

Guide to enclosures for potentially **explosive** **atmospheres**



by Schneider Electric

Guide to enclosures for potentially **explosive** atmospheres



The safety of every application, in every environment, thanks to ATEX-certified steel, stainless steel and polyester wall-mounting enclosures.



by Schneider Electric

The specialist in sealed equipment

> Since 1958, HIMEL has been dedicated to creating, producing and selling enclosure systems. These provide physical protection for the production and installation of equipment for industrial automation, electrical distribution and VDI networks in all environmental conditions.

> HIMEL is amongst the world's leaders in the field of industrial boxes, wall-mounting enclosures, monobloc and suitable floor-standing enclosures and control desks, offered in all kind of materials (steel, stainless steel, polyester and thermoplastic), and in the field of switchgear, boxes and installation accessories. HIMEL is the confirmed specialist in sealed equipment.



To best meet the needs of professionals:

**Attentiveness,
proximity,
innovation
and presence.**

The choice of a worldwide leader

Command of five industrial lines of work

> To efficiently meet the needs of professionals in the fields of electricity, automation, electronics and VDI and telecom networks, HIMEL guarantees, through its Quality Assurance department, command of the industrial lines of work required to manufacture its products.

> Distributed over four sites, covering a total surface area of 55,000 m², the industrial activities take place in different workshops. Each workshop houses specialised production lines, with functions and equipment for specific production, dedicated to:

- > Sheet metal work.
- > Injection and extrusion of plastics.
- > Stainless, brushed and micro-beaded sheet metal work.
- > Transformation of thermosetting plastics.
- > Logistics.



Production launch



Production line



Packaging



Logistics platform



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Potentially explosive atmospheres: important information

What is ATEX?

> It is a term commonly used to describe potentially explosive atmospheres (ATmosphères EXplosibles in French) and standards for protection systems and equipment.

> Two European directives, ATEX 99/92/CE and ATEX 94/9/CE, and international standards IEC 60079 and IEC 61241, harmonized with EN European standards, apply to this field.

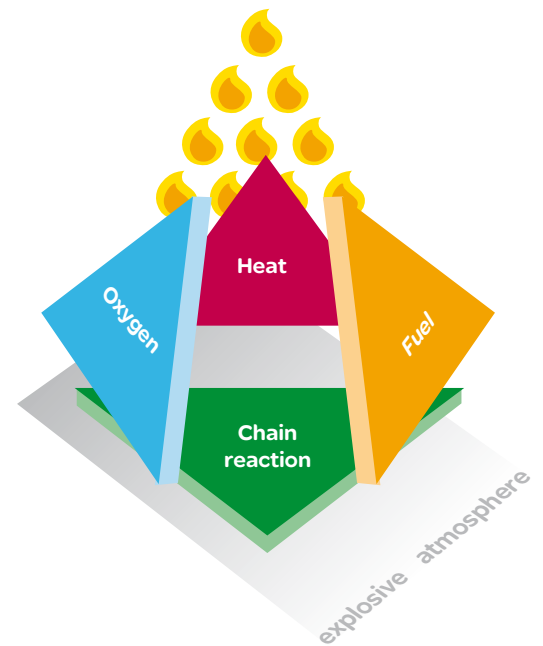


Product directive 94/9/CE: defines the manufacturers' obligations.

Personal protection directive 99/92/CE: defines the users' obligations.

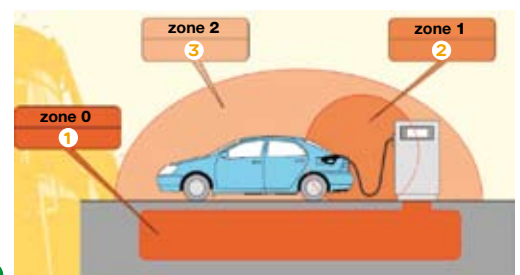
How is an potentially explosive atmosphere defined according to ATEX?

> An potentially explosive atmosphere is defined as a mix of flammable substances in the form of gas, vapour, dust (cloud or deposit) which, in air and under normal atmospheric conditions, can completely or partially catch fire in the form of an explosion when exposed to a source of ignition.

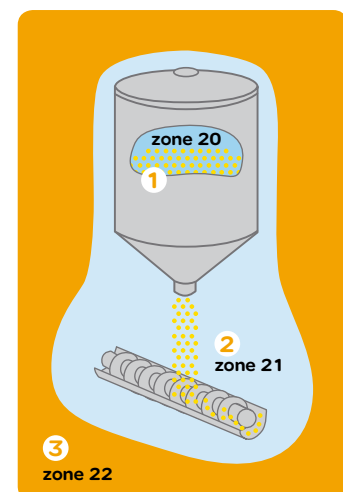


Classification of an explosive atmosphere

They are classified into groups and zones according to directive 99/92/CE and IEC standards as follows:



destination	categories/presence of potentially explosive atmosphere	hazardous zones	atmosphere
group I mines	M1 and M2	gas and dust (G & D)	
group II surface industries	1 permanent or frequent	zone 0: gas and vapour	G
		zone 20: mist and dust	D
	2 occasional	zone 1: gas and vapour	G
		zone 21: mist and dust	D
	3 rare	zone 2: gas and vapour	G
zone 22: mist and dust	D		

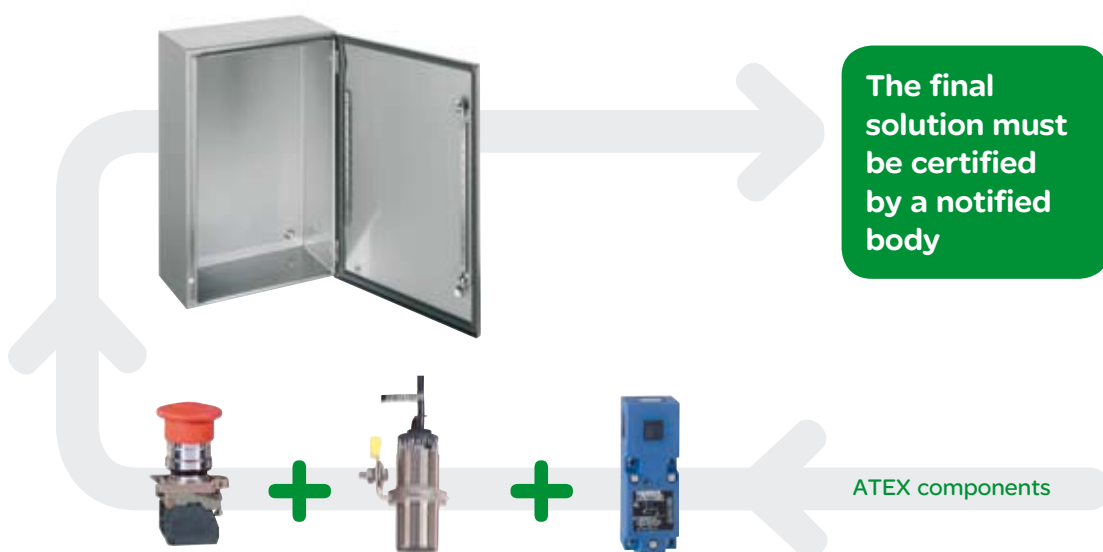


Equipment for potentially explosive atmospheres

- > Since 1st July 2003, European directive ATEX 94/9/CE has made it compulsory to use certified electric or non-electric equipment when it must be installed in zones with explosive atmospheres (gas or dust).
- > Certification must be provided by a body which is notified according to the same directive.
- > The body notifies its assessment of the quality of the production and certifies that the product complies with the health and safety demands defined in the directive and the international standards.
- > The certificate shows the category of the product by marking, and thus the zone and atmosphere in which it can be used.
- > The standards define the following types of protection for electric equipment:

electrical equipment				
CENELEC	IEC	gas: symbol of the types of protection	CENELEC/IEC	powder: symbol of the types of protection
EN 60079-0	IEC 60079-0	general rules	IEC/EN 61241-0	general rules
EN 50015	IEC 60079-6	o -oil immersion	IEC/EN 61241-1	tD -protection by enclosures
EN 50016	IEC 60079-2	p -pressurised enclosures	IEC/EN 61241-4	pD -protection by pressurisation
EN 50017	IEC 60079-5	q -powder filling	IEC/EN 61241-11	iD -protection by intrinsic safety
EN 60079-1	IEC 60079-1	d -flameproof enclosures	IEC/EN 61241-18	mD -protection by encapsulation
EN 60079-7	IEC 60079-7	e -increased safety		
EN 50020	IEC 60079-11	i -intrinsic safety		
EN 60079-15	IEC 60079-15	n -type of protection "n"		

- > Enclosures are certified as components. They will be assembled with other ATEX electrical, pneumatic and hydraulic components, among others to form a final solution which, in turn, must be ATEX-certified and subject to a declaration of conformity.



Degree of protection

In hazardous areas, equipment is required to offer a minimum degree of protection of IP54, but it can be tested or certified with a higher degree of protection.

Fields of application of HIMEL ATEX enclosures

Three types of enclosures

> All the wall-mounting enclosures presented in this brochure comply with standards for protection against the increased risk of explosion in atmospheres charged with gas (G) and/or dust (D).

> The HIMEL offer, designed to be used in group II, is classified as category 2.



destination	categories/presence of potentially explosive atmosphere	hazardous zones	atmosphere
group I mines	M1 and M2	gas and dust (G and D)	
group II surface industries	1 permanent or frequent	zone 0: gas and vapour	G
		zone 20: mist and dust	D
	2 occasional	zone 1: gas and vapour	G
		zone 21: mist and dust	D
	3 rare	zone 2: gas and vapour	G
zone 22: mist and dust		D	

Zone of application of HIMEL ATEX wall-mounting enclosures

> Category 2 products can be used as category 3.

> Our products are qualified for increased safety "e" (Ex e) but not for explosion-proof safety "d" (Ex d).

> The wall-mounting enclosures have the following marks:
 Ⓜ II 2 GD Ex e II Ex tD A21 IP66 according to directive 94/9/CE and standards EN 60079-0 (2004), EN 60079-7 (2006), EN 61241-0 (2005) and EN 61241-1 (2004).

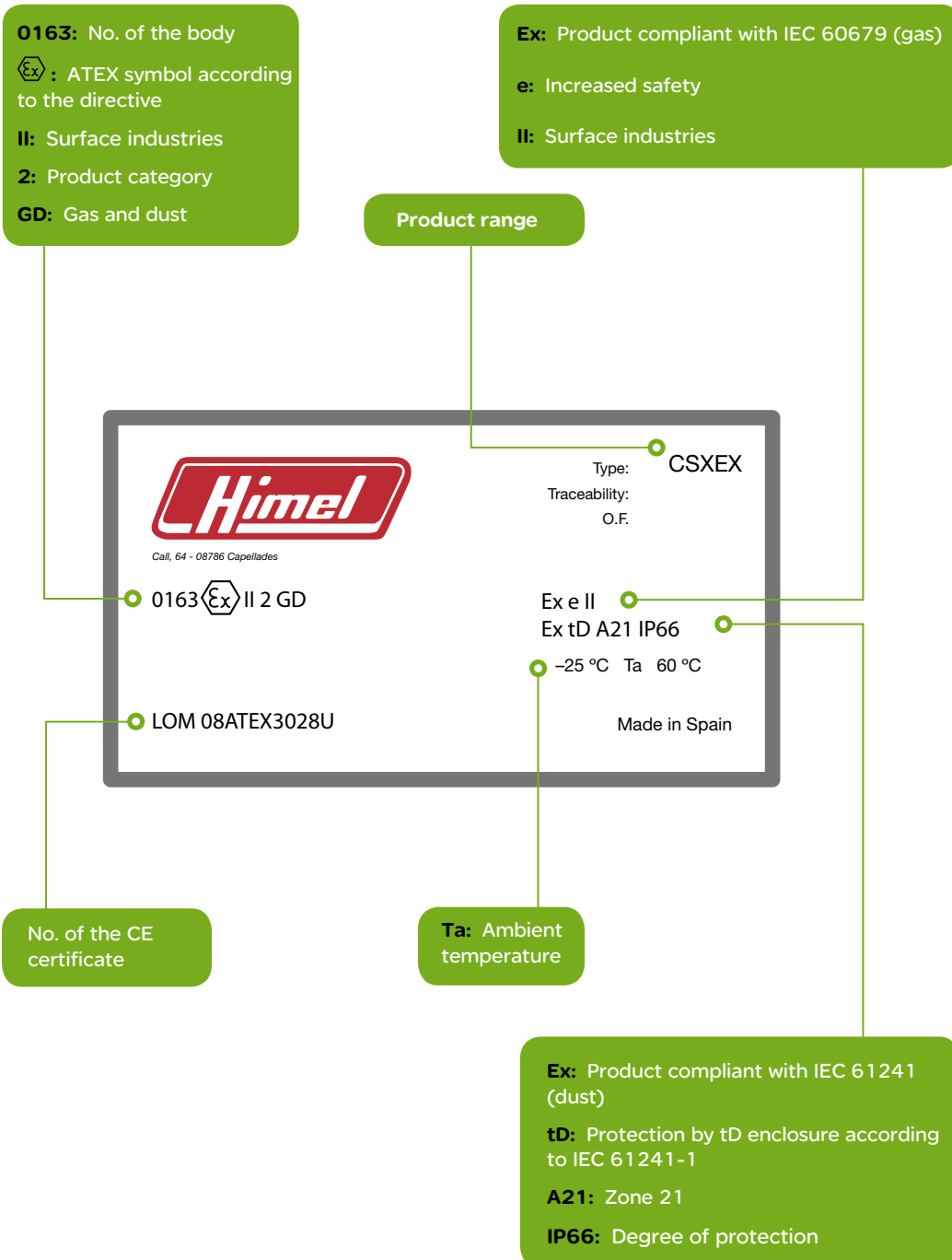
> The wall-mounting enclosures offer a degree of protection IP66 according to EN 60529, exceeding the recommendations of the ATEX directive.

> Certification of our production sites and inspection procedures guarantees observance and consistency of the quality level.

Description of the marking label affixed to ATEX certified wall-mounting enclosures



Download our ATEX certificates over the internet.



Three types of material to support all your applications

Industrial environments, equipment rooms



Steel

solution



Laboratories, food and beverage industries, specific demands in terms of hygiene and corrosion



Stainless steel

solution



Seaside, petrochemicals, highly corrosive environments



Polyester
reinforced with
fibreglass

solution



ATEX CRATX steel wall-mounting enclosure:

> The **ATEX CRATX steel wall-mounting enclosure** is certified by the LCIE with no. LCIE 07ATEX0012U (component certificate).

> 10 sizes: from 300 × 200 × 150 mm to 1000 × 800 × 300 mm.

> Degree of protection: IP66.

> Ambient temperature limits: -25 °C Ta +40 °C.

> Protection against external mechanical impact: IK10.

> Structured finish, epoxy-polyester powder paint, colour grey RAL 7032.



Download our ATEX certificates over the internet.

ATEX CSXEX stainless steel wall-mounting enclosure:

> The **ATEX CSXEX stainless steel wall-mounting enclosure** is ATEX-certified by the LOM with no. LOM 08ATEX3028U (component certificate).

> 7 sizes: from 300 × 200 × 150 mm to 1000 × 800 × 300 mm.

> Degree of protection: IP66.

> Ambient temperature limits: -25 °C Ta +60 °C.

> Protection against external mechanical impact: IK10.

> Scotch-Brite® polished finishing.



ATEX PLMEX polyester wall-mounting enclosure:

> The **ATEX PLMEX polyester wall-mounting enclosure** is certified by the LOM with no. LOM 08ATEX3040U (component certificate).

> 7 sizes: from 307 × 255 × 164 mm to 1056 × 852 × 350 mm.

> Degree of protection: IP66.

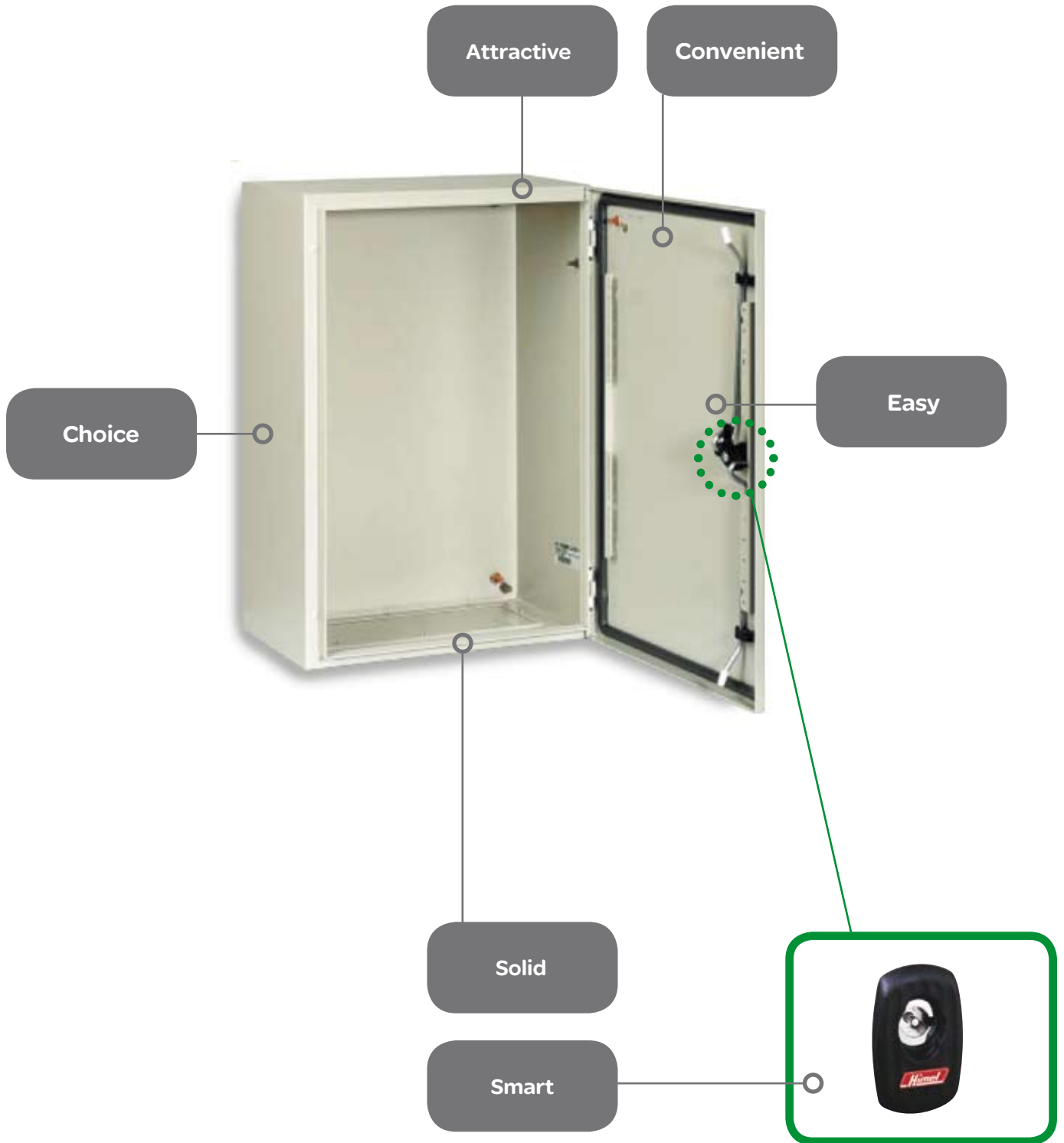
> Ambient temperature limits: -25 °C Ta +60 °C.

> Protection against external mechanical impact: IK10.

> Black colour.



ATEX CRATX steel wall-mounting enclosure



HIMEL steel wall-mounting enclosure compliant with the ATEX directive



Blind nut for external earth connection.



The earthing studs are welded to the door and in the body.



The chassis is mounted on four backstuds with 10 mm shoulders.



The four fixing holes are blocked by four crimped blind nuts.

Attractive

- > Sheet-steel wall-mounting enclosure.
- > Structured finish, colour grey RAL 7032.
- > Single-piece body with a cross-shaped structure.

Choice

- > Solid door: 10 references.
- > Metal chassis.
- > Perforated chassis.
- > Universal chassis.

Solid

- > Protection against external mechanical impact: IK10.
- > Degree of protection: IP66. Polyurethane seal.
- > Double folded gutter-shaped front profile of the body.

Smart

- > 3 mm double-bar lock as standard.
- > For heights exceeding 600 mm, 3 closure points with single operating point.

Easy

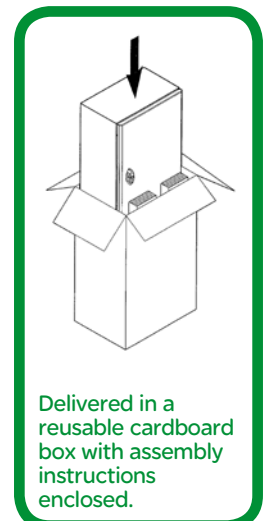
- > The door can be removed and turned over to open towards the left.

Convenient

- > Large variety of common accessories with the CRN range.
- > Reusable packaging.



Specific ATEX marking.



Delivered in a reusable cardboard box with assembly instructions enclosed.

ATEX CRATX steel wall-mounting enclosure

Product sheet




Download our ATEX
certificates and product
sheets over the internet.



The ATEX CRATX range of steel wall-mounting enclosures is certified by the LCIE with no. LCIE 07ATEX0012U (component certificate).

The wall-mounting enclosures have the following marks:

 II 2 GD Ex e II Ex tD A21 IP6X according to directive ATEX 94/9/CE and standards EN 60079-0 (2004), EN 60079-7 (2006), EN 61241-0 (2005) and EN 61241-1 (2004).

Technical features

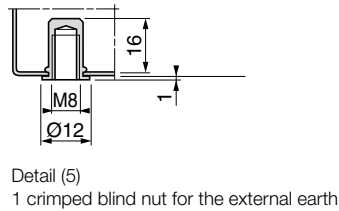
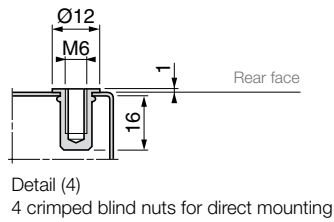
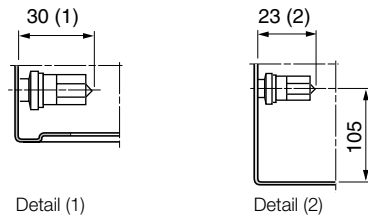
- > Degree of protection IP66 (wall-mounting enclosures with single door)
 - Polyurethane sealing gasket.
- > Protection against external mechanical impact: IK10.
- > Optimised closing and opening.
- > Perforated rails on the door: 2 vertical rails from H = 400 mm, 2 vertical rails and 2 horizontal rails from W = 800 mm.
- > Removable and reversible door, opens to 120°. Simple reversal of linkage.
- > Maximum load: 50 kg/m².
- > Standard wall-mounting enclosure supplied with a double-bar lock.
- > Equipotential connection between the door and the body by means of the M6 × 16 earthing screw.
- > Space optimisation: 4 M8 × 25 shouldered backstuds for mounting the chassis and the step slides leaving a space of 10 mm behind them.
- > Cable gland plate with grid pattern to facilitate drilling and assure maximum access.
- > Structured finish, epoxy-polyester powder paint, colour grey RAL 7032.
- > Compared with the universal CRN wall-mounting enclosure, the ATEX CRATX enclosure has:
 - > The 4 fixing holes blocked by 4 crimped blind nuts.
 - > One crimped M8 blind nut for an external earth connection (earth braid not supplied).
 - > Ambient temperature limits: -25 °C Ta +40 °C.

ATEX CRATX steel wall-mounting enclosure

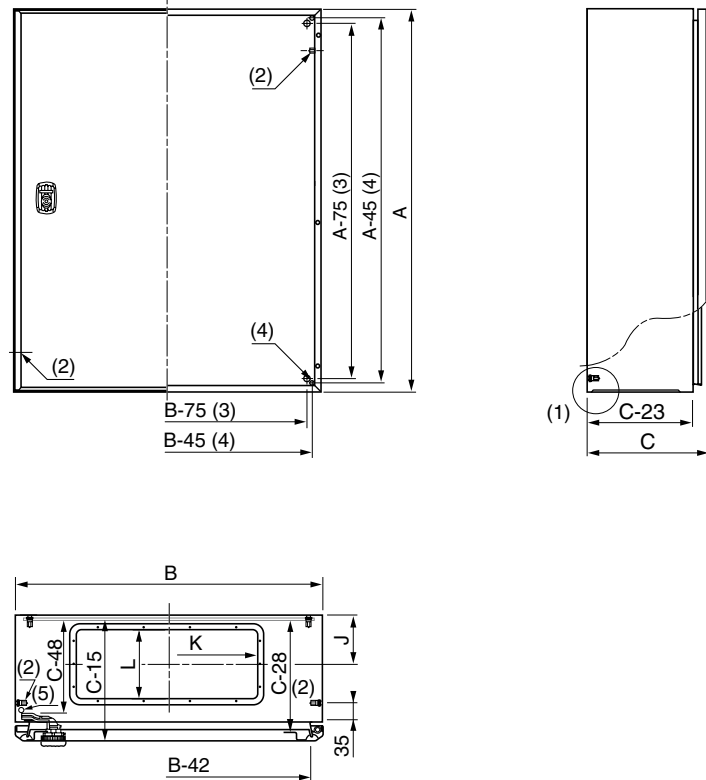
Dimensions

A: enclosure height
B: enclosure width
C: enclosure depth

- (1) 4 M8 × 25 mm backstuds.
- (2) 2 M6 × 17.5 mm earthing studs.
- (3) Stud centre-to-centre distance.
- (4) Direct mounting hole centre-to-centre distance.
- (5) Crimped blind nut for external earth.



1-door enclosure

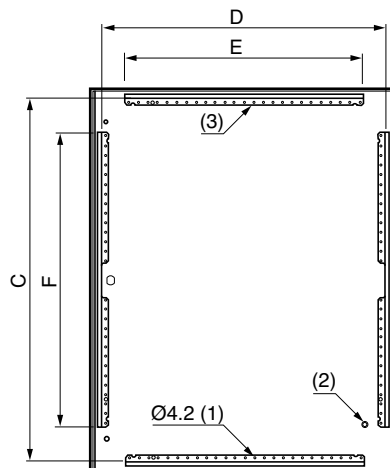


enclosure (mm)		cable-gland plate				
width	depth	dimensions (mm)	no	J	K	L
200	150	140 × 80	1	57	115	55
300	200	245 × 130	1	80	220	105
400	200-250	345 × 130	1	80	320	105
500	250	445 × 130	1	80	420	105
600	250	545 × 130	1	80	520	105
600	300	495 × 220	1	126	470	195
800	300	345 × 130	2	80	320	105

Perforated rails on the door

enclosure (3) (mm)		perforated rails on door (mm)			
height	width	vertical		horizontal	
		F	D	E	C
400	300	320	237	-	-
400	400	320	337	-	-
500	400	370	337	-	-
600	400	370	337	-	-
600	600	370	537	-	-
700	500	470	437	-	-
800	600	570	537	-	-
1000	800	770	737	620	949

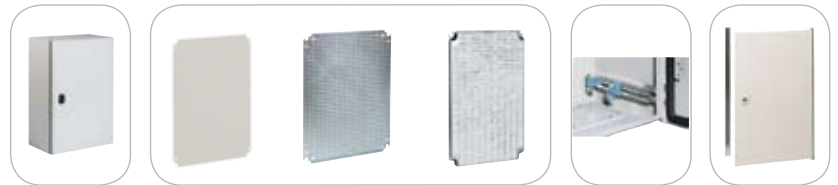
(3) The doors of enclosures that are smaller than 800 × 600 mm do not have horizontal wire guides.



- (1) Perforations with a pitch of 25 mm.
- (2) 1 M6 × 17.5 mm earthing stud.

ATEX CRATX steel wall-mounting enclosure

Table for choosing enclosures and main accessories



external dimensions (mm)			enclosure references	mounting plates references			step slides	inner door
height	width	depth		metal	perforated	universal		
300	200	150	CRATX 32/150	MM-32	MF-32	MR-32	-	-
300	300	200	CRATX 33/200	MM-33	MF-33	MR-33	SDCR 200	-
400	300	200	CRATX 43/200	MM-43	MF-43	MR-43	SDCR 200	PIN-43
400	400	200	CRATX 44/200	MM-44	MF-44	MR-44	SDCR 200	-
500	400	200	CRATX 54/200	MM-54	MF-54	MR-54	SDCR 200	PIN-54
600	400	250	CRATX 64/250	MM-64	MF-64	MR-64	SDCR 250	PIN-64
600	600	250	CRATX 66/250	MM-66	MF-66	MR-66	SDCR 250	-
700	500	250	CRATX 75/250	MM-75	MF-75	MR-75	SDCR 250	PIN-75
800	600	300	CRATX 86/300	MM-86	MF-86	MR-86	SDCR 300	PIN-86
1000	800	300	CRATX 108/300	MM-108	MF-108	MR-108	SDCR 300	PIN-108

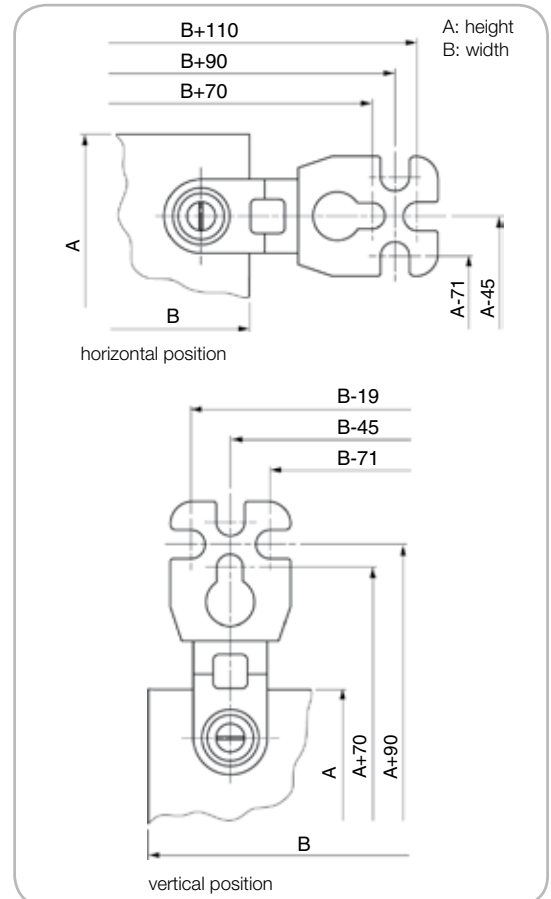
Composition accessories

Wall fixing lugs



- > Set of 4 wall fixing lugs, by order only.
- > Mounted directly on the rear of the enclosure, either in horizontal or vertical position:
 - Maximum load:
 - horizontal position: 180 kg,
 - vertical position: 350 kg.
- > One type of lug, steel, for a wall separation of 10 mm.
- > Supplied with attachment screws and seals.

reference	description
PFCRG	wall-mounting kit



CRN post fixing device



- > For indoor installations on posts with a maximum circumference of 675 mm (maximum diameter: 215 mm).
- > Material: galvanised steel.
- > Mounting of the rail in the inserts in the bottom of the enclosure with 8 mm screws.
- > Supplied with fixings and assembly instructions.
- > Maximum load: 100 kg.

reference	for enclosure width (mm)
SFPCRN 300	300
SFPCRN 400	400
SFPCRN 500	500
SFPCRN 600	600
SFPCRN 800	800



Other accessories can be found in the HIMEL catalogue (please consult us).



19" chassis



Terminal fixing support



DIN rails



Cable management devices



Door rails