

Large, globally certified product range

Our explosion protection enclosing solutions are comprehensive and widely configurable. Reliable in use and convenient to install, their overall quality provides cost efficiency, and most of all, increased safety of your employees and equipment every day.

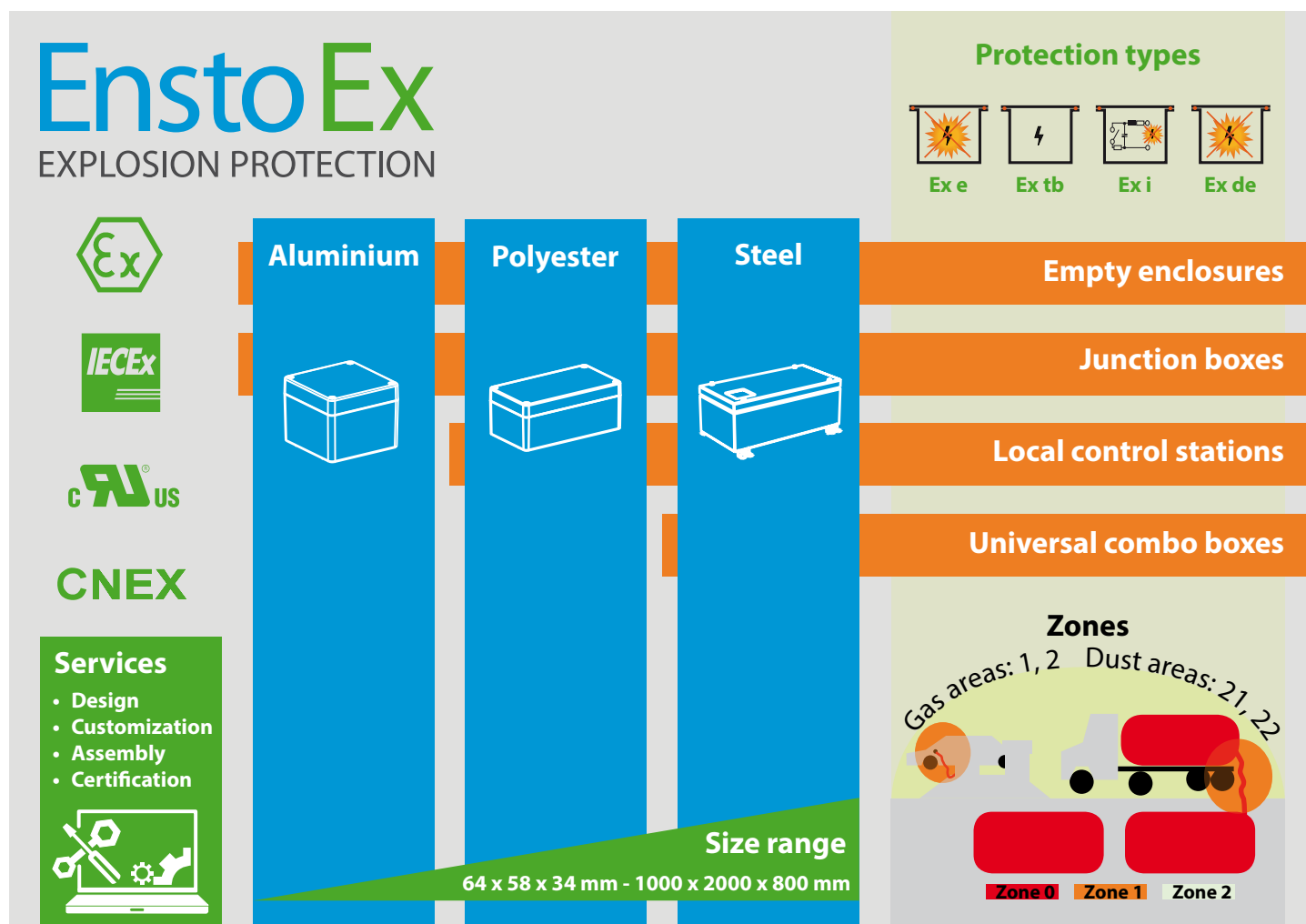
Our explosion protection offering now comprises Ex enclosing solutions and various related industrial components. They are designed and tested to meet the requirements of industries and applications where explosive atmospheres may be present.

The enclosures are available in painted mild steel, stainless steel (AISI 304 and AISI 316L), die-cast aluminium and polyester and they

are widely certified to meet the requirements of global markets. They hold ATEX, China Ex, IECEx, Russian and UL certifications.

Our Ex enclosures are suitable for installations in:

- Zones 1 and 2 in gas areas
- Zones 21 and 22 in dust areas.



Material comparison



Our product range comprises Ex enclosures made of steel, aluminium and polyester. Below are some advantages and disadvantages of the different materials.

Steel

Polyester painted mild steel

- + High impact resistance
- + High degree of protection
- + Easy to customize; customer-specific dimensions possible
- Corrosion risk

Stainless steel AISI 304

- + High impact resistance
- + High degree of protection
- + Excellent corrosion resistance
- + Excellent resistance to UV radiation
- + Suitable for outdoor use; a rain shelter is recommended
- + Suitable for industrial environments
- + Excellent suitability e.g. to the food industry
- + Customer-specific dimensions possible
- More expensive than painted mild steel

Stainless steel AISI 316L

- In addition to the advantages of AISI 304
- + Excellent corrosion resistance
 - + Excellent suitability e.g. to offshore industry
 - More expensive than stainless steel AISI 304



Polyester (GRP)

Carbon loaded glass-reinforced polyester (black)

- + Excellent temperature resistance
- + Good corrosion resistance
- + Good resistance against solvents
- + Excellent suitability e.g. to chemical industries
- Unrecyclable material



Die-cast aluminium

Die-cast powder-coated aluminium

- + Lighter than steel
- + High impact resistance
- + Good resistance against solvents
- + Good corrosion resistance
- + Wide temperature resistance range
- Machining may be problematic



Ensto Ex steel enclosures

In short

Our offering includes a comprehensive range of widely certified steel enclosures that are manufactured in our state-of-the-art factory in Finland. The special strength of this range is the scalable dimensioning that enables quick manufacturing.

The series includes empty enclosures, equipped junction boxes, universal combo boxes and local control stations, available in painted mild steel and stainless steel (AISI 304 and AISI 316L).



Material alternatives	Description
Painted mild steel:	For dry environments
Stainless steel AISI 304:	For demanding environments
Stainless steel AISI 316L:	For extremely demanding environments (e.g. offshore/marine)
Product alternatives	Description
Empty enclosures:	Gas and dust area components
Junction boxes:	Gas and dust area equipment, including terminals
UL recognized enclosures:	Gas and dust area components
Universal combo boxes:	Ex e enclosures certified as gas and dust area components and used together with Ex d enclosures
Customer-specific solutions:	Products designed for your specific needs
Local control station:	Gas and dust area equipment including enclosure with cutouts and specified accessories. See page 37.

EnstoEx

EXPLOSION PROTECTION

Services

- Design
- Customization
- Assembly
- Certification

Material	Aluminium	Polyester	Steel
Protection types	Ex e	Ex tb	Ex i
Empty enclosures			
Junction boxes			
Local control stations			
Universal combo boxes			

Zones

Gas areas: 1, 2 Dust areas: 21, 22

Zone 0 **Zone 1** **Zone 2**

Size range

150 x 150 x 90 mm - 1000 x 2000 x 800 mm

Empty enclosures, steel

Ex e and Ex tb components



Our empty steel Ex enclosures are certified as Ex e and Ex tb components for gas and dust areas. The equipped enclosure needs to be certified as an end product.

Our empty enclosures in brief:

- Certified to meet demanding regional requirements
- Suitable for Zones 1 and 2 in gas group IIC
- Suitable for Zones 21 and 22 in dust group IIIC
- Scalable dimensioning
- Different options for:
 - Enclosure version
 - Material
 - Surface treatment.

Contents of the product package:

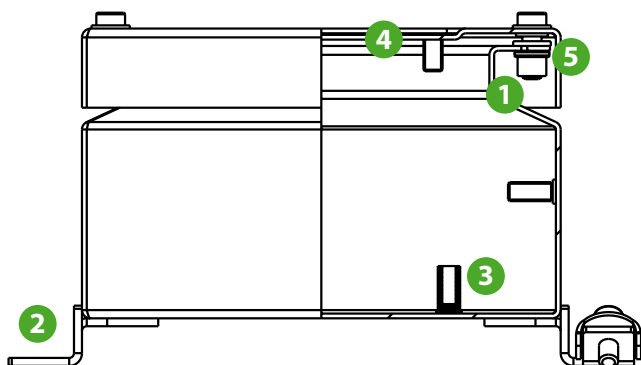
- Enclosure base
- Cover
- Captive cover screws with washers or a quick lock
- An M6 nut and a washer for earthing
- Models with flange openings include cover plates, bolts and washers.

Further information:

- Standard sizes, page 19
- Accessories, page 23 and 42–44
- Services, page 18.

Special features guaranteeing the maximum strength and durability of our solutions:

1. Extremely rugged collar structure
2. All hinges and lugs welded for maximum strength
3. Inserts for DIN rail/mounting plate
4. Special closed-cell gasket
5. High-quality screw inserts mounted in hexagonal holes.



Variations

Version:	Cover screws Tight hinges and cover screws on the opposite side Tight hinges and quick locks Cover screws and hinges enabling free movement of the cover
Material:	Stainless steel, AISI 316L (1.5 mm) Stainless steel, AISI 304 (1.5 mm) Polyester painted mild steel (1.5 mm)
Surface treatment:	Natural Brushed Painted, RAL7035 (custom colors available)
Dimensions:	Width: 150–1,500 mm Height: 150–1,000 mm Depth: 90–400 mm
Earthing:	Internal earthing bolt External earthing bolt (M6)
Mounting:	Welded fastening lugs, horizontal/vertical

Technical information

Degree of protection:	IP66/IP67 (IP66 with flanges installed)
Service temperature:	-55 °C to +160 °C / +100 °C / +85 °C

Conformity

Approvals/certificates:	 Presafe 14 ATEX 5378U IECEx PRE 14.0042U ROSTECHNADZOR (RTN) PERMIT CNEx12. 1219U
Standards:	EN/IEC 60079-0, -7, -31
Marking, gas:	II 2 G Ex e IIC Gb
Marking, dust:	II 2 D Ex tb IIIC Db IP66/67 or IP66



Fastening lugs can be attached in a horizontal or vertical position. Standard grounding is placed onto one lug.



Standard grounding can be replaced with an M10 brass internal/outer insert.

A code key for choosing the optimal solutions

Our flexible and easily configurable Ex steel concept helps you to define the optimal and most cost-efficient enclosure. You can be certain that an optimized size and shape can be found for every purpose and situation. A code key has been created to help customers define and make the optimal choice for their specific needs and situations.

Based on your individual enclosure needs, you can first choose a platform from four alternatives. This is followed by a choice of materials and surface treatments. You can also select either plain sides or sides with flange openings. Size alternatives are flexible.



Version 1

The cover is fastened with screws and connected with a ground strap.

Version 2

The cover is fastened with tight hinges and cover screws on the opposite side.

Version 3

The cover is fastened with tight hinges and one or several locks.

Version 4

The cover is fastened with screws as in Version 1. The cover is secured with hinges enabling free movement of the cover.

Code:	X / 1, 2, 3, 4 / S, A, F / N, B, E / P, F, FC / W / H / D / D / S / C
Model:	X
Version 1:	1
Version 2:	2
Version 3 ⁶ :	3
Version 4:	4
Material AISI 304:	S
Material AISI 316L:	A
Material FEDC01:	F
Surface treatment, Natural ¹ :	N
Surface treatment, Brushed ² :	B
Surface treatment, Painted ³ :	E
With plain sides:	P
With 155x75 mm flange opening/flange (IP66):	F
With custom flanges (IP66):	FC
Width (from 150 to 1,000 mm):	W
Height (from 150 to 2,000 mm) ⁴ :	H
Depth (from 90 to 400 mm) ⁵ :	D
Two door version:	D
Quick locks, AISI 316 ⁶ :	S
Universal combo box	C



Enclosures can be ordered with plain sides or with flange openings and flanges.



Nickel coated zinc locks as standard and AISI 316 as an option.

¹ Natural: no brushing, rough looking, more economical
² Brushed: brushed finish, grinded seams, welded corners on the cover, attractive appearance
³ Painted: FEDC01 with a polyester painted surface (max +85 °C)
⁴ If size is more than 1200 mm, an enclosure with two doors is highly recommended.
⁵ Depth is not limited by certificate. Enclosure door can be opened in any direction, based on customer request.
⁶ We deliver nickel coated zinc locks as standard; quick lock AISI 316 requires S in the coding (max +85 °C).

Junction boxes, steel

Ex e, Ex tb and Ex i equipment



We also provide complete junction boxes certified as Ex e, Ex tb and Ex i equipment to our customers. These junction boxes are designed to enclose Ex e and Ex i terminals. The maximum number of terminals used in each solution is determined by the conductor cross-section, enclosure operating temperature and required temperature class. Our boxes are suitable for temperature classes T6 up to T4.

Our junction boxes in brief:

- Certified to meet demanding regional requirements
- Suitable for Zones 1 and 2 in gas group IIC
- Suitable for Zones 21 and 22 in dust group IIIC
- Scalable dimensioning
- Different enclosure version for:
 - Material
 - Surface treatment.

Contents of the product package:

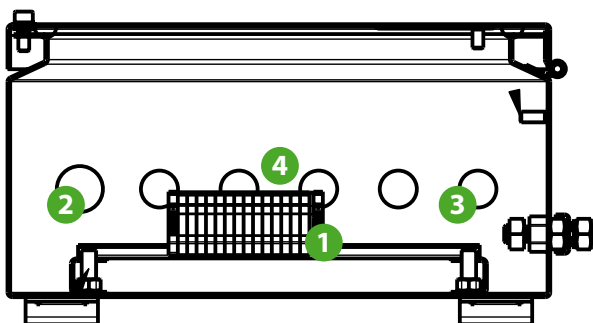
- Empty enclosure
- DIN rail or mounting plate
- Terminals
- Optional:
 - Cable glands
 - Breather.

Further information:

- Standard sizes, page 21
- Accessories, page 23 and 42–44
- Services, page 18.

Special features guaranteeing the maximum strength and durability of our solutions:

1. DIN rail installed terminals
2. Customized openings
3. Cable glands chosen to meet equipment specifications
4. Clearance and creepage distances taken into account in design.







Variations

Material:	Stainless steel, AISI 316L (1.5 mm) Stainless steel, AISI 304 (1.5 mm) Polyester painted mild steel (1.5 mm)
Surface treatment:	Natural Brushed Painted, RAL7035 (custom colors available)
Dimensions:	Width: 150–1,500 mm Height: 150–1,000 mm Depth: 90–400 mm
Earthing:	Internal earthing bolt as standard External earthing bolt (M5 or M6)
Mounting:	Welded fastening lugs, horizontal/vertical
Optional:	Earthing M10 internal/external Window(s) (5 standard sizes) Gland plate(s) Drain plug/cable glands/blinds Solution for two pad lock(s) Busbar system Mounting plate(s) or DIN rail(s) (with profiles) Ex certified terminals

Technical information

Degree of protection:	IP66/IP67 (IP66 with flanges installed)
Temperature class:	T6 (80 °C) / T5 (95 °C) / T4 (130 °C)
Ambient temperature:	-55 °C to +40 °C / +50 °C / +65 °C
Terminal quantity:	Specified in table on page 22
Surface temperature (dust areas):	T65 °C to T139 °C

Conformity

Approvals/certificates:	  CNEX Presafe 14 ATEX 5379X IECEx PRE 14.0043X ROSTECHNADZOR (RTN) PERMIT CNEx12. 1220X
Standards:	EN/IEC 60079-0, -7, -31
Marking, gas:	 II 2 G Ex e IIC T ₁ Gb
Marking, dust:	 II 2 D Ex tb IIIC T ₁ °C Db



Ensto Ex cabinets with quick locks,

Product code	Description	Service temperature	Dimensions (mm)			GTIN-13
			Width	Height	Depth	
Brushed AISI 316L cabinets, IP66						
X3ABP203016	Zinc DIN-3 lock	-55 °C to +85 °C	200	300	160	6438100156350
X3ABP303016	Zinc DIN-3 lock	-55 °C to +85 °C	300	300	160	6438100156367
X3ABP304016	Zinc DIN-3 lock	-55 °C to +85 °C	300	400	160	6438100156374
X3ABP304020	Zinc DIN-3 lock	-55 °C to +85 °C	300	400	200	6438100156381
X3ABP404016	Zinc DIN-3 lock	-55 °C to +85 °C	400	400	160	6438100156398
X3ABP404020	Zinc DIN-3 lock	-55 °C to +85 °C	400	400	200	6438100156404
X3ABP406020	Zinc DIN-3 lock	-55 °C to +85 °C	400	600	200	6438100156411
X3ABP506030	Zinc DIN-3 lock	-55 °C to +85 °C	500	600	300	6438100156428
X3ABP608030	Zinc DIN-3 lock	-55 °C to +85 °C	600	800	300	6438100156435
X3ABP8010030	Zinc DIN-3 lock	-55 °C to +85 °C	800	1000	300	6438100156442
Brushed AISI 316L cabinets, IP66/67						
X3ABP203016S	AISI 316 DIN-3 lock	-55 °C to +85 °C	200	300	160	6438100156459
X3ABP303016S	AISI 316 DIN-3 lock	-55 °C to +85 °C	300	300	160	6438100156466
X3ABP304016S	AISI 316 DIN-3 lock	-55 °C to +85 °C	300	400	160	6438100156473
X3ABP304020S	AISI 316 DIN-3 lock	-55 °C to +85 °C	300	400	200	6438100156480
X3ABP404016S	AISI 316 DIN-3 lock	-55 °C to +85 °C	400	400	160	6438100156497
X3ABP404020S	AISI 316 DIN-3 lock	-55 °C to +85 °C	400	400	200	6438100156503
X3ABP406020S	AISI 316 DIN-3 lock	-55 °C to +85 °C	400	600	200	6438100156510
X3ABP506030S	AISI 316 DIN-3 lock	-55 °C to +85 °C	500	600	300	6438100156527
X3ABP608030S	AISI 316 DIN-3 lock, hi-strength mounting lugs	-55 °C to +85 °C	600	800	300	6438100156534
X3ABP8010030S	AISI 316 DIN-3 lock, hi-strength mounting lugs	-55 °C to +85 °C	800	1000	300	6438100156541
Brushed AISI 316L cabinets with two doors, IP66						
X3ABP10010030D	Zinc DIN-3 lock, hi-strength mounting lugs	-55 °C to +85 °C	1000	1000	300	6438100156558
X3ABP12010030D	Zinc DIN-3 lock, hi-strength mounting lugs	-55 °C to +85 °C	1200	1000	300	6438100156565
X3ABP15010030D	Zinc DIN-3 lock, hi-strength mounting lugs	-55 °C to +85 °C	1500	1000	300	6438100156572



Universal combo boxes,

Order code	Product code	Service temperature	Drilling area (mm)	Minimum installation space (mm)	Dimensions (mm)			GTIN-13
					Width	Height	Depth	
UCB2010	X3ABP302316C	-55 °C to +85 °C	170 x 65	200 x 95	300	200+25*	160	6438100156213
UCB2015	X3ABP302320C	-55 °C to +85 °C	170 x 110	200 x 140	300	200+25*	200	6438100156220
UCB2510	X3ABP352816C	-55 °C to +85 °C	210 x 65	240 x 95	350	250+25*	160	6438100156237
UCB2515	X3ABP352820C	-55 °C to +85 °C	210 x 110	240 x 140	350	250+25*	200	6438100156244
UCB3010	X3ABP402816C	-55 °C to +85 °C	270 x 65	300 x 95	400	250+25*	160	6438100156251
UCB3015	X3ABP402820C	-55 °C to +85 °C	270 x 110	300 x 140	400	250+25*	200	6438100156268
UCB3313	X3ABP434318C	-55 °C to +85 °C	300 x 95	330 x 130	430	400+25*	180	6438100156275
UCB3319	X3ABP434325C	-55 °C to +85 °C	300 x 160	330 x 190	430	400+25*	250	6438100156282
UCB4013	X3ABP504318C	-55 °C to +85 °C	370 x 95	400 x 130	500	400+25*	180	6438100156299
UCB4019	X3ABP504325C	-55 °C to +85 °C	370 x 160	400 x 190	500	400+25*	250	6438100156305



* Note: The height of an enclosure door is 25 mm lower than the height of the base due to the collar structure of an Ex d enclosure.

UL recognized enclosures with plain sides,

Product code	Description	Service temperature (°C)	Service temperature (°F)	Dimensions (mm)			Dimensions (inch)			GTIN-13
				Width	Height	Depth	Width	Height	Depth	
X1ABP151509.U	Brushed	-55 °C to +160 °C	-67 °F to +320 °F	150	150	90	5.9	5.9	3.5	6438100166656
X1ABP152010.U	Brushed	-55 °C to +160 °C	-67 °F to +320 °F	150	200	100	5.9	7.9	3.9	6438100166663
X1ABP202010.U	Brushed	-55 °C to +160 °C	-67 °F to +320 °F	200	200	100	7.9	7.9	3.9	6438100166670
X1ABP203012.U	Brushed	-55 °C to +160 °C	-67 °F to +320 °F	200	300	120	7.9	11.8	4.7	6438100166687
X1ABP204015.U	Brushed	-55 °C to +160 °C	-67 °F to +320 °F	200	400	150	7.9	15.7	5.9	6438100166694
X1ABP303015.U	Brushed	-55 °C to +160 °C	-67 °F to +320 °F	300	300	150	11.8	11.8	5.9	6438100166700
X1ABP403015.U	Brushed	-55 °C to +160 °C	-67 °F to +320 °F	400	300	150	15.7	11.8	5.9	6438100166717
X1ABP404020.U	Brushed	-55 °C to +160 °C	-67 °F to +320 °F	400	400	200	15.7	15.7	7.9	6438100166724
X1ABP406020.U	Brushed	-55 °C to +160 °C	-67 °F to +320 °F	400	600	200	15.7	23.6	7.9	6438100166731
X1ABP508020.U	Brushed	-55 °C to +160 °C	-67 °F to +320 °F	500	800	200	19.7	31.5	7.9	6438100166748



Product code	Description	Service temperature (°C)	Service temperature (°F)	Dimensions (mm)			Dimensions (inch)			GTIN-13
				Width	Height	Depth	Width	Height	Depth	
Brushed AISI 316L cabinets, IP66										
X3ABP203016S.U	Zinc DIN-3 lock	-55 °C to +85 °C	-67 °F to +185 °F	200	300	160	7.9	11.8	6.3	6438100166755
X3ABP303016S.U	Zinc DIN-3 lock	-55 °C to +85 °C	-67 °F to +185 °F	300	300	160	11.8	11.8	6.3	6438100166762
X3ABP304016S.U	Zinc DIN-3 lock	-55 °C to +85 °C	-67 °F to +185 °F	300	400	160	11.8	15.7	6.3	6438100166779
X3ABP304020S.U	Zinc DIN-3 lock	-55 °C to +85 °C	-67 °F to +185 °F	300	400	200	11.8	15.7	7.9	6438100166786
X3ABP404016S.U	Zinc DIN-3 lock	-55 °C to +85 °C	-67 °F to +185 °F	400	400	160	15.7	15.7	6.3	6438100166793
X3ABP404020S.U	Zinc DIN-3 lock	-55 °C to +85 °C	-67 °F to +185 °F	400	400	200	15.7	15.7	7.9	6438100166809
X3ABP406020S.U	Zinc DIN-3 lock	-55 °C to +85 °C	-67 °F to +185 °F	400	600	200	15.7	23.6	7.9	6438100166816
X3ABP556030S.U	Zinc DIN-3 lock	-55 °C to +85 °C	-67 °F to +185 °F	550	600	300	19.7	23.6	11.8	6438100166823
X3ABP608030S.U	Zinc DIN-3 lock, hi-strength mounting lugs	-55 °C to +85 °C	-67 °F to +185 °F	600	800	300	23.6	31.5	11.8	6438100166830
X3ABP8010030S.U	Zinc DIN-3 lock, hi-strength mounting lugs	-55 °C to +85 °C	-67 °F to +185 °F	800	1000	300	31.5	39.4	11.8	6438100166847
Brushed AISI 316L cabinets with two doors, IP66										
X3ABP10010030D.U	Zinc DIN-3 lock, hi-strength mounting lugs	-55 °C to +85 °C	-67 °F to +185 °F	1000	1000	300	39.4	39.4	11.8	6438100166854
X3ABP12010030D.U	Zinc DIN-3 lock, hi-strength mounting lugs	-55 °C to +85 °C	-67 °F to +185 °F	1200	1000	300	47.2	39.4	11.8	6438100166861
X3ABP15510030D.U	Zinc DIN-3 lock, hi-strength mounting lugs	-55 °C to +85 °C	-67 °F to +185 °F	1550	1000	300	59.1	39.4	11.8	6438100166878

Junction boxes, steel

Standard sizes

We have created some standard sizes that are readily available for fast and efficient delivery. Customer-specific sizes also available.



Instructions for ordering junction boxes

1.

Select the suitable empty enclosure (custom sizes also available)



Empty enclosures

Enclosure type	Description	Dimensions (mm)			GTIN-13
		Width	Height	Depth	
II 2 GD Ex e, Ex tb, Ex i junction box					
X1ABP01JB	Empty X1ABP151509 enclosure	150	150	90	-
X1ABP02JB	Empty X1ABP152010 enclosure	150	200	100	-
X1ABP03JB	Empty X1ABP202010 enclosure	200	200	100	-
X1ABP04JB	Empty X1ABP203012 enclosure	200	300	120	-
X1ABP05JB	Empty X1ABP204015 enclosure	200	400	150	-
X1ABP06JB	Empty X1ABP303015 enclosure	300	300	150	-
X1ABP07JB	Empty X1ABP403015 enclosure	400	300	150	-
X1ABP08JB	Empty X1ABP404020 enclosure	400	400	200	-
X1ABP09JB	Empty X1ABP406020 enclosure	400	600	200	-
X1ABP10JB	Empty X1ABP508020 enclosure	500	800	200	-