

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.

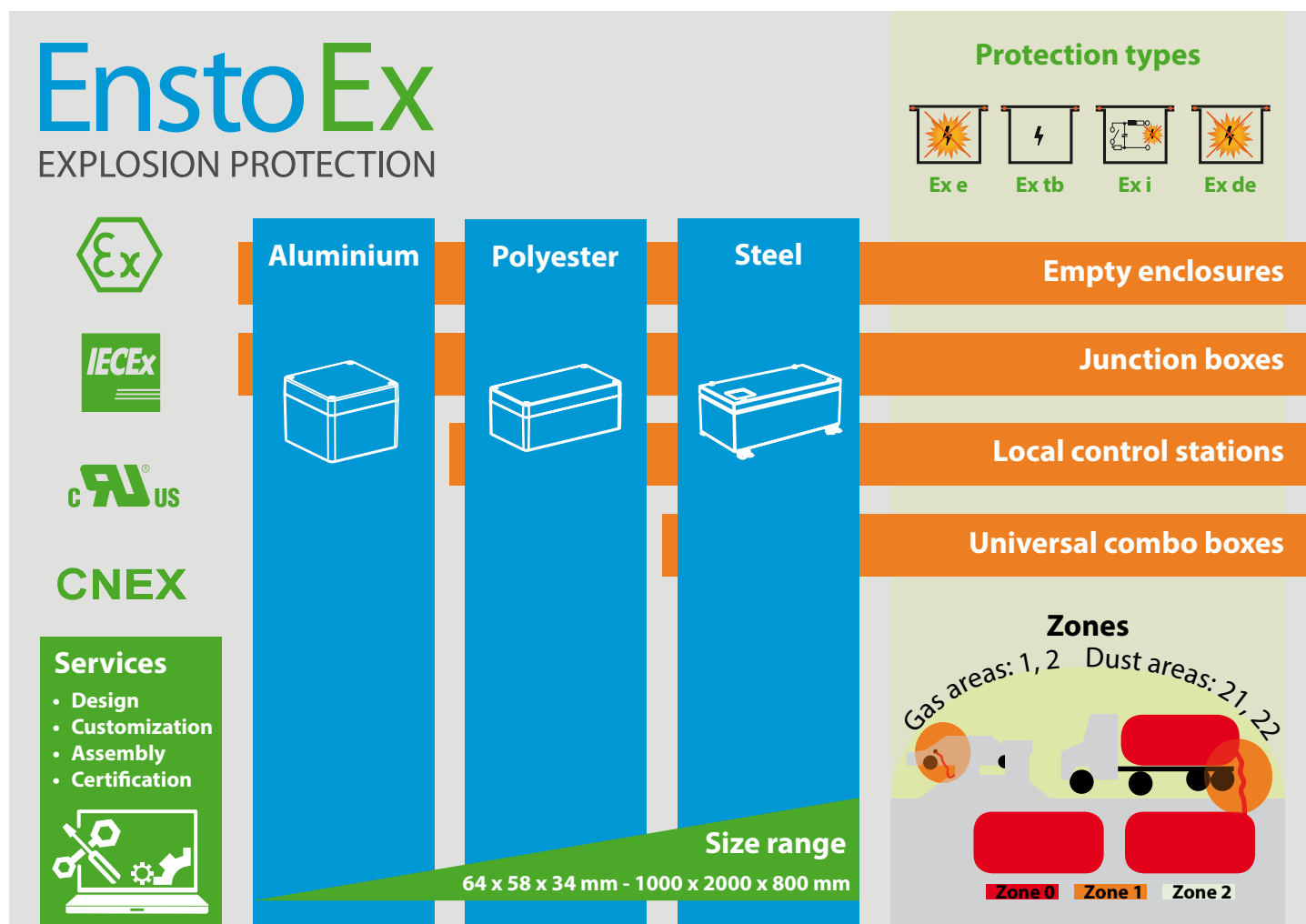
Our explosion protection offering now comprises Ex enclosing solutions and various related industrial components. They are designed and tested to meet the requirements of industries and applications where explosive atmospheres may be present.

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.

Ensto Ex

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

Universal combo boxes, steel

Ex e and Ex tb components



We also provide universal combo boxes certified as Ex e and Ex tb components to our customers. Our universal combo box is an Ex e and Ex tb enclosure designed to fit perfectly next to an Ex d enclosure. Instead of having one Ex d enclosure with terminals and an interface component, you can have a lightweight, easier to maintain and more cost efficient universal combo box solution with indirect connection.

Our universal combo boxes in brief:

- Certified to meet the demanding ATEX and IECEx requirements
- Suitable for Zones 1 and 2 in gas group IIC
- Suitable for Zones 21 and 22 in dust group IIIC
- Scalable dimensioning.

Contents of the product package:

- Enclosure base
- Door
- DIN 3 lock and key
- Mounting set for connecting to an Ex d enclosure
- Gasket for connecting to an Ex d enclosure
- Drilling instructions
- Mounting plate
- DIN rail, 1 x 200 - 400 mm.

Further information:

- Standard sizes, page 20
- Accessories, page 23 and 42–44
- Services, page 18.

Variations

Material:	Stainless steel AISI 316L Painted mild steel, coated RAL7035 (1.5 mm)
Surface treatment:	Brushed
Dimensions:	Width: 300 – 500 mm Height: 200+25 – 400+25 mm Depth: 160 – 250 mm
Earthing:	Internal earthing: Ensto Clampo Ground (optional) External earthing: rivet for M6x12mm
Mounting:	Connection to an Ex d enclosure by bolts

Technical information

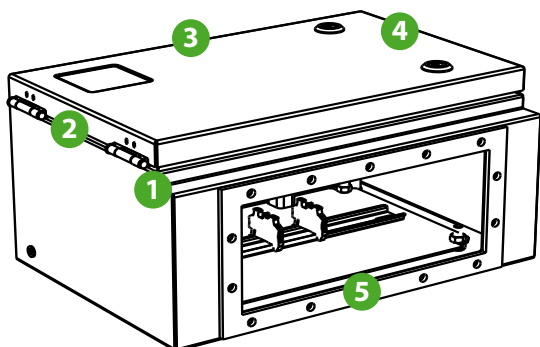
Degree of protection:	IP66
Service temperature:	-55 °C to +40 °C
Maximum power:	9.6 W up to 36 W
Temperature class:	T6
Optional:	T6 (+40 °C / +55 °C / +65 °C)
Surface temperature (dust areas):	T85 °C

Conformity

Approvals/certificates:	Presafe 14 ATEX 5378U IECEx PRE 14.0042U
Standards:	EN/IEC 60079-0, -7 -31
Marking, gas:	II 2 G Ex e IIC Gb
Marking, dust:	II 2 D Ex tb IIIC T ₁ Db

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

1. High-tension base collar structure
2. All hinges and lugs welded for maximum strength
3. Special closed-cell gasket
4. Quick lock version offers an easy but reliable key access to the enclosure
5. EPDM rubber gasket.



Watch video: Kurt Rönberg presents Ensto's innovative universal combo box.

Universal combo boxes, steel

Ex e and Ex tb components



Operation example

Traditional solution

Large Ex d with terminals



← All components integrated into one Ex d enclosure

← Extra air space needed (EN 60079-1)

← Ex d glands integrated at factory, no flexibility to add spare connections

Universal combo box solution

Small Ex d with our Ex e enclosure



← Non-Ex components in Ex d enclosures

← IP-rated flange opening facing an Ex d enclosure

← Ex e d components in Ex e enclosure can be used

← Ex e glands can be used, extra connections can be added on-site

Benefits of our universal combo boxes



Safe solution

- Minimize the risk of damaging the protection type of the Ex d enclosure
- No Ex d knowledge needed for installation on-site



Cost-efficient solution

- Smaller Ex d enclosure needed
- Maintenance costs lower



Smaller size

- Size smaller than in traditional Ex d solution as no extra air space needed in Ex e part
- Lighter weight compared to traditional ex d solutions



Easy machining

- Possibility for different variations (e.g. window)
- Possibility to add for extra connections on-site
- Reduced machining needs of Ex d enclosure bring cost savings



Easy and quick connection and maintenance

- No need to open Ex d enclosure for connections
- Connection space in Ex e universal combo box is easy to open and close reliably



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

