Signal type	Installation	Model	Code
LSA22S/T40 - LSA25S/T40	For fixing on 40 mm diameter tube	SF/LSA22/T40	095613030
LSA22S/H100 - LSA25S/H100	For fixing on 100 mm HEA - HEB beam	SF/LSA22/H100	095613105

## Pile shoe

**Materials:** Made of hot galvanized steel.

**Applications:** For installation of delineator signals LSA22S/DL - LSA25S/DL

Model	Code
PTS90/LSA/DL	095613006

## Post packed into the ground

**Materials:** Made of hot galvanized steel.

**Applications:** For installation of delineator signals LSA22S/DL - LSA25S/DL.

Model	Code
PTS40/LSA/DL	095613014

## CS3/... alternate flashing gear cases series for LSA23/... e LSA24/... LSA25/.. – LSG/.. signallers

### Characteristics:

Electronic gear cases for day use predispose to be mounted in 517x543x260 size boxes equivalent to the CVT /...fiber glass box, IMQ certified, with IP44 protection degree according to CEI EN 60529, IK10 in compliance with CEI EN 62262.

Enclosure installations: wall, pole, floor.

Predisposition for remote control power or other systems.

**This two models differs only by the loading current flow (13 e 23 A) and each unit is prepared to work:**

- flashing (on/off);
- alternate flashing (two flashes on 1, off 2; off 1; on 2);
- 3 channels run up.

### Power supply

Power supply: 230 Vac. Voltage output: 48 Vac.

Number of output channels: 3.

The gear case 230 Vac power line can be controlled through one or more external signals (such as twilight type and/or fog detection sensor) to allow the activation of the signalling system due to different needs.

The system must be wired according to the type of operation chosen.

Up to 4 units can be synchronized

## CSE3/230/50/13 Gearcase



CSE3/230/50/13  
Execution enclosure to be ordered separately)

Maximum load per 13 A channel, equivalent to:

- 45 single flashing signallers,
- 75 alternating flash signallers,
- 45x3 running up channels.

Model	Code
CSE3/230/50/13	095613055

## CSE3/230/50/23 Gearcase

23 A maximum load per channel, equivalent to 7

- 5 single flash signallers,
- 120 alternating flash signallers,
- 75x3 running up channels

Model	Code
CSE3/230/50/23	095613071

**Series CSE/...containers for control units**


CSE3/230/50/13  
(enclosure execution)

Type of plant	Type of container
CSE3/230/50/13	CVT and branch
CSE3/230/50/23	CVT and branch

**Blinkers for control units (spare parts until exhaustion)**


LEA/C2L

Application characteristics	Power supply voltage rating	No. flashes per minute	Type of control unit	Model	Code
2 channels alternate flashing. Octal plug	24-48 Vac	50-60	CSE2/220/..	LEA/C2L	095602512
To synchronize flashes of 2 or more control units CSE2/..	24 Vac	50-60	CSE2/SCL	LEA/S2L	095602595



Probe SRN 300 is an electronic device that detects fog, fumes, dust, snow, hail, heavy rain and automatically activates or deactivates the relative signaling systems on roads, motorways, car parks, navigable rivers and canals and coastal navigation areas. The probe has an electronic infrared reflecting system with adjustable sensitivity threshold corresponding to a visibility of 80 to 400 m. Not influenced by noise or heat.

## Electronic probe for fog detection



SRN300/E2

### Dimensions

Overall dimensions (including receiver and transmitter) 450 x 450 x 172.

### Materials

- Box made of die-cast UNI EN 1706 AC - 44100 aluminium alloy.
- Hinged cover with neoprene seal.
- Cover closed by self-locking knobs with stainless steel screws.
- Electronic components on galvanically protected vetronite board.
- Switch for dusk-dawn activation and deactivation.
- Bipolar relay with switch contacts for fog, dusk-dawn sensor and heater powering.

### Protection degree

IP55 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

### Execution

To fix to poles with 1 1/2" GAS (Ø 48) collar.

To fix to walls by means of feet.

### Technical/functional specifications

- Power supply: 48/110/230 V-50 Hz.
- Operating range: 0÷4000 Lux.
- Dusk setting: 10÷100 Lux.
- Automatic signal activation delay: 35÷160 sec.
- Automatic signal deactivation delay: 3÷6 min.
- Dusk function activation and deactivation delay: 45 sec.
- Fog sensor relay capacity (N.O.): 5 A 250 V.
- Heater power relay capacity (N.O.): 5 A 250 V.
- Dusk function relay capacity (N.O.): 5 A 250 V.
- Heater regulating thermostat: 5±15° C.
- Operating temperature: -20° C +50° C.
- Recommended power rating for heater (excluded): 20÷50 W max.
- Circuit activation and autodiagnosis signalling: LED (red and green).

Model	Code
SRN300/E2	081913022





# Directional signaling devices for tunnel

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## LSE - IMG Series

The design and production of LED directional signalers through the highways galleries exits confirm the propensity of Conchiglia in delivering security products, which combine high reliability with design and energy saving. The signaling system consists of a series of signalers installed in the left wall for the entire length of the tunnel and the front entrance of the cusp configuration by-pass exit with two bright arrows indicating the escape direction route to the outside of the tunnel or toward a safe place inside the tunnel (where existing) in case of fire or other emergency, with the double function of signaling and lighting of the sidewalk. The tunnels signalers are of two types: directional signalers for tunnel wall and directional signalers for by-pass exit.

### Directional signalers for tunnel wall:

- Set by screw anchors or mounting bracket on the left wall in relation to the direction of march, the bracket allows an easier orientation and easy installation;
- installed on the left-hand side of one-way tunnels at a height of 1.30 m from the road surface;
- 12,5 meters of distance between signalers;
- LSE/105 series devices can also illuminate escape route signs installed near the signalling device itself;
- The versions with green Leds are installed nearer to each other in the immediate vicinity of the emergency exits.

### Directional signalers for by-pass entrance:

- directly embedded on the corners of the by-pass openings;
- 3 signalers for every entrance, of which two laterally and other in a centred high position.

## Execution



LSE/150/VLP



LSE/105/BPL



LSE/250/S/P

## LSE series

In compliance with UNI EN 12352: 2006 with CE certification n° 305/2011 (c.d. CPR).

Led-based lighting devices are designed to indicate escape routes in tunnels in emergency situations. They are generally installed on the left-hand side of one-way tunnels at a height of 1.30 m from the road surface and at a distance of 12.5 m from each other. The devices are designed for continuous service at a reduced intensity (versions LSE/105 and LSE/120) or with separate circuits (version LSE/250). Dedicated controllers allow the power supplied to the individual lighting devices to be changed by modifying the light emission so as to obtain at least 2 Lux illumination at ground level over an area 1 m in width.



LSE250/S/P



LSE105/BPL

### Materials

- Anodized die cast aluminum alloy body for corrosion resistance.
- Wrapping transparent polycarbonate screen in the LED area and flat photoengraved LED on the central zone.
- Support in fiberglass with galvanically isolated tracks
- The led support of the LSE/105/... series is mounted on an aluminium base.

### Optical apparatus

To ensure efficient lighting of the sidewalk, all series have LED towards down.

### • LSE250/./...CE.

### Flashing classes in accordance with UNI EN 12352:2006 L2H-P1-C Yellow 1-R0-A0-F1-O0-M3-T1-S0.

- 2 dual function LED cards, each of it has 48 LED yellow-amber light with emission > / = 8 candles, arrow form (90 x 50 mm), in 2 separate circuits (24 + 24 LED), including a permanent circuit (outer edge of the arrow) and an emergency circuit (the central part of the arrow).  
Total power consumption 5 VA (2.5 + 2.5 VA per circuit).

### • LSE/120

- 2 LED boards with double signalling function, each comprising 24 white-light LEDs with 16 to 18 candle light intensity arranged in a rectangle (78x45 mm) in a single circuit.  
Total power input 5 VA.

### • LSE/105..

- 2 LED boards with double signalling function. Each comprising 5 white-light LEDs with 60 Lm/W emission in a single circuit, total power input 19.2 VA (at 48 Vac) 3,1V (with 24Vac reduced voltage).

### Power

48 Vac. Works through gear case CGS2/230/50/6 (signaller LSE250).

24/48 Vac. Works through gear case CGS/230/50/6 and CGP/230/50/6 (LSE120 – LSE105)

Protection degree

IP66 as CEI EN 60529.

### Execution

Bearing frame (SF/LSE250) for fixing to the wall (to be ordered separately).

Overall dimensions			Application	Model	Code
Height	Base	Depth			
160	70	120	Right side - with both LED arrows directed to the right	LSE250/D/P	061250007
160	170	120	Left side - with both LED arrows directed to the left	LSE250/S/P	061250106
160	170	120	2 descriptive lamps with 24 white led	LSE/120/BR	061122057
160	170	120	2 descriptive lamps with 24 green led	LSE/120/VR	061122073
160	170	120	2 descriptive lamps with 5 white led	LSE/105/BPL	061105003
160	170	120	2 descriptive lamps with 5 green led	LSE/105/VPL	061105011

## Bracket fasteners warning series LSE/...

Polyamide with fiberglass reinforcement with 2 points of attachment for vertical orientation work.

Manufacturer	Model	Code
For LSE signallers fastening	SF/LSE250	095613154

## IMG series



IMG250/BP

**Materials:**

- Die cast alloy aluminium anodized body
- Polycarbonate transparent screens
- Fiberglass support with galvanically isolated tracks

**Optical apparatus**

- 2 card with LED light signalling for exit pathways, each of it having 48 LED yellow-amber light with emission > / = 5 candles, arrow like (90 x 50 mm), in 2 separate circuits (24 + 24 LED): Standing circuit (outer edge of the arrow) and emergency circuit (the central part of the arrow).
- Orientation of the 2 sheets to 90 degrees between them for addressing it within the by-pass.
- Total power consumption 5 VA (2.5 + 2.5 VA per circuit).

**Power**

48 VAC terminal board 3 x 4 mm<sup>2</sup> and cable gland for a FGOM 3x1,5 cable.

**Protection degree:** IP55 according to CEI EN 60529.

**Application**

- Wall mounted or embedded.
- Positioning is made on the edges of the by-pass openings (1 right, 1 left and 1 on top of opening).

Dimensions			Application	Model	Code
Height	Base	Depth			
105	240	81	Embedded or wall	IMG250/BP	061250205

## Control unit for LSE/250/... series signal lights powered separately

**Characteristics:**

Supplied in RP1000 series enclosure (overall dimensions 485x664x171 mm) made of aluminium alloy UNI EN 1706AC-46100DF. Protection degree IP55.

**Functioning:**

Provision for independent power supply of 15 signal lights on each side (control unit installed halfway through the plant) with double operation:

- continuous light on outer arrow;
- completely On (inner and outer arrow), by means of alarm contact from external sensors

**Power:**

Supply voltage 230 Vac.

Output voltage 48 Vac.

Model	Code
CGS2/230/50/6	095614012

## Control unit for LSE/105/... – LSE/120/... series signal lights connected in parallel

**Characteristics:**

Supplied in RP400A series enclosure (overall dimensions 457x467x293 mm) made of aluminium alloy UNI EN 1706AC-46100DF, protection degree IP55.

**Functioning:**

Version for permanent lighting up of signal lights LSE 105 and LSE 120 at low voltage (reduced luminosity) and, increased luminosity by means of external sensor, in alarm situation.

Provision for max. power supply of 15 signal lights on each side (control unit installed halfway through the plant) connected in parallel.

Signals light up with steady light or light up only in case of alarm with external sensors.

**Power:**

Supply voltage 230 Vac.

Output voltage 48 Vac.

Model	Code
CGP/230/50/6	095614202

## Control unit for LSE/105/... – LSE/120/... series signal lights powered separately

**Characteristics:**

Supplied in RP1000 series enclosure (overall dimensions 485x664x171 mm) made of aluminium alloy UNI EN 1706AC-46100DF, protection degree IP55.

**Functioning:**

Version for permanent lighting up of signal lights LSE 105 and LSE 120 at low voltage (reduced luminosity) and, increased luminosity by means of external sensor, in alarm situation.

**Provision for max. power supply of 15 signal lights on each side** (control unit installed halfway through the plant) powered separately.

Signals light up with steady light or light up only in case of alarm with external sensors.

**Power:**

Supply voltage 230 Vac.

Output voltage 48 Vac.

Model	Code
CGS/230/50/6	095614103





## Signal devices for pedestrian crossings

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## LSP series

**Optical apparatus in compliance with UNI EN 12352 CE certification CPD89/106/CEE.  
Approved by Ministry of Transport: Prot. n. 106148**

The Sentinella signal lights satisfy all the requirements for integrating the existing passive horizontal and vertical signal light with a more evident flashing light signal, as provided for by the Road Rules, for pedestrian crossings in urban and extra-urban areas where no traffic signals are present. In fact, many pedestrian crossings are not clearly visible to drivers or pedestrians because of obstacles like trees, advertisement boards and other street furniture. The "Sentinella" signal, with a two-way LED lighting system LED, makes it possible for the driver to see the pedestrian crossing from a distance and for the pedestrian to immediately locate the position of the crossing.

**The advantages:**

- System consisting of a two-way light with 2 LED lamps, longer-lasting, reliable and economical. Moreover, the LED lamp allows good visibility during the day and at night, also in difficult atmospheric conditions.
- No separate line is required for its installation; it has provision for being powered from the electricity mains, with the help of a buffer battery, thereby allowing the working in case of blackout as well as connection on public lighting systems during the day.
- Better architectonic impact, since the signal blends in perfectly with the street furniture.
- The three types of executions available (on supporting post, on outreach bracket or suspended on metal rope) extend the application possibilities.

## Installations



## Serie LSP a LED (Patented)

Optical apparatus in compliance with UNI EN 12352 CE certification CPD89/106/CEE.  
Approved by Ministry of Transport: Prot. n. 106148



LSP35/GB/F

Design by: Studio Dogliotti - Genova.

### Materials

- Bidirectional lighthouse with base in thermoplastic PC/PBT (fiber glass reinforced with mechanical and atmospheric agents resistance. Varnished in different colours.
- Cap in thermoplastic PMMA shockproof, yellow colour RAL 1018, shock, UV rays and atmospheric agents resistance.

### Optical apparatus

- Signalling equipment consisting of 2 LED lamps 200 mm diameter, with clear polycarbonate lenses, each with 60 LED average emission 2 cd, Able to operate in continuous service flashing mode.
- light emission in compliance with UNI EN 12352: L8H - P1 - C yellow1 - R0 - A0 - I0 - F2 - O1 - M4 T2 - S0
- approved by ministry of transport: Prot. n. 106148

### Power

Power supplier, batteries and buffer charger fixed on Din bar watertight casing housed inside the signalling unit and, able to power the two lamps in alternate flashing mode.

### Characteristics:

- night operation with energy drawn from the public lighting network;
- day operation using the battery charged overnight, with more than 40 hours charge reserve;
- light attenuation can be regulated during mains operation.

2 power cables 3 m in length to connect the mains power supply and section the battery power.

**Protection degree:** IP43 in accordance with CEI EN 60529. Protection degree optical apparatus IP55 in accordance with CEI EN 60529.

### Execution

**LSP35/...../F** - with diameter 70 mm x 80 mm length lower coupling equipped with 3 locking plugs for installation on posts or bearing brackets.

**LSP35/...../S** - with connection for hanging on metal rope.

Dimensions	Type installation	Colour	Model	Code
350x470h	With connection for pole or bracket	Yellow/blue	LSP35/GB/F	061351102
350x470h	With connection for hanging	Yellow/blue	LSP35/GB/S	061351144
350x470h	With connection for pole or bracket	Yellow/red	LSP35/GR/F	061351201
350x470h	With connection for hanging	Yellow/red	LSP35/GR/S	061351243
350x470h	With connection for pole or bracket	Yellow/green	LSP35/GV/F	061351300
350x470h	With connection for hanging	Yellow/green	LSP35/GV/S	061351342
350x470h	With connection for pole or bracket	Yellow/grey	LSP35/GG/F	061351409
350x470h	With connection for hanging	Yellow/grey	LSP35/GG/S	061351441

## Support pole



ST/LSP/25/B

### Materials

In drawn hot-dip galvanized steel. Diameter 250 mm base mount in SMC (fiberglass) painted RAL 1018 yellow in color.

### Characteristics

70 mm diameter post connection hole with adapter for 60 mm diameter.

Length 2500 mm above ground and 500 mm to bury in the ground.

Polyester powder coating on the outside, four 75 mm adhesive white reflector strips affixed to the top, 50 mm distance from each other.

Terminal board and closing door with 2 x 16 mm<sup>2</sup> terminals and 2 sectionable fuse holders.

Color	Model	Code
Blue	ST/LSP/25/B	095615019
Red	ST/LSP/25/R	095615027
Green	ST/LSP/25/V	095615035
Grey	ST/LSP/25/G	095615043

## Support shelves



SM/LSP/70/B

### Materials

Made of hot-dip galvanized steel, painted on the outside.

### Characteristics

Designed for wall mounting using the 4 supplied expansion plugs.

Available in two versions, with 700 and 1000 mm spans.

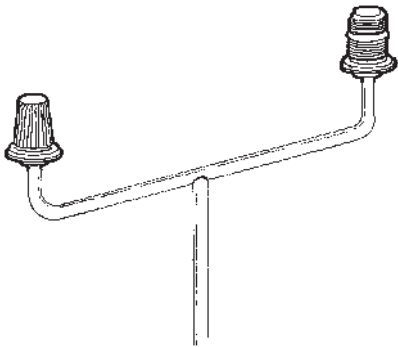
Equipped with cable routing tube and core hitches for facilitated wiring.

Color	Span	Model	Code
Blue	700	SM/LSP/70/B	095615712
Red	700	SM/LSP/70/R	095615720
Green	700	SM/LSP/70/V	095615738
Grey	700	SM/LSP/70/G	095615746
Blue	1000	SM/LSP/100/B	095615910
Red	1000	SM/LSP/100/R	095615928
Green	1000	SM/LSP/100/V	095615936
Grey	1000	SM/LSP/100/G	095615944

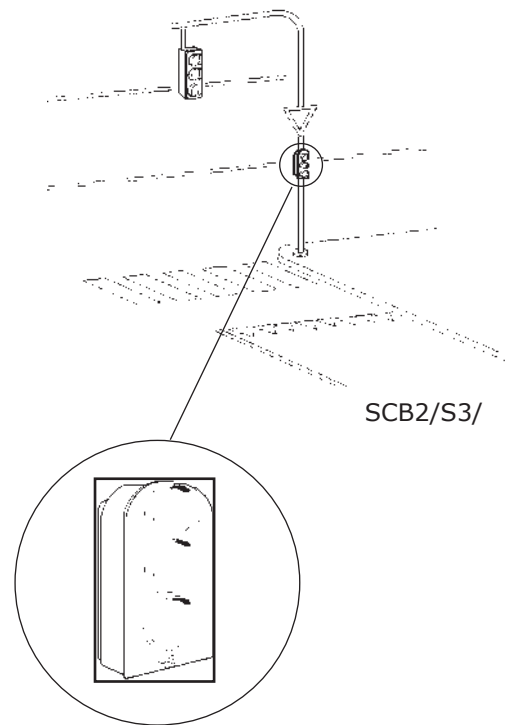


# Signal system

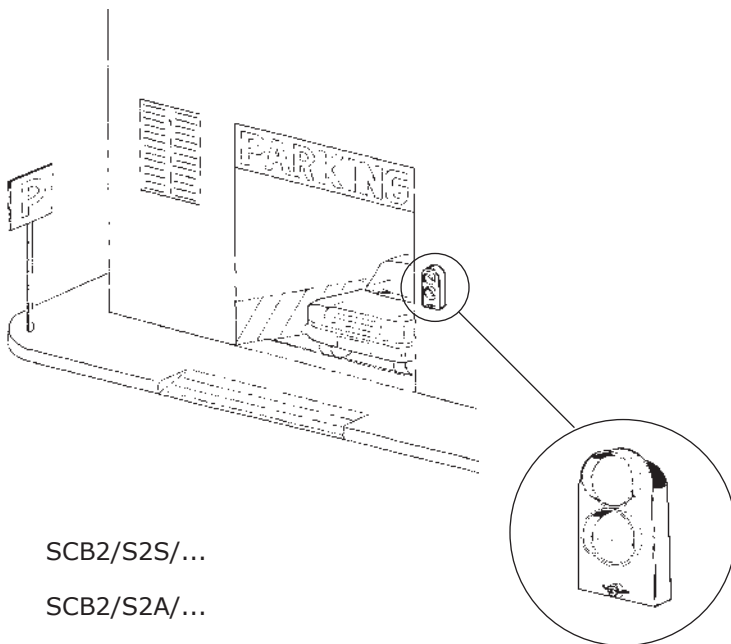
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LSA4 - LSA5



SCB2/S3/



SCB2/S2S/...

SCB2/S2A/...



## LSA4 - LSA5 Series with 1 light



LSA4/RE/F



LSA5/GE/F

**Materials**

Flange and diffuser locking ring in die-cast UNI EN 1706 AC - 46100 DF aluminium alloy. Surfaces protected with RAL 1004 yellow colored stove-enamelled synthetic paint.

LSA4 types: polycarbonate diffuser with vertical prismatic effect.

LSA5 types: hardened glass diffuser with FRESNELL lens.

**Optical apparatus**

Screw-on adjustable bulb-holder with E 27 connection.

Max. lamp power 60 W.

360° illumination.

**Protection degree**

LSA4: IP43 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

LSA5: IP54 in compliance with CEI EN 60529, IK 09 according to CEI EN 62262.

**Applications**

To signal permanent or temporary obstacles, light posts, cranes, parked bulky vehicles, moving automatic gates, diversions, etc.

## With polycarbonate diffuser

Overall dimension	Type installation	Diffuser color	Model	Code
ø 121 x 141	With smooth end for installation on pipe size 1 1/2" gas	Red	LSA4/RE/F	061041505
ø 121 x 141	With smooth end for installation on pipe size 1 1/2" gas	Yellow	LSA4/GE/F	061042503

## With hardened glass diffuser

Overall dimension	Type installation	Diffuser color	Model	Code
ø 121 x 141	With smooth end for installation on pipe size 1 1/2" gas	Red	LSA5/RE/F	061051504
ø 121 x 1000	Complete of pedestal and plugs 2x15 A+1 for chain supply	Red	LSA5/RE/PI	061051538
ø 121 x 141	With smooth end for installation on pipe size 1 1/2" gas	Yellow	LSA5/GE/F	061052502
ø 121 x 1000	Complete of pedestal and plugs 2x15 A+1 for chain supply	Yellow	LSA5/GE/PI	061052536

## Diffusers



LP4/R



LF4/G

Types LP4/...: moulded polycarbonate with vertical internal prismatic effect.  
Types LF4/...: in hardened glass with FRESNELL lens.

Type of signal light	Type installation	Diffuser color	Model	Code
LSA4/..	Polycarbonate	Red	LP4/R	095630414
LSA4/..	Polycarbonate	Yellow	LP4/G	095630422
LSA5/..	Tempered glass	Red	LF4/R	095631412
LSA5/..	Tempered glass	Yellow	LF4/G	095631420

## SCB Series



SCB2/S2A/F



SCB2/S2S/F

### Materials

In die-cast UNI EN 1706 AC - 46100 DF aluminium alloy.  
 Reflectors moulded in polyamide resin with metallized mirror finish.  
 Surfaces protected with RAL 1004 yellow coloured stove-enamelled synthetic paint.

### Characteristics:

Cover to access the lighting apparatus with sun-shade, coulisse sliding system and stainless steel locking screw. 3x16 mm terminal block.

### Optical apparatus

E14 built-in lamp holder for max 15 W round lamps  
 Coloured acrylic resin moulded lenses with concentric internal prismatic effect (78 with 2 lights - 56 with 3 lights).

### Dimensions

Head dimensions 142 x 265 x 140 mm.

### Protection degree

for /F versions IP 44 in compliance with CEI EN 60529, IK 08 according to CEI EN 50102.  
 for /P - /CN versions IP 43 in compliance with CEI EN 60529, IK 08 according to CEI EN 50102.

### Applications

To delineate/signal motorway by-passes or road junctions, traffic diversions due to abnormal, automatic gate movement, traffic handling in car parks, car washing systems, etc., remote controlled traffic light signals and repeats.

### Versions

.../F - With opening at the bottom for assembly on 1 1/2" (Ø 48,3).  
 .../P - For installation on walls or flat surfaces. Closed bottom part.  
 .../CN - For installation on 140 diameter poles. Closed bottom part.

### With 2 lights - SCB2/S2... types

Type installation	Top lens	Bottom lens	Model	Code
End diameter 49 mm for 1 1/2" diam. pipes fitting	Orange	Orange	SCB2/S2A/F*	062210406
Flat surfaces mounting. Bottom closed	Red	Green	SCB2/S2S/P	062220108
Pole mounting. Bottom closed.	Red	Green	SCB2/S2S/CN	062220207
End diameter 49 mm for 1 1/2" diam. pipes fitting	Red	Green	SCB2/S2S/F	062220405
End diameter 49mm for 1 1/2" diam. pipes fitting. Complete with 2 channels flasher 50-60 flash x min. Power supply 110-220V 0,8A	Orange	Orange	SCB2/S2AL/F	062230404

\*Signallers without lamp and indicator

### With 3 lights - SCB2/S3... types



SCB2/S3/CN

For three light working it's necessary to connect the signallers to the traffic light electronic control unit

Type installation	Top lens	Middle lens	Bottom lens	Model	Code
Flat surfaces mounting. Bottom closed	Red	Orange	Green	SCB2/S3/P	062300108
Pole mounting. Bottom closed.	Red	Orange	Green	SCB2/S3/CN	062300207
End diameter 49mm for 1 1/2" diam. pipes fitting	Red	Orange	Green	SCB2/S3/F	062300405



## Lenses - SCB2/S2... - .../S3



LS7/R



LS6/V

Moulded in colored acrylic resin.  
Concentric circular internal prismatic effect.

Type of signal light	Top lens color	Middle lens color	Bottom lens color	Model	Code
SCB2/S3/..	red	-	-	LS6/R	095632618
SCB2/S3/..	-	orange	-	LS6/A	095632634
SCB2/S3/..	-	-	green	LS6/V	095632642
SCB2/S2S/..	red	-	-	LS7/R	095632717
SCB2/S2A/..	orange	-	orange	LS7/A	095632733
SCB2/S2S/..	-	-	green	LS7/V	095632741

## Flashers for signal lights

Type of signal light	Application characteristics	Power supply voltage rating	No. flashes per minute	Model	Code
SCB2/S2AL/.	Double channel for incandescence lamps, alternate flash	110 - 220 Vac	50-60	LEA/2L	095602215

## CTP series



CTP/220/24/4

### Materials

Electronic plant in fiberglass box measuring 300 x 400 x 200.

### Technical/functional characteristics

Programming module with microprocessor. Up to 4 two-way channels can be programmed. Characteristics module:

- Up to 4 two-way channels can be programmed
- Each individual channel can be timed from 1 sec. to 99 min. with intermediate overlap time programmable between the stop and go functions.
- Channels can be cut-out by means of microswitch.

### Electrical characteristics

Power supply voltage rating: 230 Vac - 50 Hz.

Output voltage rating: 24 VacMax load: 200 W.

Max. capacity of contacts: 10 A. Terminal section: 6 mm<sup>2</sup>.

Operating temperature: -5°C +55°C.

### Installation

For timed management of approach roads in car parks/apartment blocks and private garages, industrial areas, goodshandling yards, hypermarkets, etc., in the open or underground, by means of traffic light repeaters with two lamps of the SCB2/S2S/... type. For wall installation.

### Protection degree

IP55 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

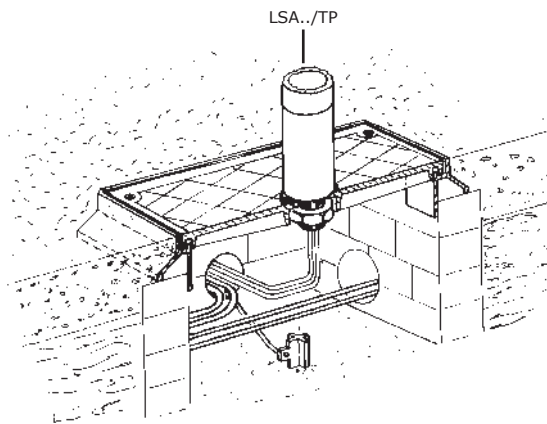
Model	Code
CTP/220/24/4	095612859



## Road covers

Road covers for masonry wells .....	440
Cover for masonry wells .....	441

**Road covers PZ - PZV**



## PZ series - In aluminium alloy



PZ2

### Materials

In die-cast UNI EN 1706 AC - 46100 DF aluminium alloy. Cover closed with anti-loosening allen screws in AISI 304 stainless steel. Seal moulded in anti-ageing flexible vinyl chloride.

### Characteristics

Able to bear the weight of light vehicles in transit (static bearing capacity approx. 1200 Kg). To cover brick or concrete wells in workshops, warehouses, pavements.

### Applications

For shunts and junctions in electricity, grounding, telephone lines.

### Protection degree

IP 55 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

### Rectangular types

External dimensions			Internal dimensions well	Dimensions cover span	Model	Code
Height	Base	Depth				
266	169	40	130x230	119x215	PZ1	046210001
414	285	40	250x380	234x363	PZ2	046220000



PZ4

### Square types

External dimensions			Internal dimensions well	Dimensions cover span	Model	Code
Height	Base	Depth				
266	266	40	230x230	215x215	PZ3	046230009
413	413	40	380x380	363x363	PZ4	046240008

## PZV series - In SMC (fiberglass)



PZV2

### Materials

Moulded in SMC (fiberglass). Cover closed with anti-loosening allen screws in AISI 304 stainless steel. Seal moulded in anti-ageing flexible vinyl chloride.

### Characteristics

Able to bear the weight of light vehicles in transit (static bearing capacity approx. 1000 Kg). To cover brick or concrete wells in workshops, warehouses, pavements.

### Applications

For shunts and junctions in underground electricity, grounding, telephone lines, where insulation and/or protection against corrosive agents is required.

### Protection degree

IP 55 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

### Rectangular types

External dimensions			Internal dimensions well	Dimensions cover span	Model	Code
Height	Base	Depth				
414	285	40	250x380	234x363	PZV2	046320008



PZV4

### Square types

External dimensions			Internal dimensions well	Dimensions cover span	Model	Code
Height	Base	Depth				
266	266	40	230x230	215x215	PZV3	046330007
413	413	40	380x380	363x363	PZV4	046340006





# Gas/water







# Cathodic protection terminal boards

Terminal boards for cathodic protection plants .....	446
Accessories and spare parts for cathodic protection terminal boards .....	449

The terminal boards for electrical (cathodic) protection of underground metal ducts have been designed and built in collaboration with the most important GAS/WATER authorities and have been standardized by them.

## NM series - junctions



NM/416

### Materials/Characteristics

Insulating base moulded in polyvinyl chloride (PVC). Plug-locked brass terminals.

### Applications

For copper wire junctions.

Overall dimensions			No. poles	Nominal section mm <sup>2</sup>	Model	Code
Height	Base	Depth				
37	102	33	4	16	NM/416	011014164

## MPE series

### Of potential connections and measuring



MPE/PP4

### Materials

Insulating base moulded in SMC (fiberglass).

### Characteristics

M8 bolt terminals in AISI 304 stainless steel with 4 hole for measuring plugs.

### Applications

For potential connection to pipes for instantaneous and recorded measurements with or without reference electrode.

**TYPES MPE/PP2 - MPE/PP3** - complete with sliding copper parallel jumpers.

**TYPES MPE/PP4** - complete with two sliding copper parallel jumper.

Overall dimensions			No. poles	Nominal section mm <sup>2</sup>	Model	Code
Height	Base	Depth				
180	40	27	1	25	MPE/PP1	018201012
180	40	27	2	25	MPE/PP2	018201020
180	40	27	3	25	MPE/PP3	018201038
180	40	27	4	25	MPE/PP4	018201046

## Temperature measurements



MPE/MT1

### Materials

Insulating base moulded in SMC (fiberglass).

### Characteristics

Complete with six bushes with 4 hole for measuring plug. Contacts to be soldered. Overall dimensions 40 x 180 x 21.

### Applications

Used to measure the temperature in points of the pipeline metal and in the adjacent ground.

Model	Code
MPE/MT1	018201103

## Check galvanic couples



MPE/CV4

### Materials

Insulating base moulded in SMC (fiberglass).

### Characteristics

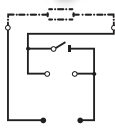
Through terminals in brass with screw fitting for cable terminals. Stainless steel studs with 4 hole.

### Applications

To check galvanic couples between each joint or parallelism between pipes and reference electrodes.

Overall Dimensions			No. poles	Nominal section mm <sup>2</sup>	Model	Code
Height	Base	Depth				
178	110	29	8	6	MPE/CV4	018204008

Shunting and balancing



MPE/SB2

**Materials**

Insulating base moulded in SMC (fiberglass).  
Stainless steel terminals. Tin-plated brass d.c. jumpers. Connecting bars in tin-plated brass.

**Characteristics**

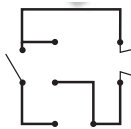
Plate sectioning for measuring purposes. Balancing resistor can be installed instead of d.c. jumpers (see ACCESSORIES). Used for shunting dielectric joints in open, closed versions or with variable balancing resistors.

**Applications**

For electrical connections between several pipes at one junction or in parallel to extend cathodic MPE/SB2 protection or to measure and monitor reciprocal interference.

Overall dimensions			No. poles	Nominal section mm <sup>2</sup>	Model	Code
Height	Base	Depth				
178	110	48	2	25	MPE/SB2	018202002

For eathing purposes



MPE/SV3

**Materials**

Insulating base moulded in SMC (fiberglass).  
Protective cover in transparent polycarbonate.  
Clamp grub screws in AISI 303 stainless steel.  
Measuring sleeves in AISI 303 stainless steel with 4 hole.  
Connecting bars in tin-plated brass.  
Circuit sectioning device in tin-plated brass.  
Supports in AISI 303 stainless steel.

**Characteristics**

Supports in AISI 303 stainless steel to fix discharger (53 x 86 cylindrical type fixed by bar - 118 mm center distance). To install in boxes on posts.

**Applications**

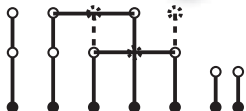
To earth pipelines with cathodic protection and for terminal protection stations.

**Protection degree**

IP 10 in compliance with CEI EN 60529.

Overall dimensions			No. poles	Nominal section mm <sup>2</sup>	Model	Code
Height	Base	Depth				
213	110	62	2	25	MPE/SV3	018203109

Shunting and connection to potential



MPE/IT527

**Materials**

Insulating base moulded in SMC (fiberglass).  
Terminals in nickel-plated pressed brass (OT58 - UNI 5705-65).  
Clamping grub screws in nickel-plated steel.  
Mobile parallel jumpers in nickel-plated brass.

**Characteristics**

Jumper clamping studs in nickel-plated brass with 4 hole to connect instruments. Using the jumpers and studs, all the input terminals can be connected in parallel.

**Applications**

For active cathodic protection stations.

For potential connections for electric measurements and for checking interference and pipe insulation. For electrical connection between several pipes to extend cathodic protection or for measuring and checking reciprocal interference and taking electrical measurements. For shunting dielectric joints.

Overall dimensions			No. poles	Nominal section mm <sup>2</sup>	Model	Code
Height	Base	Depth				
197	64	41	5	16	MPE/IT527	018105270



## MGD series - for terminating purposes



MGD/B5

**Materials**

Insulating base moulded in SMC (fiberglass).  
 Bolt terminals in AISI 304 stainless steel for cable fixing.  
 Transparent polycarbonate protection cover.

**Applications**
**Type MGD/B5**

For terminating cables in cathodic protection plants (suitable for one circuit only).

**Type MGD/A10**

As above, but for dielectric joints (two circuits, upstream/downstream) or for pipe crossings.

Overall dimensions			No. poles	Nominal section mm <sup>2</sup>	Model	Code
Height	Base	Depth				
310	100	60	5	25	MGD/B5	018302059
310	100	60	10	25	MGD/A10	018301101

## D.C. jumper

### Materials

In nickel-plated copper.

### Applications

For terminal board MPE/SB2 to shunt dielectric joints.

Model	Code
SC/16	095590162

## Balancing resistor



RES/4,7

### Characteristics

Corrugated flat wire balancing resistor with adjustable slider - 0 ÷ 4,7 Ω.

### Applications

For terminal board MPE/SB2 to shunt dielectric joints, instead of the d.c. jumper.

Model	Code
RES/4,7	095590477

## Identification markers



SF/MPE/R



SF/MPE/B



SF/MPE/G

### Materials

In coloured thermoplastic material - snap-in fitting.

### Characteristics

In packs containing 100 pcs.

Type of terminal board	Nominal section mm <sup>2</sup>	Model	Code
MPE/PP1 - MPE/PP2 - MPE/PP3 - MPE/PP4 - MPE/SB2 - MPE/CV4 - MPE/SV3	White	SF/MPE/W	095182002
MPE/PP1 - MPE/PP2 - MPE/PP3 - MPE/PP4 - MPE/SB2 - MPE/CV4 - MPE/SV3	Blue	SF/MPE/B	095182010
MPE/PP1 - MPE/PP2 - MPE/PP3 - MPE/PP4 - MPE/SB2 - MPE/CV4 - MPE/SV3	Yellow	SF/MPE/G	095182028
MPE/PP1 - MPE/PP2 - MPE/PP3 - MPE/PP4 - MPE/SB2 - MPE/CV4 - MPE/SV3	Green	SF/MPE/V	095182044
MPE/PP1 - MPE/PP2 - MPE/PP3 - MPE/PP4 - MPE/SB2 - MPE/CV4 - MPE/SV3	Black	SF/MPE/N	095182051
MPE/PP1 - MPE/PP2 - MPE/PP3 - MPE/PP4 - MPE/SB2 - MPE/CV4 - MPE/SV3	Red	SF/MPE/R	095182069
MPE/PP1 - MPE/PP2 - MPE/PP3 - MPE/PP4 - MPE/SB2 - MPE/CV4 - MPE/SV3	Grey	SF/MPE/H	095182077
MPE/PP1 - MPE/PP2 - MPE/PP3 - MPE/PP4 - MPE/SB2 - MPE/CV4 - MPE/SV3	Orange	SF/MPE/A	095182085
MPE/PP1 - MPE/PP2 - MPE/PP3 - MPE/PP4 - MPE/SB2 - MPE/CV4 - MPE/SV3	Brown	SF/MPE/M	095182093
MPE/PP1 - MPE/PP2 - MPE/PP3 - MPE/PP4 - MPE/SB2 - MPE/CV4 - MPE/SV3	Sulfur Yellow	SF/MPE/GZ	095182101

## Protection cover



CP/MGD

**Materials**

In transparent polycarbonate.

**Applications**

For terminal boards MGD/B5 - MGD/A 10.

Model	Code
CP/MGD	095590204



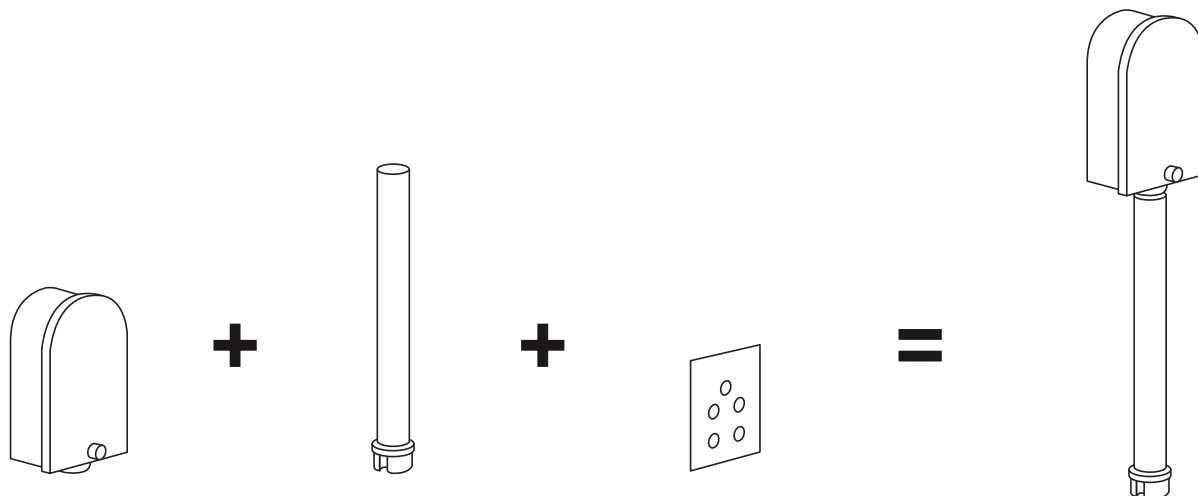


## Boxes - wells - tubular supports

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Boxes for cathodic protection systems.....	453
Wells and tubular supports for cathodic protection .....	456

## Modularity

The table below shows the model of the boxes and support pipes that will be provided separately from previous versions (see correspondent model).

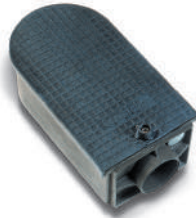


Box	Support pipe	Terminal board	Previous symbol corresponding
SCB1/F	TC/34		SCB1/TC
SCB2R/F	TC/48		SCB2R/TC
SCB2R/F	TL/48		SCB2R/TL
SCB2R/F/AZ	TL/48		SCB2R/TL/AZ
SCB5/F	TL/48		SCB5/TL
SCF2/F	TC/48		SCF2/TC
SCF2/F	TL/48		SCF2/TL
SCB1/3/F	TC/34	included	SCB1/3/TC
SCB2R/3/F	TC/48	included	SCB2R/3/TC
SCB2R/3/F	TL/48	included	SCB2R/3/TL
SCB2R/4/F	TC/48	included	SCB2R/4/TC
SCB2R/4/F	TL/48	included	SCB2R/4/TL
SCB2R/4/F/AZ	TL/48	included	SCB2R/4/TL/AZ
SCB2R/5/F	TC/48	included	SCB2R/5/TC
SCB2R/5/F	TL/48	included	SCB2R/5/TL
SCB2R/5/F/AZ	TL/48	included	SCB2R/5/TL/AZ
SCB2R/6/F	TC/48	included	SCB2R/6/TC
SCB2R/6/F	TL/48	included	SCB2R/6/TL
SCB2R/6/F/AZ	TL/48	included	SCB2R/6/TL/AZ
SCB2R/7/F	TC/48	included	SCB2R/7/TC
SCB2R/7/F	TL/48	included	SCB2R/7/TL
SCB2R/7/F/AZ	TL/48	included	SCB2R/7/TL/AZ
SCF2/3/F	TC/48	included	SCF2/3/TC
SCF2/3/F	TL/48	included	SCF2/3/TL

## SCB series - Empty aluminium alloy version



SCB1/F



SCB2R/F/AZ

**Materials**

In die-cast UNI - EN 1706 AC - 46100 DF aluminium alloy.  
Coated in grey RAL 7000 colored stove-enamelled epoxy paint.

**Characteristics**

Coulisse sliding cover closed by an Allen screw in AISI 304 stainless steel.  
Materials solely designed for use in systems with voltage ratings of less than **50 Vdc**.

**Applications**

For outdoor use in cathodic protection systems, potential connections, electric measuring points on metal pipelines.

**Protection degree**

IP 43 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

**Version**

**TYPE SCB2R/...:** with reinforced cover.

Protection degree IP44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

**TYPE .../AZ:** in die-cast UNI 5080 corrosion-proof aluminium alloy; surfaces protected by anodic oxidation treatment.

**.../F** with bottom fitting for non-threaded pole mounting.

Overall dimensions			Internal dimensions			Installation	Pipe diameter	Model	Code
Height	Base	Depth	Height	Base	Depth				
210	114	78	175	93	54	Installation on support pipe without thread end	1" (34mm)	SCB1/F	056110406
266	142	99	214	118	80	Anodised corrosion proof aluminium alloy, prearrangement for support pole without thread end.	1"1/2 (49mm)	SCB2R/F/AZ	056120108
266	142	99	214	118	80	Installation on support pipe without thread end	1"1/2 (49mm)	SCB2R/F	056120405
435	240	210	390	213	191	Installation on support pipe without thread end	1"1/2 (49mm)	SCB5/F	056150402

## SCF series - Empty fiberglass-reinforced plastic version



SCF2/F

**Materials**

Moulded in grey RAL 7040 colored SMC (fiberglass).

**Characteristics**

Coulisse sliding cover closed by an Allen screws in AISI 304 stainless steel.

**Versions:.../F:** with bottom fitting for non-threaded pole mounting.

**Applications**

For outdoor use in cathodic protection systems, potential connections, electric measuring points on metal pipelines. Materials solely designed for use in systems with voltage ratings of less than 50 Vdc.

**Protection degree**

IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

Overall dimensions			Internal dimensions			Installation	Pipe diameter	Model	Code
Height	Base	Depth	Height	Base	Depth				
211	122	76	188	98	58	Prearrangements for installation on support pipe without thread end	1" (34mm)	SCF1/F	056410400
268	144	100	215	120	81	Prearrangements for installation on support pipe without thread end	1"1/2 (49mm)	SCF2/F	056420409

## SCB series - Outfitted aluminium alloy versions

### For copper wire junctions

Overall dimensions			Type of terminal board	Installation	Pipe diameter	Model	Code
Height	Base	Depth					
210	114	78	NM/416	Prearrangements for installation on support pipe without thread end	1" (34mm)	SCB1/3/F	056113400
266	142	99	NM/416	Prearrangements for installation on support pipe without thread end	1"1/2 (49mm)	SCB2R/3/F	056123409



SCB2R/4/F

### For measuring points and to shunt dielectric joints

Overall dimensions			Type of terminal board	Installation	Pipe diameter	Model	Code
Height	Base	Depth					
266	142	99	MPE/IT/527	Anodised corrosion proof aluminium alloy. Prearrangement for support pole without thread end	1"1/2 (49mm)	SCB2R/4/F/AZ	056124100
266	142	99	MPE/IT/527	Prearrangements for installation on support pipe without thread end	1"1/2 (49mm)	SCB2R/4/F	056124407



SCB2R/5/F/AZ

### For measuring points and potential connections - 2 pole terminal board

Overall dimensions			Type of terminal board	Installation	Pipe diameter	Model	Code
Height	Base	Depth					
266	142	99	MPE/PP2	Anodised corrosion proof aluminium alloy. Prearrangement for support pole without thread end	1"1/2 (49mm)	SCB2R/5/F/AZ	056125107
266	142	99	MPE/PP2	Prearrangements for installation on support pipe without thread end	1"1/2 (49mm)	SCB2R/5/F	056125404



SCB2R/6/F/AZ

### For measuring points and potential connections - 4 pole terminal board

Overall dimensions			Type of terminal board	Installation	Pipe diameter	Model	Code
Height	Base	Depth					
266	142	99	MPE/PP4	Anodised corrosion proof aluminium alloy. Prearrangement for support pole without thread end	1"1/2 (49mm)	SCB2R/6/F/AZ	056126105
266	142	99	MPE/PP4	Prearrangements for installation on support pipe without thread end	1"1/2 (49mm)	SCB2R/6/F	056126402

For terminal board's characteristics see page 180





SCB2R/7/F

**For shunting and balancing dielectric joints**

Overall dimensions			Type of terminal board	Installation	Pipe diameter	Model	Code
Height	Base	Depth					
266	142	99	MPE/SB2	Anodised corrosion proof aluminium alloy. Prearrangement for support pole without thread end	1"1/2 (49mm)	SCB2R/7/F/AZ	056127103
266	142	99	MPE/SB2	Prearrangements for installation on support pipe without thread end	1"1/2 (49mm)	SCB2R/7/F	056127400

**For measuring galvanic couples between joint and reference electrode**

Overall dimensions			Type of terminal board	Installation	Pipe diameter	Model	Code
Height	Base	Depth					
1711	142	99	MPE/CV4	In anodized corrosion proof aluminium alloy.	1"1/2 (49mm)	SCB2R/9/F/AZ	056129612

**SCF series - Outfitted fiberglass version**



SCF2/3/F

**For copper wire junctions**

Overall dimensions			Type of terminal board	Installation	Pipe diameter	Model	Code
Height	Base	Depth					
268	144	100	NM/416	Prearrangements for installation on support pipe without thread end	1"1/2 (49mm)	SCF2/3/F	056423403

**For measuring points and to shunt dielectric joints**

Overall dimensions			Type of terminal board	Installation	Pipe diameter	Model	Code
Height	Base	Depth					
268	144	100	MPE/IT/527	Prearrangements for installation on support pipe without thread end	1"1/2 (49mm)	SCF2/4/F	056424518

**For measuring points and potential connections - 2 pole terminal board**

Overall dimensions			Type of terminal board	Installation	Pipe diameter	Model	Code
Height	Base	Depth					
268	144	100	MPE/PP2	Prearrangements for installation on support pipe without thread end	1"1/2 (49mm)	SCF2/5/F	056425515

For terminal board's characteristics see page 180

## PP7 series - Version in well IP55



PP7/4

### Materials

Well made of die-cast UNI EN 1706 AC - 46100 DF aluminium alloy.

### Characteristics

Cover closed with Allen screws in AISI 304 stainless steel.

1 1/4' fairlead for conductor input/output.

Equipped with terminal board for measuring points and to shunt dielectric joints.

### Protection degree

IP 55 in compliance with CEI EN 60529, IK 1 according to CEI EN 62262.

### Installation

Floor installation to avoid above-ground structures in urban areas of high artistic or environmental prestige.

## For measuring points and to shunt dielectric joints

Overall dimensions			Type of terminal board	Installation	Model	Code
Height	Base	Depth				
245	245	153	MPE/IT/527	Floor flush mounting	PP7/4	056817042

## Supports pipe for cathodic protection boxes

Type of box	Installation	Pipe diameter	Model	Code
SCB1F - SCF1/F	Support pipe L=890	1" (34mm)	TC/34	095561346
SCB2R/F - SCF2/F	Support pipe L=900	1"1/2 (49mm)	TC/48	095561486
SCB2R/F - SCF2/F	Support pipe L=900	1"1/2 (49mm)	TC/48/F*	095561502
SCB2R/F - SCF2/F	Support pipe L=1473	1"1/2 (49mm)	TL/48/F*	095562484

For terminal board's characteristics see page 180

\* Complete with flange.



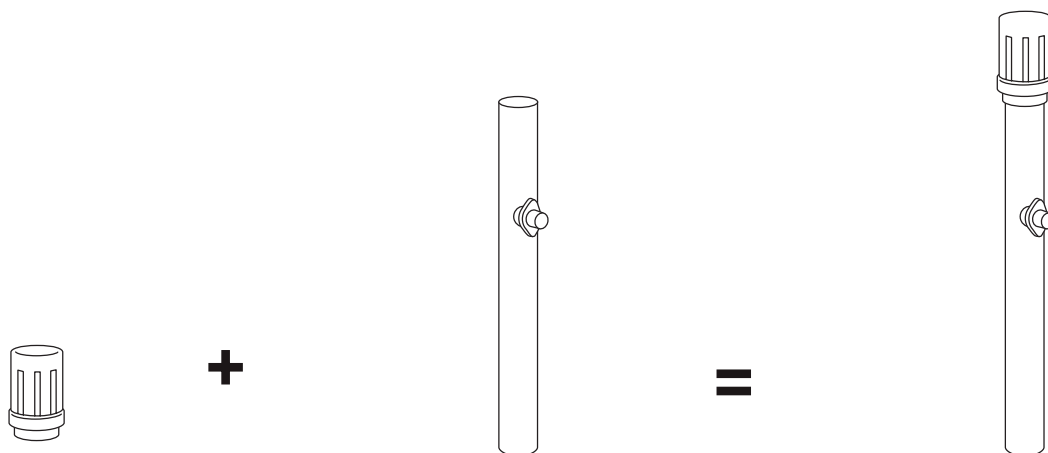
# Breathers

Modularity breathers for gas pipelines .....	458
Breathers for gas pipelines .....	459



## Modularity

The table below shows the model of breathers for gas pipeline and support pipes that will be provided separately from previous versions (see correspondent model).



Breathers for gas pipelines	Support pipe	Previous symbol corresponding
EM48	T1/48/V	EM48/T1
EM48	T2/48/V	EM48/T2
EM60	T1/60/V	EM60/T1
EM60	T2/60/V	EM60/T2
EM89	T1/89/V	EM89/T1
EM89	T2/89/V	EM89/T2

## EM series



EM60



EM89

### Materials

Breather body in die-cast UNI EN 1706 AC - 46100 DF aluminium alloy. Support tube in FE33 UNI 7288-74.

Flame trap between pipe and breather body in AISI 316 stainless steel.

Breather body fixed to AISI 304 stainless steel tube with locking grub screw protected by plastic plugs. Breather body exterior protected with RAL 1004 golden yellow coloured stove-enamelled synthetic paint.

Support tube exterior protected by green RAL 6010 color plasticating treatment.

### Characteristics

Quick probe access opening mechanism with special profile key, removable when in the locked position (max. diam. of probe inlet 10 mm).

### Applications

For gas pipes at road or rail crossings, vent wells or small underground chambers with safety valve.

### Types EM48 - EM60

For medium or low pressure lines.

### Types EM89

For high pressure lines.

Nominal diameter	Version	Model	Code
1"1/2 (49mm)	Breather head with flame trap	EM48	056050008
2" (61 mm)	Breather head with flame trap	EM60	056060007
3" (89mm)	Breather head with flame trap	EM89	056090004

## Supports pipe for breathers



T1/60/V

### For EM48 breather

Description	Pipe diameter	Model	Code
Pipe L= 650 mm	1"1/2	T1/48/V	095581484
Pipe L= 2250 mm	1"1/2	T2/48/V	095582482

### For EM60 breather

Description	Pipe diameter	Model	Code
Pipe L= 650 mm	2"	T1/60/V	095581609
Pipe L= 2250 mm	2"	T2/60/V	095582607

### For EM89 breather

Description	Pipe diameter	Model	Code
Pipe L= 650 mm	3"	T1/89/V	095581898
Pipe L= 2250 mm	3"	T2/89/V	095582896

## Probe inlet



DPS10/48-60

### Materials

Body in die-cast UNI EN 1706 AC - 46100 DF aluminium alloy. Cylinder and pipe adapter in polyamide resin 6.6. Painted yellow RAL 1004 color.

Complete with special profile key in die-cast aluminium alloy, removable when in locked position.

### Characteristics

Maximum probe inlet diameter 10 mm. Fixed to pipe exterior.

Pipe diameter	Key model	Key code	Model	Code
1"1/2 - 2"	CDPS/10	091506105	DPS10/48-60	095580155
3"	CDPS/10	091506105	DPS10/89	095580197

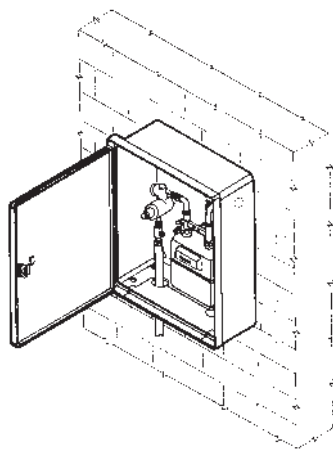




## Containers-gas pressure reducing doors

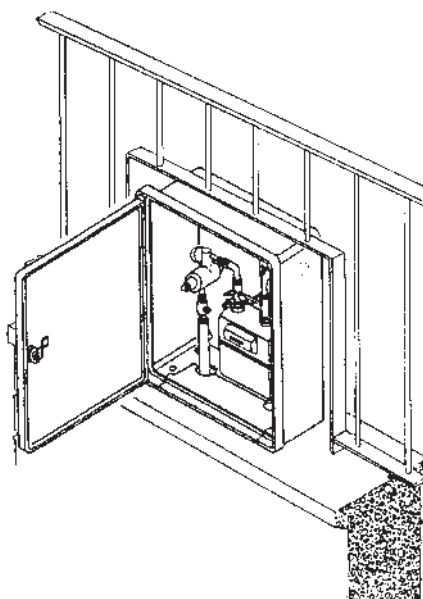
Installation of contact carriers and gas pressure reducers .....	462
Gas meter containers and gas pressure reducers .....	463
Carrier covers and gas pressure reducers .....	464
Accessories for containers, carrier covers and gas pressure reducers ...	465

CPWR/C - CPWQ/C



Installation on wall

CPWR/C - CPWQ/C



Installation wall limiting property

## CPWR - CPWQ series



CPWR/C

### Materials

Made of SMC (fiberglass) with 1 degree fire resistance according to D.M. of 24/11/84 (fire-prevention safety standards for the conveyance, distribution, storage and use of natural gas with a density of not more than 0.8). Grey RAL 7040 color.

### Characteristics

Hinged cover, removable by turning through 90°. Exterior embossing to protect against UV rays. Dustproof door operated with key lockable lever. Ventilation through door labyrinth equal to 1/10th of net surface area. Removable bottom panel to facilitate pipe installation. Break-through blanked holes for pipe inlet/outlet. Complete with 3/4" pipe fixing collars.

### Applications

For wall installation or fixing to property boundary wall. Complies with the specifications established by the most important distribution authorities.

### Protection degree

IP 43 in compliance with CEI EN 60529, IK 09 according to CEI EN 62262.

For EEC class G4 gas meters or gas pressure reducer-regulators for max. Inlet pressure values of up to 5 bar and flow rates of up to 25 m<sup>3</sup>/H.

Overall dimensions			Internal dimensions			Version	Model	Code
Height	Base	Depth	Height	Base	Depth			
500	360	217	455	315	201	Lock operated by safety key cod. Y21	CPWR/C	075740001
500	360	217	455	315	201	Lock operated by square key 7 mm	CPWR/C/Q7	075740100



CPWQ/C

For ECC class G4 gas meters complete with gas pressure reducer-regulators for max. Inlet pressure values of up to 5 bar and flow rates of up to 25 m<sup>3</sup>/H.

Overall dimensions			Internal dimensions			Version	Model	Code
Height	Base	Depth	Height	Base	Depth			
504	504	217	455	455	201	Lock operated by safety key cod. Y21	CPWQ/C	075720003
504	504	217	455	455	201	Lock operated by square key 7 mm	CPWQ/C/Q7	075720102

## CPYK series



CPYK/GS

### Materials

Box and door moulded in SMC (fiberglass). Grey RAL 7040 color.

### Characteristics

Removable coulisse sliding door closed by screw with triangular head. Sectioned removable coulisse sliding bottom door with 2" hole. For recessed or mounted installation on walls.

**Ventilation through door labyrinth formed around door perimeter.**

### Applications

To house gas pressure reducers, safety valves, water connections.

### Protection degree

IP 43 in compliance with CEI EN 60529, IK 09 according to CEI EN 62262.

Overall dimensions			Internal dimensions			Version	Model	Code
Height	Base	Depth	Height	Base	Depth			
500	311	208	406	211	142	With dome cover, locked by triangle key 9 mm	CPYK/GS	075700096

## CPWRA series - insulated

### Materials

Made of SMC (fiberglass) - grey RAL 7040 color.

### Characteristics

Hinged cover, removable by turning through 90°.

Exterior embossing to protect against UV rays.

Dustproof door operated with key lockable lever. Ventilation through door labyrinth equal to 1/10th of net surface area.

Removable bottom panel to facilitate pipe installation. Break-through blanked holes for pipe inlet/outlet.

Complete with 3/4" pipe fixing collars.

Water meter antifreezing inside insulation.

### Applications

For wall installation or fixing to property boundary wall.

Complies with the specifications established by the most important distribution authorities.

### Protection degree

IP 43 in compliance with CEI EN 60529, IK 09 according to CEI EN 62262.

Overall dimensions			Internal dimensions			Version	Model	Code
Height	Base	Depth	Height	Base	Depth			
500	360	211	397	257	132	Lock operated by safety key cod. Y21	CPWRA/C	075745000

## TPV series - Doors



TPV/43

### Materials

Made of SMC (fiberglass) with 1 degree fire resistance according to D.M. of 24/11/84 (fire-prevention safety standards for the conveyance, distribution, storage and use of natural gas with a density of not more than 0.8). Grey RAL 7040 color.

### Characteristics

Hinged cover, removable by turning through 90; Dustproof door operated with key lockable lever.

Ventilation through door labyrinth equal to 1/10th of net surface area.

Complete with galvanized and passivated shanks to wall in or fix with expansion plugs.

### Applications

Suitable for gas meter, gas pressure reducer-regulator, safety-valves and water intakes.

### Protection degree

IP43 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

Niche dimensions		Outframe dimensions		Door dimensions		Type	Model	Code
Height	Base	Height	Base	Height	Base			
500	360	530	390	455	315	Lock operated by safety key cod. Y21	TPV/43	076430008
500	360	530	390	455	315	Lock operated by square key 7 mm	TPV/43/Q7	076430107



## Inspection window



OC/120

### Materials

Transparent polycarbonate shield complete with polyvinyl chloride seal.

### Applications

To check and read the values inside with the cover closed (always state the position).

### Protection degree

IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

Outer diameter	Rading diameter	Type of box	Version	Model	Code
154	120	CPWR - CPWQ - CPYK - TPV/43	Loose	OC/120	095750915
154	120	CPWR - CPWQ - CPYK - TPV/43	Installed	EA/OC/120	097750913

## Keys - summarizing table

Type of box	Description	Model	Code
CPYK/GS	Triangle metal key 9 mm	CH/TR9	091501098
CPWR/C/Q7 - CPWQ/C/Q7 - TPV/43/Q7	Square metal key 7 mm	CH/Q7	091501577
CPWR/C - CPWQ/C - CPWRA/C - TPV/43	Nickel-plated brass key cfr. Y21.	CS/21	091505214

## CEI EN 60529

### Protection ratings of casings (IP Code)

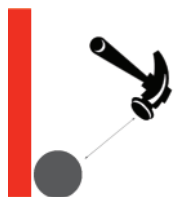
The Standard establishes a classification system for the protection ratings of casings for electrical material the rated voltage of which does not exceed 72,5 kV.

The IP code identifies the protection rating of a casing by combining two digits: the first digit indicates protection against access to hazardous parts and the penetration of solid foreign bodies, the second digit refers to protection against liquid ingress.

Protection against solids, dust			Protection against water		
First IP digit Xx	Protection	Proof	Second IP digit xX	Protetion	Pooof
0	No protection		0	No protection	-
1	Protection against solids of diameter $\geq 50$ mm (protection against accidental contacts)		1	Protection against vertical water drops (drops which fall vertically due to gravity)	
2	Protection against solids of diameter $\geq 12,5$ mm (protection against contact with fingers)		2	Protection against vertical water drops at a maximum angle of 15°	
3	Protection against solids of diameter $\geq 2,5$ mm (protection against contact with tools)		3	Protection against water falling at an angle no higher than 60°	
4	Protection against solids of diameter $\geq 1,0$ mm (protection against insertion of wires/cables)		4	Protection against spray from all directions	
5	Protection against dust. Penetration is limited to a quantity which does not damage the housed equipment		5	Protection against power cleaner water jets placed 3 metres away, from all directions	
6	Total protection against dust		6	Protection against flooding and powerful water jets	
			7	Protection against the effects of temporary immersion	
			8	Protection against the effects of continuous immersion	

## CEI EN 50102

### Protection ratings for electrical equipment casings against external mechanical impact (IK Code)



IK rating	Equivalence in Joule for impact
00	0
01	0,15
02	0,20
03	0,35
04	0,50
05	0,70
06	1,0
07	2,0
08	5,0
09	10,0
10	20,0

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011014065	NM/46	202
011014164	NM/416	202
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011212107	MM/210	203
011213105	MM/310	203
011214160	MM/416	203
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011214350	MM/435	203
011222254	MMS/225	206
011224250	MMS/425	206
011311354	MMC/135	202
011311362	MMC/135/N	202

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012024162	MNV/416	202
012024253	MNV/425	202
012051702	MPZ/10-70/A	203
012056354	MPZ/6-35/A	203
012114500	MLZ/450	371
012114955	MLZ/4100	371

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013014253	MCM/425	204
013014501	MCM/450	204
013014709	MCM/470	204
013091707	MN/170	204
013124250	NLM/425	205
013124508	NLM/450	205
013124953	NLM/4100/P	205
013591250	SG/125	370
013591508	SG/150	370

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017103102	MSP/3100	372
017103508	MSP/350	372
017103607	MSP/3160	372
017202110	MST/2100/V	374
017202516	MST/250/V	374
017202615	MST/2160/V	374
017203100	MST/3100	395
017203506	MST/350	372
017394974	MSRH/495/C	375
017420951	MCU/495/BM	204
017421959	MSU/495/B	373
017422161	MSMT/2100/Y	373
017423179	MSMT/3100/B	373
017523218	MSG/3120/V	374

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018201012	MPE/PP1	446
018201020	MPE/PP2	446
018201038	MPE/PP3	446
018201046	MPE/PP4	466
018201103	MPE/MT1	446
018202002	MPE/SB2	447
018203109	MPE/SV3	447
018204008	MPE/CV4	446
018301101	MGD/A10	448
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019201250	VS/125	207
019201268	VS/125/B	207
019251263	VT/125/D	207
019251602	VT/160	207
019301001	BNH/00	208
019301100	BNH/0	208
019301118	BNH/1	208
019301126	BNH/2	208
019311257	VM/120	208
019320019	BFM/MVY/1	208
019320027	BFM/MVY/2	208
019750025	FT/R2	209
019750041	FT/R4	209
019750066	FT/R6	209
019750108	FT/R10	209
019750165	FT/R16	209
019750256	FT/R25	209
019752302	FT/GO30	209
019752401	FT/GO40	209
019752609	FT/GO60	209
019753045	FT/S4	209
019753060	FT/S6	209
019753102	FT/S10	209
019753169	FT/S16	209
019753250	FT/S25	209
019754027	FV/S2	209
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019754167	FV/S16	209
019754209	FV/S20	209
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021820139	USV25/A/3	216

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023160104	ASV16/A	215, 363
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027101005	UPM10/10	214, 362
027160001	UPM16	213, 361
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027161108	UPM16/10	214, 362
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035700137	VQ70/MA/13	221
035700426	VQ70/42	220
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035701424	VQ70/MA/42	221
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035701531	VQ70/50-MA/13	221
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035711530	VQH70/50-MA/13	221
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035711936	VQH70/100-MA/13	221
035718204	VQH70/VB	221
035718220	VQH70/VB/12	221

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<b>042160002</b>	RP1600	380
<b>042161000</b>	RP1600A	380
<b>042200006</b>	RP20	379
<b>042240002</b>	RP250	380
<b>042350009</b>	RP35	379
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<b>042441006</b>	RP400A	380
<b>042500009</b>	RP50	379
<b>042661009</b>	RP600A	380
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<b>043161249</b>	RP1600A/FS/PT	384
<b>043240241</b>	RP250/FS/PT	384
<b>043440247</b>	RP400/FS/PT	384
<b>043441245</b>	RP400A/FS/PT	384
<b>043661248</b>	RP600A/FS/PT	384

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<b>044671246</b>	BRP600A/FS/PT	384

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<b>052300258</b>	SMW/P	347
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077124113	G12-4/4A/T	158
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077126316	G12-6/111A/T	166
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<b>077135184</b>	GH12-5/13A/ZT	159	<b>077509198</b>	G5-9/28/ZT	21	<b>077519312</b>	GH5-9/442/T	32
<b>077135218</b>	GH12-5/22A/T	162	<b>077509208</b>	G5-9/55/T	26	<b>077519320</b>	GH5-9/531/T	32
<b>077136216</b>	GH12-6/33A/T	162	<b>077509214</b>	G5-9/82/T	26	<b>077519379</b>	GH5-9/2222/ZT	33
<b>077136299</b>	GH12-6/111A/ZT	163	<b>077509271</b>	G5-9/252/ZT	27	<b>077519387</b>	GH5-9/1322/ZT	33
<b>077136315</b>	GH12-6/111A/T	166	<b>077509289</b>	G5-9/244/ZT	27	<b>077519395</b>	GH5-9/1331/ZT	33
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<b>077138113</b>	GH12-8/8A/T	158	<b>077509305</b>	G5-9/522/T	32	<b>077519411</b>	GH5-9/3221/T	38
<b>077138196</b>	GH12-8/25A/ZT	159	<b>077509313</b>	G5-9/442/T	32	<b>077519429</b>	GH5-9/2222/T	38
<b>077138212</b>	GH12-8/52A/T	162	<b>077509321</b>	G5-9/531/T	32	<b>077519494</b>	GH5-9/11111/ZT	39
<b>077138220</b>	GH12-8/44A/T	162	<b>077509370</b>	G5-9/2222/ZT	33	<b>077519502</b>	GH5-9/11111/T	38
<b>077138295</b>	GH12-8/222A/ZT	163	<b>077509388</b>	G5-9/1322/ZT	33	<b>077702108</b>	G7-2/2/T	70
<b>077138311</b>	GH12-8/222A/T	166	<b>077509396</b>	G5-9/1331/ZT	33	<b>077702900</b>	G7-2/2/S	60
<b>077139194</b>	GH12-9/28A/ZT	159	<b>077509404</b>	G5-9/3311/T	38	<b>077702959</b>	G7-2/ZT	61
<b>077139210</b>	GH12-9/82A/T	162	<b>077509412</b>	G5-9/3221/T	38	<b>077704104</b>	G7-4/4/T	70
<b>077139228</b>	GH12-9/55A/T	162	<b>077509420</b>	G5-9/2222/T	38	<b>077704906</b>	G7-4/4/S	60
<b>077139285</b>	GH12-9/252A/ZT	163	<b>077509495</b>	G5-9/11111/ZT	39	<b>077705101</b>	G7-5/5/T	70
<b>077139293</b>	GH12-9/244A/ZT	163	<b>077509503</b>	G5-9/11111/T	38	<b>077705192</b>	G7-5/22/ZT	71
<b>077139319</b>	GH12-9/522A/T	166	<b>077512101</b>	GH5-2/2/T	20	<b>077705200</b>	G7-5/22/T	80
<b>077139327</b>	GH12-9/442A/T	166	<b>077512903</b>	GH5-2/2/S	12	<b>077705903</b>	G7-5/5/S	60
<b>077139392</b>	GH12-9/2222A/ZT	167	<b>077512952</b>	GH5-2/ZT	13	<b>077707107</b>	G7-7/7/T	70
<b>077139418</b>	GH12-9/2222A/T	166	<b>077513109</b>	GH5-3/3/T	20	<b>077708006</b>	G7-8/T	96
<b>077500106</b>	G5-1/1/T	20	<b>077513901</b>	GH5-3/3/S	12	<b>077708105</b>	G7-8/8/T	70
<b>077501906</b>	G5-1/1/S	12	<b>077513950</b>	GH5-3/ZT	13	<b>077708196</b>	G7-8/25/ZT	71
<b>077501955</b>	G5-1/ZT	13	<b>077514107</b>	GH5-4/4/T	20	<b>077708204</b>	G7-8/44/T	80
<b>077502102</b>	G5-2/2/T	20	<b>077514909</b>	GH5-4/4/S	12	<b>077708212</b>	G7-8/52/T	80
<b>077502904</b>	G5-2/2/S	12	<b>077515104</b>	GH5-5/5/T	20	<b>077708295</b>	G7-8/222/ZT	81
<b>077502953</b>	G5-2/ZT	13	<b>077515187</b>	GH5-5/22/ZT	21	<b>077708303</b>	G7-8/222/T	88
<b>077503100</b>	G5-3/3/T	20	<b>077515195</b>	GH5-5/13/ZT	21	<b>077709004</b>	G7-9/T	96
<b>077503902</b>	G5-3/3/S	12	<b>077515203</b>	GH5-5/22/T	26	<b>077709194</b>	G7-9/28/ZT	71
<b>077503951</b>	G5-3/ZT	13	<b>077515211</b>	GH5-5/31/T	26	<b>077709202</b>	G7-9/55/T	80
<b>077504108</b>	G5-4/4/T	20	<b>077515906</b>	GH5-5/5/S	12	<b>077709210</b>	G7-9/82/T	80
<b>077504900</b>	G5-4/4/S	12	<b>077516193</b>	GH5-6/33/ZT	21	<b>077709285</b>	G7-9/252/ZT	81
<b>077505105</b>	G5-5/5/T	20	<b>077516201</b>	GH5-6/33/T	26	<b>077709293</b>	G7-9/244/ZT	81
<b>077505188</b>	G5-5/22/ZT	21	<b>077516292</b>	GH5-6/111/ZT	27	<b>077709301</b>	G7-9/522/T	88
<b>077505196</b>	G5-5/13/ZT	21	<b>077516300</b>	GH5-6/111/T	32	<b>077709319</b>	G7-9/442/T	88
<b>077505204</b>	G5-5/22/T	26	<b>077517100</b>	GH5-7/7/T	20	<b>077709392</b>	G7-9/2222/ZT	89
<b>077505212</b>	G5-5/31/T	26	<b>077518009</b>	GH5-8/T	44	<b>077709400</b>	G7-9/2222/T	88
<b>077505907</b>	G5-5/5/S	12	<b>077518108</b>	GH5-8/8/T	20	<b>077712107</b>	GH7-2/2/T	70
<b>077506194</b>	G5-6/33/ZT	21	<b>077518199</b>	GH5-8/25/ZT	21	<b>077712909</b>	GH7-2/2/S	60
<b>077506202</b>	G5-6/33/T	26	<b>077518207</b>	GH5-8/44/T	26	<b>077712958</b>	GH7-2/ZT	61
<b>077506293</b>	G5-6/111/ZT	27	<b>077518215</b>	GH5-8/52/T	26	<b>077714103</b>	GH7-4/4/T	70
<b>077506301</b>	G5-6/111/T	32	<b>077518272</b>	GH5-8/231/ZT	27	<b>077714905</b>	GH7-4/4/S	60
<b>077507101</b>	G5-7/7/T	20	<b>077518280</b>	GH5-8/132/ZT	27	<b>077715100</b>	GH7-5/5/T	70
<b>077508000</b>	G5-8/T	44	<b>077518298</b>	GH5-8/222/ZT	27	<b>077715191</b>	GH7-5/22/ZT	71
<b>077508109</b>	G5-8/8/T	20	<b>077518306</b>	GH5-8/222/T	32	<b>077715209</b>	GH7-5/22/T	80
<b>077508190</b>	G5-8/25/ZT	21	<b>077518314</b>	GH5-8/321/T	32	<b>077715902</b>	GH7-5/5/S	60
<b>077508208</b>	G5-8/44/T	26	<b>077519007</b>	GH5-9/T	44	<b>077717106</b>	GH7-7/7/T	70
<b>077508216</b>	G5-8/52/T	26	<b>077519197</b>	GH5-9/28/ZT	21	<b>077718005</b>	GH7-8/T	96
<b>077508273</b>	G5-8/231/ZT	27	<b>077519205</b>	GH5-9/55/T	26	<b>077718104</b>	GH7-8/8/T	70
<b>077508281</b>	G5-8/132/ZT	27	<b>077519213</b>	GH5-9/82/T	26	<b>077718195</b>	GH7-8/25/ZT	71
<b>077508299</b>	G5-8/222/ZT	27	<b>077519270</b>	GH5-9/252/ZT	27	<b>077718203</b>	GH7-8/44/T	80
<b>077508307</b>	G5-8/222/T	32	<b>077519288</b>	GH5-9/244/ZT	27	<b>077718211</b>	GH7-8/52/T	80
<b>077508315</b>	G5-8/321/T	32	<b>077519296</b>	GH5-9/153/ZT	27	<b>077718294</b>	GH7-8/222/ZT	81



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077719193	GH7-9/28/ZT	71
077719201	GH7-9/55/T	80
077719219	GH7-9/82/T	80
077719284	GH7-9/252/ZT	81
077719292	GH7-9/244/ZT	81
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077902906	G9-2/2/S	106
077902955	G9-2/ZT	107
077904100	G9-4/4/T	116
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077904902	G9-4/4/S	106
077904910	G9-4/4A/S	106
077904951	G9-4/ZT	107
077905107	G9-5/5/T	116
077905115	G9-5/5A/T	116
077905198	G9-5/22/ZT	117
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077905909	G9-5/5/S	106
077907103	G9-7/7/T	116
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077908184	G9-8/25A/ZT	117
077908192	G9-8/25/ZT	117
077908200	G9-8/44/T	126
077908218	G9-8/52/T	126
077908226	G9-8/44A/T	126
077908291	G9-8/222/ZT	127
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077909000	G9-9/T	142
077909190	G9-9/28/ZT	117
077909208	G9-9/55/T	126
077909216	G9-9/82/T	126
077909281	G9-9/252/ZT	127
077909299	G9-9/244/ZT	127
077909307	G9-9/522/T	134
077909315	G9-9/442/T	134
077909398	G9-9/2222/ZT	135
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077912905	GH9-2/2/S	106
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077914109	GH9-4/4/T	116
077914117	GH9-4/4A/T	116
077914901	GH9-4/4/S	106
077914919	GH9-4/4A/S	106
077914950	GH9-4/ZT	107
077915106	GH9-5/5/T	116

077915114	GH9-5/5A/T	116
077915197	GH9-5/22/ZT	117
077915205	GH9-5/22/T	126
077915908	GH9-5/5/S	106
077917102	GH9-7/7/T	116
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077918100	GH9-8/8/T	116
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077918225	GH9-8/44A/T	126
077918290	GH9-8/222/ZT	127
077918308	GH9-8/222/T	134
077919009	GH9-9/T	142
077919199	GH9-9/28/ZT	117
077919207	GH9-9/55/T	126
077919215	GH9-9/82/T	126
077919280	GH9-9/252/ZT	127
077919298	GH9-9/244/ZT	127
077919306	GH9-9/522/T	134
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078127115	G12-7/7A/T-4	158
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078128212	G12-8/52A/T-4	162
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078128311	G12-8/222A/T-4	166
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078129210	G12-9/82A/T-4	162
078129228	G12-9/55A/T-4	162
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078132115	GH12-2/2A/T-4	158
078132198	GH12-2/2A/S-4	152
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078139193	GH12-9/28A/ZT-4	159
078139219	GH12-9/82A/T-4	162
078139227	GH12-9/55A/T-4	162
078139284	GH12-9/252A/ZT-4	163
078139292	GH12-9/244A/ZT-4	163
078139318	GH12-9/522A/T-4	166
078139326	GH12-9/442A/T-4	166
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078501905	G5-1/1/S-4	12
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078502903	G5-2/2/S-4	12
078503109	G5-3/3/T-4	20
078503901	G5-3/3/S-4	12
078504107	G5-4/4/T-4	20
078504909	G5-4/4/S-4	12
078505104	G5-5/5/T-4	20
078505187	G5-5/22/ZT-4	21
078505195	G5-5/13/ZT-4	21
078505203	G5-5/22/T-4	26
078505211	G5-5/31/T-4	26
078505906	G5-5/5/S-4	12
078506193	G5-6/33/ZT-4	21
078506201	G5-6/33/T-4	26
078506292	G5-6/111/ZT-4	27
078506300	G5-6/111/T-4	32
078507100	G5-7/7/T-4	20
078508108	G5-8/8/T-4	20
078508199	G5-8/25/ZT-4	21
078508207	G5-8/44/T-4	26
078508215	G5-8/52/T-4	26
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<b>078508280</b>	G5-8/132/ZT-4	27	<b>078519311</b>	GH5-9/442/T-4	32	<b>078719284</b>	GH7-9/252/ZT-4	81
<b>078508298</b>	G5-8/222/ZT-4	27	<b>078519329</b>	GH5-9/531/T-4	32	<b>078719291</b>	GH7-9/244/ZT-4	81
<b>078508306</b>	G5-8/222/T-4	32	<b>078519378</b>	GH5-9/2222/ZT-4	33	<b>078719309</b>	GH7-9/522/T-4	88
<b>078508314</b>	G5-8/321/T-4	32	<b>078519386</b>	GH5-9/1322/ZT-4	33	<b>078719317</b>	GH7-9/442/T-4	88
<b>078509197</b>	G5-9/28/ZT-4	21	<b>078519394</b>	GH5-9/1331/ZT-4	33	<b>078719390</b>	GH7-9/2222/ZT-4	89
<b>078509205</b>	G5-9/55/T-4	26	<b>078519402</b>	GH5-9/3311/T-4	38	<b>078719408</b>	GH7-9/2222/T-4	88
<b>078509213</b>	G5-9/82/T-4	26	<b>078519410</b>	GH5-9/3221/T-4	38	<b>078719507</b>	GH7-S/84/T-4	80
<b>078509270</b>	G5-9/252/ZT-4	27	<b>078519428</b>	GH5-9/2222/T-4	38	<b>078902905</b>	G9-2/2/S-4	106
<b>078509288</b>	G5-9/244/ZT-4	27	<b>078519493</b>	GH5-9/11111/ZT-4	39	<b>078904109</b>	G9-4/4/T-4	116
<b>078509296</b>	G5-9/153/ZT-4	27	<b>078519501</b>	GH5-9/11111/T-4	38	<b>078904117</b>	G9-4/4A/T-4	116
<b>078509304</b>	G5-9/522/T-4	32	<b>078702107</b>	G7-2/2/T-4	70	<b>078904901</b>	G9-4/4/S-4	106
<b>078509312</b>	G5-9/442/T-4	32	<b>078702909</b>	G7-2/2/S-4	60	<b>078904919</b>	G9-4/4A/S-4	106
<b>078509320</b>	G5-9/531/T-4	32	<b>078704103</b>	G7-4/4/T-4	70	<b>078905106</b>	G9-5/5/T-4	116
<b>078509379</b>	G5-9/2222/ZT-4	33	<b>078704905</b>	G7-4/4/S-4	60	<b>078905114</b>	G9-5/5A/T-4	116
<b>078509387</b>	G5-9/1322/ZT-4	33	<b>078705100</b>	G7-5/5/T-4	70	<b>078905197</b>	G9-5/22/ZT-4	117
<b>078509395</b>	G5-9/1331/ZT-4	33	<b>078705191</b>	G7-5/22/ZT-4	71	<b>078905205</b>	G9-5/22/T-4	126
<b>078509403</b>	G5-9/3311/T-4	38	<b>078705209</b>	G7-5/22/T-4	80	<b>078905908</b>	G9-5/5/S-4	106
<b>078509411</b>	G5-9/3221/T-4	38	<b>078705902</b>	G7-5/5/S-4	60	<b>078907102</b>	G9-7/7/T-4	116
<b>078509429</b>	G5-9/2222/T-4	38	<b>078707106</b>	G7-7/7/T-4	70	<b>078908100</b>	G9-8/8/T-4	116
<b>078509494</b>	G5-9/11111/ZT-4	39	<b>078708104</b>	G7-8/8/T-4	70	<b>078908183</b>	G9-8/25A/ZT-4	117
<b>078509502</b>	G5-9/11111/T-4	38	<b>078708195</b>	G7-8/25/ZT-4	71	<b>078908191</b>	G9-8/25/ZT-4	117
<b>078512100</b>	GH5-2/2/T-4	20	<b>078708203</b>	G7-8/44/T-4	80	<b>078908209</b>	G9-8/44/T-4	126
<b>078512902</b>	GH5-2/2/S-4	12	<b>078708211</b>	G7-8/52/T-4	80	<b>078908217</b>	G9-8/52/T-4	126
<b>078513109</b>	GH5-3/3/T-4	20	<b>078708294</b>	G7-8/222/ZT-4	81	<b>078908225</b>	G9-8/44A/T-4	126
<b>078513900</b>	GH5-3/3/S-4	12	<b>078708302</b>	G7-8/222/T-4	88	<b>078908290</b>	G9-8/222/ZT-4	127
<b>078514106</b>	GH5-4/4/T-4	20	<b>078709193</b>	G7-9/28/ZT-4	71	<b>078908308</b>	G9-8/222/T-4	134
<b>078514908</b>	GH5-4/4/S-4	12	<b>078709201</b>	G7-9/55/T-4	80	<b>078909199</b>	G9-9/28/ZT-4	117
<b>078515103</b>	GH5-5/5/T-4	20	<b>078709219</b>	G7-9/82/T-4	80	<b>078909207</b>	G9-9/55/T-4	126
<b>078515186</b>	GH5-5/22/ZT-4	21	<b>078709284</b>	G7-9/252/ZT-4	81	<b>078909215</b>	G9-9/82/T-4	126
<b>078515194</b>	GH5-5/13/ZT-4	21	<b>078709292</b>	G7-9/244/ZT-4	81	<b>078909280</b>	G9-9/252/ZT-4	127
<b>078515202</b>	GH5-5/22/T-4	26	<b>078709300</b>	G7-9/522/T-4	88	<b>078909298</b>	G9-9/244/ZT-4	127
<b>078515210</b>	GH5-5/31/T-4	26	<b>078709318</b>	G7-9/442/T-4	88	<b>078909306</b>	G9-9/522/T-4	134
<b>078515905</b>	GH5-5/5/S-4	12	<b>078709391</b>	G7-9/2222/ZT-4	89	<b>078909314</b>	G9-9/442/T-4	134
<b>078516193</b>	GH5-6/33/ZT-4	21	<b>078709409</b>	G7-9/2222/T-4	88	<b>078909397</b>	G9-9/2222/ZT-4	135
<b>078516200</b>	GH5-6/33/T-4	26	<b>078709508</b>	G7-S/84/T-4	80	<b>078909405</b>	G9-9/2222/T-4	134
<b>078516291</b>	GH5-6/111/ZT-4	27	<b>078712106</b>	GH7-2/2/T-4	70	<b>078909504</b>	G9-S/84/T-4	126
<b>078516309</b>	GH5-6/111/T-4	32	<b>078712908</b>	GH7-2/2/S-4	260	<b>078912904</b>	GH9-2/2/S-4	267
<b>078517109</b>	GH5-7/7/T-4	20	<b>078714102</b>	GH7-4/4/T-4	261	<b>078914108</b>	GH9-4/4/T-4	268
<b>078518107</b>	GH5-8/8/T-4	20	<b>078714904</b>	GH7-4/4/S-4	261	<b>078914116</b>	GH9-4/4A/T-4	116
<b>078518198</b>	GH5-8/25/ZT-4	21	<b>078715109</b>	GH7-5/5/T-4	70	<b>078914900</b>	GH9-4/4/S-4	267
<b>078518206</b>	GH5-8/44/T-4	26	<b>078715190</b>	GH7-5/22/ZT-4	71	<b>078914918</b>	GH9-4/4A/S-4	106
<b>078518214</b>	GH5-8/52/T-4	26	<b>078715208</b>	GH7-5/22/T-4	80	<b>078915105</b>	GH9-5/5/T-4	116
<b>078518271</b>	GH5-8/231/ZT-4	27	<b>078715901</b>	GH7-5/5/S-4	60	<b>078915113</b>	GH9-5/5A/T-4	116
<b>078518289</b>	GH5-8/132/ZT-4	27	<b>078717105</b>	GH7-7/7/T-4	70	<b>078915196</b>	GH9-5/22/ZT-4	117
<b>078518297</b>	GH5-8/222/ZT-4	27	<b>078718103</b>	GH7-8/8/T-4	70	<b>078915204</b>	GH9-5/22/T-4	126
<b>078518305</b>	GH5-8/222/T-4	32	<b>078718194</b>	GH7-8/25/ZT-4	71	<b>078915907</b>	GH9-5/5/S-4	106
<b>078518313</b>	GH5-8/321/T-4	32	<b>078718202</b>	GH7-8/44/T-4	80	<b>078917101</b>	GH9-7/7/T-4	106
<b>078519196</b>	GH5-9/28/ZT-4	21	<b>078718210</b>	GH7-8/52/T-4	80	<b>078918109</b>	GH9-8/8/T-4	116
<b>078519204</b>	GH5-9/55/T-4	26	<b>078718293</b>	GH7-8/222/ZT-4	81	<b>078918182</b>	GH9-8/25A/ZT-4	117
<b>078519212</b>	GH5-9/82/T-4	26	<b>078718301</b>	GH7-8/222/T-4	88	<b>078918190</b>	GH9-8/25/ZT-4	117
<b>078519279</b>	GH5-9/252/ZT-4	27	<b>078718350</b>	GH7-8/8/GMI/T-4	79	<b>078918208</b>	GH9-8/44/T-4	126
<b>078519287</b>	GH5-9/244/ZT-4	27	<b>078719192</b>	GH7-9/28/ZT-4	71	<b>078918216</b>	GH9-8/52/T-4	126
<b>078519295</b>	GH5-9/153/ZT-4	27	<b>078719200</b>	GH7-9/55/T-4	80	<b>078918224</b>	GH9-8/44A/T-4	126
<b>078519303</b>	GH5-9/522/T-4	32	<b>078719218</b>	GH7-9/82/T-4	80	<b>078918299</b>	GH9-8/222/ZT-4	127

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078919206	GH9-9/55/T-4	126
078919214	GH9-9/82/T-4	126
078919289	GH9-9/252/ZT-4	127
078919297	GH9-9/244/ZT-4	127
078919305	GH9-9/522/T-4	134
078919313	GH9-9/442/T-4	134
078919396	GH9-9/2222/ZT-4	135
078919404	GH9-9/2222/T-4	134
078919503	GH9-S/84/T-4	126

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091503300	CHP/TR9/CPMI	235
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092803436	EFR/3430	337

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095030292	BPG/29	365
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095182002	SF/MPE/W	449
095182010	SF/MPE/B	449
095182028	SF/MPE/G	449
095182044	SF/MPE/V	449
095182051	SF/MPE/N	449
095182069	SF/MPE/R	449
095182077	SF/MPE/H	449
095182085	SF/MPE/A	449
095182093	SF/MPE/M	449
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095330700	PVQ70	222
095341707	C1/VQ70	222
095344719	CSD/VQ70	222
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095420154	PRP/160	385
095420162	PRP/1600	385
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095420444	PRP/400	385
095420501	PRP/50	385
095420667	PRP/600	385
095420956	PRP/100	385
095424107	PRP/1000/ZC	385
095424164	PRP/1600/ZC	385
095424172	PRP/160/ZC	385
095424248	PRP/250/ZC	385
095424446	PRP/400/ZC	385
095424503	PRP/50/ZC	385
095424669	PRP/600/ZC	385
095424958	PRP/100/ZC	385
095425104	PB/RP1000	385
095425153	PB/RP160	385
095425161	PB/RP1600	385
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DKC Europe S.r.l. - Division Conchiglia  
via E. Mattei, 22 - 29010 Villanova Sull'Arda (PC)  
tel.+39 0321 989898 - Fax +39 0522 302803  
e-mail: conchiglia@dkceurope.eu

[www.conchiglia.com](http://www.conchiglia.com)  
[www.dkceurope.eu](http://www.dkceurope.eu)

