



Customized  
Engineered  
Solutions

 **TECHNOR**  
ITALSMEA

A COMPANY OF MARECHAL ELECTRIC







# CUSTOMIZED ENGINEERED SOLUTIONS

<b>LIGHTING FIXTURES</b>	13
--------------------------	----

<b>ENCLOSURES &amp; BOXES</b>	51
-------------------------------	----

<b>CUSTOMIZED ENGINEERED SOLUTIONS</b>	119
--	-----

<b>CABLE GLANDS &amp; FITTINGS</b>	127
------------------------------------	-----

<b>DECONTACTOR™ &amp; CONNECTORS</b>	155
--------------------------------------	-----

<b>Ex REGULATIONS</b>	168
-----------------------	-----

# SELECTION GUIDE

LIGHTING FIXTURES		
HAZARDOUS AREAS ZONE 1-21		
MODELS	APPLICATIONS	MATERIAL
<b>EVF-L*/P*TL* SERIES</b>	LED LINEAR LIGHTING FIXTURES	Copper-free aluminium - GRP
<b>RMS-*TL2 SERIES</b>	LED LINEAR LIGHTING FIXTURES	AISI304 stainless steel body
<b>FL1 SERIES</b>	LED FLOODLIGHT	Copper-free aluminium body
<b>EVde-PR.. LED SERIES</b>	LED WELLGLASS LIGHTING FIXTURES	Copper-free aluminium body
<b>EVCC-PR3 LED</b>	LED WELLGLASS LIGHTING FIXTURES	Copper-free aluminium body
<b>EVA LED SERIES</b>	LED HAND LAMP	Copper-free aluminium body
HAZARDOUS AREAS ZONE 1-21		
MODELS	APPLICATIONS	MATERIAL
<b>EV../ROT SERIES LED</b>	LED ROTATING LIGHTING FIXTURES	Copper-free aluminium body
<b>EV../XN-MXN SERIES</b>	XENOFASH LIGHTING FIXTURES	Copper-free aluminium body
<b>EV../WA.. LIOL SERIES</b>	LED AIRCRAFT OBSTRUCTION LIGHTING FIXTURES	Copper-free aluminium body
<b>EVDE SERIES</b>	LED AIRCRAFT OBSTRUCTION LIGHTING FIXTURES	Copper-free aluminium body
<b>EVCC-PR LED SERIES TRAFFIC LIGHT</b>	LED TRAFFIC LIGHT	Copper-free aluminium body
HAZARDOUS AREAS ZONE 2-22		
MODELS	APPLICATIONS	MATERIAL
<b>EVF2-PL/FL.. LED SERIES</b>	LED LINEAR LIGHTING FIXTURES	Copper-free aluminium - GRP
<b>G2X SERIES</b>	LED LINEAR LIGHTING FIXTURES	GRP
<b>L2EX SERIES</b>	LED LINEAR LIGHTING FIXTURES	Polycarbonate body
<b>FL2 SERIES</b>	LED FLOODLIGHT	Copper-free aluminium
<b>WG2 SERIES</b>	LED WELLGLASS LIGHTING FIXTURES	Copper-free aluminium
ENCLOSURES & BOXES		
HAZARDOUS AREAS ZONE 1-21, 2-22		
MODELS	APPLICATIONS	MATERIAL
<b>SB/ST</b>	ENCLOSURES / JUNCTION BOXES WITH TERMINALS	AISI 316 L Stainless steel
<b>AQ/AR</b>	ENCLOSURES / JUNCTION BOXES WITH TERMINALS	GRP Copper-free aluminium
<b>CDX</b>	ENCLOSURES	GRP
<b>B2X</b>	JUNCTION OR SOCKET OUTLET BOXES	GRP
<b>MXBJ</b>	JUNCTION BOXES	AISI316L Stainless stess/GRP/ Copper-free aluminium
<b>MXBS</b>	SOCKET OUTLET BOXES	AISI316L Stainless stess/GRP/ Copper-free aluminium
<b>EFE</b>	LOCAL CONTROL STATIONS	GRP
<b>EFXE</b>	LOCAL CONTROL STATIONS	AISI 316 L Stainless steel/Aluminium with low content of copper
<b>ECR-3</b>	DRAIN VALVE	AISI 316 L Stainless steel/ galvanized steel
<b>TI/ HARMATEX SERIES</b>	OPERATORS INCREASED SAFETY	Depending on reference
<b>CP../ EFDN- EFSRC</b>	LOCAL CONTROL STATIONS	Copper free aluminium
<b>CP/CPS</b>	LOCAL CONTROL STATIONS	Copper free aluminium



LUMEN (LM)	AMBIENT TEMPERATURE (°C)	RATED VOLTAGE (VAC)	EMERGENCY SERVICE (MIN)	PAGE	
from 3.225 to 13.065	-20 /+55	220-240	60' 180'	14-17	
from 3.225 to 6.450	-30 /+60	110 - 277	60' 180'	18-19	
from 8.000 to 32.000	-30 /+60	110 - 277	180'	20-21	
from 7.950 to 22.000	-60 /+60	220 - 240	180'	22-23	
820	-60 /+60	220 - 240	/	24-25	
540	-52 /+60	220 - 240	/	26-27	
LUMINOSITY (cd)	AMBIENT TEMPERATURE (°C)	RATED VOLTAGE (VAC)	EMERGENCY SERVICE (MIN)	PAGE	
up to 1.600	-60 /+60	240	/	28-29	
up to 8.500	-60 /+60	240	/	30-31	
>32	-60 /+60	230	/	32-33	
20.000cd day mode 2.000cd night mode	-60 /+60	230	/	34-35	
up to 1.500	-60 /+60	110/230	/	36-37	
LUMEN (LM)	AMBIENT TEMPERATURE (°C)	RATED VOLTAGE (VAC)	EMERGENCY SERVICE (MIN)	PAGE	
from 3.825 to 14.300	-20 /+55	220 - 240	/	40-41	
from 2.825 to 5.625	-20 /+40	220 - 240	180'	42-43	
from 2.560 to 9.030	-25 /+55	220 - 250	180'	44-45	
from 9.780 to 39.120	-30 /+55	220 - 240	/	46-47	
from 15.360 to 22.375	-35 /+50	220 - 240	60' 180'	48-49	
IP RATING		AMBIENT TEMPERATURE (°C)		PAGE	
IP66/IP67		-50/+95		52-53	
IP66		-50/+95		54-57	
IP66/IP67		-25/+60		58	
IP66/IP67		-50/+60		59	
IP66		-25/+60		60	
IP66		-25/+60		62-63	
IP65/IP66		-50/+95		64-65	
IP65/IP66		-50/+95		66-69	
IP66/IP67		-50/+105		70	
Depending on reference		Depending on reference		71-90	
IP66		-60/+60		92-95	
IP66		-50/+60		96-97	

# SELECTION GUIDE

HAZARDOUS AREAS ZONE 1-21, 2-22		
MODELS	APPLICATIONS	MATERIAL
CPS/EMH	COMPACT FLAMEPROOF ENCLOSURES	Copper free aluminium
EJB	FLAMEPROOF ENCLOSURES	Copper free aluminium/ AISI 316 L Stainless steel
GUB	FLAMEPROOF ENCLOSURES	Copper free aluminium/ AISI 316 L Stainless steel
GUB/QL	FLAMEPROOF ENCLOSURES	Copper free aluminium/ AISI 316 L Stainless steel
GUB/EMH	FLAMEPROOF ENCLOSURES	Copper free aluminium/ AISI 316 L Stainless steel
PL/ PSRC	COMPONENTS & OPERATORS FLAMEPROOF	Brass, Aluminum, AISI 304/316
CUSTOMIZED ENGINEERED SOLUTIONS		
HAZARDOUS AREAS ZONE 1-21, 2-22		
MODELS	APPLICATIONS	MATERIAL
EJSB	PANELBOARD SYSTEM	AISI 316 L Stainless steel (SB) Light alloy, AISI 316 L/ galvanized carbon steel ( EJB)
Q-GENESIS	JUNCTION BOXES AND PANEL BOARDS	AISI 316 L Stainless steel
QPREX	PRESSURIZED CABINETS	AISI 316 L Stainless steel
GUMT	EARTHING SYSTEMS	Copper free aluminium/ AISI 316 L Stainless steel
CABLE GLANDS & FITTINGS		
HAZARDOUS AREAS ZONE 1-21, 2-22		
MODELS	APPLICATIONS	MATERIAL
SINGLE SEAL	METALLIC CABLE GLANDS	Nickel chrome plated brass / AISI 316 L Stainless steel
DOUBLE SEAL	METALLIC CABLE GLANDS	Nickel chrome plated brass / AISI 316 L Stainless steel
PSM - PSF	METALLIC CABLE GLANDS	Nickel chrome plated brass / AISI 316 L Stainless steel
POLYAMIDE	PLASTIC CABLE GLANDS	Polyamide
BMF/BFF/BMM	FITTINGS	Galvanised steel
EYS	FITTINGS	Aluminium with low content of copper
NP	FITTINGS	Galvanised steel
EM	FITTINGS	Galvanised steel
ELF	FITTINGS	Aluminium with low content of copper
DB	FITTINGS	Aluminium with low content of copper
PLG	FITTINGS	Galvanised steel, Aluminium with low content of copper
TR	FITTINGS	Black polyamide
T SERIES	FITTINGS	Nickel chrome plated brass / AISI 316 L Stainless steel
A../R..	FITTINGS	Nickel chrome plated brass / AISI 316 L Stainless steel
DECONTACTOR™ & CONNECTORS		
HAZARDOUS AREAS ZONE 1-21, 2-22		
MODELS	APPLICATIONS	MATERIAL
DXN	DECONTACTOR™	GRP
DXA1	DECONTACTOR™	Metal
DX	DECONTACTOR™	Metal
MULTICONTACTS/SPeX/PNCX	CONNECTORS	GRP/Metal



IP RATING	AMBIENT TEMPERATURE (°C)	PAGE
IP66	-50/+60	98
IP66	-50/+60	100-103
IP66	-60/+80	104-105
IP66	-60/+60	106-107
IP66	-55/+80	108-109
IP66/IP67	-50/+60	112-116
IP RATING	AMBIENT TEMPERATURE (°C)	PAGE
IP65/IP66	-50/+60	120
IP66/IP67	-50/+95	121
IP65	-50/+60	122-123
IP66	-50/+60	124-125
IP RATING	AMBIENT TEMPERATURE (°C)	PAGE
IP66	-52/+110	132-133
IP66	-52/+110	134-135
IP66	-52/+110	136-137
IP66/IP68	-20/+80	138
IP66/IP67	-20/+60	144-145
IP66	-20/+100	146-147
IP66/IP67	-40/+150	148
IP66/IP67	-40/+150	149
IP66/IP67	-55/+150	150
/	/	152
IP66/IP67	-20/+80	153
IP66/IP68	-40 /+70	154
IP66/IP68	-40/+100	155
IP66/IP68	-40/+100	156-157
IP RATING	AMBIENT TEMPERATURE (°C)	PAGE
IP66/IP67	-40/+60°C	160-161
IP66/IP67	-55/+60°C	162-163
IP65 /IP66	-40/+60°C	164-165
IP65/IP66/IP67/IP69		166



## OUR PATH TO SUCCESS

TECHNOR ITALSMEA, a long-standing Italian company founded in 1969, specializes in the supply of electrical equipment designed for systems located in areas at risk of explosion. Since 2013 it has been part of the MARECHAL ELECTRIC Group, leader in low-voltage electrical connection systems, with operating offices all over the world.

TECHNOR ITALSMEA deals with the design, development and production of LED lighting and signaling devices, electrical panels for the control of lights, sockets, motorized valves, heating cables, motor starters, etc., junction and branch enclosures, push-button panels control, distribution and power panels, pressurized cabinets, earthing systems and sockets and plugs.

The majority of applications are found in the chemical, pharmaceutical, food, offshore oil installations, refineries, petrochemical facilities, ships, FPSOs, and other industries where explosive dust may be dangerous, such the textile, food, and grain silo industries.

TECHNOR®'s products are suitable for installation in Zone 1, 2, 21, 22 and comply with the ATEX Directive 2014/34/EU, the IECEx and EAC certification scheme. The main protection methods for classified areas with the presence of gas include Ex d, Ex e, Ex p, Ex m; while for areas with the presence of dust Ex t, Ex p, Ex m are available.

TECHNOR®'s product range and geographic locations integrate seamlessly with MARECHAL® explosion-proof connectors and DECONTACTOR™ solutions, providing significant product and distribution channel synergies.

TECHNOR ITALSMEA is dedicated to providing the highest calibre technical solutions in terms of quality, safety and reliability, achieved by providing not just standardised goods but also specially designed and engineered solutions that are tailored to each customer's unique requirements.



# Customized engineered solutions

When it comes to ensuring safety in potentially explosive environments, it is essential to have high-quality standard Ex products and customized engineered solutions.

Our specialized solutions, such as Pressurised Cabinets, Switchboards, and Junction boxes, allow us to meet our customers' individual needs.

These solutions, which are made of aluminium, galvanized carbon steel, or stainless steel and manufactured in accordance with Ex db eb, Ex db ec, and Ex pxb protection methods, can withstand extremely high temperatures and are appropriate for installation in chemical, petrochemical, refining, and other industrial contexts where there is a potential for an explosive atmosphere due to flammable gases, vapors, or dust.

The high quality and safety of all our products are certified by reputable partners.

Our personalized approach ensures that every element is carefully studied and that the solution is completely fitted to the customer's requirements.

Our professionals have vast expertise in developing and designing Ex systems for large applications, indicating a high level of skill in this field. With accumulated knowledge in engineering and project management for EPC customers in the ATEX and IECEx sectors, we provide solutions complying with the most recent requirements to ensure maximum safety and quality in the projects managed.

Investing in specialized solutions for potentially explosive areas not only guarantees adherence to safety rules but also provides the comfort of knowing that the people and assets involved will be protected safely and efficiently through a custom-designed system.

With our dedication to quality and meticulous attention to detail, we guarantee that every project is successfully finished in order to completely satisfy our clients.

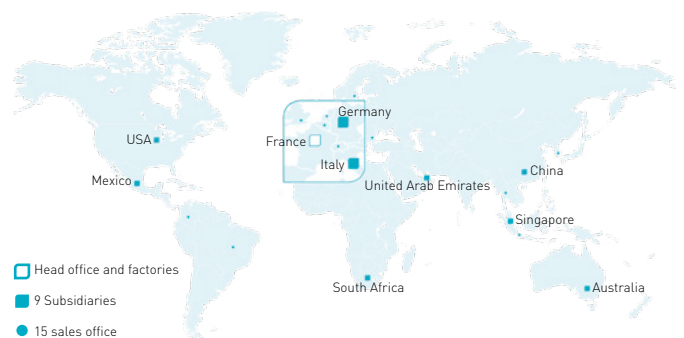


## An independent French group with international presence

Founded in 1952, MARECHAL ELECTRIC is an independent French group with international reach, a world specialist in low-voltage electrical connections up to 1,250 A for use in industrial environments and potentially explosive atmospheres.

Our various production sites, subsidiaries, and sales offices, as well as our network of partners, enable us to establish long-term relationships with our customers in over 120 countries.

### An international group with operations on 5 continents



## A strong investment in R&D to support innovation

For more than 70 years, MARECHAL ELECTRIC has been developing the world's safest electrical solutions.

5% of our turnover are invested in R&D every year, which focuses on constant improvement of products, while maintaining their compatibility with existing ranges.

New products design systematically meets the safest challenges of end users.



# More than 70 Years of expertise in the industrial electrical equipment

The company markets its products under two brands, MARECHAL® and TECHNOR®, with the same high-quality standards throughout the world, making it a "pure player" in low-voltage (LV) electrical connection systems in industrial and Ex environments.

## **SAFETY AND RELIABILITY OF OUR PRODUCTS**

Boasting of a unique level of know-how, MARECHAL ELECTRIC first and foremost prioritises the safety of the individuals in the facilities and during the use and maintenance of its equipment. Our design goes hand in hand with sustainability and performance over the long-term, irrelevant of the number of operations, outer environment, or conditions of use.

## **OPTIMISING THE MODULAR DESIGN**

MARECHAL ELECTRIC offers its customers the possibility of customising the functions and modular assembly options for its products.

For large-scale projects, a dedicated Specific Equipment Technical Team is available to support the customer for their projects to offer a comprehensive solution.

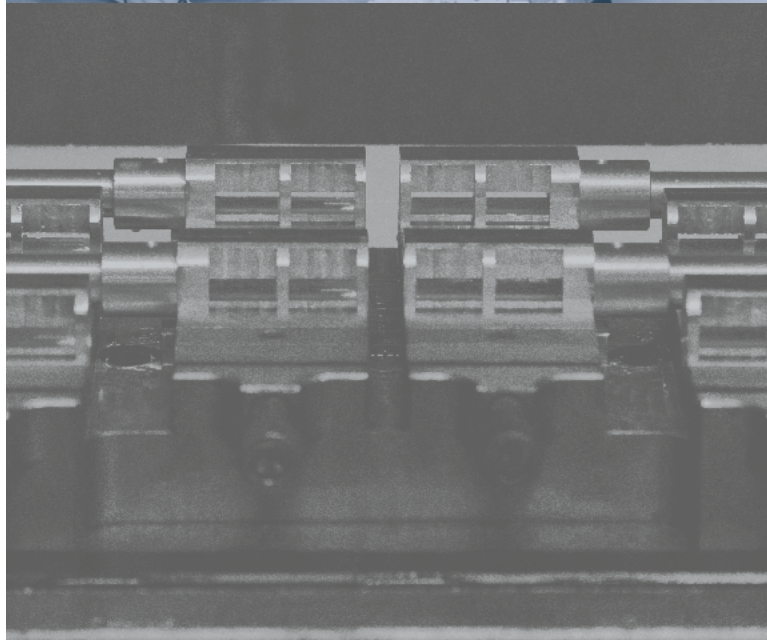
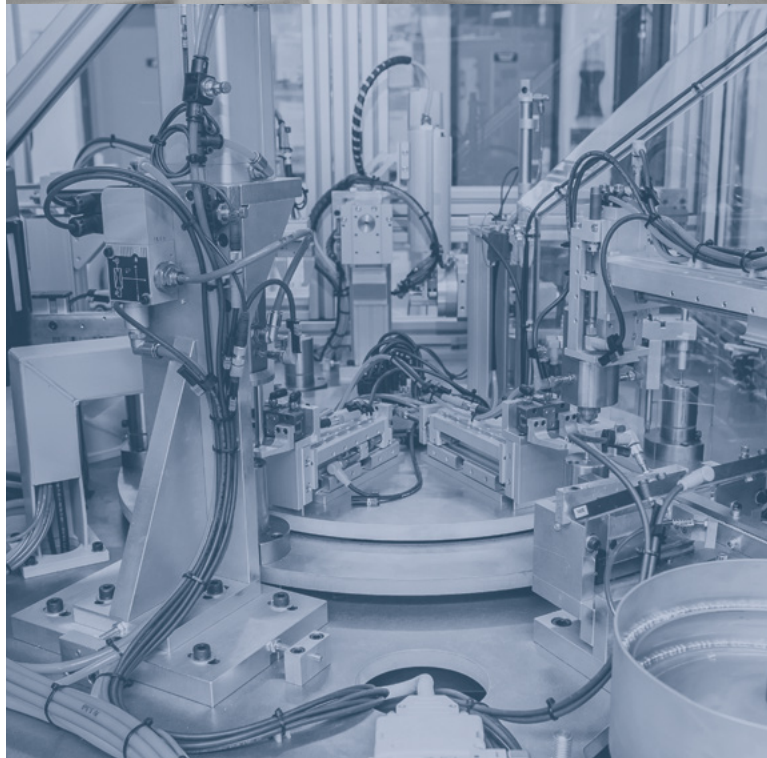
## **ENRICHING PARTNERSHIP DEVELOPMENTS WITH ITS CUSTOMERS**

MARECHAL ELECTRIC is present on turnkey markets and the close partnerships developed with all market actors. We are therefore constantly improving the performances and functions of our products to exceed our customers' expectations.

## **COMPLYING WITH INTERNATIONAL REGULATIONS**

Every product we design, every decision we make and every development initiative we undertake has the safety of our customers at its heart.

Our compliance with the safety standards of all major companies and our commitment to IEC and IECEx standards guarantee the quality and performance of our products.









# LIGHTING FIXTURES

## **ZONE 1, 21**

LED Linear

PAG

14-19

LED Floodlight

20-21

LED Wellglass

22-27

Visual Signals

28-39

## **ZONE 2-22**

LED Linear

PAG

40-45

LED Floodlight

46-47

LED Wellglass

48-49

# LED LINEAR LIGHTING FIXTURES

## EVF-L\*/P\* TL\* .. Series - Copper-free aluminium - GRP



- Complete range of explosion-proof linear lighting fixtures available ideal for applications where a continuous row of lighting is needed to ensure a uniform illumination of production sites and machinery.
- Threelayers-extrusion lamp housing: Polycarbonate layer; Top side reflecting layer which protects inner electrical and electronic apparatus from direct sun heating/radiation effect; Filter layer which protects inner polycarbonate layer against UV radiation and related yellowing effect.
- Circular shape grants the best possible "CX" factor, therefore it is less affected by wind-dusts, pollution and dirty bunching.
- Possibility to apply an OFF-SHOREpainting cycle suitable for marine environments.
- All lighting fixtures are supplied ready for LOOP IN-LOOP OUT facility with cable up to 4 sqmm.
- Integrated electronic - Equipped with thermal guard protection to prevent overtemperature

### MARKING

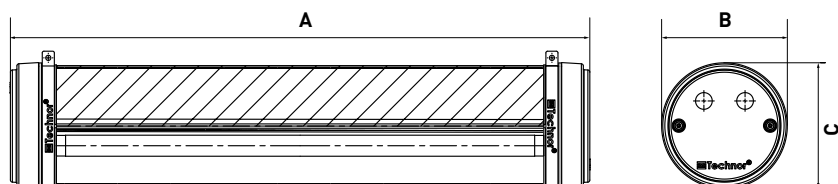
II 2G Ex db eb mb IIC T3/T4 Gb

II 2D Ex tb IIIC T85°C Db

## TECHNICAL FEATURES

<b>Material</b>	EVF-L*TL*LED = End cups in GRP/Light housing in polycarbonate EVF-P*TL*LED = End cups in aluminium with low content of copper / Light housing in polycarbonate
<b>IP/IK rating</b>	IP66 IK10
<b>Ambient temperature range</b>	EVF-L*TL*LED = -20 °C to + 60 °C (normal & emergency service) EVF-P*TL*LED = -20 °C to + 55 °C (normal & emergency service)
<b>Approvals</b>	INERIS 20ATEX0036X IECEX INE 20.0038X
<b>Zones</b>	Gas Zone: 1 , 2 Dust Zone: 21, 22
<b>Rated voltage</b>	220-240 VAC (normal & emergency service)
<b>Frequency</b>	50 - 60 Hz
<b>Colour rendering index</b>	> 80 CRI
<b>Colour temperature</b>	6.500 K
<b>Power factor</b>	CosØ ≥ 0.98
<b>Surge protection</b>	4 kV AC
<b>LED Lifetime ( L70) Ta +25°C</b>	> 66.000 h - according to IES LM - 80 -08
<b>Hardware and screws</b>	AISI316L stainless steel
<b>Coating</b>	EVF-L*TL*LED = Unpainted for EVF in GRP version. EVF-P*TL*LED = Painted by polyurethane painting: RAL5014 painting cycle C4 suitable for On-Shore The reference standard is UNI EN ISO 12944 - 1: 2018 Upon request other colours and painting cycles (only for EVF-P*TL* LED)
<b>Entries</b>	2x entries M20 x 1,5. Upon request: M25 entries or PNCX connector for EVF-L*TL*LED (GRP version)
<b>Through wiring</b>	Loop-in / Loop-out possibility
<b>Plug</b>	1 x plastic dustproof plug for M20 entry protection 1 x M20 polyamide/Brass nickel chrome plug c/w gasket (mounted)
<b>Accessories upon request</b>	AISI316L mounting kit: pole mounting, ceiling mounting, suspension mounting; Cable gland kit in brass nickel chrome or AISI316L stainless steel.

## Dimensions EVF-L\* TL\* LED



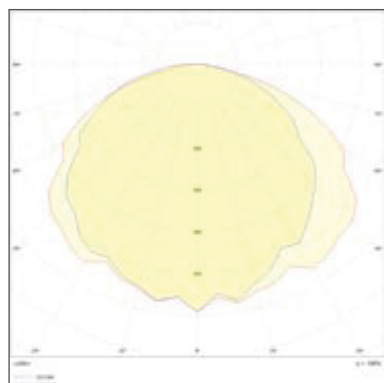
## EVF-L\* TL\* LED - Lighting fixtures for normal and emergency service

CODE	TYPE	POWER [W]	LUMEN [lm]	LUM. EFF [lm/W]	DIMENSION [mm]			WEIGHT [kg]
					A	B	C	
A020962210001	EVF-L 1TL2 1X19W	1X19	3.225	170	745	153	166	5,00
A020962210002	EVF-L 2TL2 2X19W	2X19	6.450	170	745	153	166	5,00
A020962210003	EVF-L 3TL2 3X19W	3X19	9.800	172	1.342	153	166	8,00
A020962210004	EVF-L 4TL2 4X19W	4X19	13.065	172	1.342	153	166	8,00
A021062210001	EVF-L 1TL2 LE-P 60 1X19W	1X19	3.225	170	745	153	166	6,00
	EMERGENCY SERVICE: 60'		500					
A021062210005	EVF-L 1TL2 LE-P 180 1X19W	1X19	3.225	170	745	153	166	6,00
	EMERGENCY SERVICE: 180'		500					
A021062210002	EVF-L 2TL2 LE-P 60 2X19W	2X19	6.450	170	745	153	166	6,00
	EMERGENCY SERVICE: 60'		500					
A021062210006	EVF-L 2TL2 LE-P 180 2X19W	2X19	6.450	170	745	153	166	6,00
	EMERGENCY SERVICE: 180'		500					
A021062210003	EVF-L 3TL2 LE-P 60 3X19W	3X19	9.800	172	1.342	153	166	9,00
	EMERGENCY SERVICE: 60'		500					
A021062210007	EVF-L 3TL2 LE-P 180 3X19W	3X19	9.800	172	1.342	153	166	9,00
	EMERGENCY SERVICE: 180'		500					
A021062210004	EVF-L 4TL2 LE-P 60 4X19W	4X19	13.065	172	1.342	153	166	9,00
	EMERGENCY SERVICE: 60'		500					
A021062210008	EVF-L 4TL2 LE-P 180 4X19W	4X19	13.065	172	1.342	153	166	9,00
	EMERGENCY SERVICE: 180'		500					

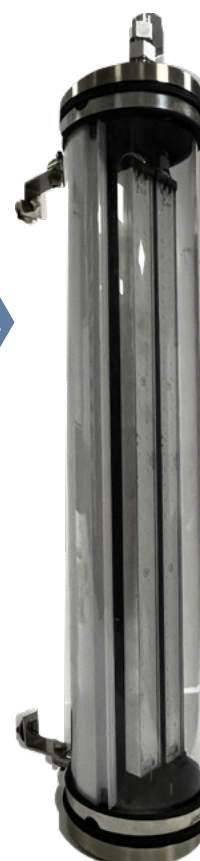
## Lighting accessories

CODE	TYPE
A601102010009	1"1/2 POLE MOUNTING KIT P14 AISI316L
A601102010008	2" POLE MOUNTING KIT P14 AISI316L
A601102010005	CEILING MOUNTING KIT G3 AISI316L
A601102010012	SUSPENSION MOUNTING KIT G4 AISI316

## Photometric light curves



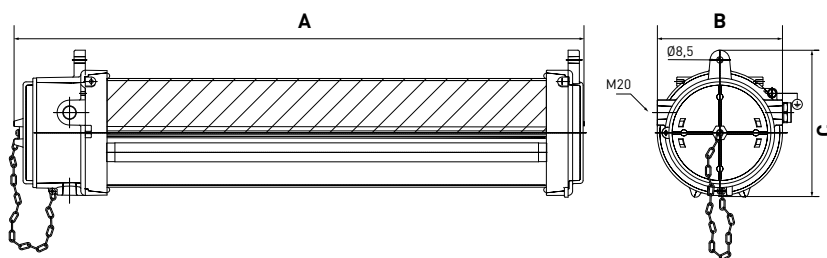
EVF-P  
STAINLESS STEEL  
COMING SOON



FLUORESCENT LIGHTING AVAILABLE UPON REQUEST



## Dimensions EVF-P\* TL\* LED



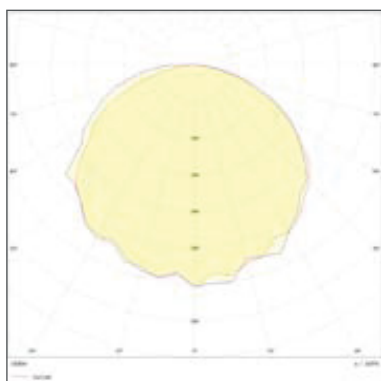
## EVF-P\* TL\* LED - Lighting fixture for normal and emergency service

CODE	TYPE	POWER [W]	LUMEN [lm]	LUM. EFF [lm/W]	DIMENSION [mm]			WEIGHT [kg]
					A	B	C	
A020562210003	EVF-P 1TL2 1X19W	1X19	3.225	170	760	167	194	6,00
A020562210004	EVF-P 2TL2 2X19W	2X19	6.450	170	760	167	194	6,00
A020562210005	EVF-P 3TL2 3X19W	3X19	9.800	172	1.370	167	194	9,00
A020562210006	EVF-P 4TL2 4X19W	4X19	13.065	172	1.370	167	194	9,00
A020662210001	EVF-P 1TL2 LE-P 60 1X19W	1X19	3.225	170	760	167	194	7,00
	EMERGENCY SERVICE: 60'		500					
A020662210005	EVF-P 1TL2 LE-P 180 1X19W	1X19	3.225	170	760	167	194	7,00
	EMERGENCY SERVICE: 180'		500					
A020662210002	EVF-P 2TL2 LE-P 60 2X19W	2X19	6.450	170	760	167	194	7,00
	EMERGENCY SERVICE: 60'		500					
A020662210006	EVF-P 2TL2 LE-P 180 2X19W	2X19	6.450	170	760	167	194	7,00
	EMERGENCY SERVICE: 180'		500					
A020662210003	EVF-P 3TL2 LE-P 60 3X19W	3X19	9.800	172	1.370	167	194	10,00
	EMERGENCY SERVICE: 60'		500					
A020662210007	EVF-P 3TL2 LE-P 180 3X19W	3X19	9.800	172	1.370	167	194	10,00
	EMERGENCY SERVICE: 180'		500					
A020662210004	EVF-P 4TL2 LE-P 60 4X19W	4X19	13.065	172	1.370	167	194	10,00
	EMERGENCY SERVICE: 60'		500					
A020662210008	EVF-P 4TL2 LE-P 180 4X19W	4X19	13.065	172	1.370	167	194	10,00
	EMERGENCY SERVICE: 180'		500					

## Lighting accessories

CODE	TYPE
A601102010009	1"1/2 POLE MOUNTING KIT P14 AISI316L
A601102010008	2" POLE MOUNTING KIT P14 AISI316L
A601102010005	CEILING MOUNTING KIT G3 AISI316L
A601102010012	SUSPENSION MOUNTING KIT G4 AISI316

## Photometric light curves



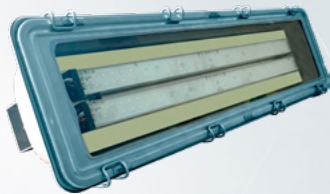
FLUORESCENT LIGHTING AVAILABLE UPON REQUEST





# LED LINEAR LIGHTING FIXTURES

## RMS - \*TL2.. Series - Aisi304



- RMS.. series lighting fixtures are ideally suited for ON and OFF-SHORE applications and all kinds of industries where there is an high level of corrosion.
- Both body and glass frame are made of AISI304 stainless steel and manufactured from a single sheet of steel with no invasive mounting holes, to minimize the risk of water ingress through the housing.
- Design has been studied to allow operator working with free hands and no need to support any part of lighting fixture. One person can take care of start-up or maintenance without any aid and assistance.
- Due to inorganic materials like stainless steel and glass, RMS.. series lighting fixtures are 95% recyclable.

### MARKING

II 2G Ex db eb mb IIC T4 /T3 Gb

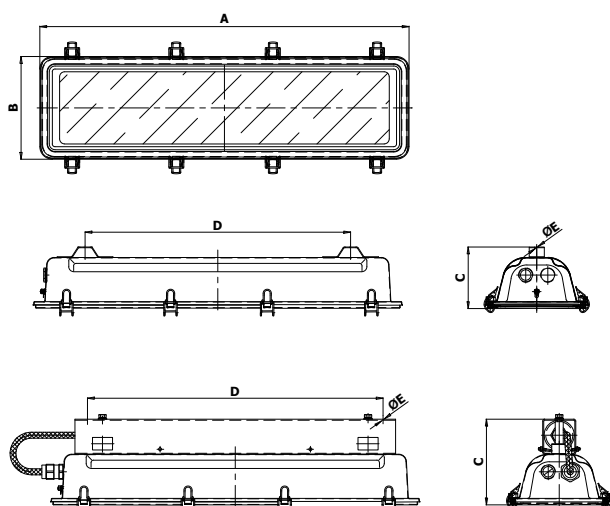
II 2D Ex tb IIIC T85°C Db

## TECHNICAL FEATURES

<b>Material</b>	AISI304
<b>IP rating</b>	IP65
<b>Ambient temperature range</b>	-30°C to + 60°C
<b>Approvals</b>	FIDI 23 ATEX xxxxx X/xx IECEX FIDI 23.xxxx X/xx
<b>Zones</b>	Gas Zone: 1,2 Dust Zone: 21, 22
<b>Rated voltage</b>	110-277 VAC (normal & emergency service)
<b>Frequency</b>	50 - 60 HZ
<b>Colour rendering index</b>	> 80 CRI
<b>Colour temperature</b>	6.500 K
<b>Power factor</b>	cos φ ≥ 0,98
<b>Surge protection</b>	4kVAC
<b>LED Lifetime ( L70) Ta+25°C</b>	> 66.000 h - according to IES LM-80-08
<b>Hardware and screws</b>	AISI304
<b>Entries</b>	2x entries M20 x 1,5
<b>Through wiring</b>	Loop-in / loop-out
<b>Plug</b>	1 x plastic dustproof plug for M20 entry protection 1 x M20 Brass nickel chrome plug c/w gasket ( mounted)
<b>Accessories upon request</b>	AISI316L mounting kit: pole mounting, ceiling mounting, suspension mounting; Cable gland kit in brass nichel chrome or AISI316L stainless steel.



## Dimensions RMS - \*TL2 Series



## RMS-560 LED - Lighting fixtures for emergency service

CODE	TYPE	POWER [W]	LUMEN [lm]	LUM. EFF [lm/W]	DIMENSIONS [mm]					WEIGHT [Kg]
					A	B	C	FIXING		
								D	ØE	
A020162210001	RMS 1TL2 1X19W	1X19	3.225	170	737	239	124	530	9	5,50
A020162210002	RMS 2TL2 2X19W	2X19	6.450	170	737	239	124	530	9	5,60
A020262210001	RMS 1TL2 LE-P 60 1X19W	1X19	3.225	170	737	239	177	590	9	9,50
	EMERGENCY SERVICE: 60'		500							
A020262210005	RMS 1TL2 LE-P 180 1X19W	1X19	3.225	170	737	239	177	590	9	10,50
	EMERGENCY SERVICE: 180'		500							
A020262210002	RMS 2TL2 LE-P 60 2X19W	2X19	6.450	170	737	239	177	590	9	9,60
	EMERGENCY SERVICE: 60'		500							
A020262210006	RMS 2TL2 LE-P 180 2X19W	2X19	6.450	170	737	239	177	590	9	10,60
	EMERGENCY SERVICE: 180'		500							

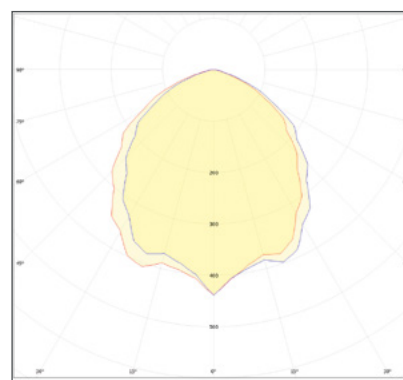
## Not permanent version

CODE	TYPE	POWER [W]	LUMEN [lm]	LUM. EFF [lm/W]	DIMENSIONS [mm]					WEIGHT [Kg]
					A	B	C	FIXING		
								D	ØE	
A020262210009	RMS 1TL2 LE-NP 60 1X19W	1X19	3.225	170	737	239	177	590	9	9,50
	EMERGENCY SERVICE: 60'		500							
A020262210010	RMS 1TL2 LE-NP 180 1X19W	1X19	3.225	170	737	239	177	590	9	10,50
	EMERGENCY SERVICE: 180'		500							

## Lighting accessories

CODE	TYPE
A601102010009	1" 1/2 POLE MOUNTING KIT P14 AISI316L
A601102010008	2" POLE MOUNTING KIT P14 AISI316L
A601102010005	CEILING MOUNTING KIT G3 AISI316L
A601102010012	SUSPENSION MOUNTING KIT G4 AISI316

## Photometric light curves



FLUORESCENT LIGHTING AVAILABLE UPON REQUEST

# LED FLOODLIGHT

## FL1.. Series - Copper-free aluminium



- LED explosion-proof floodlights ideal for large-scale areas and street lighting, sidewalk-lighting or perimeter illumination
- Manufactured in copper-free aluminium and tempered glass, FL1 Series have an excellent corrosion resistance
- Provided with adjustable bracket in AISI316L stainless steel for wall/ceiling and pole-mounting
- Modular design: up to 4 units
- Very high lumen output: up to 32.000 lm.

### MARKING

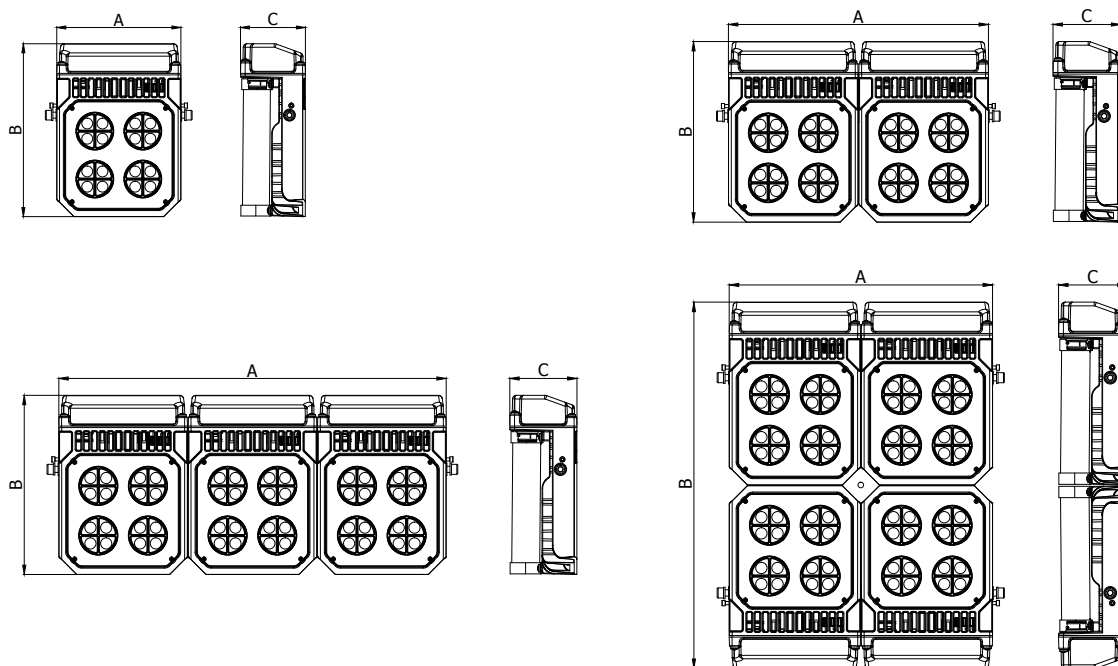
II 2G Ex db eb mb IIC T4 Gb

II 2D Ex mb tb IIIC T90°C Db

## TECHNICAL FEATURES

<b>Material</b>	Body: copper-free aluminium and tempered glass
<b>IP rating</b>	IP66
<b>Ambient temperature range</b>	-30°C to +60°C
<b>Approval</b>	ATEX: INERIS 20ATEX0063X IECEX: IECEX INE 20.0074X
<b>Zones</b>	Gas Zone: 1, 2 Dust Zone: 21, 22
<b>Rated voltage</b>	110/277 VAC
<b>Frequency</b>	50 - 60 Hz
<b>Colour rendering index</b>	80 CRI
<b>Colour temperature</b>	5.700 K 3.000 K
<b>Power factor</b>	cos $\varphi$ $\geq$ 0,98
<b>Surge protection</b>	6 kV AC
<b>LED Lifetime L70/80 Ta+25°C</b>	> 60.000 h - according to IES LM-80-08
<b>Hardware and screws</b>	AISI316L stainless steel
<b>Coating</b>	Painted by polyurethane painting: RAL5014 painting cycle C4 suitable for On-Shore The reference standard is UNI EN ISO 12944 - 1: 2018 Upon request other colours and painting cycles
<b>Entries</b>	2 x entries M25 x 1,5 MARECHAL® 5 Amps PNCX connector upon request
<b>Through wiring</b>	Loop-in/Loop-out possibility
<b>Plug</b>	1 x M25 brass nickel chrome plated plug c/w gasket (mounted) 1 x plastic dustproof plug for M25 entry protection
<b>Emergency Service</b>	Available with only 2- 3 and 4 module version with a 3-hour duration (180 mn)
<b>Accessories upon request</b>	Mounting kit in AISI316L stainless steel; Pole mounting kit, from 1 1/2" up to 2"; Cable gland kit in brass nickel chrome or AISI316L stainless steel.

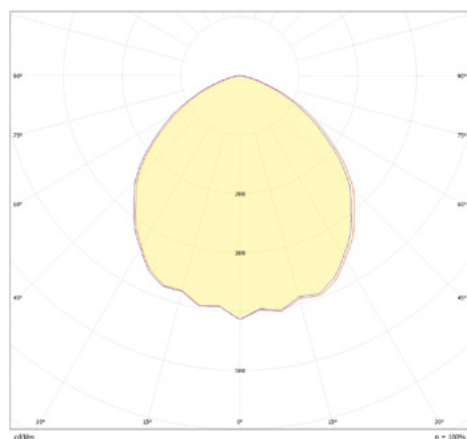
## Dimensions FL1



### FL1 LED–Floodlight for normal and emergency service

CODE	TYPE	TOTAL POWER [W]	LUMEN [lm]	LUM. EFF [lm/W]	DIMENSION [mm]			WEIGHT [kg]
					A	B	C	
A0101610D0001	FL1 LED	64	8.000	125	207	290	110	5,00
A0101610D0002	2X FL1 LED 128W	128	16.000	125	414	290	110	10,00
A0101610D0003	3X FL1 LED 192W	192	24.000	125	620	290	110	16,00
A0101610D0004	4X FL1 LED 256W	256	32.000	125	414	578	110	21,00
A0102610D0003	2X FL1-LED 128W LE-P 180	128	16.000	125	414	290	190	13,50
	EMERGENCY SERVICE: 180°		1.200					
A0102610D0002	3X FL1-LED 196W LE-P 180	192	24.000	125	414	290	190	19,50
	EMERGENCY SERVICE: 180°		1.200					
A0102610D0001	4X FL1-LED 256W LE-P 180	256	32.000	125	414	578	190	24,50
	EMERGENCY SERVICE: 180°		1.200					

### Photometric light curves





# LED WELLGLASS LIGHTING FIXTURES

## EVde-PR../LED Series – Copper-free aluminium



- Explosion-proof wellglass lighting fixture made in copper-free aluminium and tempered glass; provided with AISI304 or AISI316L stainless steel hardware and screws;
- LED lifetime-saving technology and overvoltage protection system;
- High resistance to corrosion and designed for the harshest temperatures.

### MARKING

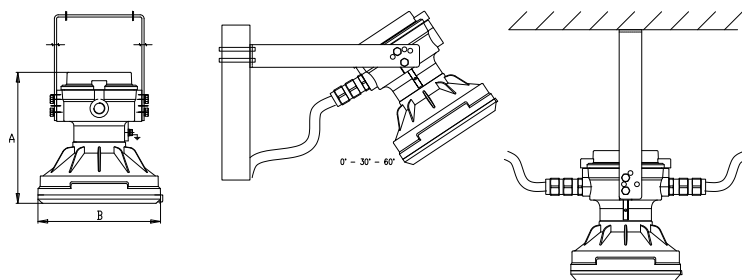
II 2 G Ex db eb IIC T6/T5/T4 Gb

II 2 D Ex tb IIIC T85/T100/T135°C Db

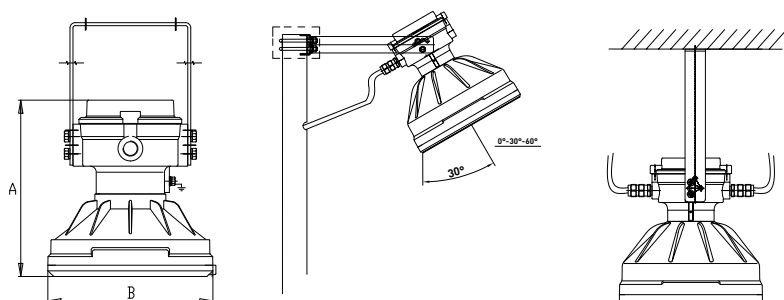
## TECHNICAL FEATURES

<b>Material</b>	Copper-free aluminium and tempered glass
<b>IP rating</b>	IP66
<b>Ambient temperature range</b>	-60°C to +60°C [Operating at -60°C, provided that the luminaire is switched on above +40°C]
<b>Approvals</b>	ATEX: INERIS 01ATEX0019X - IECEX: INE 15.0031X EAC: RU C-IT.BH02.B.00616/20 – ECAS available
<b>Zones</b>	Gas Zone: 1, 2 Dust Zone: 21, 22
<b>Rated voltage</b>	220-240 VAC (+/-10%)
<b>Frequency</b>	50-60 Hz
<b>Colour rendering index</b>	70 CRI
<b>Colour temperature</b>	5.700 K 4.000 K upon request
<b>Power factor</b>	cos φ ≥ 0,98
<b>Surge protection</b>	8 kV
<b>Driver</b>	Integrated - Equipped with thermal guard protection to prevent overtemperature
<b>LED Lifetime ( L70) Ta+25°C</b>	> 66.000 h - according to IES LM-80-08
<b>Hardware and screws</b>	AISI316L stainless steel
<b>Coating</b>	Painted by polyurethane painting: RAL5014 painting cycle C4 suitable for On-Shore The reference standard is UNI EN ISO 12944 - 1: 2018 Upon request other colours and painting cycles
<b>Entries</b>	N° 2 entries M25 Upon request M20, 3/4" and 1/2" NPT
<b>Through wiring</b>	Loop-in/Loop-out
<b>Plug</b>	1 x plastic dustproof plug for M25 entry protection 1 x M25 brass nickel chrome plated plug c/w gasket (mounted)
<b>Accessories upon request</b>	Mounting kit in AISI316L stainless steel: Pole mounting kit, from 1 1/2" up to 2" Cable gland kit in brass nickel chrome or AISI316L stainless steel Protection guard in AISI316L stainless steel Mounting plate for internal lighting tank inspection

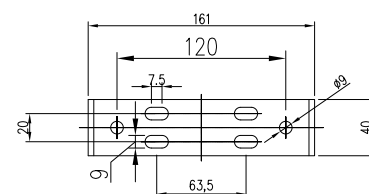
### Dimensions – EVde-PR4/LED L6K



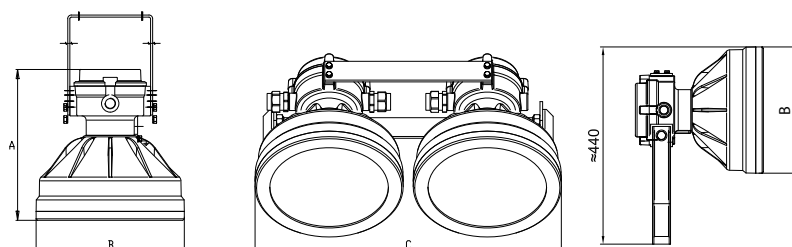
### Dimensions – EVde-PR5/LED L11K



### Mounting bracket fixing detail



### Dimensions – EVde-PR5/LED L22K



### EVde-PR../LED – Wellglass lighting fixtures

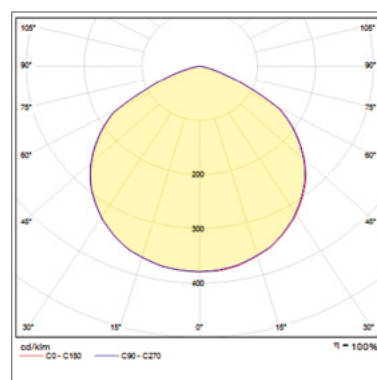
CODE	TYPE	POWER [W]	LUMEN [lm]	LUM. EFF [lm/W]	DIMENSION [mm]			WEIGHT [kg]
					A	B	C	
A030464510005	EVDE-PR4/LED-B45	45	7.950	135	231	194	-	5,00
A030568410005	EVDE-PR5/LED-B100	84	11.000	131	290	280	-	10,50
A03X000027001	EVDE-PR5/LED-B100	84X2	22.000	131	290	280	581	27,00
A030464510003	EVDE-PR4/LED-B45 LE-P 180	45	7.950	135	490	220	-	8,00
	EMERGENCY SERVICE: 180°		1.300					
A030568410010	EVDE-PR5/LED-B100 LE-P 180	84	11.000	131	540	280	-	13,50
	EMERGENCY SERVICE: 180°		1.300					

\*4.000 K upon request

### Pole mounting kit

CODE	TYPE
A601103010001	P4 KIT - 1" 1/2 POLE MOUNTING KIT
A601103010002	P5 KIT - 2" POLE MOUNTING KIT

### Photometric light curves



# LED WELLGLASS LIGHTING FIXTURES

## EVCC-PR3/LED Series - Copper-free aluminium



- Tank inspection lighting fixtures are recommended for applications where high luminous performances are required to light extreme dark spaces such as tanks and/or water towers.
- Manufactured in copper-free aluminium and suitable for LED lamp.

### MARKING

II 2 G Ex db IIC T3 Gb

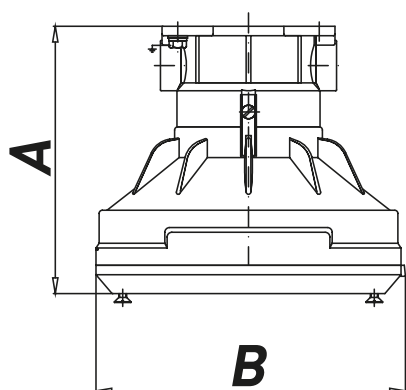
II 2 D Ex tb IIIC T200°C Db

## TECHNICAL FEATURES

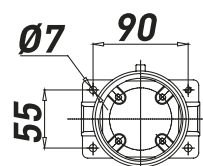
<b>Material</b>	Copper-free aluminium and tempered glass
<b>IP rating</b>	IP66
<b>Ambient temperature range</b>	-60°C to +60°C
<b>Approvals</b>	ATEX: INERIS 01ATEX0019X - IECEX: INE 15.0031X EAC: RU C-IT.BH02.B.00616/20
<b>Zones</b>	Gas Zone: 1, 2 Dust Zone: 21, 22
<b>Rated voltage</b>	220-240 VAC
<b>Frequency</b>	50/60 Hz
<b>Colour rendering index</b>	80 CRI
<b>Colour temperature</b>	5.700 K 4.000 K upon request
<b>Power factor</b>	$\cos \varphi \geq 0,98$
<b>Surge protection</b>	8kV
<b>Driver</b>	Integrated
<b>LED Lifetime ( L70) Ta+25°C</b>	>25.000 h - according to IES LM-80-08
<b>Hardware and screws</b>	AISI316L stainless steel
<b>Coating</b>	Painted by polyurethane painting: RAL5014 painting cycle C4 suitable for On-Shore The reference standard is UNI EN ISO 12944 - 1: 2018 Upon request other colours and painting cycles
<b>Entries</b>	2 x entries M25 Upon request M20, 3/4" and 1/2" NPT
<b>Through wiring</b>	Loop-in/ Loop-out
<b>Plug</b>	1 x M25 plastic plug 1 x M25 brass nickel chrome plated plug c/w gasket (mounted)
<b>Accessories upon request</b>	Mounting kit in AISI316L stainless steel: Pole mounting kit, from 1" 1/2 up to 2" Cable gland kit in brass nickel chrome or AISI316L stainless steel Protection guard in AISI316L stainless steel Mounting plate for internal lighting tank inspection



## Dimensions EVCC LED



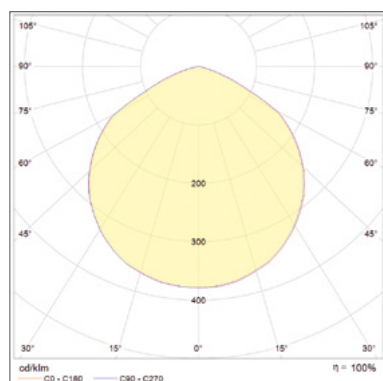
## Fixing detail



## LED EVCC-PR tank inspection lights

CODE	TYPE	POWER [W]	LUMEN [lm]	LUM. EFF [lm/W]	DIMENSIONS [mm]		WEIGHT
					A	B	
A031660790001	EVCC-PR3/LED	5,5	540	86	170	194	5,00
A031660710001	EVCC-PR3/LED	9	820	90	170	194	5,00

## Photometric light curves



# LED HAND LAMP

## EVA LED – Copper-free aluminium



- Portable lights provided with insulated handle to assure safety working conditions for operators.
- Made of copper-free aluminium and suitable for LED lamp.
- Possibility to install a protection guard.

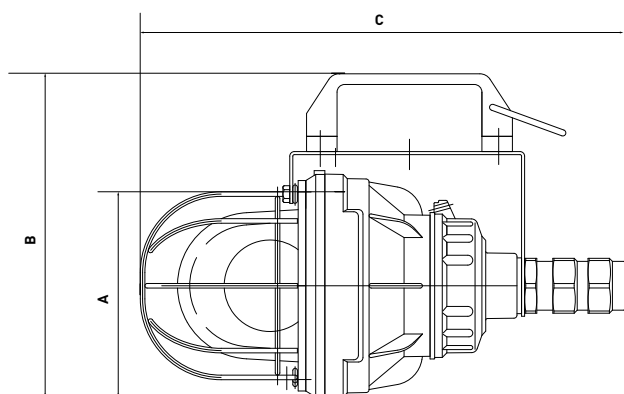
### MARKING

II 2G Ex db IIC T5/T4 Gb  
II 2D Ex tb IIIC T100/T135°C Db

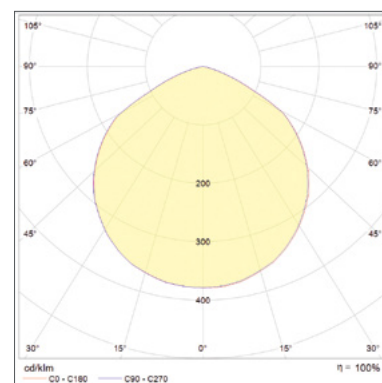
## TECHNICAL FEATURES

<b>Material</b>	Copper-free aluminium and tempered glass
<b>IP rating</b>	IP66
<b>Ambient temperature range</b>	-60°C to +60°C
<b>Approvals</b>	ATEX 01ATEX0019X - IECEx INE 15.0031X TR CU RA RU BH02 616
<b>Zones</b>	Gas Zone: 1, 2 Dust Zone: 21, 22
<b>Rated voltage</b>	220 -240 VAC
<b>Frequency</b>	50/60 Hz
<b>Colour rendering index</b>	80 CRI
<b>Colour temperature</b>	4.000 K
<b>Power factor</b>	$\cos \varphi \geq 0,85$
<b>Driver</b>	Integrated
<b>LED Lifetime ( L70) Ta+25°C</b>	25.000 h -according to IES LM-80-08
<b>Hardware and screws</b>	AISI316L stainless steel
<b>Coating</b>	Painted by polyurethane painting: RAL5014 painting cycle C4 suitable for On-Shore The reference standard is UNI EN ISO 12944 - 1: 2018 Upon request other colours and painting cycles
<b>Entries</b>	N° 1 entry M25x1,5 complete with brass nickel chrome plated cable gland PAB-AX type
<b>Through wiring</b>	Loop-in / Loop-out possibility
<b>Accessories upon request</b>	Protection guard Cable gland kit in brass nickel chrome or AISI316L stainless steel

## Dimensions EVA



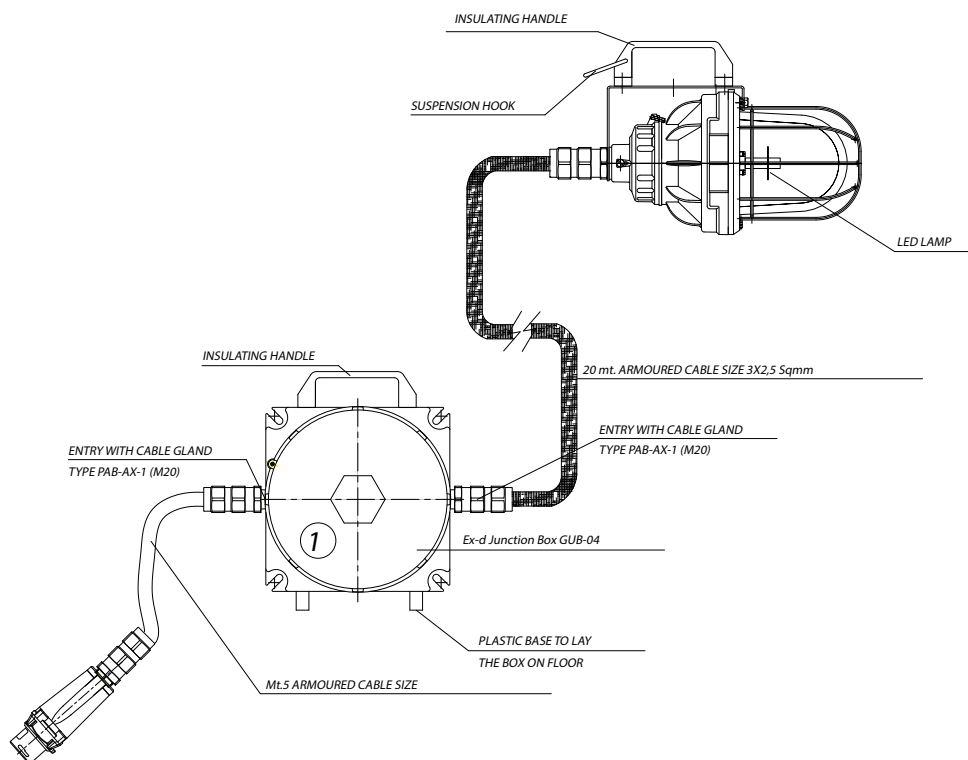
## Photometric light curves



## EVA LED – Hand lamp

CODE	TYPE	POWER [W]	LUMEN [lm]	LUM. EFF [lm/W]	DIMENSION [mm]			WEIGHT [kg]
					A	B	C	
A030160710001	EVA-1/LED	6	540	90	123	212	312	2,90

## Optional: with portable transformer unit





# LED ROTATING LIGHTING FIXTURES

## EV../ROT Series - Copper-free aluminium



- Range of rotating lamp visual signals, available in three versions up to 10 W
- Copper-free aluminium body and tempered glass lamp compartment ensure an excellent corrosion resistance
- EVCC and EVA version available upon request.

### MARKING

EVde

II 2G Ex db eb IIC T6/T5/T4 Gb

II 2D Ex tb IIIC T85/100/135°C Db

### MARKING

EVCC/ EVA

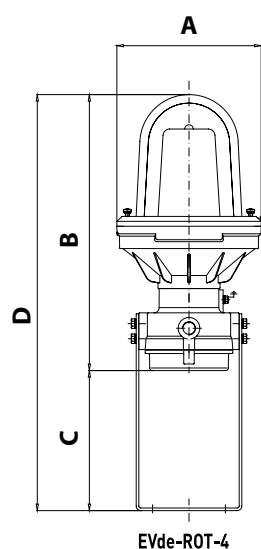
II 2G Ex db IIC T6/T5/T4 Gb

II 2D Ex tb IIIC T85/100/135°C Db

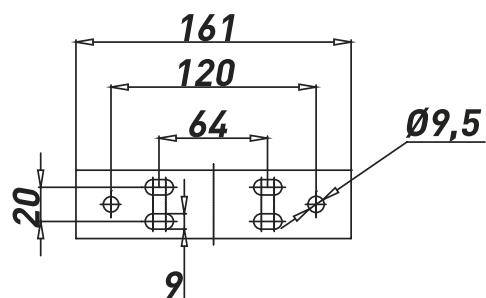
## TECHNICAL FEATURES

<b>Material</b>	Copper-free aluminium body and tempered glass
<b>IP rating</b>	IP66
<b>Ambient temperature range</b>	-60°C to +60°C
<b>Approvals</b>	ATEX: INERIS 01ATEX0019X - IECEx: INE 15.0031X EAC: RU C-IT.BH02.B.00616/20
<b>Zones</b>	Gas Zone: 1,2 Dust Zone: 21,22
<b>Rated operation voltage (UE)</b>	240Vac, 12Vdc, 24Vdc other voltages upon request
<b>Frequency (AC version)</b>	50/60Hz
<b>Colour light</b>	Other colours available upon request
<b>Hardware and screw</b>	AISI316L stainless steel
<b>Coating</b>	Painted by polyurethane painting: RAL5014 painting cycle C4 suitable for On-Shore The reference standard is UNI EN ISO 12944 - 1: 2018 Upon request other colours and painting cycles
<b>Entries</b>	N° 2 entries M25x1,5 (EVde and EVCC version) N° 1 entry M25x1,5 (EVA version plugs and cable glands excluded) Upon request M20, 3/4" and 1/2" NPT
<b>Through wiring</b>	Loop-in / Loop-out (Evde and EVCC version)
<b>Plug</b>	1 x M25 plastic plug 1 x M25 brass nickel chrome plated plug c/w gasket (mounted)
<b>Accessories upon request</b>	Mounting kit in AISI316L stainless steel: Pole mounting kit, from 1" 1/2 up to 2" Cable gland kit in brass nickel chrome or AISI316L stainless steel Protection guard in AISI316L stainless steel

## Dimensions EV../ROT



## Mounting bracket fixing detail



## EV../ROT Visual signals

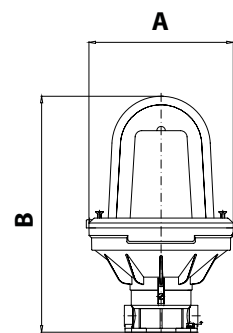
CODE	TYPE	POWER [W]	DIMENSION [mm]				VOLTAGE	COLOR LIGHT	WEIGHT [kg]
			A	B	C	D			
A040435500007	EVDE-2/ROT	6	162	357	214	571	240VAC 50/60HZ	RED	5,50
A040435500001	EVDE-3/ROT	8	194	370	214	584	240VAC 50/60HZ	RED	6,90
A040435500006	EVDE-4/ROT	10	220	421	214	635	240VAC 50/60HZ	RED	8,90

Luminosity up to 1.600 cd

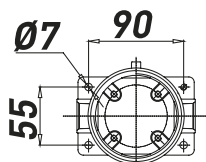
Other voltages and colors upon request.

Different options of lamp: flashing and fixed.

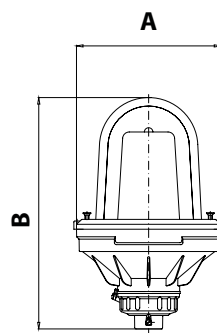
## Dimensions EVCC-ROT



## Fixing detail



## Dimensions EVA-ROT



## EVCC-ROT 4

TYPE	DIMENSION [mm]	
	A	B
EVCC-2/ROT	162	276
EVCC-3/ROT	194	309
EVCC-4/ROT	220	360

## EVA-ROT 4

TYPE	DIMENSION [mm]	
	A	B
EVA-2/ROT	162	269
EVA-3/ROT	194	302
EVA-4/ROT	220	353

## Pole mounting kit

CODE	TYPE
A601103010001	P4 KIT - 1" 1/2 POLE MOUNTING KIT
A601103010002	P5 KIT - 2" POLE MOUNTING KIT

# XENOFASH LIGHTING FIXTURES

## EV../XN-MXN Series - Copper-free aluminium



- Range of xenoflash visual signals complete with Fresnel lens, available in different luminous intensities, up to 20J
- Copper-free aluminium body and tempered glass lamp compartment ensure an excellent corrosion resistance
- EVde version, with integrated Ex e junction box, allows end users and contractors the possibility to save one junction box, two cable glands and a minimum of 30 minutes of labour during installation process. This version is supplied complete with an adjustable AISI304 stainless steel mounting bracket suitable for ceiling, wall and suspension installation.
- EVCC version, without integrated Ex e junction box, allows standard ceiling installation (available upon request).
- EVA version, without integrated Ex e junction box, allows standard suspension installation by conduit system and pastoral pole (available upon request).

### MARKING

EVde

II 2G Ex db eb IIC T6/T5/T4 Gb

II 2D Ex tb IIIC T85/100/135°C Db

### MARKING

EVCC/ EVA

II 2G Ex db IIC T6/T5/T4 Gb

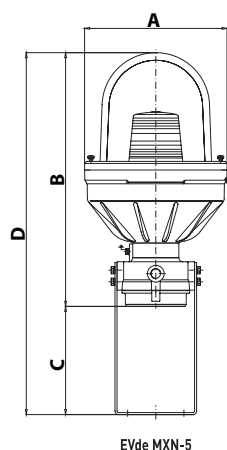
II 2D Ex tb IIIC T85/100/135°C Db

## TECHNICAL FEATURES

<b>Material</b>	Copper-free aluminium and tempered glass
<b>IP rating</b>	IP66
<b>Ambient temperature range</b>	-60°C to +60°C
<b>Approvals</b>	ATEX: INERIS 01ATEX0019X - IECEx: INE 15.0031X EAC: RU C-IT.BH02.B.00616/20
<b>Zones</b>	Gas Zone: 1,2 Dust Zone:21, 22
<b>Rated operation voltage (UE)</b>	240Vac, 12/24Vac/dc other voltages upon request
<b>Frequency (AC version)</b>	50/60Hz
<b>Colour light</b>	Other colours available upon request
<b>Hardware and screw</b>	AISI316L stainless steel
<b>Coating</b>	Painted by polyurethane painting: RAL5014 painting cycle C4suitable for On-Shore The reference standard is UNI EN ISO 12944 - 1: 2018 Upon request other colours and painting cycles
<b>Entries</b>	N° 2 entries M25x1,5 (EVde and EVCC version) N° 1 entry M25x1,5 (EVA version plugs and cable glands excluded) Upon request M20, 3/4" and 1/2" NPT
<b>Through wiring</b>	Loop-in / Loop-out (Evde and EVCC version)
<b>Plug</b>	1 x M25 plastic plug 1 x M25 brass nickel chrome plated plug c/w gasket (mounted)
<b>Accessories upon request</b>	Mounting kit in AISI316L stainless steel: Pole mounting kit, from 1" 1/2 up to 2" Cable gland kit in brass nickel chrome or AISI316L stainless steel Protection guard in AISI316L stainless steel

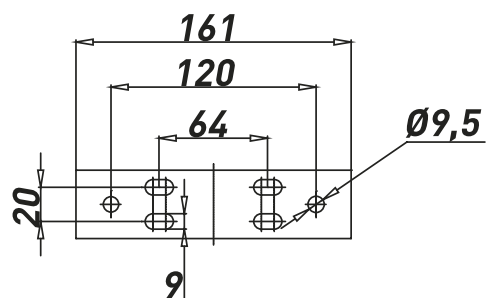


## Dimensions EVde../XN-MXN



EVde MXN-5

## Mounting bracket fixing detail



## EV../XN-MXN Series Visual Signals

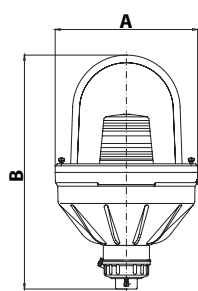
CODE	TYPE	POWER PER SECOND (Ws)	LUMINOUS INTENSITY	DIMENSION [mm]				VOLTAGE	COLOR LIGHT	WEIGHT [kg]
				A	B	C	D			
A040384500001	EVDE-XN-3	6	6J	194	370	214	584	240V 50/60HZ	RED	4.50
A040384500003	EVDE-MXN-3	16	16J	194	370	214	584	240V 50/60HZ	RED	4.50
A040584500002	EVDE-MXN-5	20	20J	281	501	214	715	240V 50/60HZ	RED	6.00
A040384C00006	EVDE-XN-3	6	6J	194	370	214	584	12/24V AC/DC	RED	4.50
A040384C00002	EVDE-MXN-3	16	16J	194	370	214	584	12/24V AC/DC	RED	4.50
A040584C00002	EVDE-MXN-5	20	20J	281	501	214	715	12/24V AC/DC	RED	6.00

Luminosity up to 8.500 cd

In case of maximum ambient temperature reaches +40°C, temperature class changes into T5 (ordering code to be required)

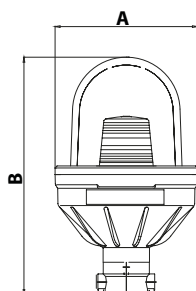
Other voltages and colors on request

## Dimensions EVA../XN-MXN



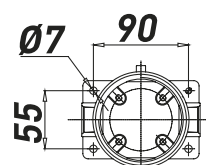
EVA MXN-5

## Dimensions EVCC../XN-MXN



EVCC MXN-5

## Fixing detail



## EVA../XN -MXN

TYPE	DIMENSION [mm]	
	A	B
EVA-XN-3	194	302
EVA-MXN-3	194	302
EVA-MXN-5	281	433

## EVCC../XN -MXN

TYPE	DIMENSION [mm]	
	A	B
EVCC-XN-3	194	309
EVCC-MXN-3	194	309
EVCC-MXN-5	281	440

# LED AIRCRAFT OBSTRUCTION LIGHTING FIXTURES

EV../WA.. series - LIOL (Low intensity obstruction lighting)

Copper free aluminium



Range of low intensity aircraft warning lights suitable for structures below 45mt.

## MARKING

EVde  
II 2G Ex db eb IIC T6/T5/T4 Gb  
II 2D Ex tb IIIC T85/100/135°C Db

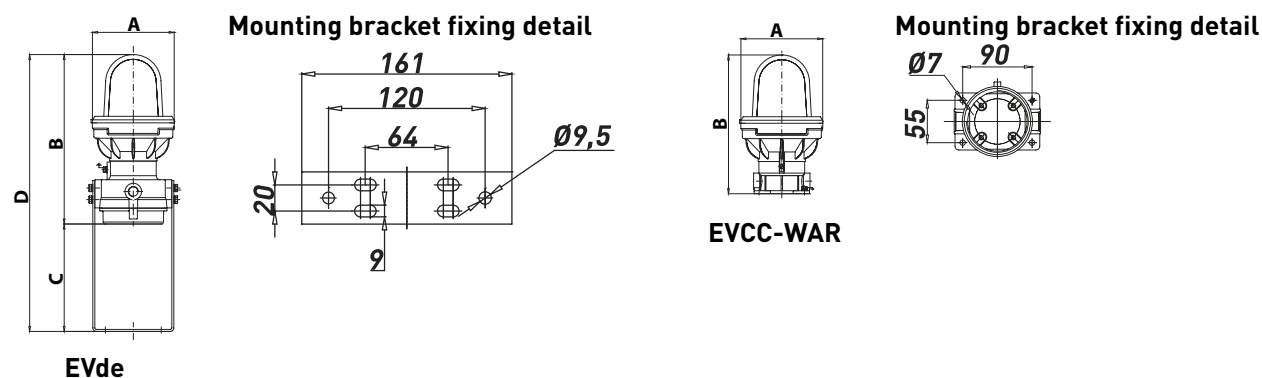
## MARKING

EVCC/ EVA  
II 2G Ex db IIC T6/T5/T4 Gb  
II 2D Ex tb IIIC T85/100/135°C Db

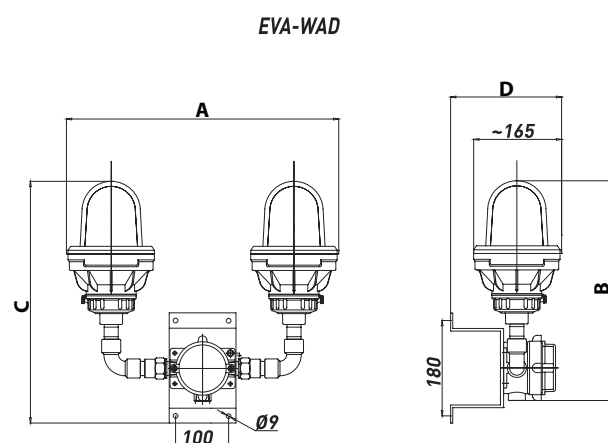
## TECHNICAL FEATURES

<b>Material</b>	Copper-free aluminium
<b>IP rating</b>	IP66
<b>Ambient temperature range</b>	-60°C to +60°C
<b>Approvals</b>	ATEX: INERIS 01ATEX0019X - IECEx: INE 15.0031X EAC: RU C-IT.BH02.B.00616/20
<b>Zones</b>	Gas Zone: 1,2 Dust Zone:21, 22
<b>Rated operation voltage (UE)</b>	230 V (standard) 24 V, 110 V, 90-264 V (available upon request)
<b>Frequency (AC version)</b>	50/60Hz
<b>Colour light</b>	Other colours available upon request
<b>Hardware and screw</b>	AISI316L stainless steel
<b>Coating</b>	Painted by polyurethane painting: RAL5014 painting cycle C4 suitable for On-Shore The reference standard is UNI EN ISO 12944 - 1: 2018 Upon request other colours and painting cycles
<b>Entries</b>	N° 2 entries M25x1,5 (EVde and EVCC version) N° 1 entry M25x1,5 (EVA version plugs and cable glands excluded) Upon request M20, 3/4" and 1/2" NPT
<b>Through wiring</b>	Loop-in / Loop-out (Evde and EVCC version)
<b>Plug</b>	1 x M25 plastic plug 1 x M25 brass nickel chrome plated plug c/w gasket (mounted)
<b>Accessories upon request</b>	Protection guard

## Dimensioni EVde/EVCC (WAR)



## Dimensioni EVA (WAD)



## EV../WA.. Series Aircraft warning lights

CODE	TYPE	POWER [W]	LIGHTING TYPE	DIMENSION [mm]				VOLTAGE	COLOR LIGHT	WEIGHT [kg]
				A	B	C	D			
A040160400002	EVCC-2/WAR LED	6	LED - SINGLE	162	276	-	-	230V 50/60HZ	RED	2.50
A040160400001	EVDE-2/WAR LED	6	LED - SINGLE	162	357	214	571	230V 50/60HZ	RED	3.50
A040160400003	EVA-2/WAD LED	2X6	LED - DOUBLE	515	415	456	209	230V 50/60HZ	RED	5.80

Luminosity:

Type A: > 10 cd, steady red

Type B: > 32 cd, steady red

\*Other voltages on request

Available lamp fully compliant with ICAO Annex 14

## Pole mounting kit

CODE	TYPE
A601103010001	P4 KIT - 1" 1/2 POLE MOUNTING KIT
A601103010002	P5 KIT - 2" POLE MOUNTING KIT



# LED AIRCRAFT OBSTRUCTION LIGHTING FIXTURES

## EVDE... series - MIOL (Medium intensity obstruction lighting) - Copper free aluminium



- The EVDE-5/...LED range of medium intensity obstruction lighting represents the top of technology, using LED technology to deliver low heat dissipation, low watt consumption and up to 100.000/hours maintenance free operation.
- Aircraft warning lighting fixtures EVDE-5/...LED are multi-light source using high-power LEDs with wide beam.
- The product is fully compliant with ICAO Annex 14, which requires that structures over 45m should incorporate medium intensity lighting fixtures
- Available LED colours: RED, WHITE or RED and WHITE

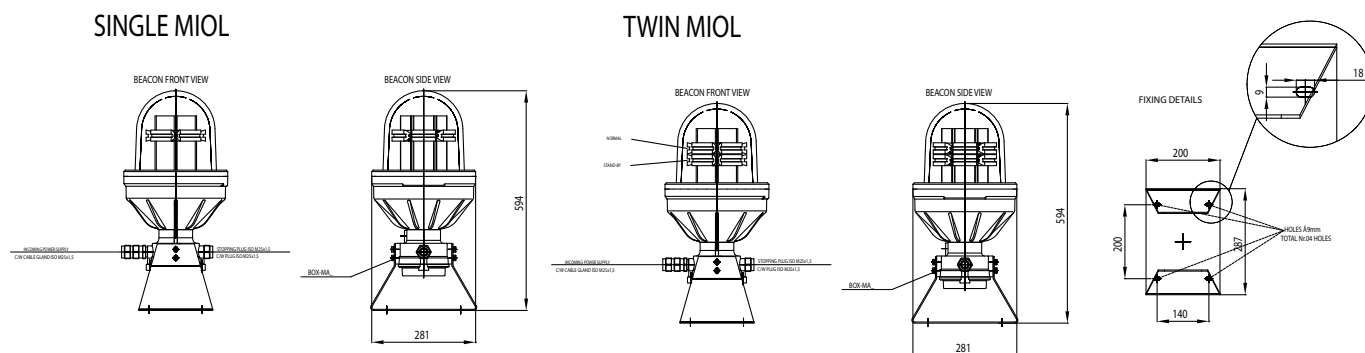
### MARKING

II 2G Ex db eb IIC T6/T5/T4 Gb  
II 2D Ex tb IIIC T85/100/135°C Db

## TECHNICAL FEATURES

<b>Material</b>	Copper-free aluminium
<b>IP rating</b>	IP66
<b>Ambient temperature range</b>	-60°C to +60°C
<b>Approvals</b>	ATEX: INERIS 01ATEX0019X - IECEX: INE 15.0031X EAC: RU C-IT.BH02.B.00616/20
<b>Zones</b>	Gas Zone: 1,2 Dust Zone:21, 22
<b>Rated operation voltage (UE)</b>	230Vac 220/240Vac 24Vdc
<b>Frequency (AC version)</b>	50/60Hz
<b>Lifetime</b>	up to 100.000 hours
<b>Hardware and screw</b>	AISI316L stainless and steel
<b>Coating</b>	Painted by polyurethane painting: RAL5014 painting cycle C4 suitable for On-Shore The reference standard is UNI EN ISO 12944 - 1: 2018 Upon request other colours and painting cycles
<b>Entries</b>	N°2 entries M25. M20 upon request Other entries: NPT thread
<b>Plug</b>	1 x M25 plastic plug 1 x M25 brass nikel chrome plated plug c/w gasket (mounted)
<b>Accessories upon request</b>	Protection guard

## Dimensions EVDE.. (MIOL) - Ex de version



## EVDE.. (MIOL) Medium intensity aircraft warning lights (NEW VERSION)

TYPE	POWER [cd]		MIOL TYPE	WEIGHT [kg]	TEMP. CLASS	PROTECTION	VOLTAGE	COLOR LIGHT
	day mode	night mode						
EVDE-5/LED	-	2.000	B - SINGLE	11 KG	T4	EX-DE	BY CONTROL PANEL[5]	RED
EVDE-5/LED	20.000	2.000	A - SINGLE	11 KG	T4	EX-DE	BY CONTROL PANEL[5]	WHITE
EVDE-5/LED	-	2.000	B - TWIN	11,5 KG	T4	EX-DE	BY CONTROL PANEL[5]	RED
EVDE-5/LED	20.000	2.000	A - TWIN	11,5 KG	T4	EX-DE	BY CONTROL PANEL[5]	WHITE
EVDE-5/LED	20.000	2.000	AB - SINGLE [4]	11,5 KG	T4	EX-DE	BY CONTROL PANEL[5]	RED & WHITE

[1] 2.000cd night mode, RED flashing

[2] 20.000cd day mode, WHITE flashing/2.000cd night mode, WHITE flashing

[3] 20.000cd day mode, WHITE flashing/2.000cd night mode, RED flashing

[4] TWIN model available upon request

[5] to be ordered separately

Additional features:

- the AWL system consists of lighting fixtures and respective panel board (custom made on the base of the system design)
- flashing is given by electronic card housed inside the control panel
- heat shield suggested for ambient temperature over +45°C

# LED TRAFFIC LIGHT EVCC



- Traffic light with red and green lamps (customized configurations available upon request)
- LED technology
- Zero maintenance

## MARKING

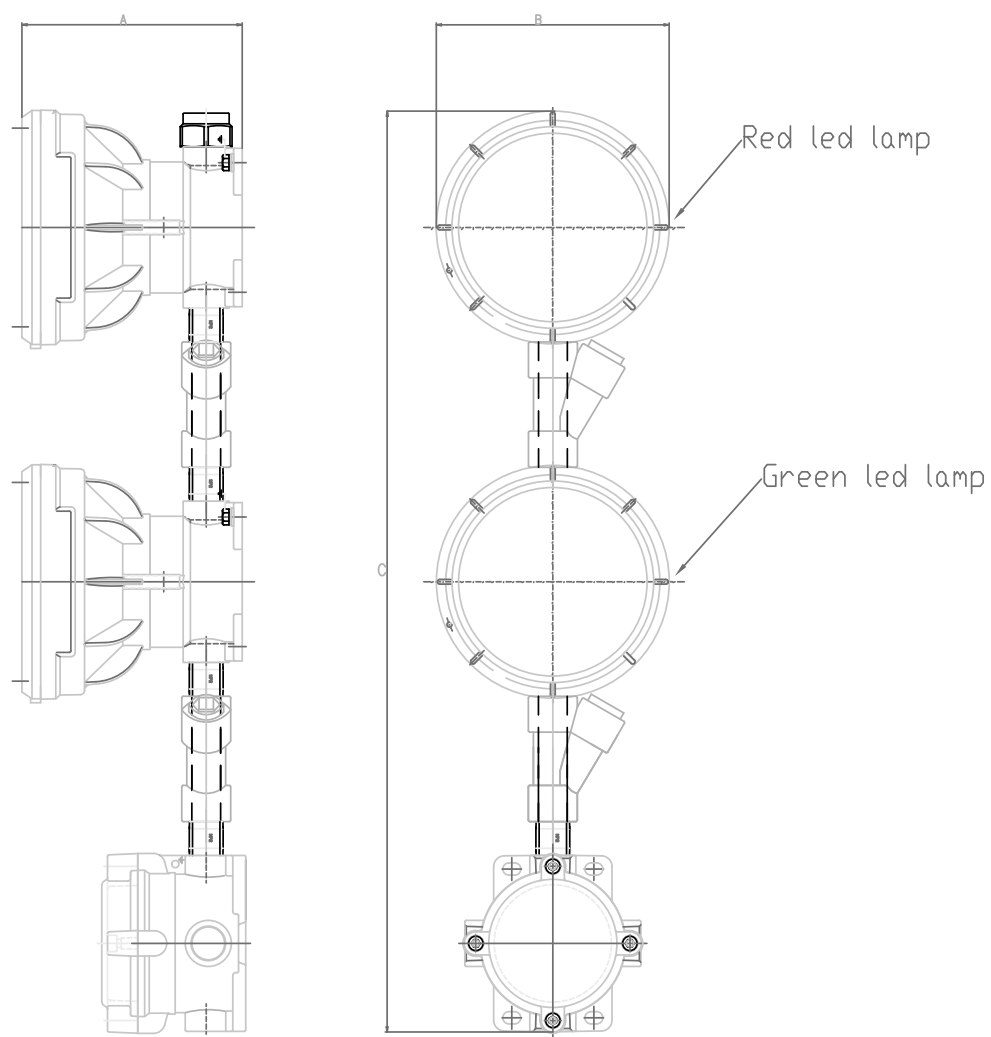
II 2G Ex db IIC T6/T5/T4 Gb  
II 2D Ex tb IIIC T85/100/135°C Db

## TECHNICAL FEATURES

Material	Copper-free aluminium
IP rating	IP66
Ambient temperature range	-60°C to +60°C
Approvals	ATEX: INERIS 01ATEX0019X - IECEX: INE 15.0031X EAC: RU C-IT.BH02.B.00616/20
Zones	Gas Zone: 1,2 Dust Zone: 21,22
Rated operation voltage (UE)	110/230 Vac 24 Vac/dc
Frequency (AC version)	50/60Hz
Colour light	Other colours available upon request
Lifetime	Up to 50.000 hours
Hardware and screw	AISI316L stainless steel
Coating	Polyurethane with epoxy base, Blue RAL5014 , C4 painting cycle is suitable for On-Shore The reference standard is UNI EN ISO 12944 - 1: 2018 Upon request other colours and painting cycles
Entries	N° 1 entry M25x1,5
Through wiring	Loop-in / Loop-out upon request
Plug	One on top
Accessories upon request	Cable gland kit in brass nichel chrome or AISI316L stainless steel



## Dimensions EVCC-PR/LED



### EVCC-PR/LED Traffic light

CODE	TYPE	POWER [W]	LIGHTING TYPE	COLOR LIGHT	VOLTAGE	DIMENSIONS [mm]			WEIGHT [kg]
						A	B	C	
A040266700001	EVCC-PR2/LED	5	LED	RED / GREEN	110/230V	153	162	640	12,50
A040266C00001	EVCC-PR2/LED	5	LED	RED / GREEN	24V AC/DC	153	162	640	12,50

Luminosity up to 1.500 cd

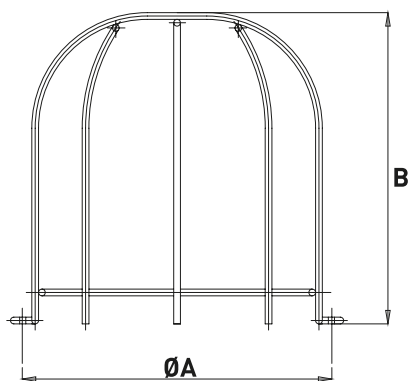
# SERIE EV../ROT/EV../XN-MXN SERIES/ EV../WA.. SERIES/ EVCC.. SERIES

## SPARES & ACCESSORIES

**Protection guard (Stainless Steel AISI316 L version available upon request)**

CODE	TYPE	DIMENSIONS AxB (mm)
A600903030001	GEV-1 PROTECTION GUARD FOR EV..-1 - AISI 304	123X103
A600903030002	GEV-2 PROTECTION GUARD FOR EV..-2 - AISI 304	138X139
A600903030004	GEV-3 PROTECTION GUARD FOR EV..-3 - AISI 304	151X152
A600903030010	GEV-4 PROTECTION GUARD FOR EV..-4 - AISI 304	178X200
A600903030008	GEV-5 PROTECTION GUARD FOR EV..-5 - AISI 304	252X233


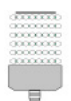


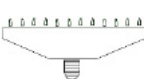
### Dimensions GEV



# SERIE EV../ROT/EV../XN-MXN SERIES/EV../WA.. SERIES/ EVCC.. SERIES

## SPARES & ACCESSORIES

### Lamps/Spare parts

CODE	PRODUCT NAME	SHAPE	POWER [W]	CAP	VOLTAGE	WHERE IT IS USED
A500166J00002	XENOFASH (RED)		6 WS (6J)	E27	220/240 VAC	EVDE-XN-3
A500166J00005			6 WS (6J)	E27	12/24 VAC/VDC	EVDE-XN-3
A50016AJ00001			16 WS (16J)	E27	220/240 VAC	EVDE-MXN-3
A50016AJ00003			16 WS (16J)	E27	12/24 VAC/VDC	EVDE-MXN-3
A50016BJ00001			20 WS (20J)	E27	220/240 VAC	EVDE-MXN-5
A50016BJ00002			20 WS (20J)	E27	12/24 VAC/VDC	EVDE-MXN-5
A500150000010	ROTOALARM (RED)		6	E27	240 VAC	EVDE-2/ROT
A500150000002			8		240 VAC	EVDE-3/ROT
A500150000011			10		240 VAC	EVDE-4/ROT
A500150600002	LED (RED)		6	E27	230 VAC	EVCC/EVDE-WAR EVA-WAD
A500150500001	LED (RED)		5W	E27	110/230 VAC/VDC	EVCC - TRAFFIC LIGHT
A500150500006						
A500150500002	LED (GREEN)		5W	E27	110/230 VAC/VDC	EVCC - TRAFFIC LIGHT
A500150500009						



# LED LINEAR LIGHTING FIXTURES

## EVF2-PL/FL.. Series - Copper-free aluminum - GRP



- Complete range of explosion-proof linear lighting fixtures available with single strip led and ideal for applications where a continuous row of lighting is needed to ensure a uniform illumination of production sites and machinery.
- End-cups made in copper-free aluminium or GRP.
- Three layers-extrusion lamp housing: Polycarbonate layer; Top side reflecting layer which protects inner electrical and electronic apparatus from direct sun heating/radiation effect; Filter layer which protects inner polycarbonate layer against UV radiation and related yellowing effect.
- Circular shape grants the best possible "CX" factor, therefore it is less affected by wind dusts, pollution and dirty bunching.
- All lighting fixtures are supplied ready for LOOP IN-LOOP OUT facility with cable upto 4sqmm.
- Integral electronic - Equipped with thermal guard protection to prevent overtemperature

### MARKING

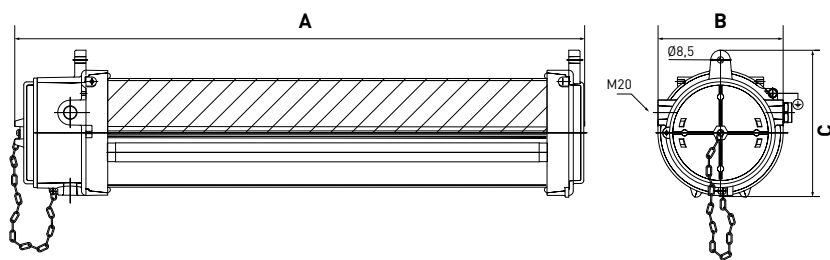
II 3G Ex ec IIC T4 Gc (normal service)

II 3D Ex tc IIIC T85°C Dc

## TECHNICAL FEATURES

<b>Material</b>	EVF2-FL = End-cups in GRP/Light housing in polycarbonate EVF2-PL = End-cups in copper-free aluminium/Light housing in polycarbonate
<b>IP/IK rating</b>	IP66 IK10
<b>Ambient temperature range</b>	-20°C to + 55°C
<b>Approvals</b>	FIDI 20 ATEX 0026X IECEX FIDI 20.0004X
<b>Zones</b>	Gas Zone: 2 Dust Zone: 22
<b>Rated voltage</b>	220-240 VAC (normal service)
<b>Frequency</b>	50-60 Hz
<b>Colour rendering index</b>	80 CRI
<b>Colour temperature</b>	4.000K others upon request
<b>Power factor</b>	cos φ ≥ 0,98
<b>Surge protection</b>	6 kV
<b>LED Lifetime ( L70) Ta +25°C</b>	> 60.000 h - according to IES LM-80-08
<b>Hardware and screws</b>	AISI316L stainless steel external hardware and screws
<b>Coating</b>	EVF2-FL = Unpainted for EVF in GRP version EVF2-PL = Painted by polyurethane painting: RAL5014 painting cycle C4 suitable for On-Shore The reference standard is UNI EN ISO 12944 - 1: 2018 Upon request other colours and painting cycles (only for EVF-P*TL* LED)
<b>Entries</b>	2x entries M20 x 1,5. Upon request: M25 entries or PNCX connector for EVF-L*TL*LED (GRP version)
<b>Through wiring</b>	Loop-in / Loop-out possibility
<b>Plug</b>	1 x plastic dustproof plug for M20 entry protection 1 x M20 polyamide/Brass nickel chrome plug c/w gasket (mounted)
<b>Accessories upon request</b>	AISI316L mounting kit: pole mounting, ceiling mounting, suspension mounting; Cable gland kit in brass nickel chrome or AISI316L stainless steel.

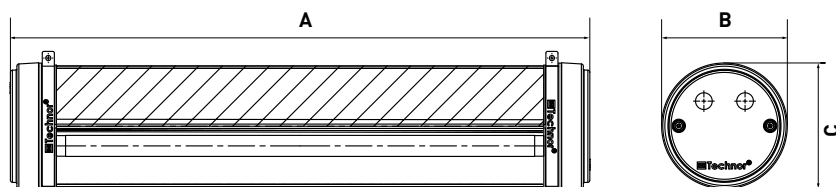
## Dimensions EVF2-PL - Copper-free aluminium



## EVF2- PL.. - LED lighting fixtures for normal service - Copper-free aluminium

CODE	TYPE	TOTAL POWER [W]	LUMEN [lm]	LUM. EFF [lm/W]	DIMENSIONS [mm]			WEIGHT [Kg]
					A	B	C	
A021362630001	EVF2-PL - 129	29	3.825	132	760	167	194	6,50
A021365230001	EVF2-PL - 155	55	7.650	140	1370	167	194	8,50
A021369530001	EVF2-PL - 195	95	14.300	150	1675	167	194	9,50

## Dimensions EVF2-FL - GRP



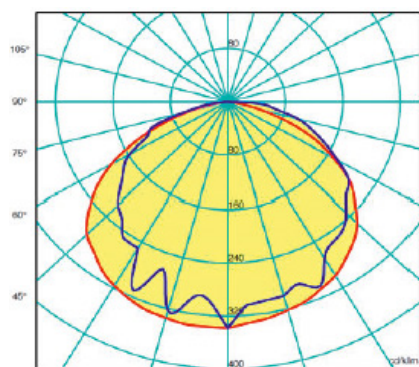
## EVF2-FL.. - LED lighting fixtures for normal service - GRP

CODE	TYPE	TOTAL POWER [W]	LUMEN [lm]	LUM. EFF [lm/W]	DIMENSIONS [mm]			WEIGHT [Kg]
					A	B	C	
A021462630001	EVF2-FL - 129	29	3.825	132	745	153	166	6,50
A021465230001	EVF2-FL - 155	55	7.650	140	1.342	153	166	8,50
A021469530001	EVF2-FL - 195	95	14.300	150	1.642	153	166	9,50

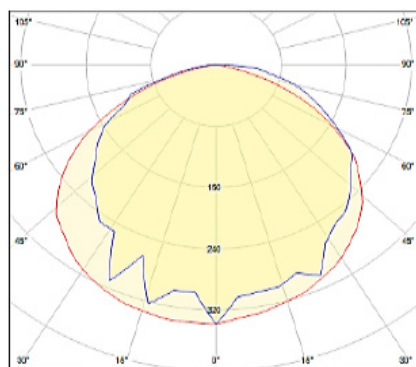
## Lighting accessories

CODE	TYPE
A601102010009	1"1/2 POLE MOUNTING KIT P14 AISI316L
A601102010008	2" POLE MOUNTING KIT P14 AISI316L
A601102010005	CEILING MOUNTING KIT G3 AISI316L
A601102010012	SUSPENSION MOUNTING KIT G4 AISI316

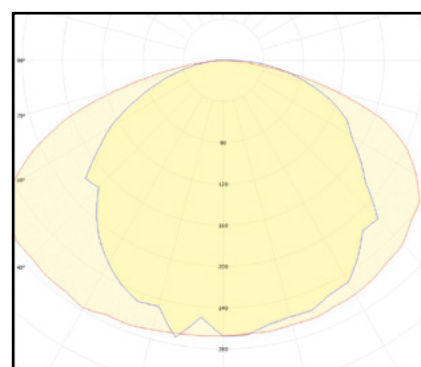
## Photometric light curves



EVF2-PL/FL 129



EVF2-PL/FL 155



EVF2-PL/FL 195

FLUORESCENT LIGHTING AVAILABLE UPON REQUEST

# LED LINEAR LIGHTING FIXTURES

## G2X Series - GRP



Luminaires G2X LED are suited for hazardous areas of industrial plants and space included in Zone 2 and 22.

The advantages of this luminaires series:

- Simple, easy and quick installation
- High resistance to corrosive industrial environment
- High luminous efficiency
- Quality ignition systems
- UV resistant.
- Easy maintenance
- A high-quality LED source with high colour rendering

### MARKING

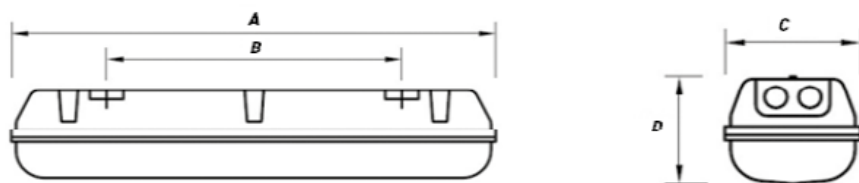
II 3G Ex nA IIC T6 Gc

II 3D Ex tc IIIC T85°C Dc IP66

## TECHNICAL FEATURES

<b>Material</b>	GRP + 2 gear tray holders in white lacquered steel plate Transparent diffuser in PC with UV protection
<b>IP rating</b>	IP66
<b>Ambient temperature range</b>	From -20°C to +40°C
<b>Approvals</b>	TNI 22ATEX0003X - IECEx OBAC18.0004X
<b>Zones</b>	Gas Zone: 2 Dust Zone:22
<b>Rated voltage</b>	220-240 VAC (normal & emergency service)
<b>Frequency</b>	50 - 60 Hz
<b>Colour rendering index</b>	80 CRI
<b>Colour temperature</b>	4.000 K
<b>Power factor</b>	$\cos \varphi \geq 0,98$
<b>LED Lifetime (L70B10) Ta+40°C</b>	> 65.000 h - according to IES LM-80-08
<b>Hardware and screws</b>	AISI304 stainless steel, GRP housing in graphite (RAL 7035)
<b>Coating</b>	Unpainted
<b>Entries</b>	2x entries M20 x 1,5. suitable for 4 entries (upon request)
<b>Through wiring</b>	Loop-in / Loop-out possibility
<b>Plug</b>	1 x plastic dustproof plug for M20 entry protection 1 x M20 polyamide/Brass nickel chrome plug c/w gasket (mounted)
<b>Accessories upon request</b>	Emergency kit 3h, Black GRP housing RAL9011, Yellow GRP housing RAL1003

## Dimensions G2X



### G2X - Lighting fixtures for normal service

CODE	TYPE	POWER [W]	LUMEN [lm]	LUM. EFF [lm/W]	DIMENSION [mm]				WEIGHT [kg]
					A	B	C	D	
A021462200001	G2X-600	22	2.825	128	665	390	145	101	2,00
A021464000001	G2X-1200	40	5.125	128	1282	800	145	101	3,25
A021464500001	G2X-1500	44	5.625	128	1578	1.100	145	101	3,60

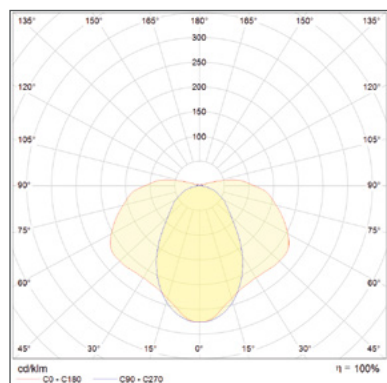
### G2X - Lighting fixtures for emergency service

CODE	TYPE	POWER [W]	LUMEN [lm]	LUM. EFF [lm/W]	DIMENSION [mm]				WEIGHT [kg]
					A	B	C	D	
A021564000001	G2X-1200 LE-P 180 EMERGENCY SERVICE: 180'	40	5.125 22% of flux	128	1282	800	145	101	3,45
A021564500001	G2X-1500 LE-P 180 EMERGENCY SERVICE: 180'	44	5.625 17% of flux	128	1575	1.100	145	101	3,80

### Lighting accessories

CODE	TYPE
A601102010009	1"1/2 POLE MOUNTING KIT P14 AISI316L
A601102010008	2" POLE MOUNTING KIT P14 AISI316L
A601102010005	CEILING MOUNTING KIT G3 AISI316L
A601102010012	SUSPENSION MOUNTING KIT G4 AISI316

### Photometric light curves



FLUORESCENT LIGHTING AVAILABLE UPON REQUEST



# LED LINEAR LIGHTING FIXTURES

## L2EX Series - Polycarbonate (Pc)



Luminaires L2EX LED are suitable for the environment with a danger of explosion of gas, dust and combustible fumes.

The advantages of this luminaires series:

- Simple, easy and quick installation
- High resistance to corrosive industrial environment
- High luminous efficiency
- Quality ignition systems
- UV resistant.
- Easy maintenance
- A high-quality LED source with high colour rendering

### MARKING

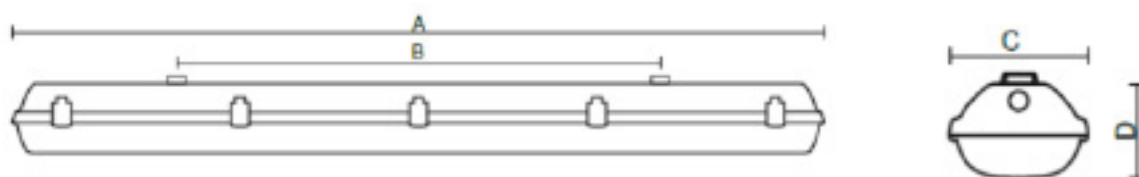
II 3G Ex nR IIC T6 Gc

II 3D Ex tc IIIC T70°C Dc

## TECHNICAL FEATURES

<b>Material</b>	Grey polycarbonate (PC), UV stable, impact-resistant
<b>IP/IK rating</b>	IP66
<b>Ambient temperature range</b>	Maximum ambient temperature $-25^{\circ}\text{C}$ up to $+55^{\circ}\text{C}$
<b>Approvals</b>	TNI 23ATEX 0008X
<b>Zones</b>	Gas Zone: 2 Dust Zone: 22
<b>Rated voltage</b>	220-250 VAC (normal & emergency service)
<b>Frequency</b>	50 - 60 Hz
<b>Colour rendering index</b>	$>80$ CRI
<b>Colour temperature</b>	4.000 K (other colour upon request)
<b>Power factor</b>	$\cos \varphi > 0,98$
<b>LED Lifetime (L90B10) Ta+40°C</b>	50.000 h according to IES L90/B10
<b>Hardware and screws</b>	AISI304 stainless steel
<b>Coating</b>	Unpainted
<b>Entries</b>	2x opposite entries M20 x 1,5 suitable for 4 entries (upon request)
<b>Through wiring</b>	Loop-in / Loop-out possibility
<b>Plug</b>	1 x plastic dustproof plug for M20 entry protection 1 x M20 polyamide/Brass nickel chrome plug c/w gasket (mounted)
<b>Accessories upon request</b>	Emergency kit 3h Wall, ceiling and suspension mounting kit

## Dimensions L2EX

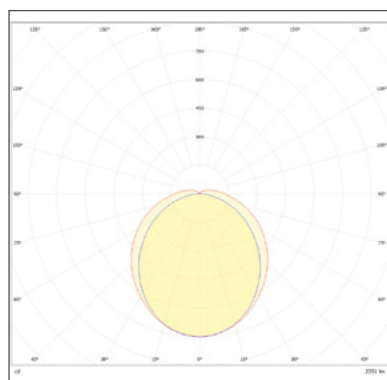


### L2EX - Lighting fixtures for normal and emergency service

CODE	TYPE	POWER [W]	LUMEN [lm]	LUM. EFF [lm/W]	DIMENSION [mm]				WEIGHT [kg]
					A	B	C	D	
A025061610001	L2EX LED-2200/840	16	2.560	147	662	350	145	111	2,00
A025063210001	L2EX LED-4400/840	31	5.070	150	1272	700	145	111	3,30
A025065410001	L2EX LED-8000/840	53	9.030	150	1572	940	145	111	4,20
A025061610002	L2EX LED-2200/840 M3H	16	2.560	147	662	350	145	111	2,78
	EMERGENCY SERVICE: 180'		500						
A025063210002	L2EX LED-4400/840	31	5.070	150	1272	700	145	111	4,50
	EMERGENCY SERVICE: 180'		500						
A025065410002	L2EX LED-8000/840	53	9.030	150	1572	940	145	111	5,50
	EMERGENCY SERVICE: 180'		500						

For other luminaires with different lumen output please ask to our Sales Dept.

### Photometric light curves



# LED FLOODLIGHT

## FL2 Series - Copper-free aluminium

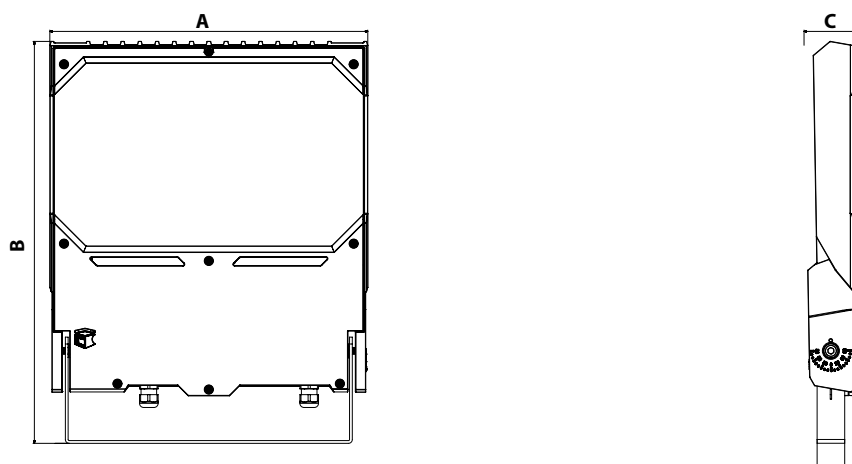


- LED explosion-proof floodlights ideal for large-scale areas and street lighting, sidewalk-lighting or perimeter illumination
- Manufactured in copper-free aluminium and tempered glass, FL2 Series have an excellent corrosion resistance
- Provided with adjustable bracket in painted steel for wall/ceiling and pole-mounting with goniometric scale for quick tilt adjustment between -90°C to +90°C
- High efficiency up to 204 lm/W

### TECHNICAL FEATURES

<b>Material</b>	Body: copper-free aluminium and tempered glass
<b>IP/IK rating</b>	IP66
<b>Ambient temperature range</b>	-30°C to +55°C
<b>Approvals</b>	ATEX: upcoming IECEX: upcoming
<b>Zones</b>	Gas Zone: 2 Dust Zone: 22 with manufacturer declaration of conformity accordance to ATEX
<b>Rated voltage</b>	220 - 240 VAC
<b>Frequency</b>	50 - 60 Hz
<b>Colour rendering index</b>	80CRI
<b>Colour temperature</b>	4.000 K
<b>Power factor</b>	$\cos \varphi \geq 0,98$
<b>Surge protection</b>	6/10 kV AC
<b>LED Lifetime L70/80 Ta+25°C</b>	> 60.000 h - according to IES LM-80-08
<b>Hardware and screws</b>	AISI316L stainless steel
<b>Coating</b>	Painted by polyuretane painting: RAL5014 painting cycle C4 suitable for On-Shore The reference standard is UNI EN ISO 12944 - 1: 2018 Upon request other colours and C5 painting cycles
<b>Entries</b>	1 entry M20 x 1,5 (additional entry upon request) MARECHAL® 5 Amps PNCX connector upon request
<b>Through wiring</b>	Loop-in/Loop-out possibility upon request
<b>Plug</b>	1 x plastic dustproof plug for M20 entry protection 1 x M20 polyamide/Brass nickel chrome plug c/w gasket (mounted)
<b>Accessories upon request</b>	Mounting kit in AISI316L stainless steel; Pole mounting kit, from 1 1/2" up to 2"; Cable gland kit in brass nickel chrome or AISI316L stainless steel.

## Dimensions FL2

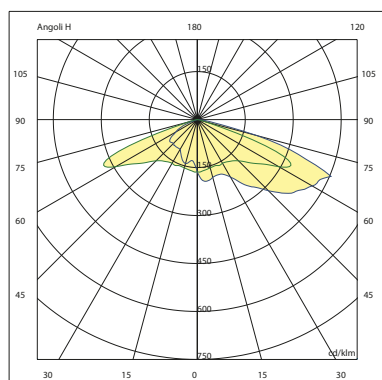


## FL2 - Floodlight for normal service

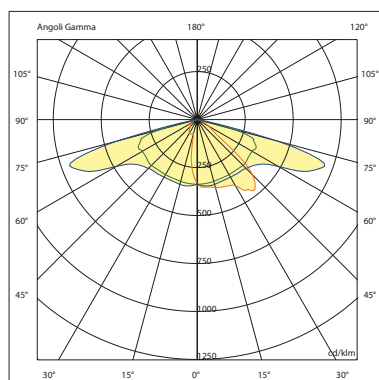
TYPE	POWER [W]	LUMEN [lm]	LUM. EFF [lm/W]	DIMENSION [mm]			WEIGHT [kg]
				A	B	C	
FL2-AS 48	48	9780	204	255	418	67	4.66
FL2-AS 90	90	17170	191	255	418	67	5.06
FL2-AS 128	128	26080	204	461	582	67	11.06
FL2-AS 192	192	39120	204	461	582	67	11.41
FL2-ST 48	48	9780	204	255	418	67	4.66
FL2-ST 90	90	17170	191	255	418	67	5.06
FL2-ST 128	128	26080	204	461	582	67	11.06
FL2-ST 192	192	39120	204	461	582	67	11.51
FL2-SY 48	48	9780	204	255	418	67	4.66
FL2-SY 90	90	17170	191	255	418	67	5.06
FL2-SY 128	128	26080	204	461	582	67	11.06
FL2-SY 192	192	39120	204	461	582	67	11.51

## Photometric light curves

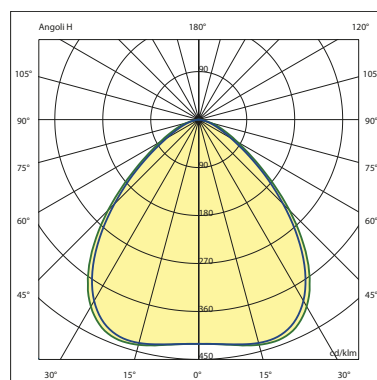
### FL2-AS 48/90/128/192W



### FL2-ST 48/90/128/192W



### FL2-SY 48/90/128/192W





# LED WELLGLASS LIGHTING FIXTURES

## WG2 Series - Copper-free aluminium

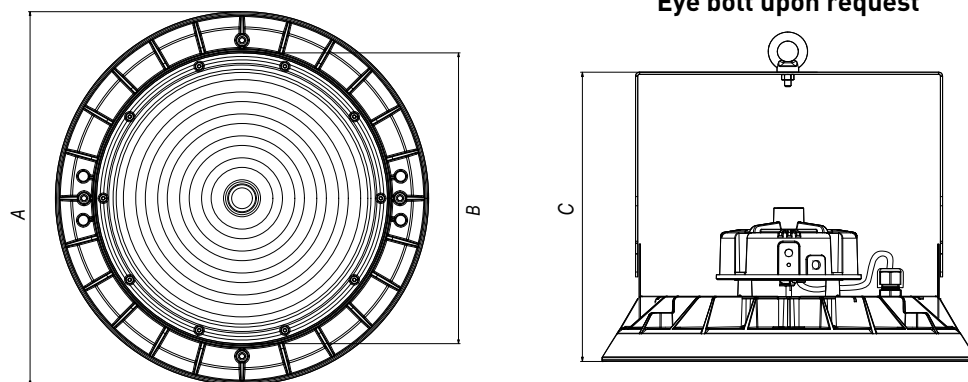


- Wellglass lighting fixture made in copper-free aluminium and tempered glass; provided with AISI304 or AISI316L stainless steel hardware and screws;
- LED lifetime-saving technology and over voltage protection system;
- High corrosion resistance and designed for the harshest temperatures.
- High efficiency up to 176 lm/ W

### TECHNICAL FEATURES

<b>Material</b>	Copper-free aluminium and tempered glass
<b>IP/IK rating</b>	IP66
<b>Ambient temperature range</b>	-20°C to +50°C with MARECHAL® 5 Amps PNCX connector -35°C to +50°C with Junction Box
<b>Approvals</b>	ATEX: upcoming IECEX: upcoming
<b>Zones</b>	Gas Zone: 2 Dust Zone: 22 with manufacturer declaration of conformity accordance to ATEX
<b>Rated voltage</b>	220 - 240 VAC
<b>Frequency</b>	50 - 60 Hz
<b>Colour rendering index</b>	70CRI
<b>Colour temperature</b>	4.000 K
<b>Power factor</b>	$\cos \varphi \geq 0,98$
<b>Surge protection</b>	8kV
<b>Driver</b>	Integrated equipped with thermal guard protection to prevent overtemperature
<b>LED Lifetime L70/80 Ta+25°C</b>	> 66.000 h -according to IES LM-80-08
<b>Hardware and screws</b>	AISI316L stainless steel
<b>Coating</b>	Painted by polyurethane painting: RAL5014 painting cycle C4 suitable for On-Shore The reference standard is UNI EN ISO 12944 -1:2018 Upon request other colours and C5 painting cycles
<b>Entries</b>	Pre-wired and assembled with MARECHAL® 5 Amps PNCX connector or Pre-wired and assembled with GRP Junction Box with M20 Entry
<b>Through wiring</b>	Loop-in/Loop-out possibility upon request
<b>Accessories upon request</b>	Mounting kit in AISI316L stainless steel: Pole mounting kit, from 1 1/2" up to 2" Cable gland kit in brass nickel chrome or AISI316L stainless steel or resin Protection guard in AISI316L stainless steel Eye bolt for suspension ( indoor use) Emergency version 60' or 180'

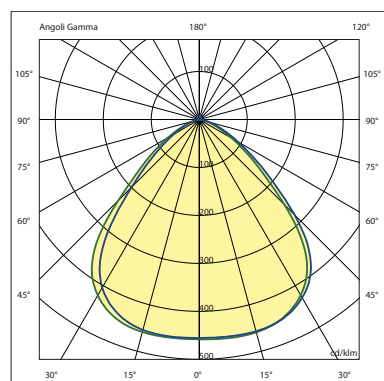
## Dimensions WG2



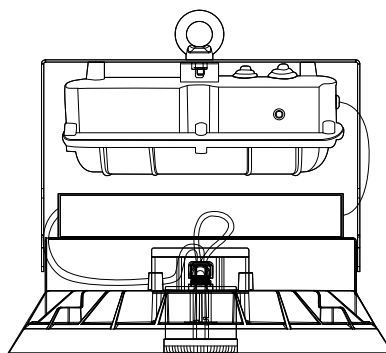
## WG2 - Wellglass Lighting fixtures for normal service

TYPE	POWER [W]	LUMEN [lm]	LUM. EFF [lm/W]	DIMENSION [mm]			WEIGHT [kg]
				A	B	C	
WG2-88- PNCX	88	15360	176	340	265	255	4,5
WG2-88- JB	88	15360	176	340	265	255	5,2
WG2-136- PNCX	136	22375	165	340	265	255	4,5
WG2-136- JB	136	22375	165	340	265	255	5,2

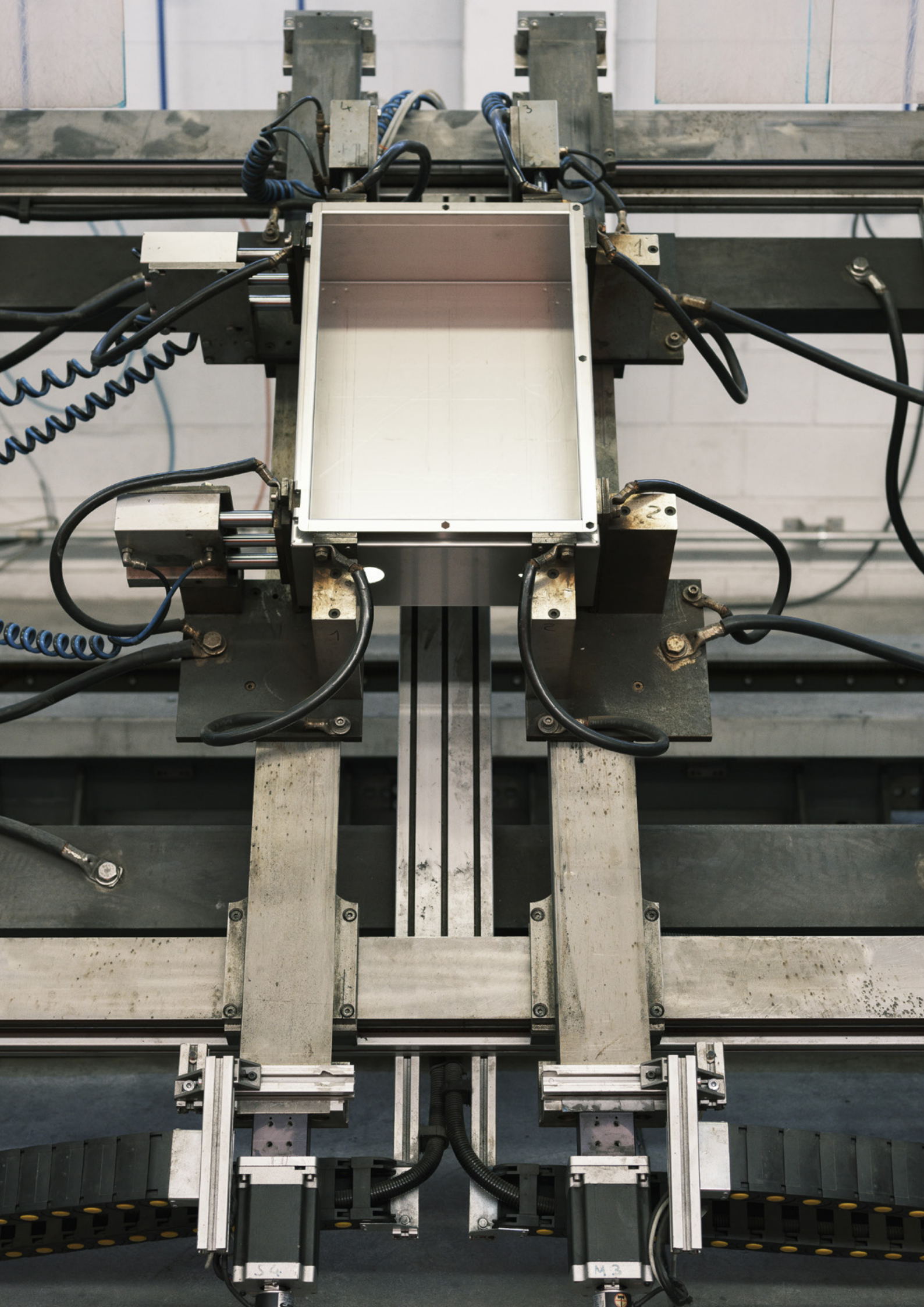
## Photometric light curves



## Emergency version







# ENCLOSURES & BOXES

Enclosure/Junction Boxes with Terminals	PAG 50-57
Enclosure/Junction or Socket Outlet Boxes	58-63
Local Control Stations	64-97
Compact Flameproof Enclosures	98
Flameproof Enclosures	100-116



# ENCLOSURES / JUNCTION BOXES WITH TERMINALS

## SB../ST.. Series - AISI 316 L Stainless steel

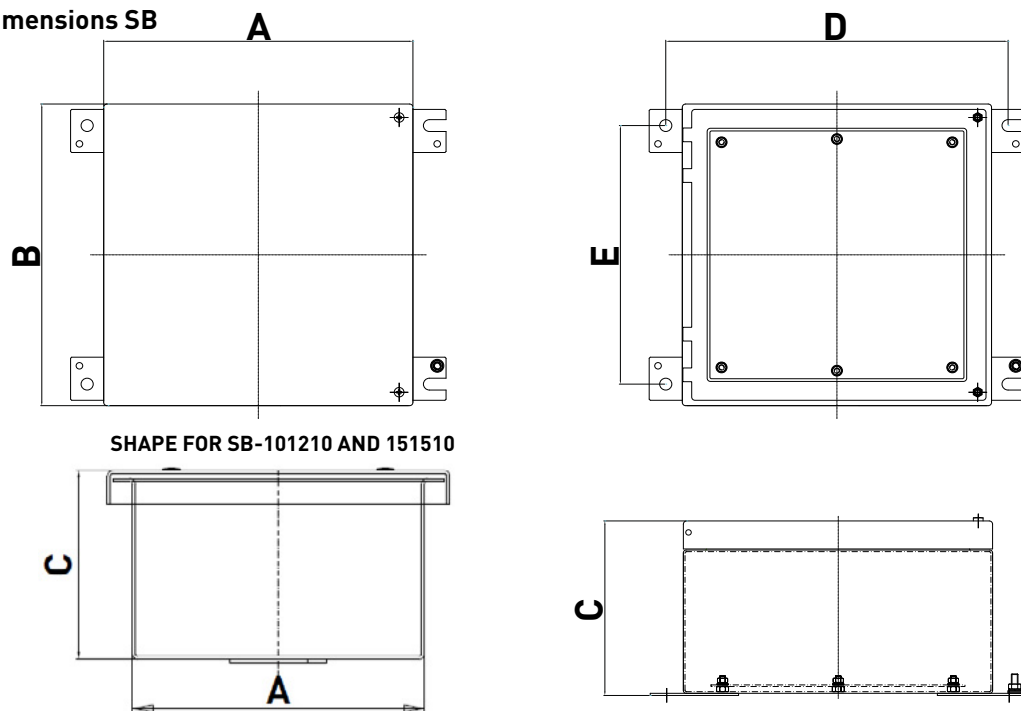


- SB../ST.. Series enclosures are suitable for housing Ex e/eb and Ex i terminals and can be provided with internal mounting plate to facilitate terminal board mounting.
- Maximum numbers of terminals varies according to: terminals section and current, enclosure size, operating temperature and required temperature class.
- Suitable for installation in ON/OFF-SHORE plants, in the presence of chemical agents and in any other highly corrosive environment.
- Full customization from 100x120x100 mm to 910x1140x500 mm: our technical department will support you in designing the best solution according to your needs and within the limits of the certificate.
- Full range of off-the-shelf solutions to ensure the best lead time on the market at a competitive pricing.

## TECHNICAL FEATURES

<b>Material</b>	AISI316L stainless steel - with thickness 1,5 mm - <a href="#">upon request other thickness available</a>		
<b>IP rating</b>	IP66/IP67	IP66/IP67	IP55/IP66 (SBHT.. Series high temperature)
<b>Shock resistance</b>	IK 10	IK 10	IK 10
<b>Ambient temperature range</b>	Ambient From -50°C to +95°C	Service From -50°C to +105°C	SBHT.. Series: From -60°C to +150°C
<b>Approvals</b>	<u>Full conformity Certificate:</u> FIDI 21 ATEX 0090X IECEX FIDI 21.0015X EAC: RU C-IT.BH02.B.00593/20	<u>Component Certificate:</u> FIDI 21 ATEX 0075U IECEX FIDI 21.0012U EAC: RU C-IT.BH02.B.00593/20	<u>SBHT.. - high temperature:</u> TÜV CY 18 ATEX0206009 IECEX EXA 18.0001 EAC: RU C-IT. BH02.B.00593/20
<b>Approvals</b>	UL listed: NEMA TYPE 1, 4, 4X,12 UL 508A-CSAC22.2No.14-13 KC: from KA4BO-0382X to KA4BO-0387X ECAS-Ex		
<b>Marking</b>	<u>Full conformity Certificate:</u> II 1 G Ex ia IIC T6...T4 Ga II 2 G Ex eb and/or ia/ib IIC T6 Gb II 2 D Ex tb IIIC T85°C...T135°C Db	<u>Component Certificate:</u> II 2 GD Ex eb IIC Gb Ex tb IIIC Db	<u>SBHT.. - high temperature:</u> II 1 G Ex ia IIC T* Ga II 2 G Ex eb and/or ia ib IIC T* Gb* Gas: T6/T5/T4/T3
<b>Surface treatment</b>	Acid treatment (pickling) Electro-polishing treatment		
<b>Standard certificate label</b>	Made by self adhesive UV and corrosion resistant polyester approved by certified Laboratory		
<b>Included accessories</b>	Screws and accessories in AISI316L stainless steel		
<b>Optional accessories</b>	Side removable gland plate Without hinges Drain/Breather valve Laminated plastic/Stainless steel certificate label Internal mounting plate Locking facility Internal/external through earth bolt		
<b>Available versions</b>	ST Version (with only 1/4 turn key and hinges) without screw Standard version: up to internal temperature of 105°C HT version: up to internal temperature of 130°C		

## Dimensions SB



## SB Series - AISI 316 L stainless steel

CODE	TYPE	DIMENSION [mm]					WEIGHT [kg]	MOUNTING PLATE
		A	B	C	FIXING			
					D	E		
B016I00000136	SB-142013	140	200	130	170	-	5	90X150
B016I00000135	SB-151510***	150	150	100	180	-	4	-
B016I00000137	SB-202016	200	200	160	230	160	6	150X150
B016I00000138	SB-202713	200	270	130	230	230	7	150X220
B016I00000139	SB-202716	200	270	160	230	230	7,5	150X220
B016I00000140	SB-272713	270	270	130	300	230	8	220X220
B016C10142526	SB-273513	270	350	130	300	310	9,5	220X300
B016I00000141	SB-273516	270	350	160	300	310	11	220X300
B016I00000142	SB-282816	280	280	160	310	240	10	230X230
B016I00000143	SB-282827	280	280	270	310	240	12	230X230
B016C12244408	SB-353516	350	350	160	380	310	13	300X300
B016I00000144	SB-353520	350	350	200	380	310	13,5	300X300
B016I00000145	SB-355016	350	500	160	380	460	16	300X450
B016I00000146	SB-355020	350	500	200	380	460	17,5	300X450
B016C10142527	SB-383816	380	380	160	410	340	14	330X330
B016I00000147	SB-383820	380	380	200	410	340	15	330X330
B016I00000148	SB-383827	380	380	270	410	340	17	330X330
B016I00000149	SB-384516	380	450	160	410	410	16	330X400
B016I00000150	SB-384520	380	450	200	410	410	17	330X400
B016I00000151	SB-385716	380	570	160	410	530	20	330X520
B016C12244409	SB-505016	500	500	160	530	460	22	450X450
B016I00000152	SB-505020	500	500	200	530	460	23,5	450X450
B016I00000153	SB-575716	570	570	160	600	530	26	520X520
B016I00000154	SB-575720	570	570	200	600	530	28,5	520X520
B016I00000155	SB-575730	570	570	300	600	530	33	520X520
B016I00000156	SB-577620	570	760	200	600	720	35,5	520X710
B016I00000157	SB-769520	760	950	200	790	910	53	710X900

\*\*\*The enclosure is without hinges and complete with TS35x7,5 Omega rail welded on the back  
 Other sizes up to 1500 x 960 x 500 cm contact our Sales Dept.  
 These enclosures refer to the empty and undrilled enclosures, sold under component certificate.  
 For complete junction boxes is necessary to ask to the Sales Dept.

# ENCLOSURES / JUNCTION BOXES WITH TERMINALS

## AQ../AR.. Series - Glassfiber reinforced polyester



- AQ../AR.. Series enclosures are ideally suited for chemical and petrochemical environments;
- Made of GRP (Glassfiber reinforced polyester), AQ../AR.. enclosures guaranteed high resistance to sea water corrosion and can withstand the harshest temperatures;
- Used to house Ex e and Ex i terminals. Maximum number of terminals changes according to: terminals section, enclosure operating temperature and required temperature class.

### MARKING

II 1 G

Ex ia IIC T6/T5/T4 Ga

II 2GD

Ex eb IIC T6/T5/T4 Gb or

Ex tb IIIC T85°C/T100°C/T135°C Db

Component marking

II 2GD

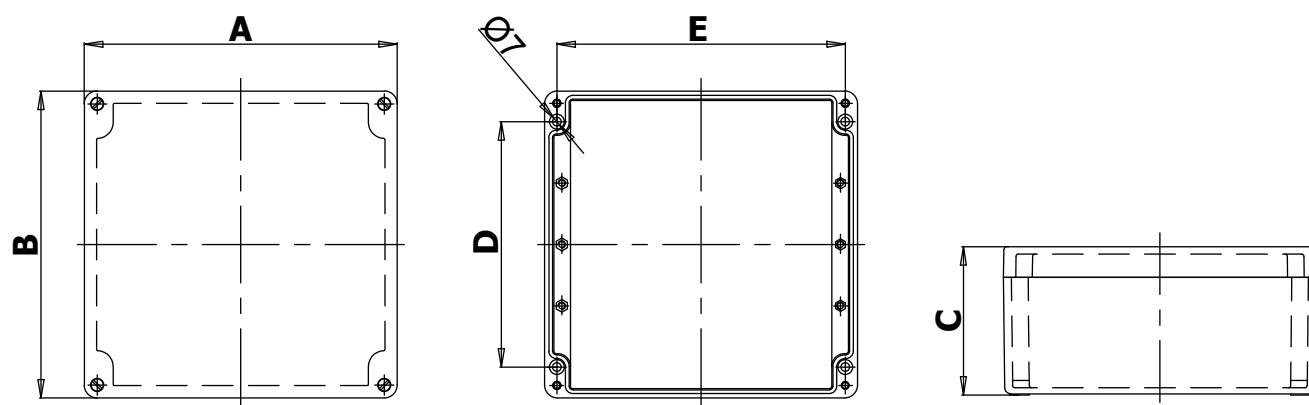
Ex eb IIC Gb

Ex tb IIIC Db

## TECHNICAL FEATURES

<b>Material</b>	GRP (Glassfiber reinforced polyester)	
<b>IP rating</b>	IP66	
<b>Shock resistance</b>	IK10	
<b>Ambient temperature range</b>	Ambient -50°C to +95°C	Service -50°C to +105°C
<b>Approvals</b>	<u>Full Conformity Certificate:</u> FIDI 21 ATEX 0090X IECEX FIDI21.0015X EAC: RUC-IT.BH02.B.00593/20 ECAS-Ex	<u>Component Certificate:</u> FIDI21ATEX0075U IECEX FIDI21.0012U EAC:RUC-IT.BH02.B.00593/20
<b>Standard certificate label</b>	Made by self adhesive UV and corrosion resistant polyester, approved by certified Laboratory.	
<b>Included accessories</b>	Screw in AISI304	
<b>Optional accessories</b>	Hinges Drain/breather valve Laminated plastic/Stainless steel certificate label Internal mounting plate Earth continuity plates Passing through earth bolt Screw in AISI316L	
<b>Available versions</b>	Standard version: up to internal temperature of 105°C HT version: up to internal temperature of 130°C	

## Dimensions AQ../AR..



### AQ../AR.. Series - Junction boxes - Standard versions\*

CODE	TYPE	DIMENSION [mm]					WEIGHT [kg]	MOUNTING PLATE
		A	B	C	FIXING			
					D	E		
B011041010008	AQ-080808P*	75	80	75	45	68	0,26	-
B011031010001	AR-081106P*	75	110	60	45	98	0,29	-
B011041010002	AQ-121209P*	122	120	90	82	106	0,75	100X100
B011031010002	AR-122209P*	120	220	90	82	204	1,06	100X195
B011041010003	AQ-161609P*	160	160	90	110	140	1,29	130X130
B011031010003	AR-162609P*	160	260	90	110	240	1,71	130X240
B011031010004	AR-163609P*	160	360	90	110	340	2,15	130X340
B011041010004	AQ-252612P*	250	255	120	200	235	2,65	210X232
B011041010005	AQ-252616P*	250	255	160	200	235	2,85	210X232
B011031010006	AR-254012P*	250	400	120	200	380	3,65	210X380
B011031010007	AR-254016P*	250	400	160	200	380	3,85	210X380
B011031010008	AR-256012P*	250	600	120	200	580	5,23	210X580
B011041010006	AQ-414012P*	405	400	120	355	380	5,58	360X375

\*HT version upon request

### AQ../AR.. Series - Junction boxes - Only HT version

CODE	TYPE	DIMENSION [mm]					WEIGHT [kg]	MOUNTING PLATE
		A	B	C	FIXING			
					D	E		
B011031010011	AR-081108P-HT	75	110	75	45	98	0,32	-
B011031010012	AR-081608P-HT	75	160	75	45	148	0,53	-
B011031010015	AR-082308P-HT	75	230	75	45	218	0,72	-
B011041010010	AQ-363609P-HT	360	360	90	310	340	4,1	320X340
B011041010007	AQ-414020P-HT	405	400	201	355	380	8,88	360X375
B011041010009	AQ-202017P-HT**	200	200	165	175	175	2	170X180
B011031010017	AR-203017P-HT**	200	300	165	175	275	2,22	170X265
B011031010018	AR-304020P-HT**	300	400	195	220	300	4	250X370
B01103101C005	AR-406025P-HT**	400	600	252	320	500	7,37	345X565

\*\*Version with hinged lead and 1/4 closing system turned key

D and E dimensions refer to fixing

These enclosures refer to the empty and undrilled enclosures, sold under component certificate.

For complete junction boxes is necessary to ask to the Sales Dept.



# ENCLOSURES / JUNCTION BOXES WITH TERMINALS

## AQ../AR.. Series - Copper free aluminium low thickness



- AQ../AR.. Series enclosures are ideally suited for chemical and petrochemical environments;
- Made of copper-free aluminium, AQ../AR.. enclosures guaranteed high resistance to sea water corrosion and can withstand the harshest temperatures;
- Used to house Ex e and Ex i terminals. Maximum number of terminals changes according to: terminals section, enclosure operating temperature and required temperature class.

### MARKING

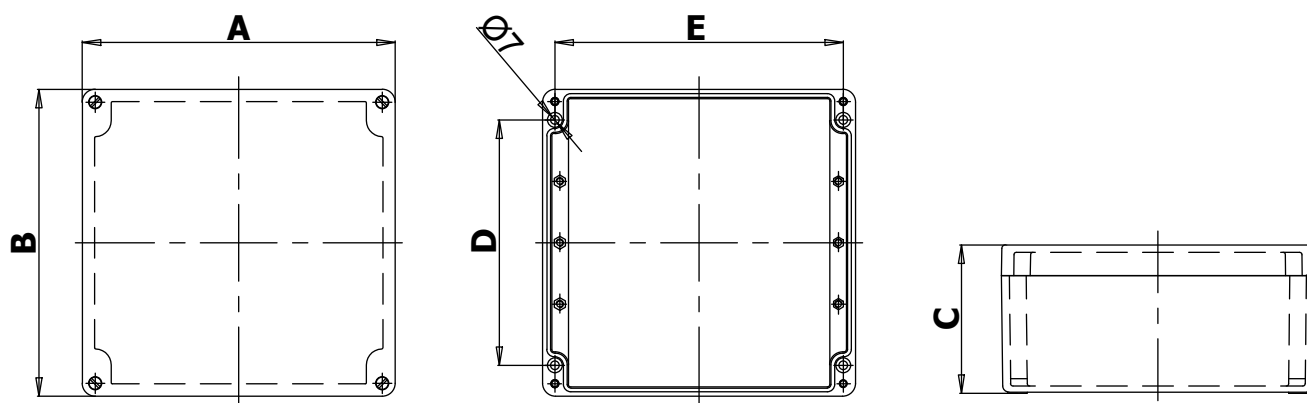
II 1 G  
Ex ia IIC T6/T5/T4 Ga  
II 2GD  
Ex eb IIC T6/T5/T4 Gb or  
Ex tb IIIC T85°C/T100°C/T135°C Db

Component marking  
II 2GD  
Ex eb IIC Gb  
Ex tb IIIC Db

## TECHNICAL FEATURES

<b>Material</b>	Copper-free aluminium	
<b>IP rating</b>	IP66	
<b>Shock resistance</b>	IK10	
<b>Ambient temperature range</b>	Ambient -50°C to +95°C	Service -50°C to +105°C
<b>Approvals</b>	<u>Full Conformity Certificate:</u> FIDI 21 ATEX 0090X IECEX FIDI21.0015X EAC: RUC-IT.BH02.B.00593/20 ECAS-Ex	<u>Component Certificate:</u> FIDI21ATEX0075U IECEX FIDI21.0012U EAC:RUC-IT.BH02.B.00593/20
<b>Standard certificate label</b>	Made by self adhesive UV and corrosion resistant polyester, approved by certified Laboratory.	
<b>Surface treatment</b>	Standard: polyester powder coating RAL7001 (other colour available upon request)	
<b>Included accessories</b>	Screw in AISI304	
<b>Optional accessories</b>	Hinges Drain/breather valve Laminated plastic/Stainless steel label Internal mounting plate Earth continuity plates Passing through earth bolt Screw in AISI316L	
<b>Available versions</b>	Standard version: up to internal temperature of 105°C HT version: up to internal temperature of 130°C	

## Dimensions AQ../AR..



### AQ../AR.. Series - Junction boxes - Standard versions\*

CODE	TYPE	DIMENSION [mm]					WEIGHT [kg]	MOUNTING PLATE
		A	B	C	FIXING			
					D	E		
B011044010001	AQ-080806AL*	80	80	57	52	63	0,30	-
B011034010029	AR-081306AL*	80	125	57	52	113	0,45	-
B011044010002	AQ-101008AL*	100	100	81	66	86	0,62	-
B011044010003	AQ-121208AL*	120	120	81	83	106	0,94	100X100
B011034010005	AR-122209AL*	120	220	91	83	204	1,43	100X195
B011044010004	AQ-141409AL*	140	140	91	93	120	1,34	110X120
B011044010005	AQ-161609AL*	160	160	91	110	140	1,50	130X140
B011034010007	AR-162609AL*	160	260	91	110	240	1,78	130X240
B011044010006	AQ-181810AL*	180	180	101	130	160	1,68	150X160
B011034010010	AR-202311AL*	200	230	111	150	200	2,44	170X210
B011034010025	AR-202318AL*	200	230	181	150	200	2,66	170X210
B011034010019	AR-232811AL*	230	280	111	180	260	2,99	200X260
B011034010013	AR-233312AL*	230	330	121	180	305	3,15	200X270
B011034010014	AR-233318AL*	230	330	181	180	305	3,21	200X310

\*HT version upon request

### AQ../AR.. Series - Junction boxes - Only HT version

CODE	TYPE	DIMENSION [mm]					WEIGHT [kg]	MOUNTING PLATE
		A	B	C	FIXING			
					D	E		
B011034010033	AR-102311AL-HT	100	230	111	66	200	2,00	-
B011034010035	AR-123608AL-HT	120	360	81	83	344	2,03	100X340
B011034010028	AR-163609AL-HT	160	360	91	110	344	2,13	130X340
B011034010021	AR-234011AL-HT	230	400	111	180	380	3,23	200X380
B011034010037	AR-234023AL-HT	230	400	225	180	380	7,96	200X380
B011034010020	AR-314011AL-HT	310	400	111	262	382	3,29	280X380
B011034010027	AR-314018AL-HT	310	400	181	262	382	8,38	280X380
B010800S00001	AR-316011AL-HT	310	600	111	260	580	9,24	280X580
B011034010024	AR-316018AL-HT	310	600	181	262	580	12,00	280X580
B010800S00002	AQ-606020AL-HT	600	600	202	525	555	22,00	570X580

The codes refer to the empty and undrilled enclosures, sold under component certificate.  
For complete junction boxes is necessary to ask to the Sales Dept.

# ENCLOSURES

## CDX Series - GRP



High resistance GRP Enclosures, developed and specially designed to host wide range of terminals, multiple DXN socket-outlets or inlet. Tested and certified to be installed and used in hazardous areas (Zones 1, 2, 21 & 22 under ATEX and IECEx).

### MARKING

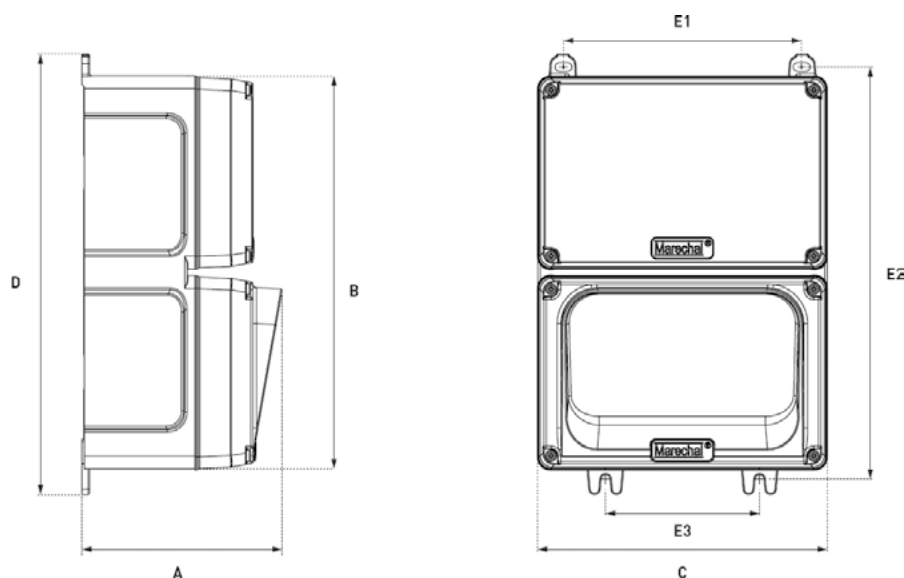
II 2G Ex eb IIC Gb

II 2D Ex tb IIIC Db

## TECHNICAL FEATURES

<b>Material</b>	GRP
<b>IP rating</b>	IP66 /IP67
<b>Ambient temperature range</b>	-25°C to +60°C
<b>Approvals</b>	LCIE 24 ATEX 3001 U IECEx LCIE 24.0001U
<b>Standard</b>	International and European IEC/ ENstandards 62262, 60079-0, 60079-7 and 60079-31
<b>Optional accessories</b>	Flat or angled covers Hinges Earth continuity plates Passing through earth bolt

### Dimensions



DIMENSION [mm]						
A	B	C	D	E1	E2	E3
156	305	225	342	185	320	120

For complete junction boxes is necessary to ask to the Sales Dept.

# ENCLOSURES / JUNCTION OR SOCKET OUTLET BOXES

## B2X Series - GRP



- New high resistance GRP Enclosures, developed and specially designed to host wide range of terminals, multiple power sockets and disconnectors. Tested and certified to be installed and used in extreme site conditions, offshore applications and hazardous areas (Zones 1, 2, 21 & 22 under ATEX and IECEx).
- Their smart and compact design make them easy to install and use in small and hard access spaces.
- B2X certification offers different kind of protection modes in order to satisfy wide range of application (increased safety Ex e, intrinsically safe Ex ia).

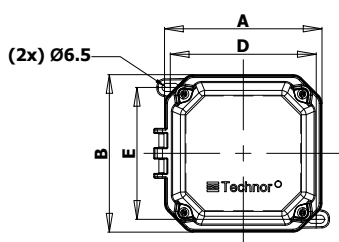
### MARKING

Ex e IIC Gb T6/T5/T4  
Ex ia or ib IIC Gb T6/T5/T4  
Ex e ia or e ib IIC Gb T6/T5/T4  
Ex tb IIIC T 80/ T 95/ T 105°C

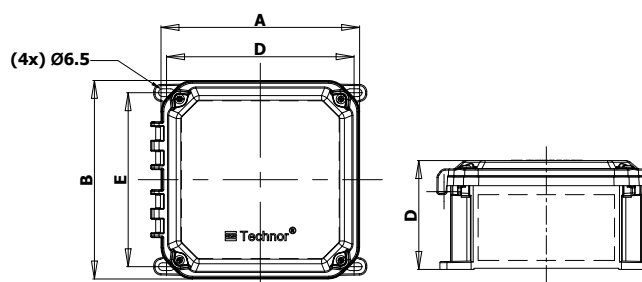
## TECHNICAL FEATURES

Material	GRP
IP rating	IP66/IP67
Ambient temperature range	-50°C to +60°C
Approvals	LCIE 16 ATEX 3057 X IECEx LCIE 16.0046X EAC: RU C-IT.BH02.B.00593/20
Standard certificate label	Made by self adhesive UV and corrosion resistant polyester, approved by certified Laboratory
Accessories in standard	Moulded hinges
Optional accessories	Drain/breather valve Earth continuity plates Passing through earth bolt

### Dimensions B2X



Drawing A



Drawing B

CODE	TYPE	DIMENSION [mm]					WEIGHT [kg]	DRAWING
		A	B	C	FIXING			
					D	E		
B011051010001	B2X-1212	120	120	91	117	105,5	0,75	A
B011051010002	B2X-1616	160	160	91	157	145,5	1,29	B

For complete junction boxes is necessary to ask to the Sales Dept.



# JUNCTION BOXES MXBJ



Junction boxes MXBJ are designed for making easier electrical connections in hazardous areas. They provide increased safety and intrinsic safety, allowing them to be used in zones 1 & 2 (gas), 21 & 22 (dust). This comprehensive range is also ideal for wet environments – such as food and beverage or chemical industries – thanks to their corrosion resistance. The terminals Ex e from 1,5 mm<sup>2</sup> to 240 mm<sup>2</sup> can be mounted on these boxes.

## MARKING

II 2 G Ex eb IIC T(1) Gb increased safety  
 II 2 G Ex ia IIC T(1) Gb or  
 II 2 G Ex ib IIC T(1) Gb intrinsic safety  
 II 2 G Ex eb ib or ia IIC T(1) Gb increased safety and intrinsic safety  
 II 2 D Ex tb IIIC T(1) Db in dust.

(1) Depending on ambient temperature and terminals used

## TECHNICAL FEATURES

### Material Enclosure

Stainless steel AISI316L  
 GRP casing  
 Copper free aluminium

### IP rating

IP66

### Ambient temperature range

-25°C to +60°C  
 [Other ambient temperature upon request]

### Approvals

IECEX N° IECEX LCI 11.0026X  
 ATEX N° LCIE 11 ATEX 3028X

### Standards

International and European IEC/ EN standards  
 62262, 60079-0, 60079-7, 60079-11 and 60079-31

### Optional accessories

Earth stud  
 Earth bar  
 Shield bar  
 Junction bar  
 Hinges  
 Mounting  
 Purge or breather  
 Earthing plate  
 Metal gland with or without earth ring



# SOCKET-OUTLET BOXES

## MXBS - Combination boxes



These socket outlet combination boxes, available in different materials and sizes, are designed for making electrical connections in hazardous areas. They can be equipped with 5 to 680A Marechal decontactors and/or 10 A Marechal multicontact connectors, offering from 12 to 37 contacts. They provide increased and intrinsic safety, allowing them to be used in zones 1 & 2 (gas), 21 & 22 (dust).

This comprehensive range is perfect for wet and corrosive environments, such as food and beverage or chemical industries, thanks to its specific and high quality materials. It is possible to mount both socket-outlets and multicontact connectors on the same box: DXN1, DXN3, DXN6, PXN12C, DXN25C, DXN37C, SPeX, DXA1 and PNCX.

### MARKING

II 2G Ex eb IIC T(2) Gb increased safety II 2G Ex ia IIC T(2) Gb  
 II 2G Ex ib IIC T(2) Gb intrinsic safety  
 II 2G Ex eb ia or eb ib IIC T(2) Gb increased safety and intrinsic safety  
 II 2D Ex tb IIIC T(2) Db in dust

(2) Depending on ambient temperature and equipment used.

## TECHNICAL FEATURES

### Material Enclosure

Stainless steel AISI316L  
 GRP  
 Copper free aluminium

### Material Socket

GRP  
 Copper free aluminium

### IP rating

IP66

### Ambient temperature range

-25°C to +60°C  
 Other ambient temperature upon request

### Approvals

LCIE 11 ATEX 3047X  
 IECEx LCI 11.0042X  
 TRCU: BH02.B.00641

### Standards

International and European IEC/ EN standards  
 62262, 60079-0, 60079-7, 60079-11 et 60079-31.

### Optional accessories

Inclined sleeve  
 Earth stud  
 Earth bar  
 Hinges  
 Mounting brackets  
 Purge or breather  
 Earthing plate  
 Metal gland with or without earth ring

## ASSOCIATED MARECHAL® PRODUCTS

DECONTACTOR™	DXA1, DXN1, DXN3, and DXN6
Connectors	PNCX and SPeX
Multicontact connectors	PXN12C, DXN25C and DXN37C



For complete junction boxes is necessary to ask to the Sales Dept.



## LOCAL CONTROL STATIONS

### EFE Series - Glassfiber reinforced polyester



Control stations EFE Series, made of GRP, are manufactured by using enclosures AQ/AR Series. They are designed to meet the requirements for use ON and OFF-SHORE, in petrochemical and marine applications and for any other industry where an explosive atmosphere may be present. They can be equipped with following Ex de certified components:

- Standard and emergency push buttons;
- Rotating switches;
- Signalling lamps;
- Measurement instruments.

#### MARKING

II 1 G  
Ex ia IIC/IIB T6/T5/T4 Ga  
II 2 GD  
Ex db eb ia/ib mb [\*] IIC/IIB T6/T5/T4 Gb and/or  
Ex tb IIIC T85/T100/T135°C Db

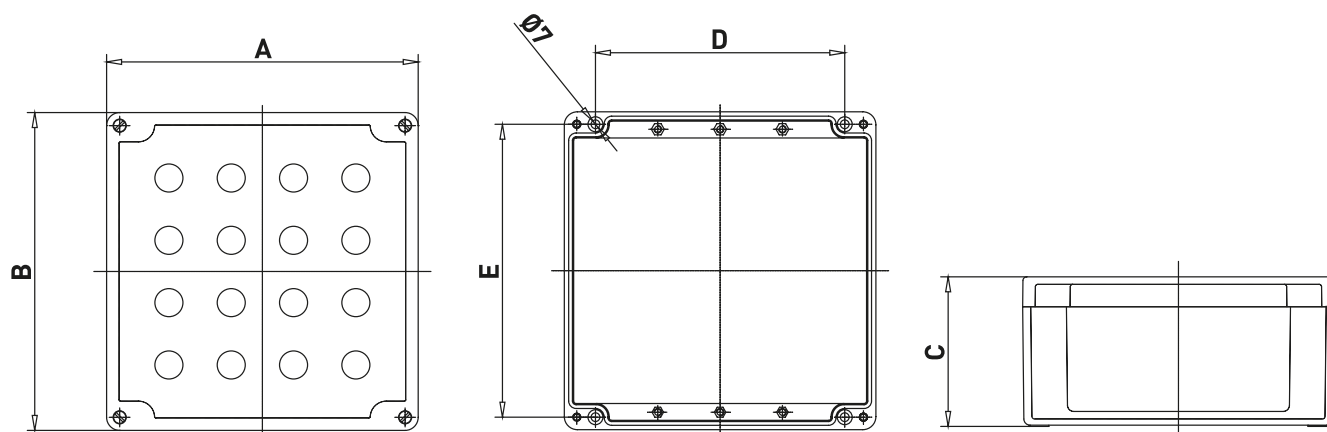
\*Associated equipment protection depending on the components actually mounted

## TECHNICAL FEATURES

<b>Material</b>	GRP (Glassfiber reinforced polyester)
<b>IP rating</b>	IP65*/IP66 *Depending on the type of components installed on
<b>Shock resistance</b>	7J
<b>Ambient temperature range</b>	-50°C to +95°C
<b>Approvals</b>	Full Conformity Certificate: FIDI 21ATEX 0090X IECEX FIDI21.0015X EAC RUC-IT.BH02.B.00593/20 ECAS-Ex Available
<b>Additional approval</b>	EA3C RU C-IT.BH02.B.00593/20 CCOE P482696/1; P471583/1 ( for more info ask to the Sales Offices)
<b>Standard certificate label</b>	Made by self adhesive UV and corrosion resistant polyester, approved by certified Laboratory.
<b>Included accessories</b>	Screw in AISI304 AISI316L upon request
<b>Optional accessories</b>	Hinges Drain/breather valve Laminated plastic/Stainless steel certificate label Internal mounting plate Earth continuity plates Internal/external through earth bolt
<b>Available version</b>	Standard version: up to internal tempertaure of 105°C HT version: up to internal temperature of 130°C



## Dimensions EFE



### EFE Series - GRP push button stations

TYPE	DIMENSIONS [mm]					WEIGHT [Kg]	MOUNTING PLATES [MM]	COVER ENTRIES (OPERATORS)
	A	B	C	FIXING				
				D	E			
EFE-121209*	122	120	90	82	106	0,75	100X100	1
EFE-122209*	120	220	90	82	204	1,06	100X195	3
EFE-161609*	160	160	90	110	140	1,29	130X130	4
EFE-162609*	160	260	90	110	240	1,71	130X240	8
EFE-163609*	160	360	90	110	340	2,15	130X340	12
EFE-252612*	250	255	120	200	235	2,65	210X232	12
EFE-252616*	250	255	160	200	235	2,85	210X232	12
EFE-254012*	250	400	120	200	380	3,65	210X380	21
EFE-254016*	250	400	160	200	380	3,85	210X380	21
EFE-256012*	250	600	120	200	580	5,23	210X580	33
EFE-414012*	405	400	120	355	380	5,58	360X375	35

\*HT version upon request

### EFE Series - GPR push buttons stations only HT version

TYPE	DIMENSIONS [mm]					WEIGHT [Kg]	MOUNTING PLATES [MM]	COVER ENTRIES (OPERATORS)
	A	B	C	FIXING				
				D	E			
EFE-363609-HT	360	360	90	310	340	4,1	320X340	30
EFE-414020-HT	405	400	201	355	380	8,88	360X375	35
EFE-202017-HT**	200	200	165	175	175	2,00	170X180	4
EFE-203017-HT**	200	300	165	175	275	2,22	170X265	12
EFE-304020-HT**	300	400	195	220	300	4,00	250X370	21
EFE-406025-HT**	400	600	252	320	500	7,37	345X565	42

\*\*Version with hinged lead and 1/4 closing system turned key  
For complete push button stations contact our Sales Dept.

# LOCAL CONTROL STATIONS

## EFXE Series - Stainless steel AISI 316 L



Control stations EFXE Series, made of stainless steel AISI 316 L, are manufactured by using enclosures SB Series. They are designed to meet the requirements for use ON and OFF-SHORE, in petrochemical and marine applications and for any other industry where an explosive atmosphere may be present.

They can be equipped with following certified components:

- Standard and emergency push buttons,
- Rotating switches,
- Signalling lamps,
- Measurement instruments.

### MARKING

II 1G Ex ia IIC/IIB T6/T5/T4 Ga

II 2GD

Ex db eb ia/ib mb\* IIC/IIB T6/T5/T4 Gb and/or

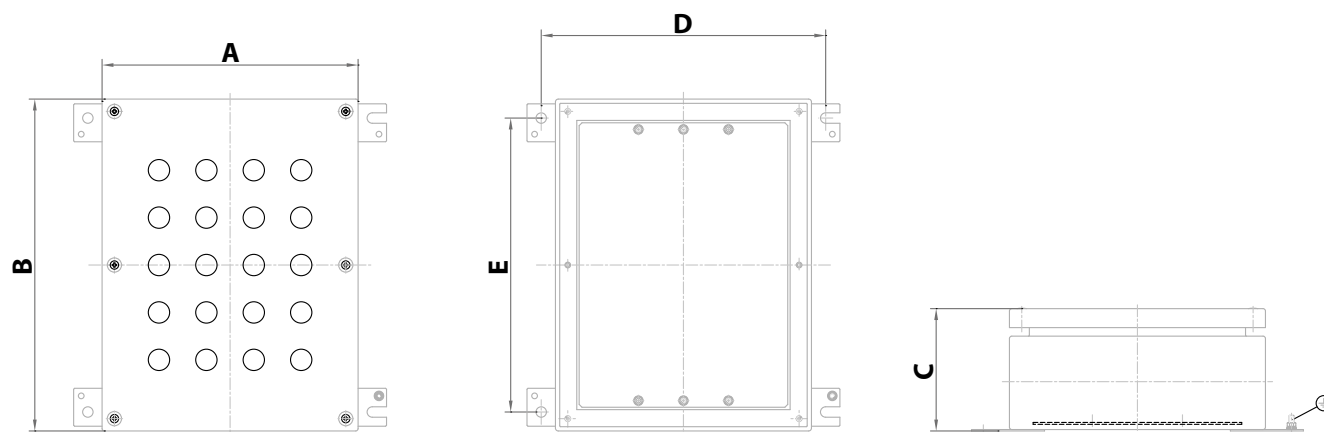
Ex tb IIIC T85/T100/T135°C Db

\*Associated equipment protection depending on the components actually mounted

## TECHNICAL FEATURES

<b>Material</b>	AISI316L stainless steel
<b>IP rating</b>	IP65*/IP66 *Depending on the type of components installed on
<b>Shock resistance</b>	IK10
<b>Ambient temperature range</b>	-50°C to +95°C
<b>Approvals</b>	FIDI21ATEX0090X IECEX FIDI21.0015X EAC RUC-IT.BH02.B.00593/20 ECAS-Ex Available
<b>Additional approval</b>	CCOE P482696/1; P471583/1 ( for more info ask to the Sales Offices)
<b>Surface treatment</b>	Acid treatment Electropolish treatment (upon request)
<b>Standard certificate label</b>	Made by self adhesive UV and corrosion resistant polyester, approved by certified Laboratory
<b>Included accessories</b>	Screws and accessories in AISI316L stainless steel
<b>Optional accessories</b>	Side gland plates Without hinges Drain/breather valve Laminated plastic/Stainless steel certificate label Internal mounting plate Locking facility Internal/external through earth bolt
<b>Available versions</b>	Standard version: up to internal tempertaure of 105°C ST Version available upon request (with only 1/4 turn key and hinges) without screw

## Dimensions EFXE



## EFXE Series - Stainless steel push button stations

TYPE	DIMENSIONS [mm]					WEIGHT [Kg]	MOUNTING PLATES [MM]	COVER ENTRIES (OPERATORS)
	A	B	C	FIXING D	E			
EFXE-142013SB	140	200	130	170	-	4,00	90X150	2
EFXE-151510SB**	150	150	100	180	-	3,00	-	4
EFXE-202016SB	200	200	160	230	160	5,00	150X150	6
EFXE-202713SB	200	270	130	230	230	6,00	150X220	9
EFXE-202716SB	200	270	160	230	230	6,40	150X220	9
EFXE-272713SB	270	270	130	300	230	7,00	220X220	12
EFXE-273513SB	270	350	130	300	310	8,10	220X300	16
EFXE-273516SB	270	350	160	300	310	8,70	220X300	16
EFXE-282816SB	280	280	160	310	240	7,80	230X230	12
EFXE-282827SB	280	280	270	310	240	9,70	230X230	12
EFXE-353516SB	350	350	160	380	310	10,20	300X300	24
EFXE-353520SB	350	350	200	380	310	11,00	300X300	24
EFXE-355016SB	350	500	160	380	460	12,90	300X450	36
EFXE-355020SB	350	500	200	380	460	13,90	300X450	36
EFXE-383816SB	380	380	160	410	340	11,20	330X330	24
EFXE-383820SB	380	380	200	410	340	12,20	330X330	24
EFXE-383827SB	380	380	270	410	340	13,90	330X330	24
EFXE-384516SB	380	450	160	410	410	13,20	330X400	30
EFXE-384520SB	380	450	200	410	410	13,60	330X400	30
EFXE-385716SB	380	570	160	410	530	15,30	330X520	42
EFXE-505016SB	500	500	160	530	460	16,60	450X450	54
EFXE-505020SB	500	500	200	530	460	18,00	450X450	54
EFXE-575716SB	570	570	160	600	530	20,00	520X520	70
EFXE-575720SB	570	570	200	600	530	21,40	520X520	70
EFXE-575730SB	570	570	300	600	530	25,00	520X520	70
EFXE-577620SB	570	760	200	600	720	26,50	520X710	100
EFXE-769520SB	760	950	200	790	910	38,50	710X900	168

\*\* The enclosure is without hinges and complete with TS35x7,5 Omega rail welded on the back.  
For complete push button stations and other sizes up to 1500 x 960 x 500 cm contact our Sales Dept.

## LOCAL CONTROL STATIONS

### EFXE Series - Copper free aluminium low thickness



Control stations EFXE Series, made of aluminium with low content of copper, are manufactured by using enclosures AQ/AR Series. They are designed to meet the requirements for use ON and OFF-SHORE, in petrochemical and marine applications and for any other industry where an explosive atmosphere may be present.

They can be equipped with following Ex de certified components:

- Standard and emergency push buttons;
- Rotating switches;
- Signalling lamps;
- Measurement instruments.

#### MARKING

II 1G

Ex ia IIC/IIB T6/T5/T4 Ga

II 2GD

Ex db eb ia/ibmb\* IIC/IIB T6/T5/T4 Gb and/or

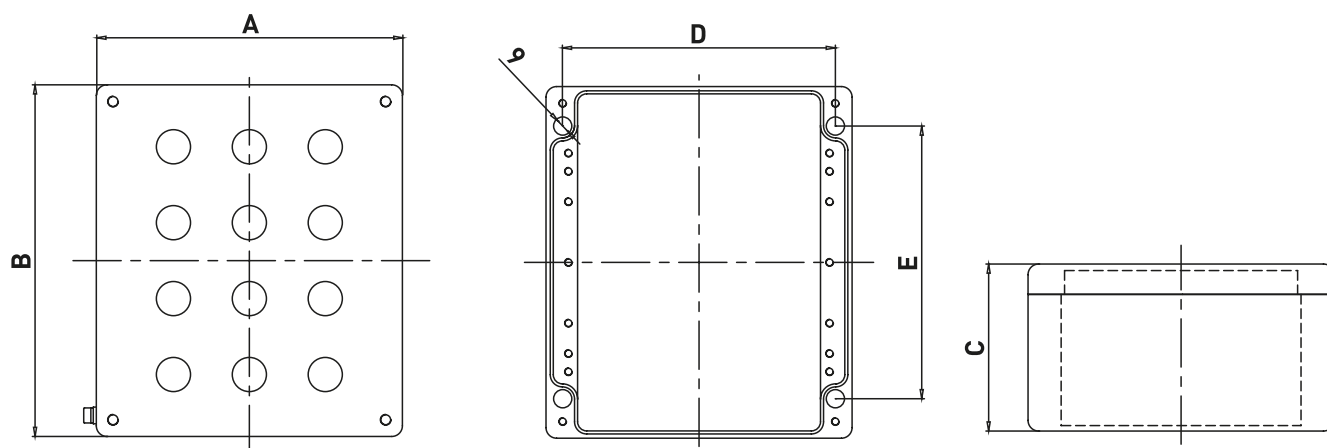
Ex tb IIIC T85°C/T100°C/T135°C Db

\*Associated equipment protection depending on the components actually mounted

## TECHNICAL FEATURES

<b>Material</b>	Aluminium with low content of copper
<b>IP rating</b>	IP65*/IP66 *Depending on the type of components installed on
<b>Shock resistance</b>	7J
<b>Ambient temperature range</b>	-50°C to +95°C
<b>Approvals</b>	FIDI 21ATEX 0090X IECEX FIDI21.0015X EAC RUC-IT.BH02.B.00593/20 ECAS-Ex Available
<b>Additional approval</b>	CCOE P482696/1; P471583/1 ( for more info ask to the Sales Offices)
<b>Surface treatment</b>	Standard with polyester powder coating RAL 7001 ( other colour available upon request)
<b>Standard certificate label</b>	Made by self adhesive UV and corrosion resistant polyester, approved by certified Laboratory
<b>Included accessories</b>	Screw in AISI304 AISI316L upon request
<b>Optional accessories</b>	Hinges Drain/breather valve Laminated plastic/Stainless steel certificate label Internal mounting plate Internal/external through earth bolt
<b>Available version</b>	Standard version: up to internal tempertaure of 105°C HT version: up to internal temperature of 130°C

## Dimensions EFXE



### EFXE Series - Aluminium push button stations

TYPE	DIMENSIONS [mm]					WEIGHT [Kg]	MOUNTING PLATE	COVER ENTRIES
	A	B	C	FIXING				
				D	E			
EFXE-101008AL*	100	100	81	66	86	0,62	-	1
EFXE-121208AL*	120	120	81	83	106	0,94	100X100	1
EFXE-122209AL*	120	220	91	83	204	1,43	100X195	3
EFXE-141409AL*	140	140	91	93	120	1,34	110X120	4
EFXE-161609AL*	160	160	91	110	140	1,50	130X140	4
EFXE-162609AL*	160	260	91	110	240	1,78	130X240	8
EFXE-181810AL*	180	180	101	130	160	1,68	150X160	4
EFXE-202311AL*	200	230	111	150	200	2,44	170X210	9
EFXE-202318AL*	200	230	181	150	200	2,66	170X210	9
EFXE-232811AL*	230	280	111	180	260	2,99	200X260	12
EFXE-233312AL*	230	330	121	180	305	3,15	200X270	16
EFXE-233318AL*	230	330	181	180	305	3,21	200X310	16

\*HT version upon request

### EFXE Series - Aluminium push buttons stations only HT version

TYPE	DIMENSIONS [mm]					WEIGHT [Kg]	MOUNTING PLATE	COVER ENTRIES
	A	B	C	FIXING				
				D	E			
EFXE-102311AL-HT	100	230	111	66	200	2,00	-	3
EFXE-123608AL-HT	120	360	81	83	344	2,03	100X340	6
EFXE-163609AL-HT	160	360	91	110	344	2,13	130X340	12
EFXE-234011AL-HT	230	400	111	180	380	3,23	200X380	21
EFXE-234023AL-HT	230	400	225	180	380	7,96	200X380	21
EFXE-314011AL-HT	310	400	111	262	382	3,29	280X380	28
EFXE-314018AL-HT	310	400	181	262	382	8,38	280X380	28
EFXE-316011AL-HT	310	600	111	260	580	9,24	280X580	33
EFXE-316018AL-HT	310	600	181	262	580	12,00	280X580	33
EFXE-606020AL-HT	600	600	202	525	555	22,00	570X580	77

For complete push button stations contact our sales dept.



# DRAIN VALVE ECR-3



- Drain valve ECR3 is a device intended for use to drain the water generated due to condensation inside the enclosure.
- Drain valve is assembled in the lowest part or side part of the enclosure because the water is accumulated in bottom part of enclosure.
- Made of stainless steel or galvanized steel.
- Gasket is in aluminium.
- O-ring is in silicon rubber.

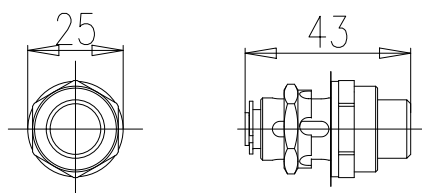
## MARKING

II 2GD – Ex e IIC Gb – Ex tb IIIC IP66/67

## TECHNICAL FEATURES

<b>Material</b>	Stainless steel AISI 316 L or galvanized steel
<b>IP rating</b>	IP66/IP67 in closed position IP44 in open position.
<b>Ambient temperature range</b>	-50°C +105°C
<b>Approvals</b>	ATEX: IMQ 14 ATEX 019U – IECEx: IMQ 14.0008U – EAC: RU C-IT.BH02.B.00593/20
<b>Standard compliance</b>	EN60079-0:2012; EN60079-7:2007; EN60079-31:2009 IEC60079-0:2011; IEC60079-7:2006-07; IEC60079-31:2008
<b>Gaskets</b>	Silicone gasket (continuous use temperature -60 ° C + 220 ° C)
<b>Dimension</b>	M16 x 1.5 6H or pre-hole diameter from 16 mm to 16.5 mm

## Dimensions ECR-3



CODE	TYPE
B080909000006	ECR 3 DRAIN VALVE

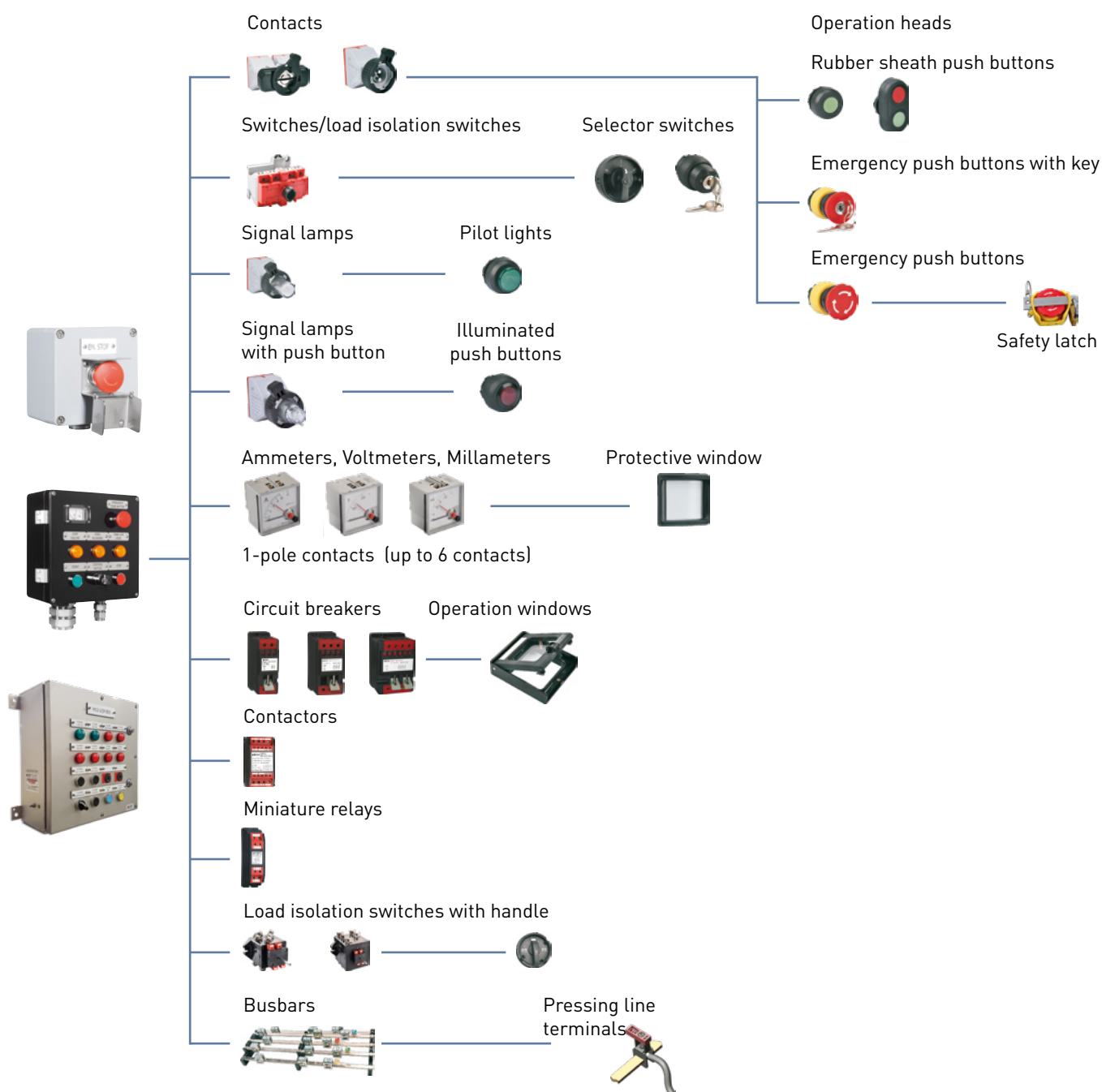
# OPERATORS

## INCREASED SAFETY - TI SERIES

TI Series\* offers a large selection of certified components suitable for Ex e enclosures:

- Contacts & standard and emergency push buttons (up to 16A);
- Signalling lamps with or without push button;
- Measurement instruments: ammeters, voltmeters, millimeters;
- Circuit breaker, contactors, miniature relays, busbars;
- Load isolation switches with handle;
- Extended operating temperature: from -55°C up to +90°C.

## TI SERIES – COMPLETE RANGE OF ACCESSORIES



\*TI Series refers to the brand name of our range of accessories

# OPERATORS INCREASED SAFETY

## MARKING

II 2 G  
Ex db eb IIC Gb

## TI SERIES - CONTACTS

Material	Silver				
IP rating	IP20				
Operating temperature range	-55°C/+90°C				
Approvals	IECEX CML 19.0053U Presafe 16 ATEX 9096U				
Terminals	2 x 2.5 mm <sup>2</sup>				
Electrical data	AC-12	AC-15	DC-13	AC-3	AC-23
	400 V/16A	400 V/10A	110 V/1A	400 V/16A	400 V/16A
Rated impulse withstand voltage	6kV				
Rated short-time withstand current	10kV				
Rated short-circuit making capacity	17kA				
Short-circuit protection	16A/500 V				

### TI-0201.. Series specifications



CODE	TYPE	CONTACT	WEIGHT (KG.)
B090601020026	TI-0201-H602SH - SWITCH - TWO POSITIONS	2NO + 2NC	0.211
B090601020027	TI-0201-H606SH - SWITCH - THREE POSITIONS	2NO + 2NC	0.211
B090601020028	TI-0201-H607SH - SWITCH - SPRING TO RETURN FROM RIGHT TO CENTRE	2NO + 2NC	0.211
B090601020004	TI-0201-H610SH - SWITCH - SPRING RETURN TO CENTRE	2NO + 2NO	0.211
B090601020029	TI-0201-H698SH - LOAD ISOLATION SWITCH	4NO	0.211



CODE	TYPE	CONTACT	WEIGHT (KG.)
B090601020005	TI-0201-70SH - CONTACT	1NO + 1NC	0.080
B090601020003	TI-0201-71SH - CONTACT	2NC	0.080
B090601020021	TI-0201-72SH - CONTACT	2NO	0.080



CODE	TYPE	CONTACT	WEIGHT (KG.)
B090601020006	TI-0201-B750SH - CONTACT	2NO + 2NC	0.166
B090601020022	TI-0201-H601SH - SWITCH	4NO	0.211

# OPERATORS INCREASED SAFETY

## MARKING

II 2 G  
Ex db eb IIC Gb

## TI SERIES - SIGNAL LAMP (AVAILABLE WITH PUSH BUTTON)

<b>Material</b>	Silver
<b>IP rating</b>	IP20
<b>Operating temperature range</b>	-55°C/+90°C
<b>Terminals</b>	2 x 2.5mm <sup>2</sup>
<b>Signal lamp</b>	
<b>Approvals</b>	IECEX CML 19.0052U CML 19ATEX1176U
<b>Rated voltage</b>	20 V – 250 V AC/DC
<b>Light source</b>	Long life LED source
<b>Colour</b>	White
<b>Power consumption</b>	Max. 1W
<b>Signal lamp with push button</b>	
<b>Approvals</b>	IECEX CML 19.0054U CML 19ATEX1178U
<b>Rated voltage</b>	AC 250 V/10A DC 24 V/1A
<b>Short-circuit protection</b>	16A/500 V
<b>Mechanical life</b>	300 thousand times



### TI-0202../0212.. Series specifications

CODE	TYPE	POLES	CONTACT	WEIGHT (KG.)
B090602020002	TI-0202-701H – SIGNAL LAMP	-	-	0.070
B090601020007	TI-0212-7401H – SIGNAL LAMP WITH PUSH BUTTON	1	NO	0.083

# OPERATORS INCREASED SAFETY

## MARKING

II 2 G  
Ex eb IIC Gb  
II 2 D  
Ex tb IIIC Db

## TI SERIES - OPERATION HEADS

### Material

Polyamide

### IP rating

IP66

### Operating temperature range

-55°C/+65°C

### Approvals

IECEx CML 19.0056U  
Sira 15ATEX3333U

### Compliant with low voltage electrical standards

IEC 60947-5-1, EN 60947-5-1  
IEC 60947-5-5, EN 60947-5-5

### Rubber sheath buttons



CODE	TYPE	DESCRIPTION	COLOUR
B090601020009	TI-4000-P101	RUBBER SHEATH BUTTON	GREEN
B090601020001	TI-4000-P121	RUBBER SHEATH BUTTON	RED
B090601020023	TI-4000-P141	RUBBER SHEATH BUTTON	WHITE
B090601020019	TI-4000-P161	RUBBER SHEATH BUTTON	YELLOW
B090601020012	TI-4000-P181	RUBBER SHEATH BUTTON	BLACK
B090601020018	TI-4000-P191	RUBBER SHEATH BUTTON	BLUE
B090601020013	TI-4000-P200	RUBBER SHEATH DOUBLE BUTTON	GREEN-RED

### Pilot lights



CODE	TYPE	DESCRIPTION	COLOUR
B090602020003	TI-4000-LR	PILOT LIGHT	RED
B090602020004	TI-4000-LG	PILOT LIGHT	GREEN
B090602020001	TI-4000-LY	PILOT LIGHT	YELLOW
B090602020010	TI-4000-LB	PILOT LIGHT	BLUE
B090602020005	TI-4000-LW	PILOT LIGHT	WHITE

### Pilot lights with push button



CODE	TYPE	DESCRIPTION	COLOUR
B090601020024	TI-4000-PR	PILOT LIGHT WITH PUSH BUTTON	RED
B090601020025	TI-4000-PG	PILOT LIGHT WITH PUSH BUTTON	GREEN
B090601020010	TI-4000-PY	PILOT LIGHT WITH PUSH BUTTON	YELLOW
B090601020011	TI-4000-PB	PILOT LIGHT WITH PUSH BUTTON	BLUE
B090601020002	TI-4000-PW	PILOT LIGHT WITH PUSH BUTTON	WHITE



# OPERATORS INCREASED SAFETY

## TI SERIES - OPERATION HEADS



### Emergency mushroom push buttons

CODE	TYPE	DESCRIPTION	COLOUR
B090601020008	TI-4000-P6E	EMERGENCY STOP/TWIST TO RELEASE BUTTON	RED-YELLOW

### Accessories for TI-4000-P6E Series

CODE	TYPE	DESCRIPTION	COLOUR
B090100S00012	TI-4000-4003/10	LABEL – FOR OPERATION HEADS OF Ø40MM, Ø55MM (10 UNITS PER PACKAGE)	YELLOW
B082309000008	TI-4000-4019/2-7	SAFETY LATCH (FOR PANEL MOUNTING)	YELLOW



### Emergency mushroom push buttons with key

CODE	TYPE	DESCRIPTION	COLOUR
B090601020020	TI-4000-Y22E	EMERGENCY STOP KEY – RELEASING BUTTON	RED-YELLOW



### Key selector switches

CODE	TYPE	DESCRIPTION	KEY WITHDRAWAL	POSITIONS
B090603020006	TI-4000-Y31GS10	SPRING RETURN FROM RIGHT TO LEFT	LEFT	2
B090603020007	TI-4000-Y61GS01	SPRING RETURN FROM RIGHT TO LEFT	ALL	2
B090603020008	TI-4000-Y42GS04	SPRING RETURN TO CENTER	CENTRE	3
B090603020009	TI-4000-Y52GS04	SPRING RETURN TO CENTER	ALL	3



### Selector switches

CODE	TYPE	DESCRIPTION	LOCKABLE POS.	POSITIONS
B090603020004	TI-4000-SB4204	SPRING RETURN TO CENTER	ALL	3
B090603020002	TI-4000-SB5204	STAY PUT	ALL	3
B090603020003	TI-4000-SB6201	STAY PUT	ALL	2
B090603020010	TI-4000-SB8205	SPRING RETURN FROM RIGHT TO CENTER	ALL	3



### Stopping plug

CODE	TYPE	DESCRIPTION	COLOUR
B090605020001	TI-4000-B1	STOPPING PLUG: FOR UNUSED HOLE OF THE PANEL TO BE PLUGGED	BLACK



## OPERATORS INCREASED SAFETY

### MARKING

II 2 G

Ex eb IIC Gb (Ammeter)

Ex eb mb IIC Gb (Millammeter/Voltmeter)

## TI SERIES - AMMETER/MILLAMMETER/VOLTMETER

**Operating temperature range** -40°C/+95°C

### Approvals

IECEX CML 19.0136U

CML 19ATEX3395U

### Terminals

2 x 2,5mm<sup>2</sup>

### Framework

Electromagnetic

### Overload scale

5 times

### Outline dimensions

L x W x H = 70.5 x 66 x 47.5mm

### Other information

Equipped with warning pointer which can be regulated

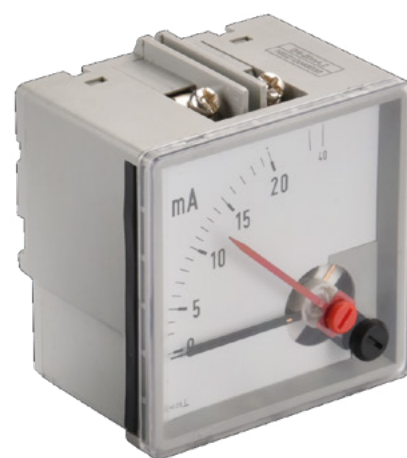
**Ammeter**



**Voltmeter**



**Millammeter**



# OPERATORS INCREASED SAFETY



## TI SERIES - AMMETER/MILLAMETER/VOLTMETER

### TI-0205.. Series specifications – Ammeter/Voltmeter/Millimeter

CODE	TYPE	CURRENT	SCALE RANGE*/OVERLOAD SCALE
AMMETER			
B090107020001	TI-0205-A 50/15	1A	0 - 50/250A
B090107020003	TI-0205-A 50/55	5A	0 - 50/250A
B090107020004	TI-0205-A 60/15	1A	0 - 60/300A
B090107020005	TI-0205-A 60/55	5A	0 - 60/300A
B090107020006	TI-0205-A 75/15	1A	0 - 75/375A
B090107020007	TI-0205-A 75/55	5A	0 - 75/375A
B090107020008	TI-0205-A 100/15	1A	0 - 100/500A
B090107020009	TI-0205-A 100/55	5A	0 - 100/500A
B090107020010	TI-0205-A 150/15	1A	0 - 150/750A
B090107020011	TI-0205-A 150/55	5A	0 - 150/750A
VOLTMETER/MILLAMETER			
B090107020013	TI-0205-V 500	0 - 500 V	TO BE DEFINED
B090107020012	TI-0205-MA 12/60	4 - 20/40MA	0 - 60MA

\*Scale range may vary upon request

### Accessories specifications

	CODE	ACCESSORIES	DESCRIPTION
	B090100S01281	MOUNTING BRACKETS	SUITABLE FOR AMMETER PANEL MOUNTING
	B081409000001	PROTECTIVE WINDOW (CALOTTE)	TI-4000-M1 WITH LABEL (UPON REQUEST)

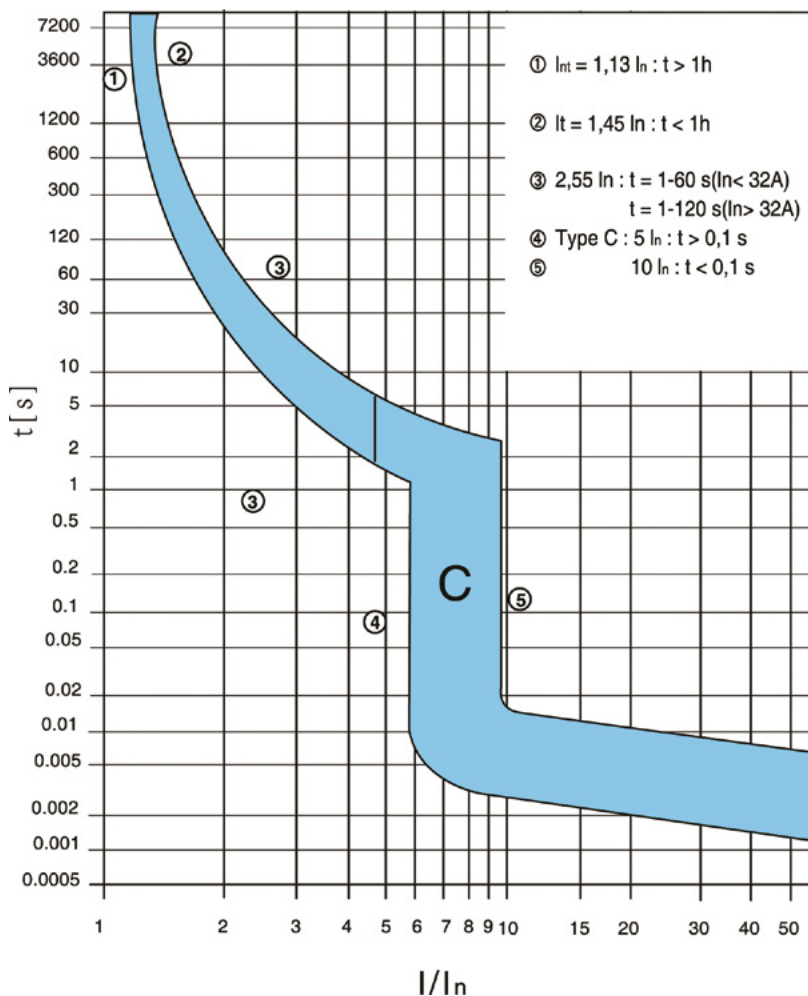
# OPERATORS INCREASED SAFETY

## MARKING

II 2 G  
Ex d e IIC Gb  
Ex d e IIB Gb

## TI SERIES - CIRCUIT BREAKERS


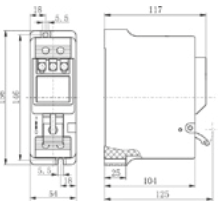

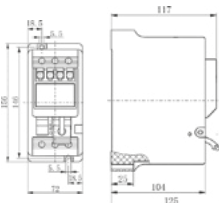

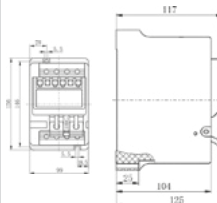
<b>Material</b>	Unsaturated resin
<b>Operating temperature range</b>	-20°C/+110°C (II C) -40°C/+110°C (II B)
<b>Approvals</b>	IECEX CML 19.0057U CML 19ATEX1181U
<b>Rated current</b>	10A; 16A; 25A; 32A (40A upon request)
<b>Rated ON-OFF capacity</b>	10kA (6kA upon request)
<b>Trip character</b>	"C" Characteristic curve Ambient temperature 30°C
<b>Rated voltage</b>	Main contacts: 230 V/400 V, 50/60Hz; 250 V DC Auxiliary contact: 250 V/400 V, 50/60Hz, 4A; 110 V DC 0.5A
<b>Terminals</b>	Main contacts 1 - 10 mm <sup>2</sup> (6 - 10mm <sup>2</sup> used in connection with compression lug). Auxiliary contact 1 - 2.5 mm <sup>2</sup>




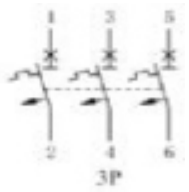
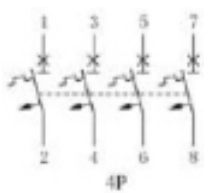
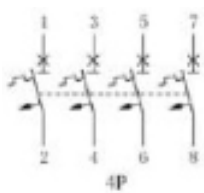
# OPERATORS INCREASED SAFETY

## TI SERIES - CIRCUIT BREAKERS

### TI-0511-BL.. Series - dimensions & principal electrical diagrams

2-POLE CIRCUIT BREAKER	DIMENSIONS	3-POLE CIRCUIT BREAKER	DIMENSIONS	4-POLE CIRCUIT BREAKER	DIMENSIONS
					

### TI-0511-BL.. Series specifications

CODE	TYPE	RATED CURRENT (A)	POLES	AUXILIARY CONTACTS	ELECTRICAL DIAGRAM
B090309020002	TI-0511-BL/10/2/C/10	10	2	-	
B090309020003	TI-0511-BL/10/2/C/10-0	10	2	1NO + 1NC	
B090309020004	TI-0511-BL/16/2/C/10	16	2	-	
B090309020005	TI-0511-BL/16/2/C/10-0	16	2	1NO + 1NC	
B090309020006	TI-0511-BL/25/2/C/10	25	2	-	
B090309020007	TI-0511-BL/25/2/C/10-0	25	2	1NO + 1NC	
B090309020008	TI-0511-BL/32/2/C/10	32	2	-	
B090309020009	TI-0511-BL/32/2/C/10-0	32	2	1NO + 1NC	
B090309020010	TI-0511-BL/10/3/C/10	10	3	-	
B090309020011	TI-0511-BL/10/3/C/10-0	10	3	1NO + 1NC	
B090309020012	TI-0511-BL/16/3/C/10	16	3	-	
B090309020013	TI-0511-BL/16/3/C/10-0	16	3	1NO + 1NC	
B090309020014	TI-0511-BL/25/3/C/10	25	3	-	
B090309020015	TI-0511-BL/25/3/C/10-0	25	3	1NO + 1NC	
B090309020016	TI-0511-BL/32/3/C/10	32	3	-	
B090309020017	TI-0511-BL/32/3/C/10-0	32	3	1NO + 1NC	
B090309020018	TI-0511-BL/10/4/10	10	4	-	
B090309020019	TI-0511-BL/10/4/C/10-0	10	4	1NO + 1NC	
B090309020020	TI-0511-BL/16/4/10	16	4	-	
B090309020021	TI-0511-BL/16/4/C/10-0	16	4	1NO + 1NC	
B090309020022	TI-0511-BL/25/4/10	25	4	-	
B090309020023	TI-0511-BL/25/4/C/10-0	25	4	1NO + 1NC	
B090309020024	TI-0511-BL/32/4/10	32	4	-	
B090309020025	TI-0511-BL/32/4/C/10-0	32	4	1NO + 1NC	



# OPERATORS INCREASED SAFETY


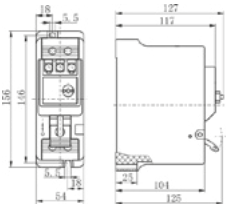

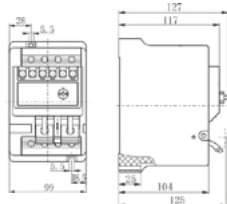

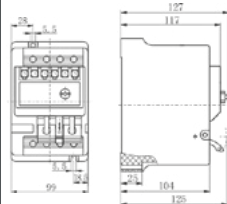
## MARKING

II 2 G  
Ex d e IIC Gb  
Ex d e IIB Gb

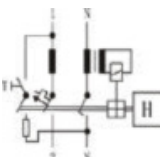
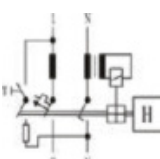
## TI SERIES - CIRCUIT BREAKERS

### TI-0511-BFL../BF.. Series -

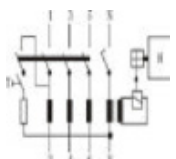
#### Dimensions & principal electrical diagrams

1P+N CIRCUIT BREAKER	DIMENSIONS	1P+N+AUX. CONTACTS CIRCUIT BREAKER	DIMENSIONS	4-POLE CIRCUIT BREAKER	DIMENSIONS
					

### TI-0511-BFL.. Series specifications

CODE	TYPE	RATED CURRENT (A)	RATED LEAKAGE CURRENT (mA)	POLES	AUXILIARY CONTACTS	ELECTRICAL DIAGRAM
B090309020026	TI-0511-BFL/10/1N/C/30/10	10	30	2 (1P+N)	-	
B090309020027	TI-0511-BFL/10/1N/C/300/10	10	300	2 (1P+N)	-	
B090309020028	TI-0511-BFL/16/1N/C/30/10	16	30	2 (1P+N)	-	
B090309020029	TI-0511-BFL/16/1N/C/300/10	16	300	2 (1P+N)	-	
B090309020030	TI-0511-BFL/25/1N/C/30/10	25	30	2 (1P+N)	-	
B090309020031	TI-0511-BFL/25/1N/C/300/10	25	300	2 (1P+N)	-	
B090309020032	TI-0511-BFL/32/1N/C/30/10	32	30	2 (1P+N)	-	
B090309020033	TI-0511-BFL/32/1N/C/300/10	32	300	2 (1P+N)	-	
B090309020034	TI-0511-BFL/10/1N/C/30/10-0	10	30	2 (1P+N)	1NO + 1NC	
B090309020035	TI-0511-BFL/10/1N/C/300/10-0	10	300	2 (1P+N)	1NO + 1NC	
B090309020036	TI-0511-BFL/16/1N/C/30/10-0	16	30	2 (1P+N)	1NO + 1NC	
B090309020037	TI-0511-BFL/16/1N/C/300/10-0	16	300	2 (1P+N)	1NO + 1NC	
B090309020038	TI-0511-BFL/25/1N/C/30/10-0	25	30	2 (1P+N)	1NO + 1NC	
B090309020039	TI-0511-BFL/25/1N/C/300/10-0	25	300	2 (1P+N)	1NO + 1NC	
B090309020040	TI-0511-BFL/32/1N/C/30/10-0	32	30	2 (1P+N)	1NO + 1NC	
B090309020041	TI-0511-BFL/32/1N/C/300/10-0	32	300	2 (1P+N)	1NO + 1NC	

### TI-0511-BF.. Series specifications

CODE	TYPE	RATED CURRENT (A)	RATED LEAKAGE CURRENT (mA)	POLES	ELECTRICAL DIAGRAM
B090309020042	TI-0511-BF/25/3N/C/30	25	30	4 (3P+N)	
B090309020043	TI-0511-BF/25/3N/C/300	25	300	4 (3P+N)	
B090309020044	TI-0511-BF/40/3N/C/30	40	30	4 (3P+N)	
B090309020045	TI-0511-BF/40/3N/C/300	40	300	4 (3P+N)	

# OPERATORS INCREASED SAFETY

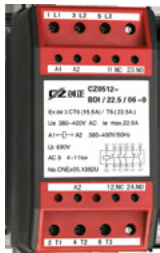
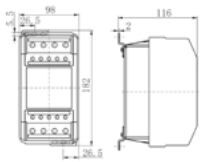
## MARKING

II 2 G  
Ex db e IIC Gb  
Ex db e IIB Gb


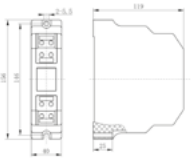
## TI SERIES - CONTACTORS & MINIATURE RELAYS

<b>Material</b>	Unsaturated resin
<b>Operating temperature range</b>	-20°C/+110°C (II C) -40°C/+110°C (II B)
<b>Ambient temperature range</b>	-20°C/+60°C (II C) -40°C/+60°C (II B)
<b>Approvals</b>	IECEX CML 19.0058U CML 19ATEX1182U

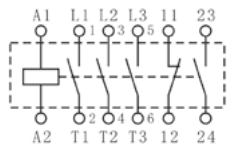
### TI-0512-BDI.. Series - Dimensions & principal electrical diagrams

3-POLE CONTACTOR	DIMENSIONS
	
CROSS SECTION OF TERMINAL	MAIN CONTACT FROM 1 TO 10 MM2 AUXILIARY CONTACT FROM 1 TO 2,5 MM2
RATED CURRENT	25A

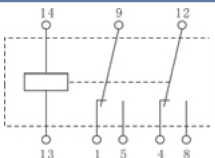
### TI-0512-BMY.. Series - Dimensions & principal electrical diagrams

RELAY	DIMENSIONS
	
CROSS SECTION OF TERMINAL	ALL CONTACT FROM 1 TO 2,5 MM2
RATED CURRENT	5A

### TI-0512-BDI.. Series specifications

CODE	TYPE	RATED VOLTAGE (V)	POLES	AUXILIARY CONTACTS	ELECTRICAL DIAGRAM
B090309020046	TI-0512-BDI/25/01-0	24	3	1NO + 1NC	
B090309020047	TI-0512-BDI/25/07-0	230	3	1NO + 1NC	

### TI-0512-BMY.. Series specifications

CODE	TYPE	SUPPLY VOLTAGE	ELECTRICAL DIAGRAM
B090712020001	TI-0512-BMY/01	AC 24V	
B090712020002	TI-0512-BMY/05	AC 220/240V	
B090712020003	TI-0512-BMY/11	DC 24V	

# OPERATORS INCREASED SAFETY

## MARKING

II 2 G Ex eb IIC Gb  
II 2 D Ex tb IIIC Db

## TI SERIES - OPERATION WINDOWS

### Material

GRP (anti-static glass fiber reinforced polyester SMC)  
Polyamide

### IP rating

IP66


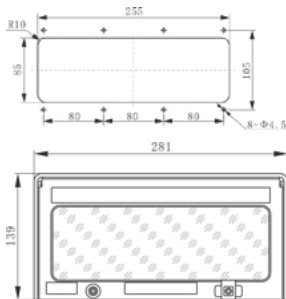

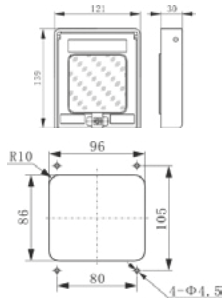
### Operating temperature range

-55°C/+80°C

### Approvals

IECEX CML 17.0042U  
CML 17ATEX3102U

## TI-8000-8002/.. Series specifications

TI-8000-8002/1	CODE	DIMENSIONS
	B081409000002	
TI-8000-8002/2	CODE	DIMENSIONS
	B081409000003	

# OPERATORS INCREASED SAFETY

## MARKING

II 2 G  
Ex eb IICGb  
II 2 D  
Ex tb IIICDb

## TI SERIES - BUSBARS

### Material

Copper

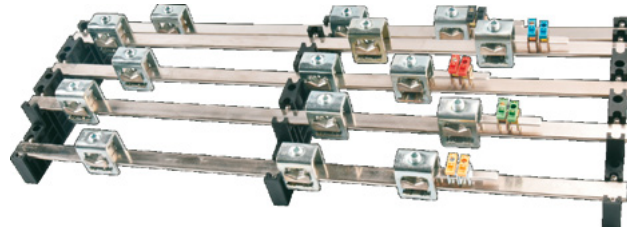
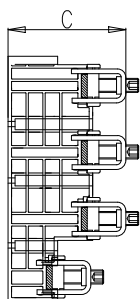
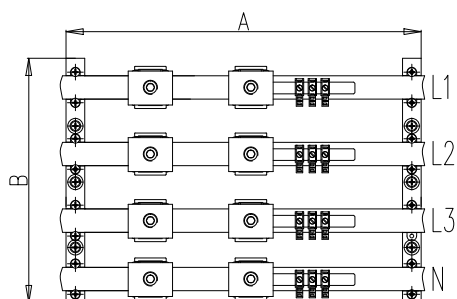
### Operating temperature range

-55°C/+80°C

### Approvals

IECEX CML 17.0042U  
CML 17ATEX3102U

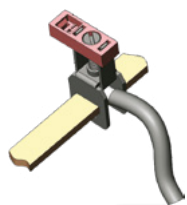
### Dimensions



### TI-8000-MX.. Series specifications\*

CODE	TYPE	RATED CURRENT (A)	POLES	COPPER BAR SIZE (MM.)			DIMENSIONS		
				L1, L2, L3	N	PE	A	B	C
F010200000040	TI-8000-MX11/80	80	4	10 X 3	10 X 3	-	310	170	70
F010200000044	TI-8000-MX11/250	250	4	20 X 5	20 X 5	-	310	170	70
F010200000041	TI-8000-MX21/250	250	5	20 X 5	20 X 5	20 X 5	310	254	78
F010200000042	TI-8000-MX21/400	400	5	20 X 10	20 X 5	20 X 5	310	254	78
F010200000045	TI-8000-MX21/630	630	5	20 X 15	20 X 10	20 X 10	310	254	78

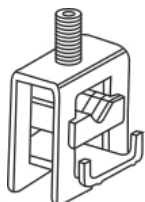
\*Upon request: 664 mm, 1018 mm, 1372 mm length



### Pressing line terminals – TI-8013.. Series specifications

CODE	TYPE	COPPER BAR SIZE	CONDUCTOR SECTION (mm²)	COLOUR
B090208020001	TI-8013/4D	10 X 3	4	Black*
B090208020002	TI-8013/16D	10 X 3	16	Black*
B090208020003	TI-8013/35D	10 X 3	35	Black*

\*Other colours available upon request



### TI-K20.. Series specifications

CODE	TYPE	COPPER BAR SIZE	CONDUCTOR SECTION (mm²)
B090208020004	TI-K20/10	20 X 5	35 ~ 240
		20 X 10	35 ~ 185
		20 X 15	35 ~ 95

# OPERATORS INCREASED SAFETY

## MARKING

II 2 G  
Ex db eb IIC Gb

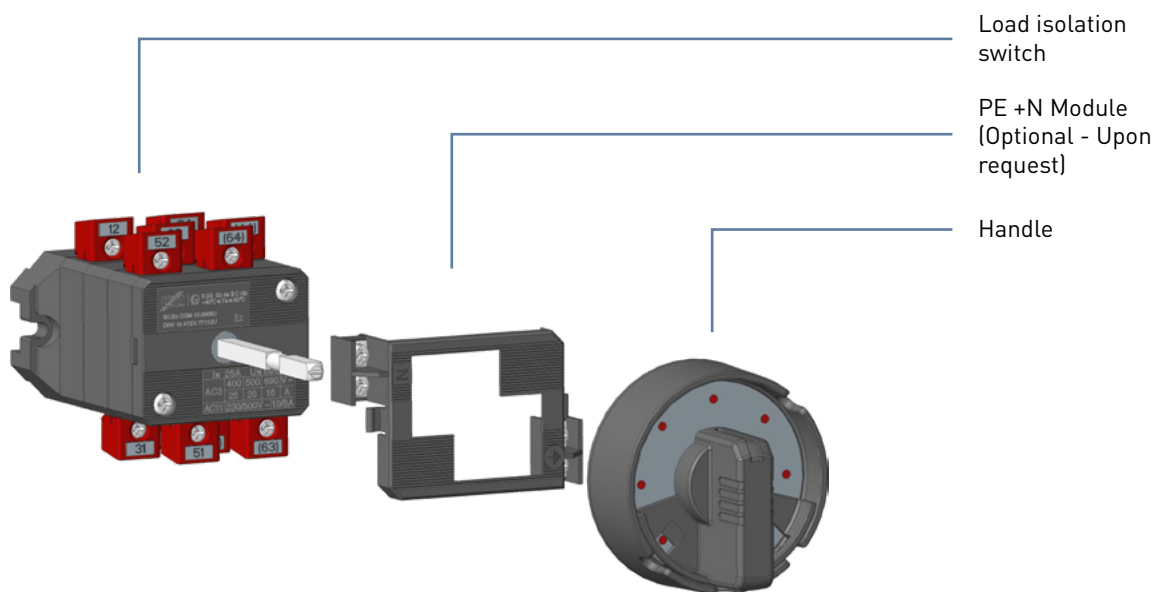
## TI SERIES - LOAD ISOLATION SWITCHES WITH HANDLE

<b>Material</b>	Unsaturated resin (Switch) Black polyamide (Handle)																												
<b>Operating temperature range</b>	-40°C/+55°C																												
<b>Approvals</b>	IECEX CML 19.0055U CML 19ATEX1179U																												
<b>Conformity to Standards</b>	IEC/EN 60079-0, IEC/EN 60079-1, IEC/EN 60079-7																												
<b>Utilization category</b>	AC-23, AC-3, AC-11																												
<b>Switch capacity</b>	<table> <tr> <th></th><th>230V</th><th>400V</th><th>500V</th><th>690V</th></tr> <tr> <td>TI-0513-25A</td><td>25A</td><td>25A</td><td>20A</td><td>16A</td></tr> <tr> <td>TI-0513-40A</td><td>40A</td><td>40A</td><td>40A</td><td>32A</td></tr> <tr> <td>TI-0513-80A</td><td>80A</td><td>80A</td><td>80A</td><td>63A</td></tr> <tr> <td>TI-0513-180A</td><td>180A</td><td>180A</td><td>150A</td><td>125A</td></tr> </table>					230V	400V	500V	690V	TI-0513-25A	25A	25A	20A	16A	TI-0513-40A	40A	40A	40A	32A	TI-0513-80A	80A	80A	80A	63A	TI-0513-180A	180A	180A	150A	125A
	230V	400V	500V	690V																									
TI-0513-25A	25A	25A	20A	16A																									
TI-0513-40A	40A	40A	40A	32A																									
TI-0513-80A	80A	80A	80A	63A																									
TI-0513-180A	180A	180A	150A	125A																									
<b>Rated insulation voltage</b>	800V																												
<b>Rated impulse withstand voltage</b>	6kV																												
<b>Rated short-time withstand current</b>	3kV (25A, 40A) 10kV (80A, 180A)																												
<b>Rated short-time marking capacity</b>	4kV (25A, 40A) 17kV (80A, 180A)																												
<b>Short-circuit protection of fuse</b>	20kA 500V/35A (25A) 20kA 500V/63A (40A) 50kA 500V/160A (80A) 50kA 500V/250A (180A)																												
<b>Terminal cross-section area</b>	25A: 2 x 1,5 ~ 4mm <sup>2</sup> 40A: 2 x 10mm <sup>2</sup> 80A: 2 x 16 ~ 25mm <sup>2</sup> 180A: 2 x 50 ~ 95mm <sup>2</sup>																												



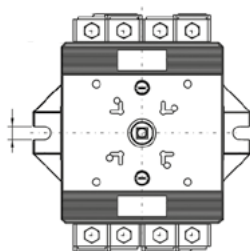
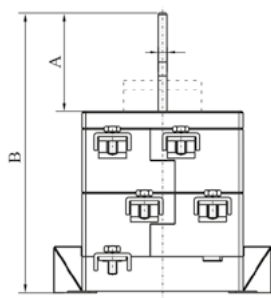
# OPERATORS INCREASED SAFETY

## TI SERIES - LOAD ISOLATION SWITCHES WITH HANDLE

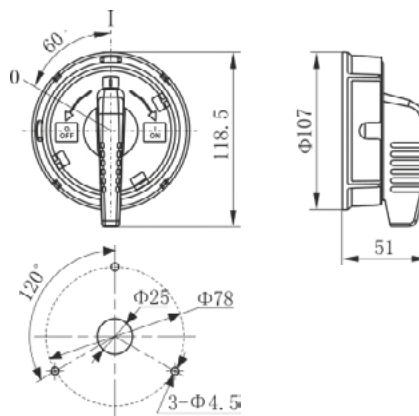


### Dimensions

Load isolation switch



Handle



### TI-0513../3DB1 Series specifications



CODE	TYPE	RATED CURRENT (A)	POLES	DIMENSIONS (MM)	
				A	B
B090603020011	TI-0513-25A/4P-3DB1	25	4	41	105
B090603020012	TI-0513-40A/4P-3DB1	40	4	83	171
B090603020001	TI-0513-80A/4P-3DB1	80	4	71	201
B090603020013	TI-0513-180A/4P-3DB1	180	4	84	241

# OPERATORS

## INCREASED SAFETY - HARMATEX SERIES

The Harmatex Series offers a large selection of contacts & operation heads suitable for Ex d enclosures:

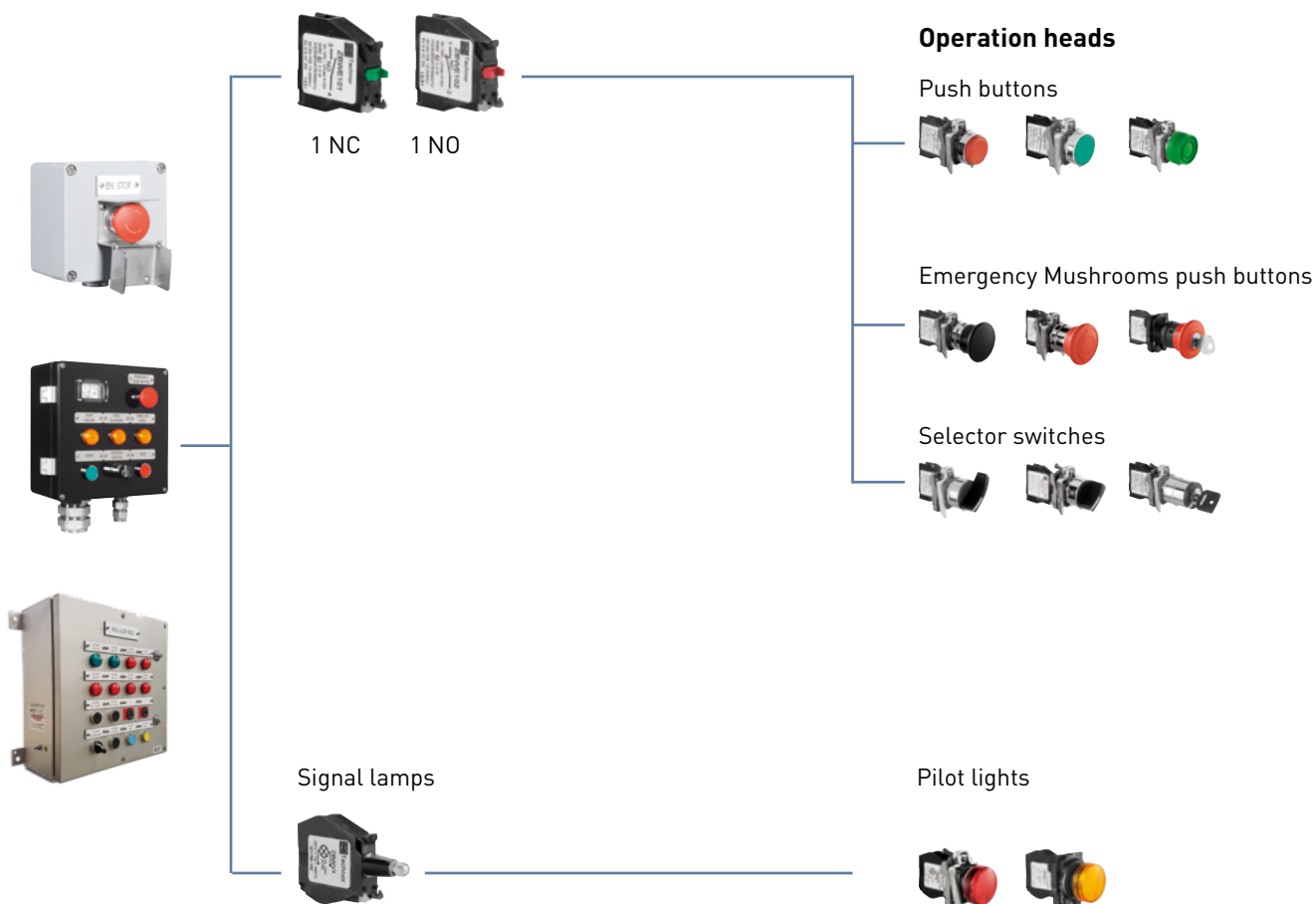
- Momentary and push-push actuation modes;
- Standard and emergency push buttons;
- Selector switches;
- Pilot lights.

Unrivalled flexibility thanks to its modular design:

- Up to 6 contacts per operation head;
- Operating temperature: from -20°C up to +75°C

## HARMATEX SERIES – CONTACTS & OPERATION HEADS

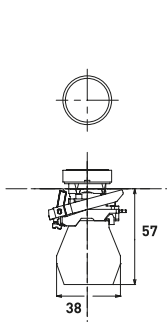
<b>Material</b>	Metal and plastic
<b>IP rating</b>	IP65/IP66
<b>Ambient temperature range</b>	-20°C TO 65°C -20°C TO 75°C
<b>Approvals</b>	Certified 02ATEX9007U (contact blocks) Certified 04ATEX9003U (pilot lamps) IECEX INE 13.0063U
<b>Marking</b>	II 2 GD Ex d e IIC Gb (contact blocks) Ex e mb IIC Gb (pilot lamps) Ex tb IIIC Db



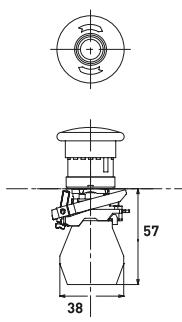
## INCREASED SAFETY

## HARMATEX SERIES – CONTACTS & OPERATION HEADS

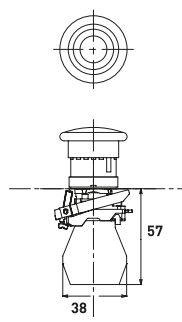
### Dimensions HARMATEX



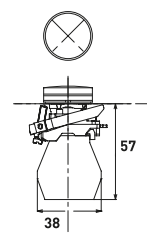
**Pushbutton**



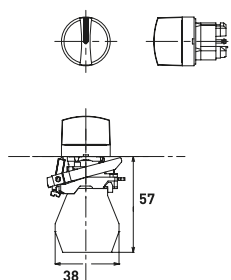
**Mushroom Pushbutton  
Twist to release**



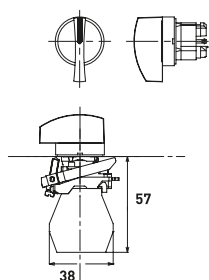
**Emergency Stop  
Mushroom Pushbutton**



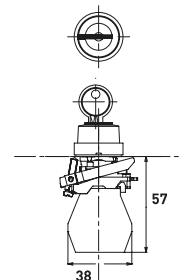
**Pilot light**



**Selector switches  
with standard handle**



**Selector switches  
with long handle**



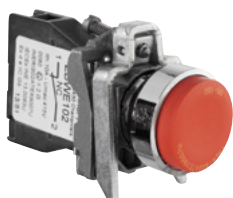
**Key selector switches**

### Flush push buttons



CODE	TYPE	BEZEL	COLOUR	CONTACT	IP RATING
B090601040015	XBW4BA11 - MOMENTARY PUSH BUTTON	METAL	WHITE	1NO	IP66
B090601040016	XBW4BA21 - MOMENTARY PUSH BUTTON	METAL	BLACK	1NO	IP66
B090601040020	XBW4BA22 - MOMENTARY PUSH BUTTON	METAL	BLACK	1NC	IP66
B090601040012	XBW4BA31 - MOMENTARY PUSH BUTTON	METAL	GREEN	1NO	IP66
B090601040021	XBW4BA41 - MOMENTARY PUSH BUTTON	METAL	RED	1NO	IP66
B090601040017	XBW4BA42 - MOMENTARY PUSH BUTTON	METAL	RED	1NC	IP66
B090601040018	XBW4BA51 - MOMENTARY PUSH BUTTON	METAL	YELLOW	1NO	IP66
B090601040019	XBW4BA61 - MOMENTARY PUSH BUTTON	METAL	BLUE	1NO	IP66

### Projecting push buttons

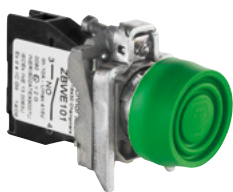


CODE	TYPE	BEZEL	COLOUR	CONTACT	IP RATING
B090601040044	XBW4BL11 - MOMENTARY PUSH BUTTON	METAL	WHITE	1NO	IP66
B090601040031	XBW4BL21 - MOMENTARY PUSH BUTTON	METAL	BLACK	1NO	IP66
B090601040032	XBW4BL31 - MOMENTARY PUSH BUTTON	METAL	GREEN	1NO	IP66
B090601040033	XBW4BL42 - MOMENTARY PUSH BUTTON	METAL	RED	1NC	IP66
B090601040045	XBW4BL51 - MOMENTARY PUSH BUTTON	METAL	YELLOW	1NO	IP66
B090601040046	XBW4BL61 - MOMENTARY PUSH BUTTON	METAL	BLUE	1NO	IP66

# OPERATORS INCREASED SAFETY - TI SERIES

## HARMATEX SERIES – CONTACTS & OPERATION HEADS

### Push buttons with silicone boot



CODE	TYPE	BEZEL	COLOUR	CONTACT	IP RATING
B090601040001	XBW4BP11S - MOMENTARY PUSH BUTTON	METAL	WHITE	1NO	IP66
B090601040002	XBW4BP21S - MOMENTARY PUSH BUTTON	METAL	BLACK	1NO	IP66
B090601040003	XBW4BP31S - MOMENTARY PUSH BUTTON	METAL	GREEN	1NO	IP66
B090601040011	XBW4BP42S - MOMENTARY PUSH BUTTON	METAL	RED	1NC	IP66
B090601040047	XBW4BP51S - MOMENTARY PUSH BUTTON	METAL	YELLOW	1NO	IP66
B090601040048	XBW4BP61S - MOMENTARY PUSH BUTTON	METAL	BLUE	1NO	IP66



B090601040004	XBW5AP11S - MOMENTARY PUSH BUTTON	PLASTIC	WHITE	1NO	IP65
B090601040005	XBW5AP21S - MOMENTARY PUSH BUTTON	PLASTIC	BLACK	1NO	IP65
B090601040006	XBW5AP31S - MOMENTARY PUSH BUTTON	PLASTIC	GREEN	1NO	IP65
B090601040007	XBW5AP42S - MOMENTARY PUSH BUTTON	PLASTIC	RED	1NC	IP65
B090601040009	XBW5AP51S - MOMENTARY PUSH BUTTON	PLASTIC	YELLOW	1NO	IP65
B090601040008	XBW5AP61S - MOMENTARY PUSH BUTTON	PLASTIC	BLUE	1NO	IP65

### Stop mushroom push button



CODE	TYPE	BEZEL	COLOUR	CONTACT	IP RATING
B090601040053	XBW4BC21 - MOMENTARY MUSHROOM	METAL	BLACK	1NO	IP65
B090601040034	XBW4BC31 - MOMENTARY MUSHROOM	METAL	GREEN	1NO	IP65
B090601040010	XBW4BC42 - MOMENTARY MUSHROOM	METAL	RED	1NC	IP65
B090601040055	XBW4BC51 - MOMENTARY MUSHROOM	METAL	YELLOW	1NO	IP65
B090601040056	XBW4BC61 - MOMENTARY MUSHROOM	METAL	BLUE	1NO	IP65

B090601040038	XBW5AC21 - MOMENTARY MUSHROOM	PLASTIC	BLACK	1NO	IP65
B090601040039	XBW5AC31 - MOMENTARY MUSHROOM	PLASTIC	GREEN	1NO	IP65
B090601040036	XBW5AC42 - MOMENTARY MUSHROOM	PLASTIC	RED	1NC	IP65
B090601040040	XBW5AC51 - MOMENTARY MUSHROOM	PLASTIC	YELLOW	1NO	IP65
B090601040041	XBW5AC61 - MOMENTARY MUSHROOM	PLASTIC	BLUE	1NO	IP65

### Emergency stop mushroom push buttons



CODE	TYPE	BEZEL	CONTACT	IP RATING
B090601040035	XBW4BS9442 - MUSHROOM TWIST T.R. WITH KEY	METAL	1NC	IP65
B090601040010	XBW4BS8442 - MUSHROOM TWIST T.R.	METAL	1NC	IP65



B090601040050	XBW5AS142 - MUSHROOM TWIST T.R. WITH KEY	PLASTIC	1NC	IP65
B090601040049	XBW5AS542 - MUSHROOM TWIST T.R.	PLASTIC	1NC	IP65

# OPERATORS INCREASED SAFETY

## HARMATEX SERIES – CONTACTS & OPERATION HEAD



### Pilot lights 24V to 254V AC/DC (current from 2 to 10mA)

CODE	TYPE	BEZEL	COLOUR	IP RATING
B090602040001	XLW4BV013 - PILOT LIGHT	METAL	WHITE	IP65
B090602040004	XLW4BV033 - PILOT LIGHT	METAL	GREEN	IP65
B090602040003	XLW4BV043 - PILOT LIGHT	METAL	RED	IP65
B090602040005	XLW4BV053 - PILOT LIGHT	METAL	YELLOW	IP65
B090602040006	XLW4BV063 - PILOT LIGHT	METAL	BLUE	IP65



B090602040007	XLW5AV013 - PILOT LIGHT	PLASTIC	WHITE	IP65
B090602040008	XLW5AV033 - PILOT LIGHT	PLASTIC	GREEN	IP65
B090602040009	XLW5AV043 - PILOT LIGHT	PLASTIC	RED	IP65
B090602040002	XLW5AV053 - PILOT LIGHT	PLASTIC	YELLOW	IP65
B090602040012	XLW5AV063 - PILOT LIGHT	PLASTIC	BLUE	IP65

### Selector switches with standard handle



CODE	TYPE	BEZEL	POSITIONS	CONTACT	IP RATING
B090603040003	XBW4BD21 - STAY PUT	METAL	2	1NO	IP65
B090603040007	XBW4BD41 - SPRING RETURN	METAL	2	1NO	IP65
B090603040006	XBW4BD33 - STAY PUT	METAL	3	1NO+1NO	IP65
B090603040008	XBW4BD53 - SPRING RETURN TO CENTER	METAL	3	1NO+1NO	IP65
B090601040009	XBW4BD73 - SPRING RETURN FROM LEFT	METAL	3	1NO+1NO	IP65
B090603040030	XBW4BD83 - SPRING RETURN FROM RIGHT	METAL	3	1NO+1NO	IP65

B090603040027	XBW5AD21 - STAY PUT	PLASTIC	2	1NO	IP65
B090601040036	XBW5AD41 - SPRING RETURN	PLASTIC	2	1NO	IP65
B090603040002	XBW5AD33 - STAY PUT	PLASTIC	3	1NO+1NO	IP65
B090603040022	XBW5AD53 - SPRING RETURN TO CENTER	PLASTIC	3	1NO+1NO	IP65
B090603040009	XBW5AD73 - SPRING RETURN FROM LEFT	PLASTIC	3	1NO+1NO	IP65
B090601040037	XBW5AD83 - SPRING RETURN FROM RIGHT	PLASTIC	3	1NO+1NO	IP65

### Selector switches with long handle



CODE	TYPE	BEZEL	POSITIONS	CONTACT	IP RATING
B090603040017	XBW4BJ21 - STAY PUT	METAL	2	1NO	IP66
B090603040019	XBW4BJ41 - SPRING RETURN	METAL	2	1NO	IP66
B090603040018	XBW4BJ33 - STAY PUT	METAL	3	1NO+1NO	IP66
B090603040020	XBW4BJ53 - SPRING RETURN TO CENTER	METAL	3	1NO+1NO	IP66
B090601040035	XBW4BJ73 - SPRING RETURN FROM LEFT	METAL	3	1NO+1NO	IP66
B090603040031	XBW4BJ83 - SPRING RETURN FROM RIGHT	METAL	3	1NO+1NO	IP66



# OPERATORS INCREASED SAFETY - TI SERIES

## HARMATEX SERIES – CONTACTS & OPERATION HEADS

### Key selector switches



CODE	TYPE	BEZEL	POSITIONS	KEY WITHDRAWAL	CONTACT	IP RATING
B090603040012	XBW4BG21 - STAY PUT	METAL	2	LEFT	1NO	IP66
B090603040014	XBW4BG41 - STAY PUT	METAL	2	LEFT - RIGHT	1NO	IP66
B090603040016	XBW4BG61 - SPRING RETURN FROM RIGHT	METAL	2	LEFT	1NO	IP66
B090603040010	XBW4BG03 - STAY PUT	METAL	3	LEFT - 0 - RIGHT	1NO+1NO	IP66
B090603040013	XBW4BG33 - STAY PUT	METAL	3	0	1NO+1NO	IP66
B090603040034	XBW4BG53 - STAY PUT	METAL	3	LEFT - RIGHT	1NO+1NO	IP66
B090603040041	XBW4BG93 - STAY PUT	METAL	3	LEFT	1NO+1NO	IP66
B090603040023	XBW4BG093 - STAY PUT	METAL	3	RIGHT	1NO+1NO	IP66
B090603040011	XBW4BG13 - SPRING RETURN FROM LEFT	METAL	3	0	1NO+1NO	IP66
B090603040042	XBW4BG73 - SPRING RETURN TO CENTER	METAL	3	0	1NO+1NO	IP66
B090603040015	XBW4BG83 - SPRING RETURN FROM RIGHT	METAL	3	0	1NO+1NO	IP66
B090603040033	XBW4BG083 - SPRING RETURN FROM RIGHT	METAL	3	LEFT	1NO+1NO	IP66

### Contacts



CODE	TYPE	CONTACT
B090601040030	ZBWE101 – NORMALLY OPEN CONTACT	NO
B090601040029	ZBWE102 – NORMALLY CLOSE CONTACT	NC

### Contact electrical data

ITH MAX. 10A	AC-15		DC-13		Ui max. (V)
	Ue (V)	Ie max. (A)	Ue (V)	Ie max. (A)	
	120	6	24	2,87	415
	240	3	125	0,55	
	380	1,9	250	0,27	

### Signal lamps



CODE	TYPE
B090602040010	ZBWV1 SPARE PILOT LIGHT BODY WHITE, RED, YELLOW, BLUE
B090602040011	ZBWV3 SPARE PILOT LIGHT BODY FOR GREEN



# LOCAL CONTROL STATIONS

## CP../EFDCN-EFSRC.. Series - Copper-free aluminium



- CP../EFDCN../ EFSRC.. Series is suitable for indoor and outdoor application and are used as push-button stations, switches, motor control stations...;
- The enclosures are made of copper-free aluminium and complete with threaded hubs suitable for cable glands or conduit, connection does not affect the internal void, which remains available for terminals wiring;
- The enclosures offer an Ex d IIC mode of protection and can be equipped with different components (up to 4) such as: push buttons, selector switches, potentiometers, signal lamps, rotary handles;
- This series is tailor made according to customer specifications in terms of quantity and type of operators. Our technical department will select the most suitable solution within the limits allowed by the certificate.

### MARKING

II 2 GD

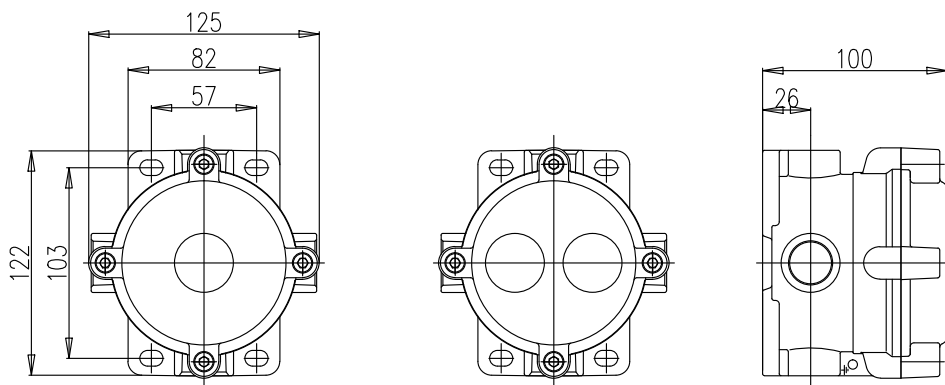
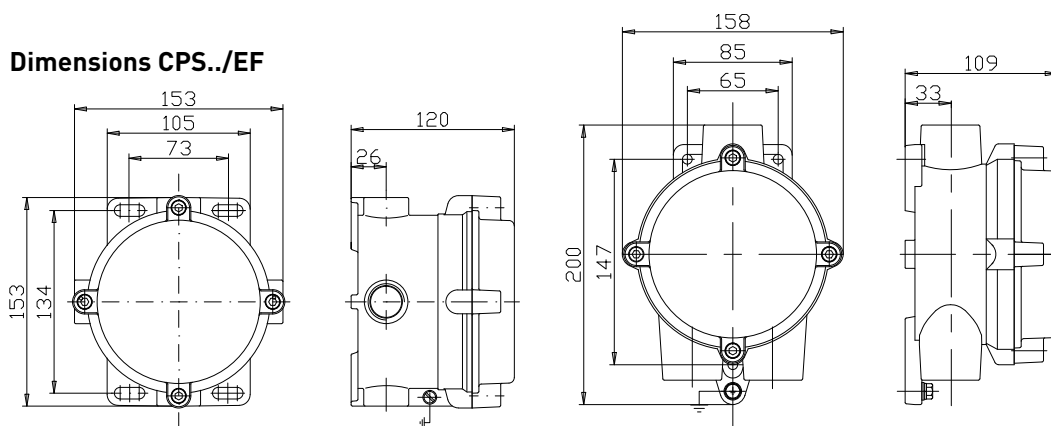
Ex db IIC T(\*) Gb

Ex tb IIIC T(\*) Db IP66

\* T6/T85°C, T5/T100°C, T4/T135°C

## TECHNICAL FEATURES





<b>Material</b>	Copper-free aluminium
<b>IP rating</b>	IP66
<b>Ambient temperature range</b>	-50°C to +60°C (ATEX) -60°C to +60°C (IECEX)
<b>Approvals</b>	INERIS 03ATEX0009X IECEX BKI 15.0002 EAC RUC-IT.BH02.B.00588/20
<b>Zones</b>	Gas Zone: 1,2 Dust Zone: 21, 22
<b>Surface treatment</b>	Painted by polyurethane painting: RAL5014 painting cycle C4 suitable for On-Shore The reference standard is UNI EN ISO 12944 - 1: 2018 Upon request other colours and painting cycles
<b>Thread</b>	ISO: M20, M25, M32 NPT: 1/2", 3/4", 1"
<b>Standard certificate label</b>	Made by self adhesive UV and corrosion resistant polyester, approved by certified Laboratory.
<b>Optional accessories</b>	Internal anticondensate painting Hot deep galvanized steel or Stainless Steel AISI316 stand/canopy.

**Dimensions CP../EFDCN****Dimensions CPS../EF****CP../EF.. Series - Push button stations - Available versions**

TYPE	AVAILABLE ENTRIES		CONFIGURATION OF ENTRIES	MAX. N° OF OPERATORS	ENCLOSURE DIAMETER [mm]
	METRIC	NPT			
CPC-26/EF..	2 X M25	2 X 3/4"NPT		2	90
CPT-26/EF..	3 X M25	3 X 3/4"NPT		2	90
CPX-26/EF..	4 X M25	4 X 3/4"NPT		2	90

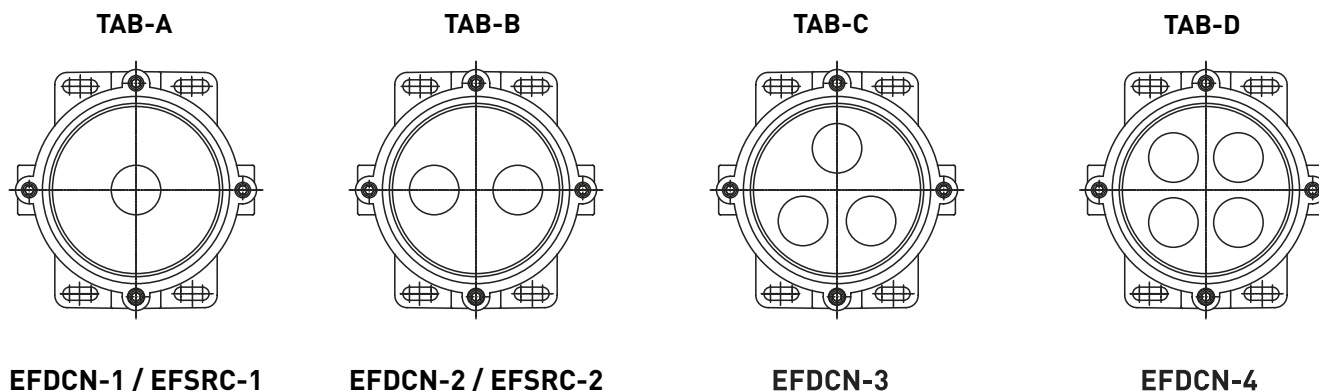
For complete push button stations, ask to the Sales Dept.

**CPS../EFDCN.. Series - Push button stations - Available versions**



TYPE	AVAILABLE ENTRIES				CONFIGURATION OF ENTRIES	MAX. N° OF OPERATORS	ENCLOSURE DIAMETER [mm]
	METRIC		NPT				
CPSC-../EF..	2 X M25	2 X M32	2 X 3/4"NPT	2 X 1" NPT		4	120
CPST-../EF..	3 X M25	3 X M32	3 X 3/4"NPT	3 X 1" NPT		4	120
CPSG-../EF..	3 X M25	3 X M32	3 X 3/4"NPT	3 X 1" NPT		4	120
CPSX-../EF..	4 X M25	4 X M32	4 X 3/4"NPT	4 X 1" NPT		4	120

For complete push button stations, ask to the Sales Dept.

## Dimensions CP../CPS.. EFDCN



### CP../CPS.. EFDCN Series - Standard versions\*

CODE	TYPE	ENTRIES	N° OF HOLES ON COVER	DRAWING	ENCLOSURE DIAMETER [mm]	WEIGHT [Kg]
B012074010149	CPC-26/EFDCN-1-90	 2 X M25	1	TAB-A	90	1.10
B012074010134	CPC-26/EFDCN-2-90		2	TAB-B	90	1.10
B012074010152	CPSC-26/EFDCN-1-120		1	TAB-A	120	1.70
B012074010154	CPSC-26/EFDCN-2-120		2	TAB-B	120	1.70
B012074010156	CPSC-26/EFDCN-3-120		3	TAB-C	120	1.70
B012074010158	CPSC-26/EFDCN-4-120		4	TAB-D	120	1.70
B012074010150	CPC-26/EFDCN-1-90	 2 X 3/4" NPT	1	TAB-A	90	1.10
B012074010151	CPC-26/EFDCN-2-90		2	TAB-B	90	1.10
B012074010153	CPSC-26/EFDCN-1-120		1	TAB-A	120	1.70
B012074010155	CPSC-26/EFDCN-2-120		2	TAB-B	120	1.70
B012074010157	CPSC-26/EFDCN-3-120		3	TAB-C	120	1.70
B012074010159	CPSC-26/EFDCN-4-120		4	TAB-D	120	1.70

\*CP../EFDCN Series are supplied ATEX/TR-CU certified. For IECEx certificate, ask to our Sales Dept.



\*CP../EFDCN Series are supplied painted. Standard painting cycle: C4 - Colour: Blue RAL5014 (Other colours available upon request)

\*\*Codes refer to drilled enclosures without operators & components. To be ordered separately, refer to "Spare & Accessories" section.

For different customized configurations, ask to our Sales. Dept.



**CP../CPS.. EFSRC Series - Standard versions\***

CODE**	TYPE	ENTRIES	OPERATOR	N° OF POLES	AMPERE A	ENCLOSURE DIAMETER [mm]	WEIGHT [Kg]
B012074010135	CPC-26/EF SRC-220	2 X M25 	ON LOAD SWITCH	2	20	90	1.10
B012074010160	CPC-26/EF SRC-D-220		CHANGE OVER SWITCH	2	20	90	1.15
B012074010161	CPC-26/EF SRC-C-220		STEP SWITCH	2	20	90	1.15
B012074010166	CPSC-26/EF SRC-320		ON LOAD SWITCH	3	20	120	1.15
B012074010167	CPSC-26/EF SRC-D-320		CHANGE OVER SWITCH	3	20	120	1.20
B012074010168	CPSC-26/EF SRC-C-320		STEP SWITCH	3	20	120	1.20
B012074010162	CPC-26/EF SRC-220	2 X 3/4"NPT 	ON LOAD SWITCH	2	20	90	1.10
B012074010163	CPC-26/EF SRC-D-220		CHANGE OVER SWITCH	2	20	90	1.15
B012074010164	CPC-26/EF SRC-C-220		STEP SWITCH	2	20	90	1.15
B012074010169	CPSC-26/EF SRC-320		ON LOAD SWITCH	3	20	120	1.15
B012074010170	CPSC-26/EF SRC-D-320		CHANGE OVER SWITCH	3	20	120	1.20
B012074010171	CPSC-26/EF SRC-C-320		STEP SWITCH	3	20	120	1.20

**PSRC Series Rated operational characteristic**

AMPERE A	AC-1 Ie MAX. [A]	AC-3 Ie MAX. [A]	AC-11 Ie MAX. [A]	Ui max. [V]
20	25	12	9	690
32	36	22	16	690

\*CP../EF SRC Series are supplied ATEX/TR-CU certified. For IECEx certificate, ask to our Sales Dept.

\*CP../EF SRC Series are supplied painted. Standard painting cycle: C4. Colour: Blue RAL5014 (Other colours are available upon request)

\*\*Codes refer to drilled enclosures with 1 standard operator.

For different customized configurations, ask to our Sales. Dept.

# LOCAL CONTROL STATIONS

## CP../CPS.. Series - Copper-free aluminium



- The CP../CPS.. range of enclosures, used for terminals wiring, grants Ex d mode of protection and is suitable for hazardous areas of industrial plants for indoor and outdoor applications.
- Made of copper-free aluminium and complete with threaded hubs suitable for cable glands or conduit, connection does not affect the internal void, which remains available for terminals wiring
- Internal and external screws are made of AISI316 stainless steel.

### MARKING

II 2 G  
Ex db IIC T6 or T5 or T4 Gb or  
II 2 (1) G  
Ex db [ ia Ga] IIC T6 Gb or  
II 2 (2) G  
Ex db [ ib] IIC T6 Gb

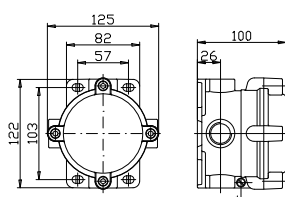
II 2 D  
Ex tb IIIC T85°C or T100°C or T135°C  
Db IP66 or  
II 2 (1) D  
Ex tb [ ia Da] IIIC T85°C Db IP66 or  
II 2 (2) D  
Ex tb [ ib] IIIC T85°C Db IP66

## TECHNICAL FEATURES

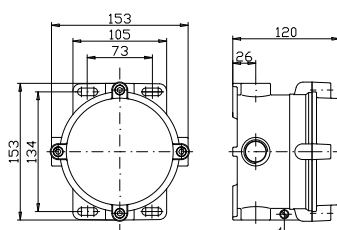
<b>Material</b>	Copper-free aluminium
<b>IP rating</b>	IP66
<b>Ambient temperature range</b>	-60°C to +60°C (ATEX) -60°C to +60°C (IECEX)
<b>Approvals</b>	INERIS 03ATEX0009X IECEX BKI 15.0002 EAC: RU C-IT.BH02.B.00588/20
<b>Surface treatment</b>	<ul style="list-style-type: none"> <li>• Painted by polyurethane painting: Blue RAL5014 ( other colours on request) painting cycle C4 suitable for On-Shore</li> <li>• External environment: Industrial areas and coastal areas with moderate salinity</li> <li>• Internal environment: Chemical plants, swimming pools, coastal plants and shipyards</li> </ul> <p>The Reference standard is UNI EN ISO 12944-1:2018</p>
<b>Thread</b>	ISO: M20, M25, M32 NPT: 1/2", 3/4", 1"
<b>Standard certificate label</b>	Made by self adhesive UV and corrosion resistant polyester, approved by certified Laboratory
<b>Optional accessories</b>	Internal anticondensate painting Terminals
<b>Maximum number of terminals</b>	[15 x 2,5 mm <sup>2</sup> /12 x 4 mm <sup>2</sup> /8 x 6 mm <sup>2</sup> ]
<b>Max. rated voltage</b>	1000 Vdc 20 kVac

## Dimensions CP../CPS..

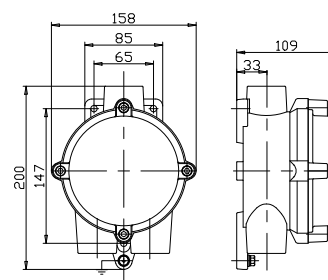
**TAB-A**







**TAB-B**



**TAB-C**



### CP../CPS.. Series - Available versions

TYPE	AVAILABLE ENTRIES				CONFIGURATION OF ENTRIES	ENCLOSURE DIAMETER [mm]	DRAWING
	METRIC		NPT				
CPC-..	2 X M20	2 X M25	2 X 1/2" NPT	2 X 3/4" NPT		90	TAB-A
CPSC-..	2 X M25	2 X M32	2 X 3/4"NPT	2 X 1" NPT		120	TAB-B
CPT-..	3 X M20	3 X M25	3 X 1/2" NPT	3 X 3/4" NPT		90	TAB-A
CPST-..	3 X M25	3 X M32	3 X 3/4"NPT	3 X 1" NPT		120	TAB-B
CPSG-..	3 X M25	3 X M32	3 X 3/4"NPT	3 X 1" NPT		120	TAB-C
CPX-..	4 X M20	4 X M25	4 X 1/2" NPT	4 X 3/4" NPT		90	TAB-A
CPSX-..	4 X M25	4 X M32	4 X 3/4"NPT	4 X 1" NPT		120	TAB-B

### CP../CPS.. Series - Standard versions\*

CODE**	TYPE	N° OF ENTRIES	TYPE OF ENTRIES	CONFIGURATION OF ENTRIES	WEIGHT [Kg]	ENCLOSURE DIAMETER [mm]
B011074010080	CPC-16 2XM20	2	M20		1	90
B011074010071	CPC-16 2X1/2" NPT	2	1/2" NPT		1	90
B011074010081	CPC-26 2XM25	2	M25		1,1	90
B011074010072	CPC-26 2X3/4" NPT	2	3/4" NPT		1,1	90
B011074010082	CPT-16 3XM20	3	M20		1	90
B011074010077	CPT-16 3X1/2" NPT	3	1/2" NPT		1	90
B011074010083	CPT-26 3XM25	3	M25		1,1	90
B011074010075	CPT-26 3X3/4" NPT	3	3/4" NPT		1,1	90
B011074010076	CPX-16 4XM20	4	M20		1	90
B011074010084	CPX-26 4XM25	4	M25		1,1	90
B011074010085	CPX-26 4X3/4" NPT	4	3/4" NPT		1,1	90
B011074010086	CPSC-26 2XM25	2	M25		1,7	120
B011074010087	CPSC-26 2X3/4" NPT	2	3/4" NPT		1,7	120
B011074010088	CPSC-36 2XM32	2	M32		1,8	120
B011074010073	CPSC-36 2X1" NPT	2	1" NPT		1,8	120
B011074010089	CPSG-26 3XM25	3	M25		1,7	120
B011074010090	CPSG-26 3X3/4" NPT	3	3/4" NPT		1,7	120
B011074010091	CPSG-36 3XM32	3	M32		1,8	120
B011074010092	CPSG-36 3X1" NPT	3	1" NPT		1,8	120
B011074010093	CPST-26 3XM25	3	M25		1,7	120
B011074010094	CPST-26 3X3/4" NPT	3	3/4" NPT		1,7	120
B011074010095	CPST-36 3XM32	3	M32		1,8	120
B011074010074	CPST-36 3X1" NPT	3	1" NPT		1,8	120
B011074010096	CPSX-26 4XM25	4	M25		1,7	120
B011074010097	CPSX-26 4X3/4" NPT	4	3/4" NPT		1,7	120
B011074010098	CPSX-36 4XM32	4	M32		1,8	120
B011074010099	CPSX-36 4X1" NPT	4	1" NPT		1,8	120

Codes refer to empty enclosures. For complete junction boxes ask to our Sales Dept.

\*CP.. Series are supplied ATEX/TR-CU certified. For IECEx certificate, ask to our Sales Dept.

# COMPACT FLAMEPROOF ENCLOSURES

## CPS../EMH.. Series with window - Copper-free aluminium



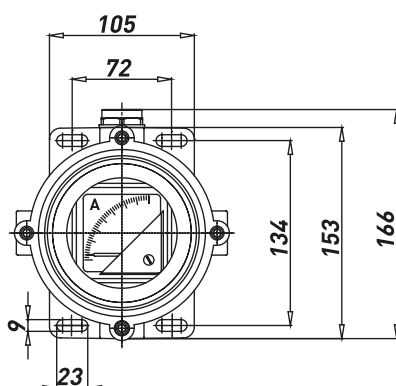
CPS/EMH.. series enclosures offers Ex dB IIC mode of protection and is equipped with window made of tempered glass for electrical equipment which requires a direct reading from the outside.

### MARKING

II 2 GD  
Ex d IIC T(\*) Gb  
Ex tb IIC T(\*) Db IP66  
Ex db IIC T6/T5/T4  
\* T6/T85°C, T5/T100°C, T4/T135°C

## TECHNICAL FEATURES

<b>Material</b>	Copper-free aluminium
<b>IP rating</b>	IP66
<b>Ambient temperature range</b>	-60°C to + 55°C (ATEX) -60°C to +60°C (IECEX)
<b>Approvals</b>	INERIS 03ATEX0009X IECEX: BKI 15.0002 EAC: RU C-IT.BH02.B.00588/20
<b>Surface treatment</b>	Painted by polyurethane painting: Blue RAL5014 ( other colours on request) painting cycle C4 suitable for On-Shore External environment: Industrial areas and coastal areas with moderate salinity Internal environment: Chemical plants, swimming pools, coastal plants and shipyards The Reference standard is UNI EN ISO 12944-1:2018
<b>Entries</b>	Metric pitch 1.5, ANSI B1.20.1 NPT
<b>Standard certificate label</b>	Made by self adhesive UV and corrosion resistant polyester, approved by certified Laboratory
<b>Dimensions CPS../EMH..</b>	



### CPS../EMH.. enclosures - Copper-free aluminium - Standard versions\*

CODE	TYPE	WINDOW DIAMETER	WEIGHT [Kg]
B016084010010	EMH-90 M25X1,5	90	1.40
B016084010012	EMH-90 3/4" NPT	90	1.40

Note: Ammeter/Voltmeter available upon request.







# FLAMEPROOF ENCLOSURES

## EJB.. Series - Copper-free aluminium



EJB.. series enclosures offers Ex d IIB or IIB+H2 mode of protection. They are suitable for hazardous areas of industrial plants for indoor and outdoor applications. The series may host electrical equipment which requires a direct reading from the outside, for this reason, they can be equipped with a window made of tempered glass.

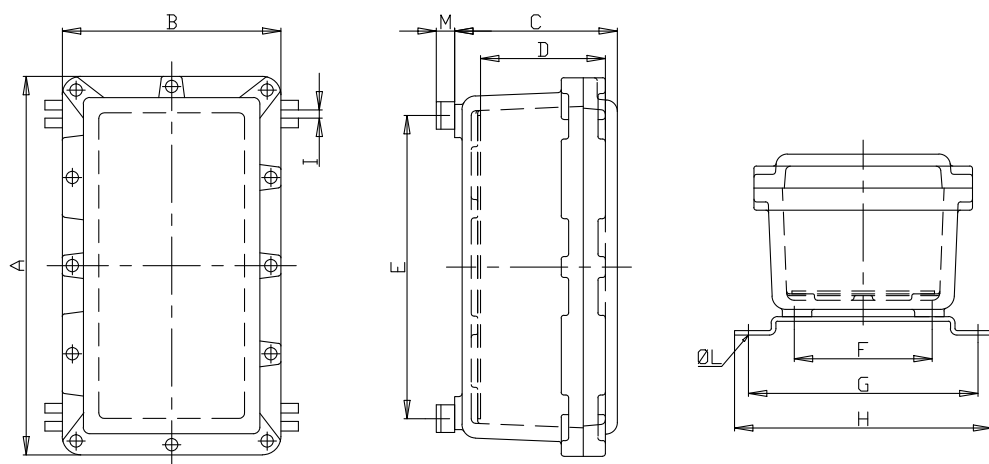
They can be equipped with following components:

- Push buttons and mechanical operators PL.. Series;
- Rotating switches PSRC Series;
- Signalling lamps PL.. Series;
- Potentiometers;
- Rotating handles SRC-1 or SRC-10;
- Measurement instruments;
- Electric and electronic equipment;

## TECHNICAL FEATURES

<b>Material</b>	Copper-free aluminium	
<b>IP rating</b>	IP66	
<b>Ambient temp. range</b>	-60 °C up to +60 °C (without window)/-50°C up to +60°C (with window)	
<b>Approvals</b>	<u>Full Conformity Certificate:</u> INERIS 00ATEX0021X IECEX INE 10.0015X EAC: RU C-IT.BH02.B.00588/20 KCs Available	<u>Component Certificate:</u> INERIS 21 ATEX 9004U IECEX INE 21.0006U EAC: RU C-IT.BH02.B.00588/20
<b>Marking</b>	<u>Full conformity certificate</u> II 2G Ex db IIB+H2 T(*) Gb or II 2G Ex db ia/ib IIB+H2 T(*) Gb and/or II 2D Ex tb IIIC T(*) Db *T6/T85°C, T5/T100°C, T4/T135°C, T3/T200°C	<u>Full Conformity Certificate:</u> II 2(1) G Ex db [ia Ga] IIB+H2 T6 Gb and/or II 2(1) D Ex tb [ia Da] IIIC T85°C D
	<u>Component Certificate</u> II 2G Ex db IIB+H2 Gb or II 2D Ex tb IIIC Db IP66	II 2(2) G Ex db [ib] IIB+H2 T6 Gb and/or II 2(2) D Ex tb [ib] IIIC T85°C Db
		II 2(1) G Ex db ia/ib [ia Ga] IIB+H2 T6 Gb and/or II 2(1) D Ex tb [ia Da] IIIC T85°C Db
		II 2(2) G Ex db ia/ib [ib] IIB+H2 T6 Gb and/or II 2(2) D Ex tb [ib] IIIC T85°C Db
<b>Surface treatment</b>	Painted by polyurethane painting: Blue RAL5014 painting cycle C4 suitable for On-Shore ·External environment: Industrial areas and coastal areas with moderate salinity ·Internal environment: Chemical plants, swimming pools, coastal plants and shipyards The Reference standard is UNI EN ISO 12944-1:2018 ·Upon request: other colour and painting cycle	
<b>Entries</b>	Metric pitch 1.5, ANSI B1.20.1 NPT	
<b>Included accessories</b>	Galvanized steel internal mounting plate, galvanized steel mounting brackets, AISI316L stainless steel external screws, hinges, door handle, acrylic laminate certificate label	
<b>Optional accessories</b>	AISI316L stainless steel mounting brackets, AISI316L stainless steel certificate label, Drain/breather valve, internal anticondensate painting.	

## Dimensions EJB copper- free aluminium



## EJB.. Series

CODE	TYPE	DIMENSIONS [MM]											WEIGHT [KG]	MOUNTING PLATES [MM]	MAX WINDOW DIMENSION [MM]	COVER ENTIERES M32
		A	B	C	D	FIXING			H	I	ØL	M				
						E	F	G								
B011014010043	EJB-2	298	238	174	135	205	140	250	280	9	M6	20	10,07	160X220	90X80	8
B011014010044	EJB-3	410	236	167	136	330	150	250	280	9	M8	20	13,40	155X330	180X100	10
B011014010045	EJB-3A	410	236	191	158	330	150	250	280	9	M8	20	13,50	155X330	-	6
B011014010046	EJB-4	415	300	165	132	300	190	300	320	9	M8	20	17,50	210X325	240X100	23
B011014010047	EJB-5	477	297	221	182	350	185	300	320	9	M8	20	20,50	200X385	270X100	18
B011014010048	EJB-6	478	404	226	186	355	280	390	420	9	M8	20	33,00	300X385	290X110	24
B011014010049	EJB-8	630	361	246	204	495	225	340	370	9	M8	20	36,06	250X520	290X110	36
B011014010050	EJB-9	532	465	252	204	410	340	440	470	12	M10	20	40,00	350X420	290X110	42
B011014010051	EJB-10	754	366	294	234	580	205	330	360	12	M10	20	48,50	240X620	150X150	42
B011014010052	EJB-11	592	501	257	204	445	360	480	510	12	M10	20	53,30	380X470	300X75	46
B011014010053	EJB-12	801	450	300	243	640	285	425	450	14	M12	20	73,00	325X675	150X150	55
B011014010025	EJB-13	830	604	298	236	630	405	580	620	14	M12	20	106,00	463X683	300X150	77
B011014010033	EJB-13A	830	604	404	322	630	405	580	620	14	M12	20	124,00	463X683	300X150	77
B011014010054	EJB-14	970	770	478	404	765	565	710	770	16	M14	25	245,00	795X595	-	-
					439									745X545		
B011012010026	EJB-14*	970	770	461	404	765	565	710	770	16	M14	25	310,00	795X595	300X150	56
					439									745X545		

\*Copper-free aluminium body and galvanized steel cover

Hinges are mounted on long left side of the enclosure. For a different configuration, ask to our Sales Dept.

For complete junction boxes, ask to our Sales Dept.

Note: For installations in either Zone 1 or volume up to 2dm<sup>3</sup>, barrier glands are required. Please refer to EN-60079-14.

# FLAMEPROOF ENCLOSURES

## EJB.. Series - Stainless steel AISI 316 L/Galvanized Carbon Steel



EJB.. series enclosures offers Ex d IIB or IIB+H2 mode of protection. The series may host electrical equipment which requires a direct reading from the outside, for this reason, they can be equipped with a window made of tempered glass. They can be equipped with following components:

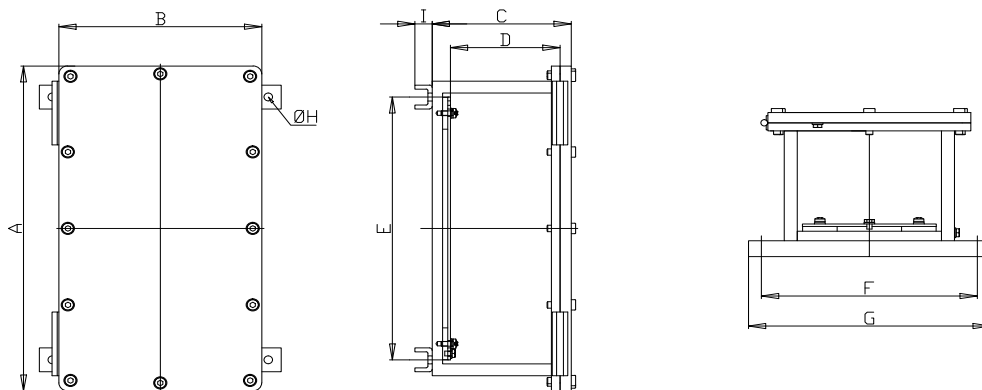
- Push buttons and mechanical operators PL.. Series;
- Rotating switches PSRC Series;
- Signalling lamps PL.. Series;
- Potentiometers;
- Rotating handles SRC-1 or SRC-10;
- Measurement instruments;
- Electric and electronic equipment;

## TECHNICAL FEATURES

<b>Material</b>	Stainless steel AISI 316 L or Galvanized carbon steel (upon request)	
<b>IP rating</b>	IP66	
<b>Ambient temp. range</b>	-60°C to +60°C (without window)/-50°C to +60°C (with window)	
<b>Approvals</b>	<u>Full Conformity Certificate:</u> INERIS 00ATEX0021X IECEx INE 10.0015X EAC: RU C-IT.BH02.B.00588/20	<u>Component Certificate:</u> INERIS 21 ATEX 9004U IECEx INE 21.0006U EAC: RU C-IT.BH02.B.00588/20
<b>Marking</b>	<u>Full conformity certificate</u> II 2 G Ex db IIB+H2 T(*) Gb or II 2 G Ex db ia/ib IIB+H2 T(*) Gb and/or II 2 D Ex tb IIIC T(*) Db *T6/T85°C, T5/T100°C, T4/T135°C, T3/T200°C  <u>Component Certificate</u> II 2G Ex db IIB+H2 Gb or I M2 Ex db I Mb and/or II 2D Ex tb IIIC Db IP66	<u>Full Conformity Certificate:</u> II 2(1) G Ex db [ia Ga] IIB T6 Gb or II 2(1) G Ex db [ia Ga] IIB+H2 T6 Gb and/or II 2(1) D Ex tb [ia Da] IIIC T85°C Db  II 2(2) G Ex db [ib] IIB T6 Gb or II 2(2) G Ex db [ib] IIB+H2 T6 Gb and/or II 2(2) D Ex tb [ib] IIIC T85°C Db  II 2(1) G Ex db ia/ib [ia Ga] IIB T6 Gb or II 2(1) G Ex db ia/ib [ia Ga] IIB+H2 T6 Gb and/or II 2(1) D Ex tb [ia Da] IIIC T85°C Db  II 2(2) G Ex db ia/ib [ib] IIB T6 Gb or II 2(2) G Ex db ia/ib [ib] IIB+H2 T6 Gb and/or II 2(2) D Ex tb [ib] IIIC T85°C Db  I M2 Ex db T(**) I Mb I M2(M1) Ex db [ia Ma] T(**) I Mb I M2(M2) Ex db [ib] T(**) I Mb **T150°C or T450°C
<b>Surface treatment</b>	Stainless steel enclosures: unpainted Painted by polyurethane painting: Blue RAL5014 painting cycle C4 suitable for On-Shore External environment: Industrial areas and coastal areas with moderate salinity Internal environment: Chemical plants, swimming pools, coastal plants and shipyards The Reference standard is UNI EN ISO 12944-1:2018 Upon request: other colour and painting cycle	
<b>Entries</b>	Metric pitch 1.5, ANSI B1.20.1 NPT	
<b>Included accessories</b>	Galvanized steel/ AISI316L internal mounting plate, Galvanized steel/ AISI316L mounting brackets, AISI316L stainless steel external screws; hinges; door handle; acrylic laminate certificate label.	
<b>Optional accessories</b>	AISI316L stainless steel certificate label; drain/breather valve; internal anticondensate painting.	

## Dimensions EJB stainless steel

Enclosures not listed in below table can be customized within the volume range of EJB-2 to EJB-14.



## EJB.. Series

CODE	TYPE	DIMENSIONS [MM]									WEIGHT [KG]	MOUNTING PLATES [MM]	MAX WINDOW DIMENSION [MM]	COVER ENTIRES M32
		A	B	C	D	FIXING		G	ØH	I				
						E	F							
B011013010002	EJB-2	296	234	158	132	205	250	280	10	20	35,00	160X220	90X80	8
B011013010004	EJB-3	408	235	161	130	330	250	280	10	20	45,00	155X330	180X100	10
B011013010006	EJB-4	414	298	160	126	300	305	340	12	20	55,00	210X325	240X100	6
B011013010008	EJB-5	472	289	210	176	350	295	330	12	20	70,00	200X385	270X100	23
B011013010010	EJB-6	489	414	224	190	355	410	450	14	25	93,00	300X380	290X110	18
B011013010012	EJB-8	617	348	237	198	495	360	400	14	25	114,00	250X520	290X110	24
B011013010014	EJB-9	516	453	237	198	400	460	500	14	25	118,00	350X420	290X110	36
B011013010025	EJB-10	726	344	267	228	580	340	380	14	25	125,00	560X178	150X150	42
B011013010016	EJB-11	585	496	236	215	445	490	530	14	25	139,00	380X470	300X75	42
B011013010018	EJB-12	809	459	299	256	640	440	480	16	30	181,00	325X675	150X150	46
B011013010020	EJB-13	825	602	269	226	667	605	650	18	30	235,00	463X683	300X150	55
B011013010021	EJB-13A	825	602	355	307	667	605	650	18	30	262,00	463X683	300X150	77
B011013010026	EJB-13 XL	940	650	404	351	775	650	690	18	30	300,00	793X509	300X150	77
B011014010054	EJB-14	970	770	436	373	790	760	800	20	30	530,00	795X595	300X150	56

Hinges are mounted on long left side of the enclosure. For a different configuration, ask to our Sales Dept.  
For complete junction boxes, ask to our Sales Dept.

# FLAMEPROOF ENCLOSURES

## GUB.. Series - Copper free aluminium or Stainless steel AISI 316 L



GUB.. series enclosures offers Ex d IIC mode of protection, can be equipped with following components:

- Push buttons and mechanical operators PL.. Series;
- Rotating switches PSRC Series;
- Signalling lamps PL.. Series;
- Potentiometers;
- Rotating handles SRC-1 or SRC-10;
- Measurement instruments;
- Electric and electronic equipment;

### MARKING

#### Full conformity certificate

II 2G Ex db IIC T6/T5/T4 or  
II 2G Ex db ia/ib IIC T6/T5/T4 Gb and/or  
II 2D Ex tb IIIC T85°C/ T100°C/T135°C Db  
II 2D Ex tb ia/ib IIIC T85°C/ T100°C/T135°C Db

#### Component Certificate

II 2G Ex db IIC Gb and/or  
II 2D Ex tb IIIC Db IP66 or  
I M2 Ex db I Mb

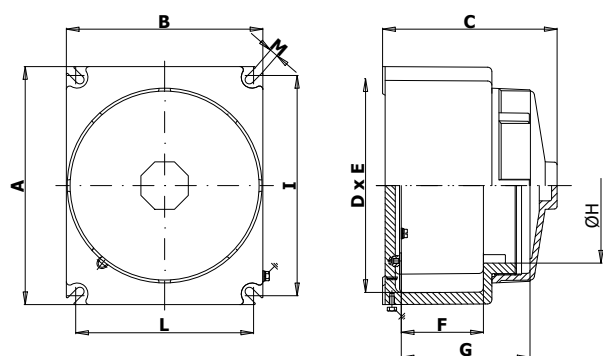
## TECHNICAL FEATURES

<b>Material</b>	Copper-free aluminium Stainless steel AISI 316 L (different sizes than the standard indicated)	
<b>IP rating</b>	IP66	
<b>Ambient temperature range</b>	-60°C to +80°C	
<b>Approvals</b>	INERIS 22 ATEX 0008X IECEX INE 22.0012X EAC: RU C-IT.BH02.B.00588/20 ECAS available	INERIS 22 ATEX 9002U IECEX INE 22.0010U EAC: RU C-IT.BH02.B.00588/20
<b>Other Marking</b>	II 2(1) G Ex db [ia Ga] IIC T6 Gb and/or II 2(2) G Ex db [ib] IIC T6 Gb and/or II 2(1) G Ex db ia/ib [ia Ga] IIC T6 Gb and/or II 2(2) G Ex db ia/ib [ib] IIC T6 Gb and/or II 2(1) D Ex tb [ia Da] IIIC T85°C Db II 2(2) D Ex tb [ib] IIIC T85°C Db II 2(1) D Ex tb ia/ib [ia Da] IIIC T85°C Db II 2(2) D Ex tb ia/ib [ib] IIIC T85°C Db	<u>Only for AISI 316L</u> I M2 Ex db I Mb I M2 Ex db ia/ib I Mb I M2(M1) Ex db [ia Ma] I Mb I M2(M2) Ex db [ib] I Mb I M2(M1) Ex db ia/ib [ia Ma] I Mb I M2(M2) Ex db ia/ib [ib] I Mb
<b>Surface treatment</b>	Painted by polyurethane painting: Blue RAL5014 ( other colours on request) painting cycle C4 suitable for On-Shore External environment: Industrial areas and coastal areas with moderate salinity Internal environment: Chemical plants, swimming pools, coastal plants and shipyards The Reference standard is UNI EN ISO 12944-1:2018	
<b>Entries</b>	Metric pitch 1.5, ANSI B1.20.1 NPT	
<b>Standard certificate label</b>	Made by self adhesive UV and corrosion resistant polyester, approved by certified Laboratory.	
<b>Included accessories</b>	Internal mounting plate, AISI316L stainless steel external screws	
<b>Optional accessories</b>	Drain/breather valve Internal anticondensate painting Laminated plastic/Stainless steel certificate label	

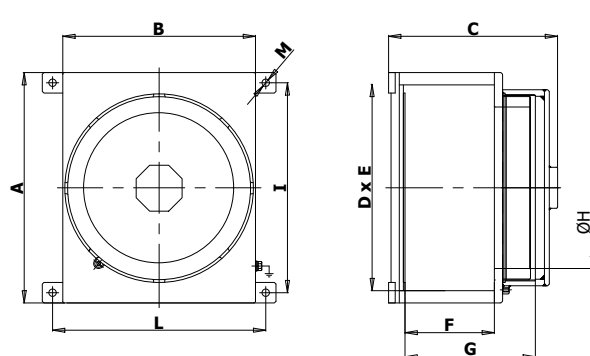


## Dimensions GUB.

### Copper-free aluminium



### Stainless steel



### GUB Series - Copper-free aluminium

CODE	TYPE	DIMENSIONS [mm]											WEIGHT [Kg]	MOUNTING PLATES Ø [MM]
		A	B	C	D	E	F	G	ØH	FIXING		M		
										I	L			
B011024010029	GUB-01	169	169	152	139	139	64	115	126	150	150	8	3.60	120
B011024010030	GUB-02	190	190	164	160	160	65	125	144	170	170	8	4.70	140
B011024010031	GUB-03	210	210	179	180	180	80	139	167	179	179	8	6.00	160
B011024010032	GUB-04	281	232	206	202	291	99	160	183	260	210	10	8.90	174
B011024010033	GUB-05	298	257	222	227	268	108	178	206	275	235	8	11.90	200
B011024010034	GUB-06	329	293	248	259	295	141	211	242	270	305	10,5	15.80	235
B011024010035	GUB-07	545	545	376	490	490	195	229	457	475	475	14,5	81.5	440

### GUB Series - Stainless steel

CODE	TYPE	DIMENSIONS [mm]											WEIGHT [Kg]	MOUNTING PLATES Ø [MM]
		A	B	C	D	E	F	G	ØH	FIXING		M		
										I	L			
B011023010002	GUB-01	170	170	135	154	154	68	112	124,5	145	195	9	9.5	120
B011023010004	GUB-02	191	191	149	70	163	163	120	144	166	216	9	12.5	140
B011023010006	GUB-03	210	210	157	190	190	80	129	173	185	235	9	16.5	160
B011023010008	GUB-04	232	281	183	212	262	101	155	18	256	257	9	23.5	174
B011023010010	GUB-05	258	298	196	238	278	110	166	216	273	283	9	30	200
B011023010012	GUB-06	295	330	240	310	275	151	210	257	305	320	9	40.5	235
B011023010013	GUB-07	545	545	341	515	515	205	290	443	595	495	16	169	440

For complete junction boxes, ask to the Sales Dept.

Note: For installations in either Zone 1 or in the presence of Group IIC gases, barrier glands are required. Please refer to EN-60079-14.

# FLAMEPROOF ENCLOSURES

## GUB../QL Series - Copper-free aluminium or Stainless Steel AISI 316 L



GUB.. series enclosures offers Ex d IIC mode of protection and can be equipped with following components:

- Push buttons and mechanical operators PL.. Series;
- Rotating switches PSRC Series;
- Signalling lamps PL.. Series;
- Potentiometers;
- Rotating handles SRC-1 or SRC-10;
- Measurement instruments;
- Electric and electronic equipment;

They can be used in different applications such as push button stations, instrument housing, lighting distribution panels, power distribution panels, heat tracing panels, motor protection, etc.

### MARKING

#### Full conformity certificate

II 2G Ex db IIC T6/T5/T4 or  
II 2G Ex db ia/ib IIC T6/T5/T4 Gb and/or  
II 2D Ex tb IIIC T85°C/ T100°C/T135°C Db  
II 2D Ex tb ia/ib IIIC T85°C/ T100°C/T135°C Db

#### Component Certificate

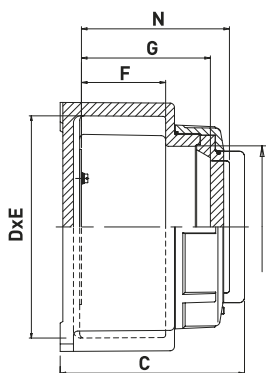
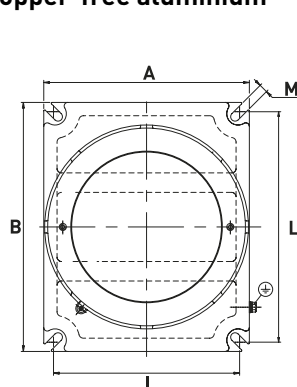
II 2G Ex db IIC Gb and/or  
II 2D Ex tb IIIC Db IP66 or  
I M2 Ex db I Mb

## TECHNICAL FEATURES

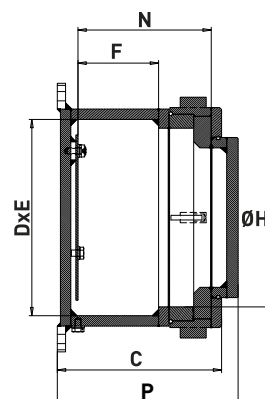
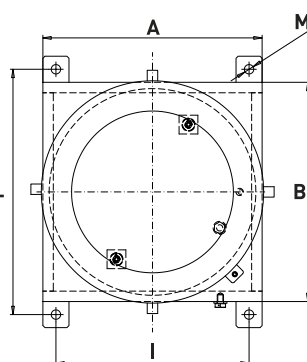
<b>Material</b>	Copper-free aluminium Stainless steel AISI 316 L (different sizes than the standard indicated)	
<b>IP rating</b>	IP66	
<b>Ambient temperature range</b>	-60°C to +60°C	
<b>Approvals</b>	<u>Full conformity certificate:</u> INERIS 22 ATEX 0008X IECEx INE 22.0012X EAC: RU C-IT.BH02.B.00588/20 ECAS available	<u>Component certificate:</u> INERIS 22 ATEX 9002U IECEx INE 22.0010U EAC: RU C-IT.BH02.B.00588/20
<b>Other marking</b>	II 2(1) G Ex db [ia Ga] IIC T6 Gb and/or II 2(2) G Ex db [ib] IIC T6 Gb and/or II 2(1) G Ex db ia/ib [ia Ga] IIC T6 Gb and/or II 2(2) G Ex db ia/ib [ib] IIC T6 Gb and/or II 2(1) D Ex tb [ia Da] IIIC T85°C Db II 2(2) D Ex tb [ib] IIIC T85°C Db II 2(1) D Ex tb ia/ib [ia Da] IIIC T85°C Db II 2(2) D Ex tb ia/ib [ib] IIIC T85°C Db	<u>Only for AISI 316L</u> I M2 Ex db I Mb I M2 Ex db ia/ib I Mb I M2(M1) Ex db [ia Ma] I Mb I M2(M2) Ex db [ib] I Mb I M2(M1) Ex db ia/ib [ia Ma] I Mb I M2(M2) Ex db ia/ib [ib] I Mb
<b>Surface treatment</b>	Painted by polyurethane painting: Blue RAL5014 ( other colours on request) painting cycle C4 suitable for On-Shore External environment: Industrial areas and coastal areas with moderate salinity Internal environment: Chemical plants, swimming pools, coastal plants and shipyards The Reference standard is UNI EN ISO 12944-1:2018	
<b>Entries</b>	Metric pitch 1.5, ANSI B1.20.1 NPT	
<b>Standard certificate label</b>	Made by self adhesive UV and corrosion resistant polyester, approved by certified Laboratory.	
<b>Optional accessories</b>	Drain/breather valve Internal anticondensate painting Laminated plastic/Stainless steel certificate label	

## Dimensions GUB../QL

### Copper-free aluminium



### Stainless steel



### GUB../QL Series - Copper-free aluminium

CODE	TYPE	DIMENSIONS [mm]												WEIGHT [Kg]	MOUNTING PLATES Ø [MM]	COVER ENTRIES
		A	B	C	D	E	F	G	ØH	FIXING		ØM	N			
										I	L					
B012024010014	GUB-QL 02	190	190	179	160	160	64	114	144	170	170	8	143	4,7	140	3
B012024010015	GUB-QL 03	210	210	174	180	180	78	129	167	179	179	8	140	6	160	4
B012024010016	GUB-QL 06	330	295	236	259	295	140	195,5	242	270	305	10,5	194	15,8	235	10
B012024010019	GUB-QL 07	545	545	363	490	490	197	285	457	475	475	14,5	293	81,5	440	35

For complete junction boxes, ask to the Sales Dept.

### GUB../QL Series - Stainless steel

CODE	TYPE	DIMENSIONS [mm]												WEIGHT [Kg]	MOUNTING PLATES Ø [MM]	COVER ENTRIES
		A	B	C	D	E	F	G	ØH	FIXING		ØM	N			
										I	L					
B012023010002	GUB-QL 03	210	210	175	190	190	80	129	173	185	235	9	144	20	160	4
B012023010001	GUB-QL 06	295	330	236	310	275	151	210	257	305	320	9	194	43	235	10
B012023010003	GUB-QL 07	545	545	363	515	515	205	290	443	595	495	16	293	169	440	35

For complete junction boxes, ask to the Sales Dept.

# FLAMEPROOF ENCLOSURES

## GUB/EMH.. Series with window - Copper-free aluminium or Stainless Steel AISI 316 L



GUB/EMH.. series enclosures offers Ex dB IIC mode of protection and is equipped with window made of tempered glass for electrical equipment which requires a direct reading from the outside. And with following components:

- Measurement instruments;
- Electric and electronic equipment;

They can be used for instrument housing.

### MARKING

#### Full conformity certificate

II 2G Ex db IIC T6/T5/T4 or  
II 2G Ex db ia/ib IIC T6/T5/T4 Gb and/or  
II 2D Ex tb IIIC T85°C/ T100°C/T135°C Db  
II 2D Ex tb ia/ib IIIC T85°C/ T100°C/T135°C Db

#### Component Certificate

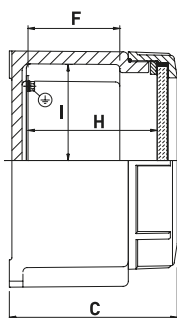
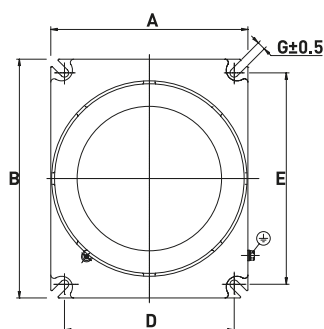
II 2G Ex db IIC Gb and/or  
II 2D Ex tb IIIC Db IP66 or  
I M2 Ex db I Mb

## TECHNICAL FEATURES

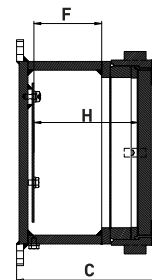
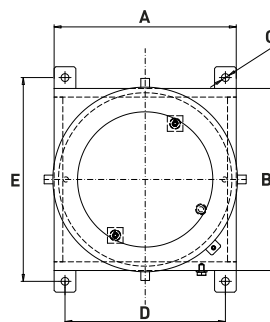
<b>Material</b>	Copper-free aluminium Stainless steel AISI 316 L (different sizes than the standard indicated)	
<b>IP rating</b>	IP66	
<b>Ambient temperature range</b>	-55°C to +80°C (ATEX) -55°C to +80°C (IECEX)	
<b>Approvals</b>	<u>Full conformity certificate:</u> INERIS 22 ATEX 0008X IECEX INE 22.0012X EAC: RU C-IT.BH02.B.00588/20 ECAS available KC: 19-KA4B0-0385X;19-KA4B0-0386X	<u>Component certificate:</u> INERIS 22 ATEX 9002U IECEX INE 22.0010U EAC: RU C-IT.BH02.B.00588/20
<b>Other marking</b>	II 2(1) G Ex db [ia Ga] IIC T6 Gb and/or II 2(2) G Ex db [ib] IIC T6 Gb and/or II 2(1) G Ex db ia/ib [ia Ga] IIC T6 Gb and/or II 2(2) G Ex db ia/ib [ib] IIC T6 Gb and/or II 2(1) D Ex tb [ia Da] IIIC T85°C Db II 2(2) D Ex tb [ib] IIIC T85°C Db II 2(1) D Ex tb ia/ib [ia Da] IIIC T85°C Db II 2(2) D Ex tb ia/ib [ib] IIIC T85°C Db	<u>Only for AISI316L</u> I M2 Ex db I Mb I M2 Ex db ia/ib I Mb I M2(M1) Ex db [ia Ma] I Mb I M2(M2) Ex db [ib] I Mb I M2(M1) Ex db ia/ib [ia Ma] I Mb I M2(M2) Ex db ia/ib [ib] I Mb
<b>Surface treatment</b>	Painted by polyurethane painting: Blue RAL5014 ( other colours on request) painting cycle C4 suitable for On-Shore; External environment: Industrial areas and coastal areas with moderate salinity Internal environment: Chemical plants, swimming pools, coastal plants and shipyards The Reference standard is UNI EN ISO 12944-1:2018	
<b>Entries</b>	Metric pitch 1.5, ANSI B1.20.1 NPT	
<b>Standard certificate label</b>	Made by self adhesive UV and corrosion resistant polyester, approved by certified Laboratory	
<b>Optional accessories</b>	Drain/breather valve Internal anticondensate painting Laminated plastic/Stainless steel certificate label	

## Dimensions GUB/EMH

### Copper-free aluminium



### Stainless steel



### GUB/EMH.. Series - Copper-free aluminium

CODE	TYPE	DIMENSIONS [mm]								WINDOW Ø [MM]	WEIGHT [KG]	MOUNTING PLATES Ø [MM]
		A	B	C	FIXING		F	ØG	H			
					D	E						
B016084010003	EMH-160	210	210	160	180	180	78	8	115	155	6.00	160
B016084010005	EMH-175	281	232	185	202	251	97	8	141	170	8.90	174
B016084010006	EMH-200	298	257	200	227	268	106	8	150	195	11.90	200
B016084010009	EMH-230	329	293	236	259	295	140	10	189	230	15.80	235

For complete junction boxes, ask to the Sales Dept.

### GUB/EMH.. Series - Stainless steel

CODE	TYPE	DIMENSIONS [mm]								WINDOW Ø [MM]	WEIGHT [KG]	MOUNTING PLATES Ø [MM]
		A	B	C	FIXING		F	ØG	H			
					D	E						
B016083010002	EMH-160	210	210	166	185	235	80	9	115	156	17.00	160



# FLAMEPROOF ENCLOSURES

## EJB/ GUB.. Series

### SPARE & ACCESSORIES

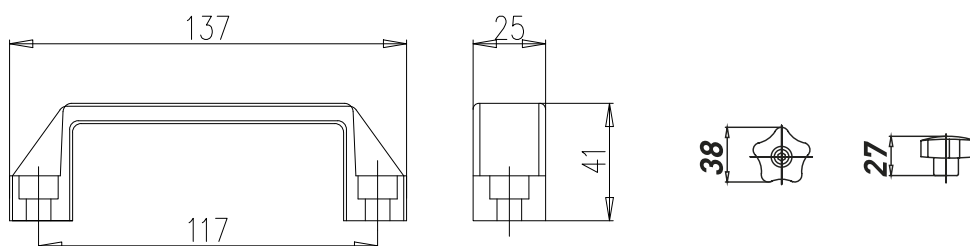
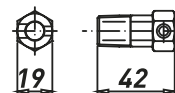
#### Wall mounting brackets

CODE		TYPE
GALVANIZED STEEL	AISI316L	
B080200100029	B080200100035	MOUNTING BRACKETS FOR EJB-2/3/3A + SCREWS (STF-2/3/3A)
B080200100011	B080200100033	MOUNTING BRACKETS FOR EJB-4/5 + SCREWS (STF-4/5)
B080200100030	B080200100036	MOUNTING BRACKETS FOR EJB-6 + SCREWS (STF-6)
B080200100032	B080200100037	MOUNTING BRACKETS FOR EJB-8 + SCREWS (STF-8)
B080200100012	B080200100031	MOUNTING BRACKETS FOR EJB-9 + SCREWS (STF-9)
B080200100013	B080200100038	MOUNTING BRACKETS FOR EJB-10 + SCREWS (STF-10)
B080200100014	B080200100039	MOUNTING BRACKETS FOR EJB-11 + SCREWS (STF-11)
B080200100015	B080200100040	MOUNTING BRACKETS FOR EJB-12 + SCREWS (STF-12)
B080200100016	B080200100034	MOUNTING BRACKETS FOR EJB-13/13A + SCREWS (STF-13)

\*AISI316L mounting brackets upon request

#### Drain/Breather valve

CODE	TYPE
B080909000001	ECR 1 VALVE

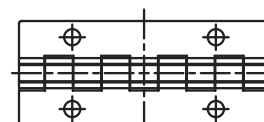


#### Door handles

CODE	TYPE
B0A0100048000	KNOB FOR EJB (UP TO 6) + SCREWS
B0A0100049000	HANDLE FOR EJB (FROM 8 TO 14) + SCREWS

#### Hinges (only for aluminium EJB Series)

CODE	TYPE
B080300100003	AISI 316 L HINGES 56X38MM + SCREWS
B080300100001	AISI 316 L HINGES 60X45MM + SCREWS
B080300100002	AISI 316 L HINGES 108X45MM + SCREWS



#### Selection table for hinges

HINGES L=56X38MM	HINGES L=60X45MM	HINGES L=108X45MM
EJB-2	EJB-6	EJB-12
EJB-3	EJB-8	EJB-13
EJB-3A	EJB-9	EJB-13A
EJB-4	EJB-10	EJB-13 XL
EJB-5	EJB-11	EJB-14





# COMPONENTS & OPERATORS FLAMEPROOF - PL../PSRC.. SERIES

Ex d components are available in a wide range of operators/pilot lights PL.. Series and selectors PSRC.. Series allowing numerous combinations with our CP../CPS.. EFDCN/EFSRC series, EJB, GUB series.

PL.. Series includes standard push buttons, emergency push buttons, key selector switches, pilot lights; mechanical operators allow the assembling of a maximum of four contacts.

PSRC.. Series includes on-load switches, change over switches, step switches and selector customized upon request on the base of customer specification.

## SPARE & ACCESSORIES

<b>IP rating</b>	IP66/IP67	
<b>Ambient temperature range</b>	-50°C to +60°C	
<b>Approvals</b>	Component Certificate IMQ 09ATEX0019U	Full Comformity Certificate included in CP../CPS.. EFDCN/EFSRC series, EJB, GUB series
<b>Marking</b>	II 2 GD Ex d IIC Ex tD A21 IP66/IP67	
<b>Barrel thread</b>	Metric M32x1,5	
<b>Option</b>	Version with AISI 316 L external hexagonal ring	



### PL.. Series momentary push buttons

CODE SPARE PART	TYPE	COLOUR
B090601000014	PLA-10 PUSH BUTTON	BLACK
B090601000015	PLA-20 PUSH BUTTON	RED
B090601000016	PLA-30 PUSH BUTTON	GREEN
B090601000017	PLA-40 PUSH BUTTON	BLUE
B090601000018	PLA-50 PUSH BUTTON	YELLOW
B090601000019	PLA-60 PUSH BUTTON	WHITE

Contacts are not included



### PL.. Series lockable momentary push buttons

CODE SPARE PART	TYPE	COLOUR
B090601000001	PLB-10 PIN-LOCKABLE PUSH BUTTON	BLACK
B090601000002	PLB-20 PIN-LOCKABLE PUSH BUTTON	RED
B090601000003	PLB-30 PIN-LOCKABLE PUSH BUTTON	GREEN

Contacts are not included



### PL.. Series Mushroom push buttons

CODE SPARE PART	TYPE	COLOUR
B090601000004	PLC-S NC/NO MUSHROOM PUSH BUTTON TWIST TO RELEASE	RED
B090601000005	PLC-S NO/NO MUSHROOM PUSH BUTTON TWIST TO RELEASE	RED
B090601000006	PLC-S NC/NC MUSHROOM PUSH BUTTON TWIST TO RELEASE	RED
B090601000007	PLC-S-F NC/NO MUSHROOM PUSH BUTTON WITH KEY	RED
B090601000032	PLC-S-F NC/NC MUSHROOM PUSH BUTTON WITH KEY	RED
B090601000008	PLC-S-F NO/NO MUSHROOM PUSH BUTTON WITH KEY	RED
B090601000009	PLC-I NC/NO MOMENTARY MUSHROOM PUSH BUTTON	RED

Contacts are not included

### PL.. Series Key selector switches



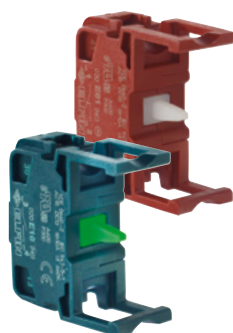
CODE SPARE PART	TYPE	KEY WITHDRAWAL
B090603000025	PLF-10 NO/NC - TWO POSITION KEY SELECTOR SWITCH	0
B090603000027	PLF-10 NO/NO - TWO POSITION KEY SELECTOR SWITCH	0
B090603000023	PLF-10 NC/NC - TWO POSITION KEY SELECTOR SWITCH	0
B090603000026	PLF-10 NO/NC - TWO POSITION KEY SELECTOR SWITCH	0-1
B090603000028	PLF-10 NO/NO - TWO POSITION KEY SELECTOR SWITCH	0-1
B090603000024	PLF-10 NC/NC - TWO POSITION KEY SELECTOR SWITCH	0-1

Contacts are not included

### PL.. Series mechanical operators



CODE SPARE PART	TYPE	COLOUR
B090601000011	PLC-RIP10 - RESTORE PB M32X1,5	BLACK
B090601000012	PLC-RIP20 - RESTORE PB M32X1,5	RED
B090601000022	PLC-RIP30 - RESTORE PB M32X1,5	GREEN
B090601000013	PLC-RIP40 - RESTORE PB M32X1,5	BLUE
B090601000010	PLC-R - RESET PB M12X1,75	-



### PL.. Series contacts

CODE SPARE PART	TYPE
B090601030001	NC CONTACT - PL.. SERIES
B090601030002	NO CONTACT - PL.. SERIES

**Rated insulated voltage:** 660 V AC/DC

**Rated thermal current (ith):** 6 A

**Rated output power:**

CAT AC15											CAT DC13						
Tension Ue	V	24	48	60	110	220	380	400	500	600	Tension Ue	V	24	48	60	110	220
Current Ie	A	10	8	6	6	3	2	1,5	1,5	1,2	Current Ie	A	2,5	1,4	1	0,6	0,3



### SRC..Rotary actuator

CODE SPARE PART	TYPE
B090616000020	SRC-1 - EXTERNAL ROTARY HANDLE
B090616000021	SRC-1 - EXTERNAL ROTARY HANDLE COMPLETE WITH INTERNAL MECHANICAL DEVICE FOR IC60 SERIES
B090616000003	SRC-10 - EXTERNAL ROTARY HANDLE WITH ALUMINIUM HANDLE



### PL.. Series Pilot lights

CODE SPARE PART	TYPE	COLOUR
B090602000021	PLD-10 PILOT LIGHT	WHITE
B090602000030	PLD-20 PILOT LIGHT	RED
B090602000026	PLD-30 PILOT LIGHT	GREEN
B090602000027	PLD-40 PILOT LIGHT	YELLOW
B090602000028	PLD-50 PILOT LIGHT	BLUE

Suitable for LED lamp 3W max. or incandescent lamp 5W max., Vmax.DC 220 V, Vmax.AC 380 V






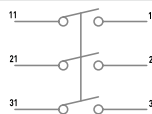
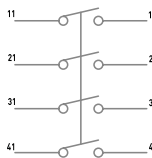

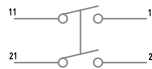
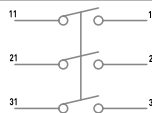
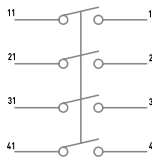
### PL.. series Lamps

CODE	TYPE	VOLTAGE	COLOUR
B090602000001	LED LAMP 12 V-R	12 V	RED
B090602000002	LED LAMP 12 V-V		GREEN
B090602000003	LED LAMP 12 V-G		YELLOW
B090602000004	LED LAMP 12 V-B		WHITE
B090602000005	LED LAMP 24 V-R	24 V	RED
B090602000006	LED LAMP 24 V-V		GREEN
B090602000007	LED LAMP 24 V-G		YELLOW
B090602000008	LED LAMP 24 V-B		WHITE
B090602000024	LED LAMP 24 V-BL		BLUE
B090602000019	LED LAMP 48 V-R	48 V	RED
B090602000018	LED LAMP 48 V-V		GREEN
B090602000020	LED LAMP 48 V-G		YELLOW
B090602000017	LED LAMP 48 V-B		WHITE
B090602000009	LED LAMP 110 V-R	110 V	RED
B090602000010	LED LAMP 110 V-V		GREEN
B090602000011	LED LAMP 110 V-G		YELLOW
B090602000012	LED LAMP 110 V-B		WHITE
B090602000022	LED LAMP 110 V-BL		BLUE
B090602000013	LED LAMP 220 V-R	220 V	RED
B090602000014	LED LAMP 220 V-V		GREEN
B090602000015	LED LAMP 220 V-G		YELLOW
B090602000016	LED LAMP 220 V-B		WHITE
B090602000025	LED LAMP 220 V-BL		BLUE
B090602000038	LED LAMP 400 V-R	400 V	RED
B090100S00762	LED LAMP 400 V-V		GREEN
B090602000039	LED LAMP 400 V-G		YELLOW
B090100S00836	LED LAMP 400 V-B		WHITE
B090602000040	LED LAMP 400 V-BL		BLUE





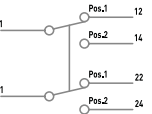
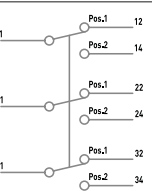


### PSRC.. Series On-load switches



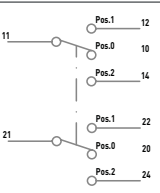

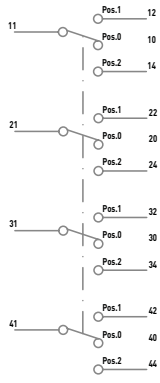
CODE SPARE PART	TYPE	N° OF POLES	AMPERE A	WEIGHT (Kg)	DIAGRAM 
B090603000013	PSRC-120 - ON LOAD SWITCH	1	20	0,13	
B090603000015	PSRC-220 - ON LOAD SWITCH	2	20	0,16	
B090603000017	PSRC-320 - ON LOAD SWITCH	3	20	0,20	
B090603000020	PSRC-420 - ON LOAD SWITCH	4	20	0,20	
B090603000014	PSRC-132 - ON LOAD SWITCH	1	32	0,20	
B090603000016	PSRC-232 - ON LOAD SWITCH	2	32	0,20	
B090603000018	PSRC-332 - ON LOAD SWITCH	3	32	0,25	
B090603000012	PSRC-432 - ON LOAD SWITCH	4	32	0,25	

\*63A Upon request

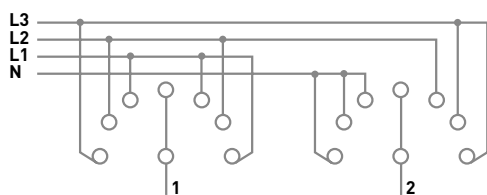
### PSRC-D.. Series Change-over switch

CODE SPARE PART	TYPE	N° OF POLES	AMPERE A	WEIGHT (Kg)	DIAGRAM 
B090603000009	PSRC-D 120 - CHANGE OVER SWITCH	1	20	0,13	
B090603000010	PSRC-D 220 - CHANGE OVER SWITCH	2	20	0,20	
B090603000029	PSRC-D 320 - CHANGE OVER SWITCH	3	20	0,25	

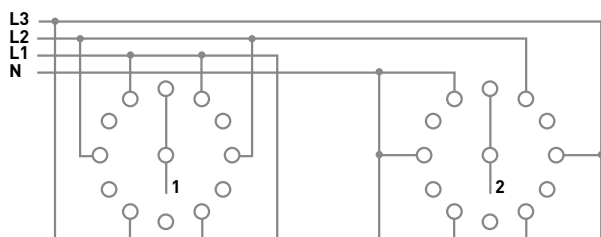
## PSRC.. Series Step switch

CODE SPARE PART	TYPE	N° OF POLES	AMPERE A	WEIGHT (Kg)	DIAGRAM 
B090603000021	PSRC-C 120 - STEP SWITCH	1	20	0,13	
B090603000022	PSRC-C 220 - STEP SWITCH	2	20	0,20	
B090603000007	PSRC-C 320 - STEP SWITCH	3	20	0,25	
B090603000008	PSRC-C 420 - STEP SWITCH	4	20	0,30	
B090603000003	PSRC-C VOLTMETER SELECTOR SWITCH 7 POS.	-	-		SEE BELOW
B090603000004	PSRC-C VOLTMETER SELECTOR SWITCH 12 POS.	-	-		SEE BELOW
B090100S00760	PSRC-C AMMETER SELECTOR SWITCH 4 POS.	-	-		SEE BELOW

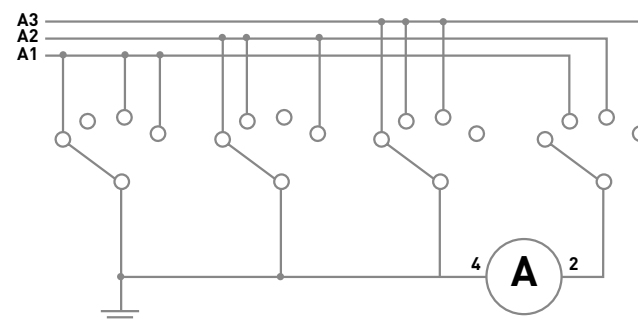
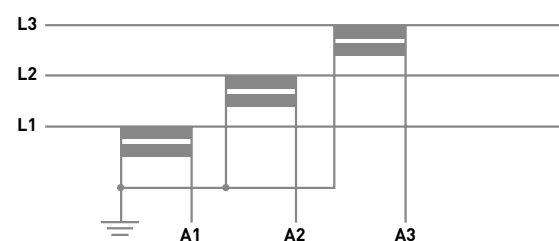
### Voltmeter selector switch 7 pos.



### Voltmeter selector switch 12 pos.



### Ammeter selector switch 4 pos.



Special versions can be manufactured upon request. For further information contact our Sales Office.



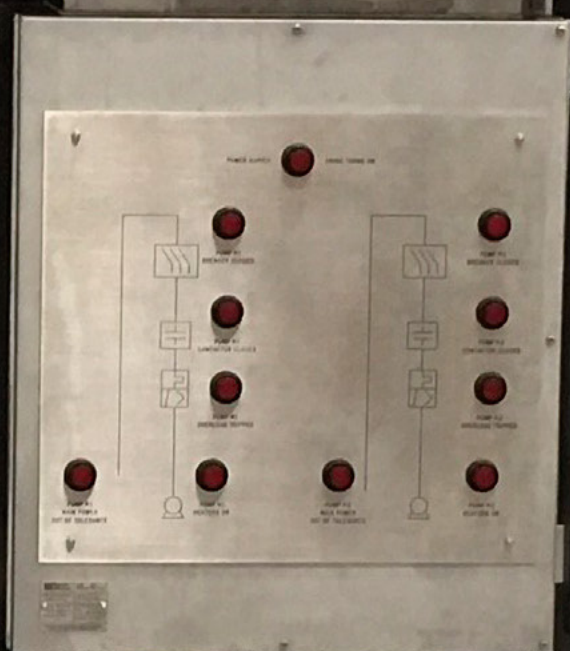
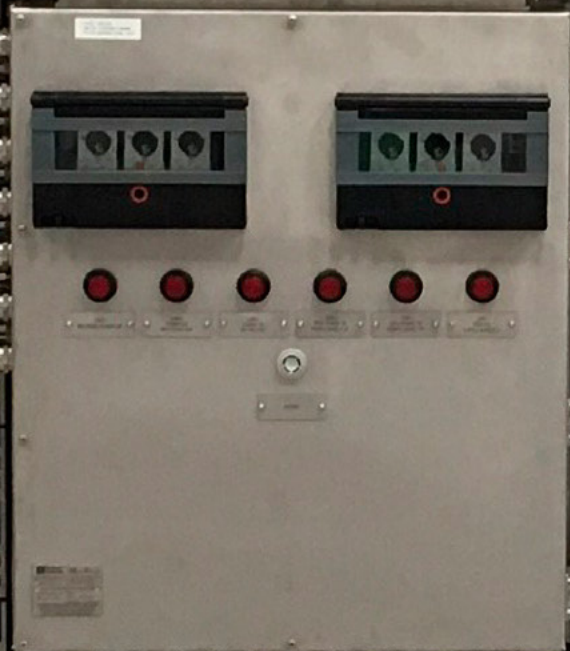
LOCAL CONTROL PANEL  
513-LCP-110





IRJ CONTROL BOX

CHOKE HPU MCC



A1 18.280 LBS

# CUSTOMIZED ENGINEERED SOLUTIONS

Panelboard System

PAG  
120

Junction Boxes and Panelboards

121

Pressurized Cabinets

122

Earthing System

124



# PANELBOARD SYSTEM

## EJSB Series - Local control stations and panelboards



The panelboards system has the function of junction box, local control station and control panel. The local control stations and panelboards EJSB series is an assembly of one 'Ex eb' and one 'Ex db' protected apparatus joined by mean of an intermediate device, which form part of the Ex-eb enclosure. The 'Ex eb' and 'Ex db' junction boxes could be also joined directly without the intermediate enclosure device, maintaining the same interface properties. The 'Ex eb' protected junction box is completely defined by the SB-\* series. The 'Ex eb' enclosure is made in stainless steel, the cover and lateral removable plates are fixed to the body with screws and rubber gasket interposition ensuring the IP66 protection. The 'Ex db' protected junction box is completely defined by the EJB\* series and already covered by certificate. The 'Ex db' enclosure is made in light alloy, stainless steel or carbon steel, the cover and the enclosure body are coupled means of an explosion proof joint suitable for gas group IIB+H2 without rubber gasket interposition. The 'Ex eb' and 'Ex db' enclosures are coupled together defining the panelboards system, by means of an intermediate device made in stainless steel material and fixed on both enclosures' wall by means of a gasket.

### MARKING

II 2G Ex db eb (\*\*) IIB or IIB +H2 T6 ... T4 Gb, or  
II 2(1)G Ex db [ia Ga or ib] eb (\*\*) IIB or IIB +H2 T6 ... T4 Gb,  
or II 2D Ex tb IIIC T85°C ... T135°C Db, or  
II 2(1)G Ex tb [ia Da or ib] IIIC T85°C ... T135°C Db

## TECHNICAL FEATURES

### Material

#### SB

Stainless steel AISI 316L

#### EJB

Light alloy  
Stainless steel AISI 316L or  
Galvanized carbon steel

### IP rating

IP65, IP66

### Ambient temperature range

From -50°C to +60°C

### Approvals

FIDI 21 ATEX 0079X  
IECEX EXA 17.0012X

#### SB

Full conformity Certificate:

FIDI 21 ATEX 0090X  
IECEX FIDI 21.0015X  
EAC: RU C-IT.BH02.B.00593/20

Component Certificate:

FIDI 21 ATEX 0075U  
IECEX FIDI 21.0012U  
EAC: RU C-IT.BH02.B.00593/20 EAC: RU C-IT

#### EJB

Full Conformity Certificate

ATEX: INERIS 00ATEX0021X IECEX: INE  
10.0015X  
EAC: RU C-IT.BH02.B.00588/20

### Maximum rated voltage

1000 V

### Maximum rated current

350 A

# JUNCTION BOXES AND PANELBOARDS

## Q-GENESIS Series



Q-GENESIS series is a junction boxes and panelboards, that use certified SB enclosures of various sizes.

Enclosures may be equipped with certified Ex equipment or Ex component and Ex terminal. Certified Ex equipment or Ex component and Ex terminal must be used according to data available in related component or equipment certificates, in particular relevant temperature range, voltage, and current limitations.

Junction boxes and panel boards shall only be used in an area of not more than pollution degree 2.

Transient protection shall be provided that is set at a level not exceeding 140 % of the peak rated voltage value at the supply terminals to the equipment if Ex equipment/Ex component installed have these condition in its certificate.

### MARKING

II 3G Ex db ec ia/ib mb nC IIC/IIB T6 ... T4 Gc

II 3D Ex tc IIIC T85°C ... T135°C DC

Ex db ec ia/ib mb nA nC IIC/IIB T6...T3 Gc or

Ex db ec ia/ib mb/mc nA nC [ia Ga] [ib Gb] IIC/IIB T6...T3 Gc

Ex tc IIIC T85°C...T200°C Dc

## TECHNICAL FEATURES

### Material

Stainless steel AISI316L

### IP rating

IP66/67

### Ambient temperature range

From -50°C to + 95°C ( depending of installed components)

### Zones

Zones 2, 22

### Approvals

FIDI 21 ATEX 0080X

IECEX FIDI 21.0010X

### SB

Full conformity Certificate:

FIDI 21 ATEX 0090X

IECEX FIDI 21.0015X

EAC: RU C-IT.BH02.B.00593/20

Component Certificate:

FIDI 21 ATEX 0075U

IECEX FIDI 21.0012U

EAC: RU C-IT.BH02.B.00593/20 EAC: RU C-IT

### Thermal resistance of enclosure (Rth)

Up to 3,582 Rth [K/W]

# PRESSURIZED CABINETS

## QPREX Series - Stainless steel AISI 316 L



Modular building system allows to realize customized volume up to 5m<sup>3</sup>. One of the system that offers the widest possibilities on the market. A single system of pressurization and washing can manage multiple modules in series. New gasket technology minimizes the dispersion of inactive gas, increasing efficiency of pressurized system and reduce operating costs. Quick access: easy opening and maintenance, when the doors open the system disconnects (zone 1 only); when the doors are closed again, after the start of the washing cycle, the system will start again automatically.

### MARKING

ATEX

II 2G or II 2D or II 2(1)G or II 2(2)G or II 2(1)D or II 2(2)D

IECEx

Ex pxb (\*1\*) IIB/IIB+H2/IIC T6 ...T3 Gb

Ex pxb (\*2\*) IIIB/IIIC T85°C ... T200°C Db

Ex pxb (\*1\*) [ia IIC Ga / ib IIC Gb] IIB/IIB+H2/IIC T6 ...T3 Gb

Ex pxb (\*2\*) [ia IIIC Da] IIIB/IIIC T85°C

T200°C Db

For zone 2

II 3G or II 3D or II 3(1)G or II 3(2)G or II 3(1)D or II 3(2)D

Ex pzc (\*3\*) IIB/IIB+H2/IIC T6 ...T3 Gc

Ex pzc (\*4\*) IIIB/IIIC T85°C ... T200°C Dc

Ex pzc (\*3\*) [ia IIC Ga / ib IIC Gb] IIB/IIB+H2/IIC T6 ...T3 Gc

Ex pzc (\*4\*) [ia IIIC Da] IIIB/IIIC T85°C ... T200°C Dc

## TECHNICAL FEATURES

<b>Material</b>	AISI 316 L, AISI 304 or painted sendzimir steel	
<b>IP rating</b>	IP65	
<b>Ambient temperature range</b>	From -50°C to +60°C (only cabinet)	
<b>Approvals</b>	Zone 1 INERIS 23 ATEX 0031X IECEx INE 23.0066X	Zone 2 INERIS 23 ATEX 3012X (3GD)
<b>Gaskets</b>	SILICONE	
<b>Dimensions</b>	From 0,125 m <sup>3</sup> to 5 m <sup>3</sup>	
<b>Standard Height</b>	1400mm; 1700mm; 2000mm	
<b>Standard Width</b>	1000mm; 1500mm; 2000mm; 2500mm	
<b>Standard Depth</b>	600mm; 800mm; 1000mm	
<b>Special standard dimension for 0,125 m<sup>3</sup></b>	500x500x500mm	
<b>Nominal Power max.</b>	6 kVA	
<b>Nominal Voltage max.</b>	24 kVAC / 1500 VDC	
<b>Internal Generated voltage max (ignition transformer)</b>	24 kVAC	
<b>Nominal Current max.</b>	3000 A	
<b>Max controller current</b>	3500 A	
<b>Nominal Frequency</b>	0-1000 Hz	
<b>Marking details</b>	(*1*) (db, eb, ma, mb, ia, ib, etc.) according to the inner/outer "Ex" installed components (*2*) (ta, tb, mb, ia, ib, etc.) according to the inner/outer "Ex" installed components (*3*) (db, dc, eb, ec, ma, mb, mc, ia, ib, ic, etc.) according to the inner/outer "Ex" installed components (*4*) (ta, tb, tc, ma, mb, mc, ia, ib, ic, etc.) according to the inner/outer "Ex" installed components	

<b>Climatization</b>	Vortex, Air conditioner, Cooling/heating water systems, Antic condensate heater.
<b>Pressurisation system</b>	Technor Italsmea TEX1 (zone 1/21 - SIL2 *) or TEX 2 (Zone 2/22) Pepperl Fuchs BEBCO EPS-6500 Gönnheimer Elektronik GmbH series FS870S.

## With TEX1 pressurization system

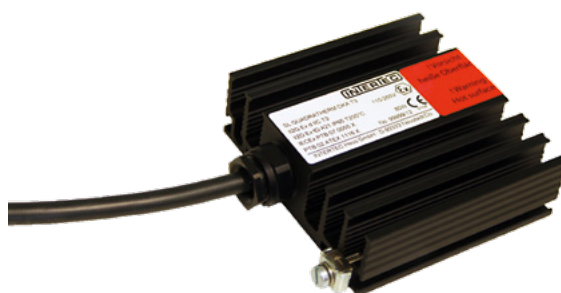
<b>Approvals</b>	ATEX, IECEx for Zone 1-21 (SIL2)
<b>Marking</b>	II (2) G [Ex ia pxb Gb] IIC II (2) D [Ex ia pxb Db] IIIC
<b>Ambient temperature</b>	IIC
<b>Temperature class</b>	T5; T4
<b>Ambient temperature</b>	0°C/+55°C for standard version -20°C/+55°C for low temperature version
<b>Pressurization system</b>	TUV 15ATEX161466X IECEX TUN 15.0025X
<b>SIL (Safety Integrity Level)</b>	The safety and integrity of the purge/pressurization system type TEX1 is tested according to IEC61511-1:2003 for single fault evaluation (HFT=1) up to SIL2 level

## With TEX2 pressurization system

<b>Approvals</b>	ATEX, IECEx for Zone 2-22
<b>Marking</b>	II (3) G [Ex ia pzc Gc] IIC II (3) D [Ex ia pzc Dc] IIIC
<b>Ambient temperature</b>	-20°C/+55°C for standard version -40°C/+55°C for low-temperature version
<b>Pressurization system</b>	TUV 15ATEX161467X IECEX TUN 15.0025X



**Vortex Cooler**



**Atex-certified anticondensation heaters**

## EARTHING SYSTEMS

# GUMT - Earthing control system /PTA - Earthing clamp



- Control and discharge system for electrostatic charges suitable for road tankers, rail tankers and any movable tanker for dangerous items
- Ready for one/two double circuit clamps PTA ISE0-2
- The system is complete with arrest/consensus optical warning and changeover contact free from output voltage.
- This solution is able to control the discharge of static charges driving it through a dedicated and safe path, safe because Explosion proof.

### MARKING

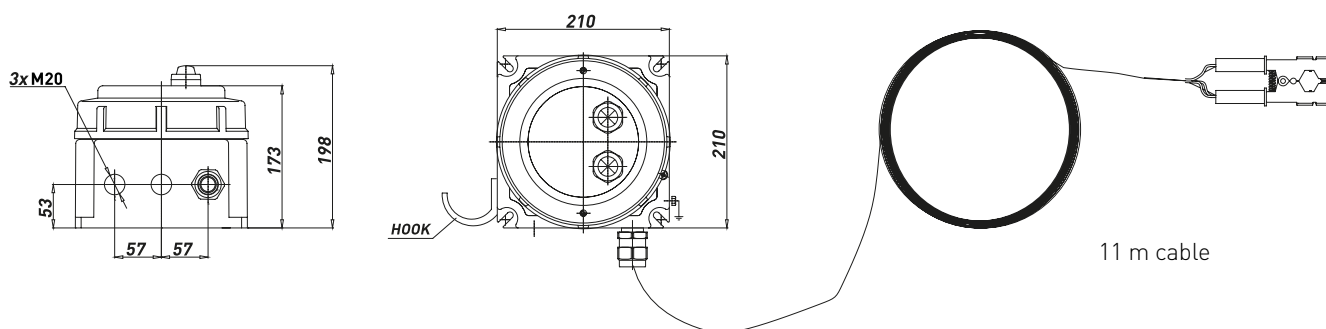
II 2 G D  
Ex db IIC T6 Gb  
Ex tb IIIC T 85 Db

## TECHNICAL FEATURES

<b>Material</b>	Copper-free aluminium Stainless steel AISI 316 L (different sizes than the standard indicated)
<b>IP rating</b>	IP66
<b>Ambient temperature range</b>	-50°C to +60°C
<b>Approvals</b>	<u>GUMT</u> INERIS 22 ATEX 0008X IECEX INE 22.0012X
<b>Surface treatment</b>	Painted by polyurethane painting cycle - Blue RAL 5014 (other colours on request), C4 painting cycle is suitable for On-Shore: ·External environment: Industrial areas and coastal areas with moderate salinity ·Internal environment: Chemical plants, swimming pools, coastal plants and shipyards The Reference standard is UNI EN ISO 12944-1:2018
<b>Electrical data PTA:</b>	
<b>Rated nominal current</b>	6 mA
<b>Rated nominal voltage</b>	0,25 V
<b>Nominal current In</b>	10A
<b>Insulation voltage</b>	3kV
<b>Changeover contact rating (GUMT)</b>	5 A
<b>Standard certificate label</b>	Made by self adhesive UV and corrosion resistant polyester, approved by certified Laboratory.
<b>Optional accessories</b>	Cable reel, Drain/breather valve, Internal anticondensate painting, Laminated plastic/Stainless steel certificate label. Cable reel (PTA)



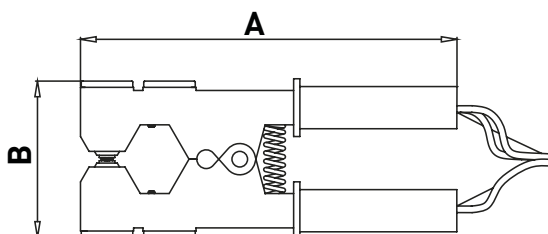
## Dimensions GUMT



## GUMT.. Series - Earthing control system - Copper-free aluminium

CODE	TYPE	VOLTAGE	DIMENSION [mm]			WEIGHT [kg]
			A	B	C	
B013094010014	GUMT-325	110/220VAC 50/60HZ	210	210	173	5,00
B013094010015	GUMT-325	24 VDC	210	210	173	5,00
B013094010013	GUMT-325 + 1 CLAMP PTA ISEO 2	110/220VAC 50/60HZ	210	210	173	8,36
B013094010011	GUMT-325 + 2 CLAMPS PTA ISEO 2	110/220VAC 50/60HZ	210	210	173	11,72

## Dimensions PTA



## PTA.. Series - Clamps

CODE	TYPE	CABLE TYPE	CABLE LENGTH [mt]	CLAMP OPENING [mm]	DIMENSIONS [mm]			WEIGHT [Kg]
					A	B	DEPTH	
B091015160001	PTA ISEO-1	1X6MM2 PUR	11	MAR-20	250	110	35	1,56
B091015160002	PTA ISEO-2	3X3MM2 PUR	11	MAR-20	250	110	35	3,36

PTA ISEO-1: Simply Earth clamp with yellow/green cable.

PTA ISEO-2: Double circuit Earth clamp, suitable to be combined with our Earth control system GUMT-325.

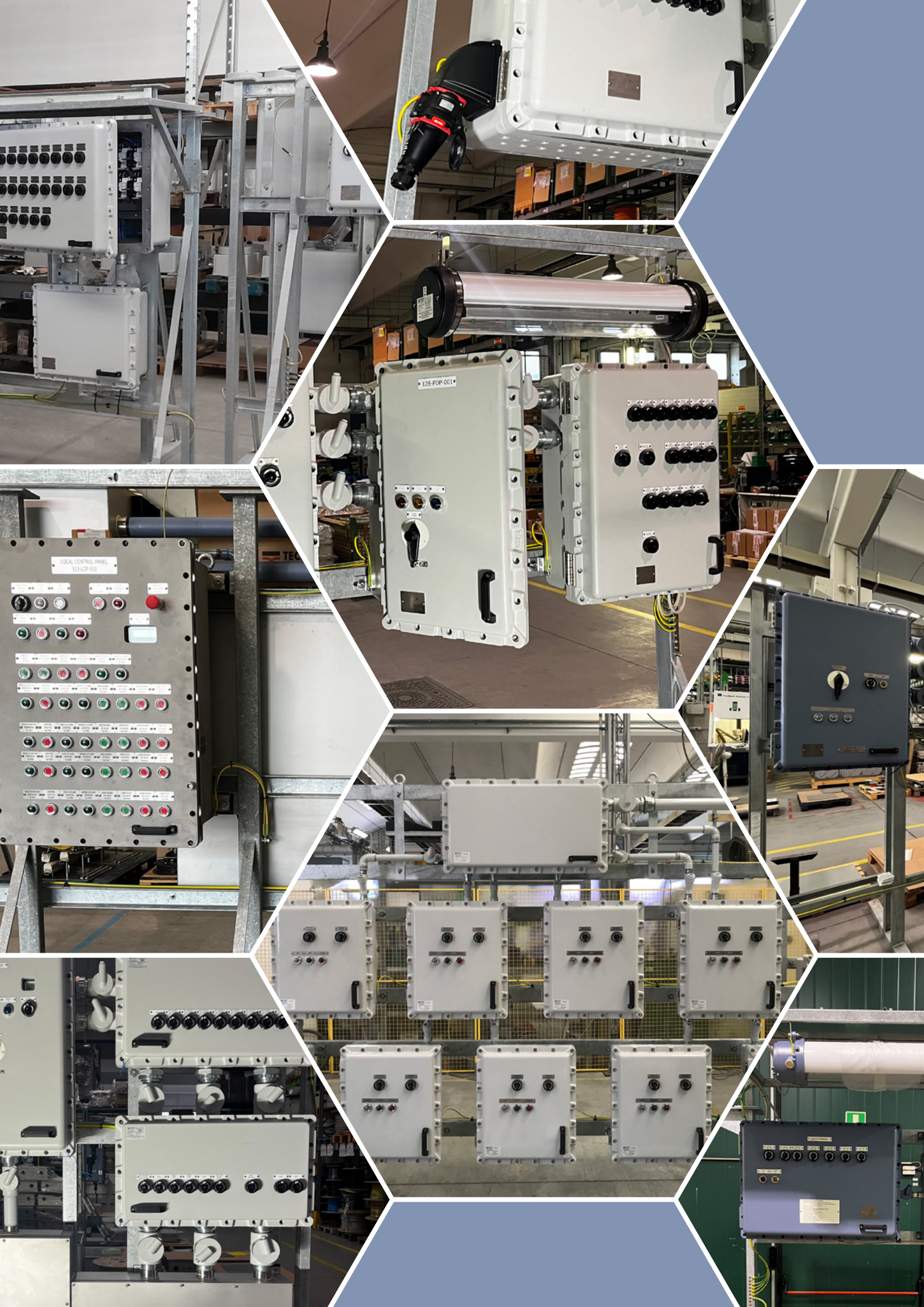
PTA is made of copper-free aluminium and the electrical continuity is ensured by the carbonitrided steel contact tips, which make a firm connection to any foothold having a thickness between 2 and 20 mm.

# CUSTOMIZED ENGINEERED SOLUTIONS



Each element  
is meticulously  
engineered, ensuring  
that every solution is  
custom-tailored to meet  
the precise technical and  
operational requirements  
of our customers







# CUSTOMIZED ENGINEERED SOLUTIONS







Every project is expertly  
engineered and executed  
with precision, ensuring  
complete customer  
satisfaction





# CABLE GLANDS & FITTINGS

Metallic Cable Glands

PAG  
128-137

Plastic Cable Glands

138

Fittings

144-157



# METALLIC CABLE GLANDS

## Single seal



A large range of single seal cable glands

- Armoured & unarmoured cable
- Lead sheathed cable
- Barrier type

Suitable for Zone 1/2 and Zone 21/22.

### MARKING\*

II 2 GD  
Ex db/eb IIC  
Ex db/eb I  
Ex tb IIIC IP66

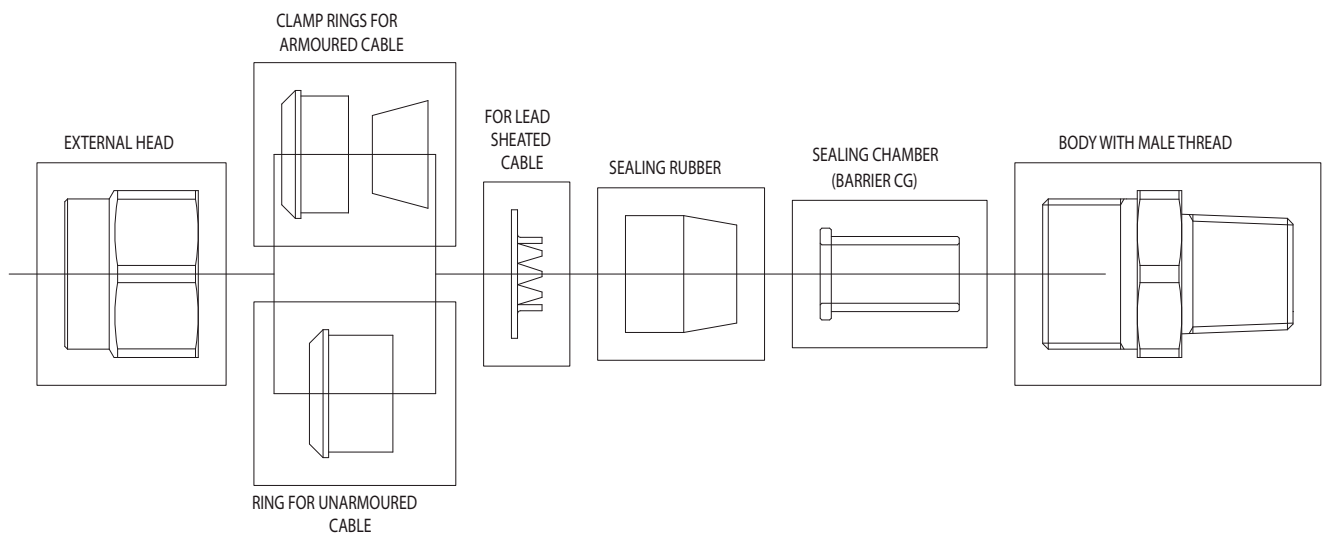
I M2  
Ex db/eb I

\* For group I certification is up to size 6.

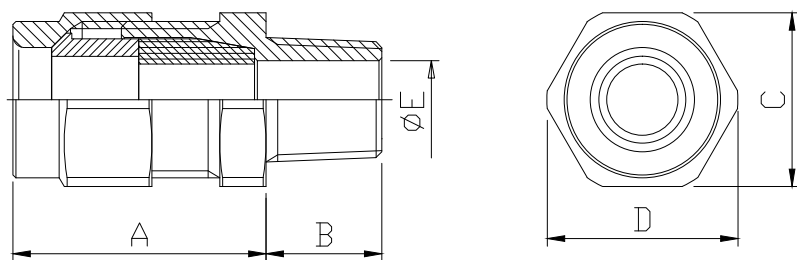
## TECHNICAL FEATURES

<b>Material</b>	Nickel chrome plated brass AISI316L stainless steel
<b>IP rating</b>	IP66
<b>Operating temperature range</b>	-52°C to +110°C
<b>Approvals</b>	ATEX INERIS: 02ATEX0084 IECEX INE 14.0046X EAC: RU C-IT.BH02.B.00596/20
<b>Internal seals</b>	EPDM
<b>Threads</b>	Metric, NPT, UNI-6125
<b>Optional accessories</b>	Locknut, sealing gasket, earthing ring, star washer, protective shroud
<b>Note</b>	<p>1. Armouring rings are usually supplied made of nickel chrome plated brass. Other materials are available upon request.</p> <p>Available only complete set of internal sealing rings</p> <p>2. Our standard cable gland are suitable for armour clamping up to 1,25mm thickness. In case of higher armour thickness please revert to our Sales department.</p>

### Assembly diagram



## Dimensions



	METRIC	NPT - UNI-6125	CABLE RANGE (mm)		EXTERNAL CABLE Ø (mm) E	DIMENSIONS (mm)				
			MIN	MAX		A	METRIC B	NPT B	C	D
SIZE 1	M20X1,5	1/2"	6	12	13	42	15	19	30	33
SIZE 2	M25X1,5	3/4"	6	17	18	42	16	19	36	40
SIZE 3	M32X1,5	1"	14	23	24	45	16	25	44	49
SIZE 5S	M40X1,5	1" 1/4	23	36	33	45	18	25	58	65
SIZE 5	M50X1,5	1" 1/2	23	36	37	45	18	25	58	65
SIZE 6	M63X1,5	2"	36	46	51	46	18	25	70	78
SIZE 7	M75X1,5	2" 1/2	44	60	61	46	20	32	87	97
SIZE 8	M80X1,5	3"	56	71	72	46	20	36	97	108

## Specific models available

MODEL	SEAL TYPE	CABLE	TYPE
PNA	SINGLE SEAL	ARMoured CABLE	-
PB AX	SINGLE SEAL	ARMoured CABLE	BARRIER TYPE
PSB	SINGLE SEAL	ARMoured CABLE	LEAD SHEATED CABLE
PNS	SINGLE SEAL	UNARMoured CABLE	-
PMS	SINGLE SEAL	UNARMoured CABLE	BARRIER TYPE
PBS	SINGLE SEAL	UNARMoured CABLE	LEAD SHEATED CABLE



# METALLIC CABLE GLANDS

## Double seal



A large range of double seal cable glands

- Armoured & unarmoured cable
- Lead sheathed cable
- Barrier type

Suitable for Zone 1/2 and Zone 21/22

### MARKING\*

II 2 GD

Ex db/eb IIC

Ex db/eb I

Ex tb IIIC IP66

I M2

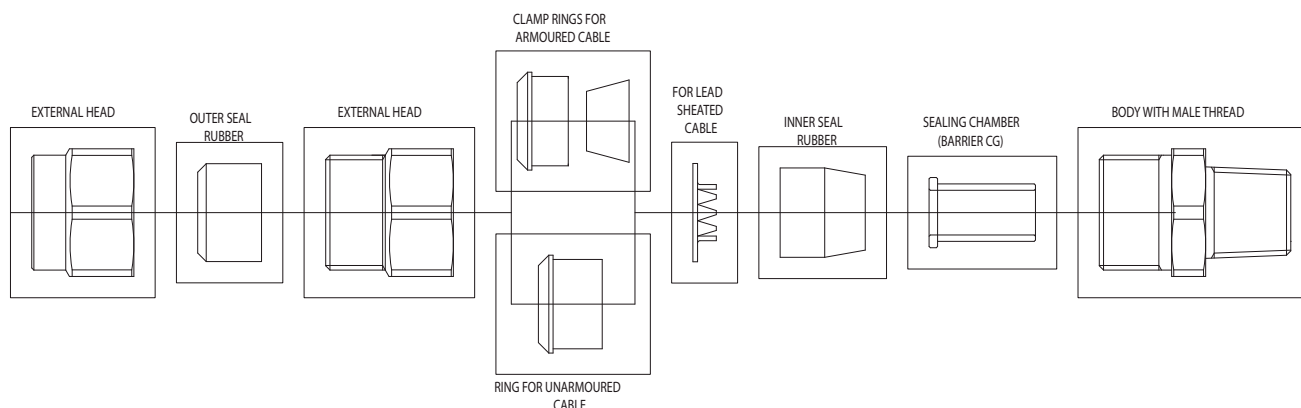
Ex db/eb I

\* For group I certification is up to size 6.

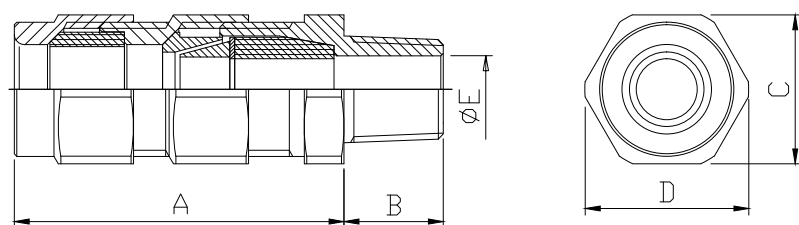
## TECHNICAL FEATURES

<b>Material</b>	Nickel chrome plated brass AISI316L stainless steel
<b>IP rating</b>	IP66
<b>Operating temperature range</b>	-52°C to +110°C
<b>Approvals</b>	ATEX: 02ATEX0084 IECEX INE 14.0046X EAC: RU C-IT.BH02.B.00596/20
<b>Internal seals</b>	EPDM
<b>Threads</b>	Metric, NPT, UNI-6125
<b>Optional accessories</b>	Locknut, sealing gasket, earthing ring, star washer, protective shroud
<b>Note</b>	1. Armouring rings are usually supplied made of nickel chrome plated brass. Other materials are available upon request. Available only complete set of internal/external sealing rings 2. Our standard cable gland are suitable for armour clamping up to 1,25mm thickness. In case of higher armour thickness please revert to our Sales department.
<b>Upon request</b>	Extended body in case of armour thickness higher than 1,25 up to 2,5 (only for size 3,5,6,7 and 8)

### Assembly diagram



## Dimensions



	METRIC	NPT - UNI-6125	INNER CABLE RANGE (mm)		OUTER CABLE RANGE (mm)		EXTERNAL CABLE Ø (mm) E	DIMENSIONS (mm)				
			MIN	MAX	MIN	MAX		A	METRIC B	NPT B	C	D
SIZE 1	M20X1,5	1/2"	6	12	8	17	13	65	15	19	30	33
SIZE 2	M25X1,5	3/4"	6	17	14	23	18	65	16	19	36	40
SIZE 3	M32X1,5	1"	14	23	20	29	24	68	16	25	44	49
SIZE 5S	M40X1,5	1" 1/4	23	36	29	42	33	68	18	25	58	65
SIZE 5	M50X1,5	1" 1/2	23	36	29	42	37	68	18	25	58	65
SIZE 6	M63X1,5	2"	36	46	44	56	51	71	18	25	70	78
SIZE 7	M75X1,5	2" 1/2	44	60	55	67	61	71	20	32	87	97
SIZE 8	M80X1,5	3"	56	71	63	77	72	71	20	36	97	108

## Specific models available

MODEL	SEAL TYPE	CABLE	TYPE
PAP	DOUBLE SEAL	ARMoured CABLE	-
PAB AX	DOUBLE SEAL	ARMoured CABLE	BARRIER TYPE
PDB	DOUBLE SEAL	ARMoured CABLE	LEAD SHEATED CABLE
PND	DOUBLE SEAL	UNARMoured CABLE	-
PMD	DOUBLE SEAL	UNARMoured CABLE	BARRIER TYPE
PBD	DOUBLE SEAL	UNARMoured CABLE	LEAD SHEATED CABLE

# METALLIC CABLE GLANDS

## PSM (Male-Male) PSF (Male-Female)



Single seal through "male-male"/"male-female" cable gland suitable for unarmoured cables. Suitable for Zone 1/2 and Zone 21/22.

### MARKING\*

II 2 GD  
Ex db/eb IIC  
Ex db/eb I  
Ex tb IIIC IP66

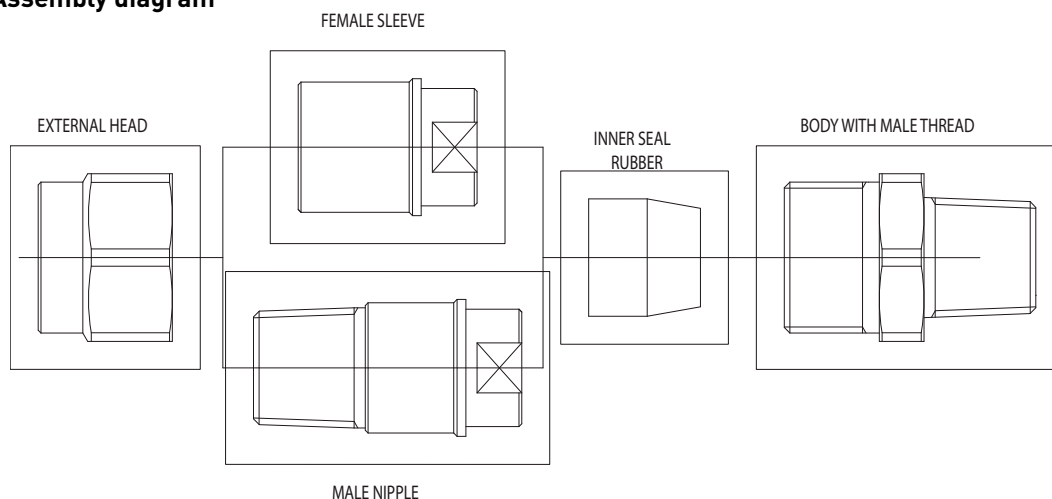
I M2  
Ex db/eb I

\* For group I certification is up to size 6.

## TECHNICAL FEATURES

<b>Material</b>	Nickel chrome plated brass AISI316L stainless steel
<b>IP rating</b>	IP66
<b>Operating temperature range</b>	-52°C to +110°C
<b>Approvals</b>	ATEX: 02ATEX0084 IECEX INE 14.0046X EAC: RU C-IT.BH02.B.00596/20
<b>Internal seals</b>	EPDM
<b>Threads</b>	Metric, NPT, UNI-6125
<b>Optional accessories</b>	Locknut, sealing gasket, earthing ring, star washer, protective shroud
<b>Note</b>	The Free Nipple thread can be provided Metric, NPT or UNI-6125

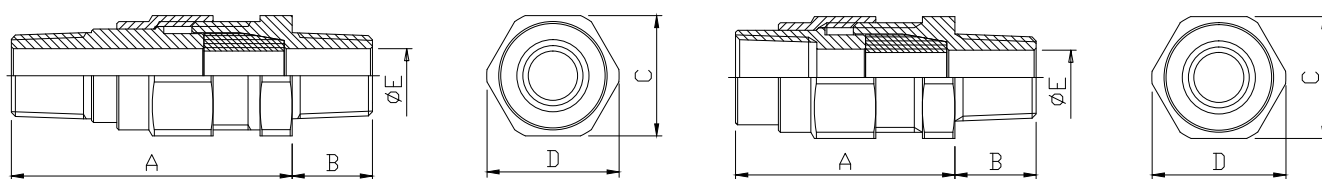
### Assembly diagram



## Dimensions

Male - Male

Male - Female



### PSM (Male - Male)

	METRIC	NPT - UNI-6125	CABLE RANGE (mm)		EXTERNAL CABLE Ø (mm) E	DIMENSIONS (mm)				
			MIN	MAX		A	METRIC B	NPT B	C	D
SIZE 1	M20X1,5	1/2"	6	12	13	70	15	19	30	33
SIZE 2	M25X1,5	3/4"	6	17	18	70	16	19	36	40
SIZE 3	M32X1,5	1"	14	23	24	79	16	25	44	49
SIZE 5S	M40X1,5	1" 1/4	23	36	33	79	18	25	58	65
SIZE 5	M50X1,5	1" 1/2	23	36	37	79	18	25	58	65
SIZE 6	M63X1,5	2"	36	46	51	84	18	25	70	78
SIZE 7	M75X1,5	2" 1/2	44	60	61	86	20	32	87	97
SIZE 8	M80X1,5	3"	56	71	72	86	20	36	97	108

### PSF (Male - Female)

	METRIC	NPT - UNI-6125	CABLE RANGE (mm)		EXTERNAL CABLE Ø (mm) E	DIMENSIONS (mm)				
			MIN	MAX		A	METRIC B	NPT B	C	D
SIZE 1	M20X1,5	1/2"	6	12	13	53	15	19	30	33
SIZE 2	M25X1,5	3/4"	6	17	18	53	16	19	36	40
SIZE 3	M32X1,5	1"	14	23	24	63	16	25	44	49
SIZE 5S	M40X1,5	1" 1/4	23	36	33	64	18	25	58	65
SIZE 5	M50X1,5	1" 1/2	23	36	37	64	18	25	58	65
SIZE 6	M63X1,5	2"	36	46	51	67	18	25	70	78
SIZE 7	M75X1,5	2" 1/2	44	60	61	72	20	32	87	97
SIZE 8	M80X1,5	3"	56	71	72	73	20	36	97	108

### Specific models available

MODEL	SEAL TYPE	CABLE	TYPE	THREAD 1	THREAD 2 (FREE NIPPLE)
PSM	SINGLE SEAL	UNARMoured CABLE	-	MALE	MALE
PSF	SINGLE SEAL	UNARMoured CABLE	-	MALE	FEMALE
PSM AX	SINGLE SEAL	UNARMoured CABLE	BARRIER TYPE	MALE	MALE
PSF AX	SINGLE SEAL	UNARMoured CABLE	BARRIER TYPE	MALE	FEMALE



# PLASTIC CABLE GLANDS

## Polyamide



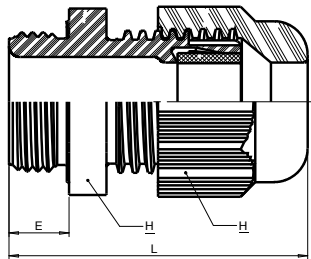
Single seal cable gland suitable for unarmoured  
Suitable for Zone 1/2 and Zone 21/22.

### MARKING

II 2 GD  
Ex db/eb IIC  
Ex db/eb I  
Ex tb IIIC IP66

## TECHNICAL FEATURES

<b>Material</b>	Polyamide
<b>IP rating</b>	IP66/IP68
<b>Ambient temperature range</b>	-20°C to +80°C
<b>Approvals</b>	ATEX LCIE 07 ATEX 6082 X IECEX LCI 10.0008X
<b>Gasket</b>	Neoprene
<b>Threads</b>	Metric, PG
<b>Optional accessories</b>	Locknut, Gasket
<b>Dimensions</b>	



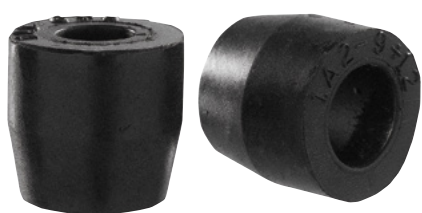
### UN.. polyamide cable glands

CODE	TYPE	THREAD	COLOUR	OVERALL CABLE		DIMENSION [mm]		
				MIN	MAX	H	E	L
C0309G1300004	UNI01XEL - POLYAMIDE CABLE GLAND	M16X1,5	BLACK	5	10	22	10	29
C0309I1300004	UNI1XEL - POLYAMIDE CABLE GLAND	M20X1,5	BLACK	10	14	27	10	33
C0309M1300004	UNI2XEL - POLYAMIDE CABLE GLAND	M25X1,5	BLACK	12	18	33	10	39
C0309O1300002	UNI3XEL - POLYAMIDE CABLE GLAND	M32X1,5	BLACK	16	25	42	10	42
C0309Q1300002	UNI4XEL - POLYAMIDE CABLE GLAND	M40X1,5	BLACK	22	32	53	10	52
C0309S1300002	UNI5XEL - POLYAMIDE CABLE GLAND	M50X1,5	BLACK	28	38,5	60	12	55
C0309U1300002	UNI6XEL - POLYAMIDE CABLE GLAND	M63X1,5	BLACK	40	48	70	12	56
C0309H1300004	UNI01XIL - POLYAMIDE CABLE GLAND	M16X1,5	BLUE	5	10	22	10	29
C0309L1300004	UNI1XIL - POLYAMIDE CABLE GLAND	M20X1,5	BLUE	10	14	27	10	33
C0309N1300004	UNI2XIL - POLYAMIDE CABLE GLAND	M25X1,5	BLUE	12	18	33	10	39
C0309P1300002	UNI3XIL - POLYAMIDE CABLE GLAND	M32X1,5	BLUE	16	25	42	10	42
C0309R1300002	UNI4XIL - POLYAMIDE CABLE GLAND	M40X1,5	BLUE	22	32	53	10	52
C0309T1300002	UNI5XIL - POLYAMIDE CABLE GLAND	M50X1,5	BLUE	28	38,5	60	12	55
C0309V1300002	UNI6XIL - POLYAMIDE CABLE GLAND	M63X1,5	BLUE	40	48	70	12	56



## CABLE GLANDS

### SPARE & ACCESSORIES



#### Set of inner seals (under armour)

CODE	TYPE	Ø CABLE (mm)
C070700000014	SET OF INNER SEALS - C.G. SIZE 1	6-12
C070700000003	SET OF INNER SEALS - C.G. SIZE 2	6-17
C070700000005	SET OF INNER SEALS - C.G. SIZE 3	14-23
C070700000007	SET OF INNER SEALS - C.G. SIZE 5	23-36
C070700000009	SET OF INNER SEALS - C.G. SIZE 6	36-46
C070700000010	SET OF INNER SEALS - C.G. SIZE 7	44-60
C070700000012	SET OF INNER SEALS - C.G. SIZE 8	56-71



#### Set outer seals (external)

CODE	TYPE	Ø CABLE (mm)
C0707000000002	SET OF OUTER SEALS - C.G. SIZE 1	8-17
C0707000000004	SET OF OUTER SEALS - C.G. SIZE 2	14-23
C0707000000006	SET OF OUTER SEALS - C.G. SIZE 3	20-29
C0707000000008	SET OF OUTER SEALS - C.G. SIZE 5	29-42
C0707000000015	SET OF OUTER SEALS - C.G. SIZE 6	44-56
C0707000000011	SET OF OUTER SEALS - C.G. SIZE 7	55-67
C0707000000013	SET OF OUTER SEALS - C.G. SIZE 8	63-77

### Inner seals - reference for diameter cable range

CABLE GLAND SIZE	TYPE	Ø CABLE (mm)
SIZE 1	1A1 RUBBER SEAL	6 - 9
	1A2 RUBBER SEAL	9 - 12
SIZE 2	2A1 RUBBER SEAL	6 - 9
	2A2 RUBBER SEAL	9 - 12
	2A3 RUBBER SEAL	11 - 14
	2A4 RUBBER SEAL	14 - 17
SIZE 3	3A1 RUBBER SEAL	14 - 17
	3A2 RUBBER SEAL	17 - 20
SIZE 5/5S	5A2 RUBBER SEAL	23 - 26
	5A3 RUBBER SEAL	26 - 29
	5A4 RUBBER SEAL	29 - 32
	5A5 RUBBER SEAL	32 - 36
SIZE 6	6A2 RUBBER SEAL	36 - 39
	6A3 RUBBER SEAL	39 - 42
	6A4 RUBBER SEAL	42 - 46
SIZE 7	7A2 RUBBER SEAL	44 - 48
	7A3 RUBBER SEAL	48 - 52
	7A4 RUBBER SEAL	52 - 56
	7A5 RUBBER SEAL	56 - 60
SIZE 8	8A4 RUBBER SEAL	56 - 60
	8A5 RUBBER SEAL	59 - 63
	8A6 RUBBER SEAL	63 - 67
	8A7 RUBBER SEAL	67 - 71

### Outer seals - reference for diameter cable range

CABLE GLAND SIZE	TYPE	Ø CABLE (mm)
SIZE 1	1B1 RUBBER SEAL	8 - 11
	1B2 RUBBER SEAL	11 - 14
	1B3 RUBBER SEAL	14 - 17
SIZE 2	2B1 RUBBER SEAL	14 - 17
	2B2 RUBBER SEAL	17 - 20
	2B3 RUBBER SEAL	20 - 23
SIZE 3	3B1 RUBBER SEAL	20 - 23
	3B2 RUBBER SEAL	23 - 26
	3B3 RUBBER SEAL	26 - 29
SIZE 5/5S	5B2 RUBBER SEAL	29 - 32
	5B3 RUBBER SEAL	32 - 36
	5B4 RUBBER SEAL	36 - 39
	5B5 RUBBER SEAL	39 - 42
SIZE 6	6B2 RUBBER SEAL	44 - 48
	6B3 RUBBER SEAL	48 - 52
	6B4 RUBBER SEAL	52 - 56
SIZE 7	7B2 RUBBER SEAL	55 - 59
	7B3 RUBBER SEAL	59 - 63
	7B4 RUBBER SEAL	63 - 67
SIZE 8	8B4 RUBBER SEAL	63 - 67
	8B5 RUBBER SEAL	65 - 69
	8B6 RUBBER SEAL	69 - 73
	8B7 RUBBER SEAL	73 - 77



# CABLE GLANDS

## SPARE & ACCESSORIES

### Protective shroud EPDM-55

CODE	TYPE	CABLE GLAND SIZE	COLOR
C070400050002	PGA-1 PVC SHROUD	SIZE 1	BLACK
C070400050012	PGA-2 PVC SHROUD	SIZE 2	BLACK
C070400050003	PGA-3 PVC SHROUD	SIZE 3	BLACK
C070400050004	PGA-5 PVC SHROUD	SIZE 5/5S	BLACK
C070400050005	PGA-6 PVC SHROUD	SIZE 6	BLACK
C070400050006	PGA-7 PVC SHROUD	SIZE 7	BLACK
C070400050007	PGA-8 PVC SHROUD	SIZE 8	BLACK

Blue color upon request

Halogen free version upon request (black color)

### Sealants for barrier type cable glands

CODE	TYPE
E012699000003	MANUAL APPLICATOR FOR 200ML CARTRIDGE, TYPE 2012/1
E012699000001	200ML CARTRIDGE WITH MIXING NOOZLE, TYPE 2012
E012699000002	PACKAGE OF N. 6 200ML CARTRIDGE WITH MIXING NOOZLE, TYPE 2012
E012699000004	MANUAL APPLICATOR FOR 310ML CARTRIDGE, TYPE 7091
E012699000005	SINGLE 310ML CARTRIDGE WITH NOOZLE, TYPE 7091

### GK-../AMF - Gasket for cable gland

CODE	TYPE	FOT THE THREAD
C070800040003	GK-16 - AMF GASKET	M16X1,5
C070800040005	GK-20 - AMF GASKET	M20X1,5
C070800040006	GK-25 - AMF GASKET	M25X1,5
C070800040009	GK-32 - AMF GASKET	M32X1,5
C070800040010	GK-40 - AMF GASKET	M40X1,5
C070800040013	GK-50 - AMF GASKET	M50X1,5
C070800040015	GK-63 - AMF GASKET	M63X1,5
C070800040017	GK-75 - AMF GASKET	M75X1,5
C070800040019	GK-80 - AMF GASKET	M80X1,5
C070800040001	GK-1 - AMF GASKET	1/2" NPT
C070800040004	GK-2 - AMF GASKET	3/4" NPT
C070800040007	GK-3 - AMF GASKET	1" NPT
C070800040012	GK-4 - AMF GASKET	1" 1/4 NPT
C070800040011	GK-5 - AMF GASKET	1" 1/2 NPT
C070800040014	GK-6 - AMF GASKET	2" NPT
C070800040016	GK-7 - AMF GASKET	2" 1/2 NPT
C070800040018	GK-8 - AMF GASKET	3" NPT

**GK-.../PTFE - Gasket for plugs**

CODE	TYPE	FOT THE THREAD
C070800090009	GK-16 PTFE GASKET	M16X1,5
C070800090001	GK-20 PTFE GASKET	M20X1,5
C070800090002	GK-25 PTFE GASKET	M25X1,5
C070800090003	GK-32 PTFE GASKET	M32X1,5
C070800090004	GK-40 PTFE GASKET	M40X1,5
C070800090005	GK-50 PTFE GASKET	M50X1,5
C070800090006	GK-63 PTFE GASKET	M63X1,5
C070800090007	GK-75 PTFE GASKET	M75X1,5
C070800090008	GK-80 PTFE GASKET	M80X1,5

**DL-... - Locknuts**

CODE		TYPE	THREAD
BRASS	AISI 316 L		
C070120110001	C070120120001	DL-1 - LOCKNUT	M20X1,5
C070125110001	C070125120001	DL-2 - LOCKNUT	M25X1,5
C070132110001	C070132120001	DL-3 - LOCKNUT	M32X1,5
C070140110001	C070140120001	DL-4 - LOCKNUT	M40X1,5
C070150110001	C070150120001	DL-5 - LOCKNUT	M50X1,5
C070163110001	C070163120001	DL-6 - LOCKNUT	M63X1,5
C070175110001	C070175120001	DL-7 - LOCKNUT	M75X1,5
C070180110001	C070180120001	DL-8 - LOCKNUT	M80X1,5
C0701A1210001	C0701A1220001	DL-1 - LOCKNUT	1/2" NPT
C0701A2210001	C0701A2220001	DL-2 - LOCKNUT	3/4" NPT
C0701A3210001	C0701A3220001	DL-3 - LOCKNUT	1" NPT
C0701A4210001	C0701A4220001	DL-4 - LOCKNUT	1" 1/4 NPT
C0701A5210001	C0701A5220001	DL-5 - LOCKNUT	1" 1/2 NPT
C0701A6210001	C0701A6220001	DL-6 - LOCKNUT	2" NPT
C0701A7210001	C0701A7220001	DL-7 - LOCKNUT	2" 1/2 NPT
C0701A8210001	C0701A8220001	DL-8 - LOCKNUT	3" NPT

**PT-... - Earthing rings**

CODE		TYPE	FOR SIZE
BRASS	AISI 316 L		
C070500010001	C070500020002	PT-1 EARTHING RING	SIZE 1
C070500010002	C070500020003	PT-2 EARTHING RING	SIZE 2
C070500010003	C070500020004	PT-3 EARTHING RING	SIZE 3
C070500010004	C070500020005	PT-4 EARTHING RING	SIZE 4
C070500010005	C070500020006	PT-5 EARTHING RING	SIZE 5
C070500010006	C070500020007	PT-6 EARTHING RING	SIZE 6
C070500010007	C070500020008	PT-7 EARTHING RING	SIZE 7
C070500010008	C070500020009	PT-8 EARTHING RING	SIZE 8

**Serrated washer made in AISI316L**

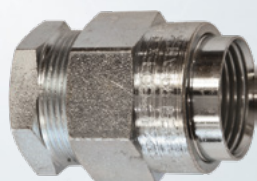
CODE	TYPE	FOR SIZE
C070600020003	STAR WASHER Ø22	SIZE 1
C070600020001	STAR WASHER Ø27	SIZE 2
C070600020004	STAR WASHER Ø34	SIZE 3
C070600020005	STAR WASHER Ø42	SIZE 4
C070600020006	STAR WASHER Ø52	SIZE 5
C070600020007	STAR WASHER Ø65	SIZE 6
C070600020008	STAR WASHER Ø77	SIZE 7
C070600020009	STAR WASHER Ø82	SIZE 8

## FITTINGS

# BMF/BFF/BMM Series - Three pieces unions



(A)



(B)



(C)

Three pieces unions for gas group IIB enable an independent rotation and the connection between pipes of an electrical equipment and enclosures or different devices of an explosion-proof equipment.

- BMF series (male/female) (A)
- BFF series (female/female) (B)
- BMM series (male/male) (C)

### MARKING

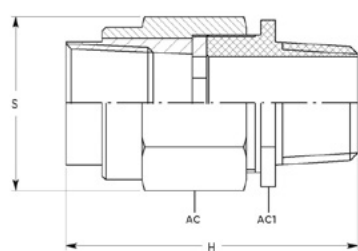
II 2 GD  
Ex d IIB Gb  
Ex tb IIIC Db IP66/67

Upon request  
II 2 GD  
Ex d IIC GB  
Ex tb IIIC Db IP66/67

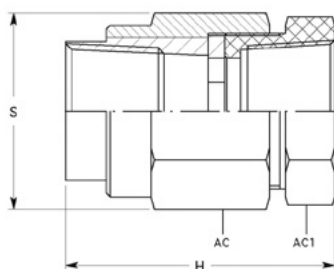
## TECHNICAL FEATURES

<b>Material</b>	Galvanised steel (AISI316L upon request)
<b>IP rating</b>	IP66/IP67
<b>Ambient temperature range</b>	<p>ATEX</p> <p>Galvanised steel: -20°C to +60°C with EPDM gasket</p> <p>Stainless Steel: -55°C to +60°C with SI/50 gasket (upon request)</p> <p>IEC Ex</p> <p>Galvanised steel: -20°C to +60°C with SILICON gasket (upon request)</p> <p>Stainless Steel: -50°C to +60°C with SILICON gasket (upon request)</p> <p>Special version suitable for high temperature +150°C is available upon request (the suffix become RBMF, RBFF and RBMM)</p>
<b>Approvals</b>	<p>CESI 99 ATEX 034U</p> <p>IECEX CES 10.0002U</p> <p>EAC</p>
<b>Thread</b>	NPT, UNI-6125 (other thread upon request)

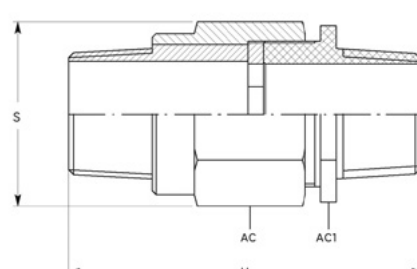
## Dimensions BMF



## Dimensions BFF



## Dimensions BMM



### BMF - Male/Female three pieces unions

CODE	TYPE	SIZE	THREAD	DIMENSIONS [mm]			
				H	S	AC	AC1
C040124120201	BMF-1N	1/2"	NPT	60	35	30	27
C040124220201	BMF-2N	3/4"	NPT	61	40	35	32
C040124320201	BMF-3N	1"	NPT	71,5	48	42	40
C040124420201	BMF-4N	1" 1/4	NPT	86	60	55	59
C040124520201	BMF-5N	1" 1/2	NPT	86,5	75	70	67
C040124620201	BMF-6N	2"	NPT	88	90	84	77
C040124720201	BMF-7N	2" 1/2	NPT	107	117	108	99
C040124820201	BMF-8N	3"	NPT	109	132	121	108

### BFF - Female/Female three pieces unions

CODE	TYPE	SIZE	THREAD	DIMENSIONS [mm]			
				H	S	AC	AC1
C040134120201	BFF-1N	1/2"	NPT	57	35	30	27
C040134220201	BFF-2N	3/4"	NPT	57	40	35	32
C040134320201	BFF-3N	1"	NPT	67	48	42	40
C040134420201	BFF-4N	1" 1/4	NPT	63	60	55	59
C040134520201	BFF-5N	1" 1/2	NPT	63	75	70	67
C040134620201	BFF-6N	2"	NPT	64	90	84	77
C040134720201	BFF-7N	2" 1/2	NPT	71	117	108	99
C040134820201	BFF-8N	3"	NPT	71	132	121	108

### BMM - Male/Male three pieces unions

CODE	TYPE	SIZE	THREAD	DIMENSIONS [mm]			
				H	S	AC	AC1
C040114120201	BMM-1N	1/2"	NPT	89	35	30	27
C040114220201	BMM-2N	3/4"	NPT	87,5	40	35	32
C040114320203	BMM-3N	1"	NPT	100,5	48	42	40
C040114420201	BMM-4N	1" 1/4	NPT	111	60	55	59
C040114520201	BMM-5N	1" 1/2	NPT	115	75	70	67
C040114620201	BMM-6N	2"	NPT	113	90	84	77
C040114720201	BMM-7N	2" 1/2	NPT	128	117	108	99
C040114820201	BMM-8N	3"	NPT	130	132	121	108



# FITTINGS

## EYS Series - Sealing fittings



Sealing fittings prevent the passage of gas, vapors or flames through pipes system. EYS series vertical fittings are available in two different dimensions: the first up to 1"; the second up to 3" with an additional lateral opening for easy insertion of glass-fiber. EZS series are used for both vertical and horizontal mounting. The fittings must be installed as close as possible to the Ex d junction box and must be filled using CRV 420 approved resin. The sealing compound is supplied, in the quantity indicated in the table below, along with the sealing fitting. Other sealing compounds are not allowed.

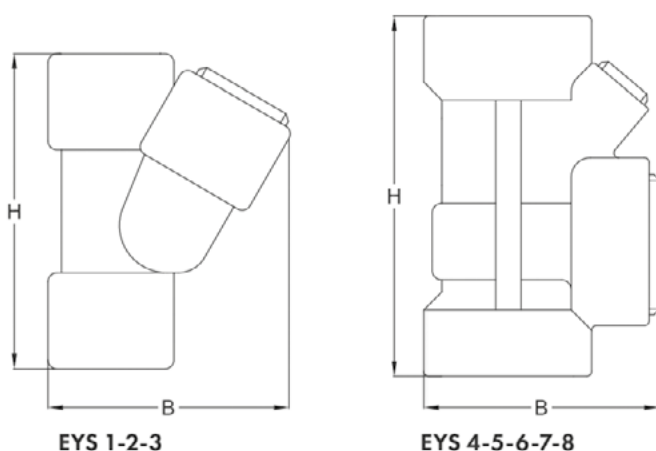
### MARKING

II 2GD  
Ex db IIC Gb  
Ex tb IIIC Db IP66

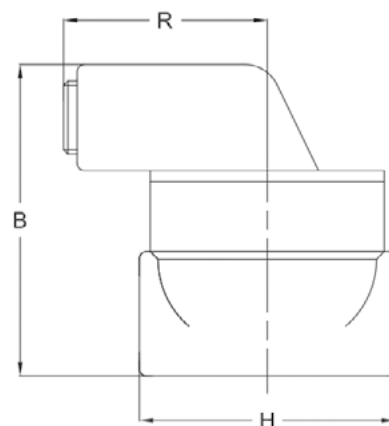
## TECHNICAL FEATURES

<b>Material</b>	Aluminium with low content of copper (AISI316L upon request)
<b>IP rating</b>	IP66
<b>Ambient temperature range</b>	-20°C to +100°C
<b>Approvals</b>	IECEX CES 14.0019X CESI 03 ATEX 085 EAC
<b>Thread</b>	NPT, UNI-6125 (other threads upon request)
<b>Optional accessories</b>	CRV420 sealing compound, fiber.

### Dimensions EYS



### Dimensions EZS



### Vertical sealing fittings EYS

CODE	TYPE	SIZE	THREAD	DIMENSIONS [mm]		RESIN QUANTITY	FIBER QUANTITY
				H	B		
C040701120201	EYS-1N	1/2"	NPT	77	56	35 GR.	17,50 GR.
C040701220201	EYS-2N	3/4"	NPT	87	66	50 GR.	25 GR.
C040701320201	EYS-3N	1"	NPT	105	82	100 GR.	50 GR.
C040701420201	EYS-4N	1" 1/4	NPT	145	84	240 GR.	120 GR.
C040701520201	EYS-5N	1" 1/2	NPT	145	84	240 GR.	120 GR.
C040701620201	EYS-6N	2"	NPT	150	95	380 GR.	190 GR.
C040701720201	EYS-7N	2" 1/2	NPT	200	134	1250 GR.	625 GR.
C040701820201	EYS-8N	3"	NPT	200	134	1250 GR.	625 GR.

### Horizontal sealing fittings EZS

CODE	TYPE	SIZE	THREAD	DIMENSIONS [mm]			RESIN QUANTITY	FIBER QUANTITY
				H	B	R		
C040601120201	EZS-1N	1/2"	NPT	72	83	50	150 GR.	70 GR.
C040601220201	EZS-2N	3/4"	NPT	72	83	50	140 GR.	70 GR.
C040601320201	EZS-3N	1"	NPT	74	92	50	140 GR.	70 GR.
C040601420201	EZS-4N	1" 1/4	NPT	98	110	80	390 GR.	195 GR.
C040601520201	EZS-5N	1" 1/2	NPT	98	110	80	390 GR.	195 GR.
C040601620201	EZS-6N	2"	NPT	130	120	80	570 GR.	285 GR.
C040601720201	EZS-7N	2" 1/2	NPT	142	160	90	1000 GR.	500 GR.
C040601820201	EZS-8N	3"	NPT	142	160	90	1000 GR.	500 GR.

### Sealing fittings accessories

CODE	TYPE	WEIGHT
C040800A00201	CRV 420/400 SEALING COMPOUND 400 GR.	400 GR.
B090100S00156	CRV 420/1000 SEALING COMPOUND 1000 GR.	1000 GR.
C040900A00201	FAB 25 FIBER 25 GR.	250 GR.
C040900A00202	FAB 50 FIBER 50 GR.	500 GR.

# FITTINGS

## NP Series - Nipples



NP series nipples are used to connect equipment or other unions with female hub.

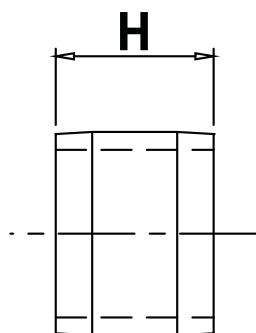
### MARKING

II 2GD  
Ex d/e IIC Gb  
Ex tb IIIC Db IP66/67

## TECHNICAL FEATURES

<b>Material</b>	Galvanised steel (AISI316L upon request)
<b>IP rating</b>	IP66/IP67
<b>Ambient temperature range</b>	ATEX Galvanised steel: -40°C to +150°C Stainless Steel: -55°C to +150°C (upon request)
<b>Approvals</b>	IEC Ex Galvanised steel: -40°C to +150°C (upon request) Stainless Steel: -50°C to +150°C (upon request)
<b>Thread</b>	CESI 01 ATEX 104U IECEX CES 15.0005U EAC
<b>Thread</b>	NPT, UNI-6125

### Dimensions NP



### Nipples - NP

CODE	TYPE	SIZE	THREAD	LENGHT H
C040214120201	NP-1N	1/2"	NPT	48
C040214220201	NP-2N	3/4"	NPT	48
C040214320201	NP-3N	1"	NPT	60
C040214420201	NP-4N	1" 1/4	NPT	55
C040214520201	NP-5N	1" 1/2	NPT	55
B090100S00182	NP-6N	2"	NPT	55
C040214720201	NP-7N	2" 1/2	NPT	68
C040214820201	NP-8N	3"	NPT	68

# FITTINGS

## EM Series - Unions



EM series couplings are used for connection of pipes with threaded male ends.

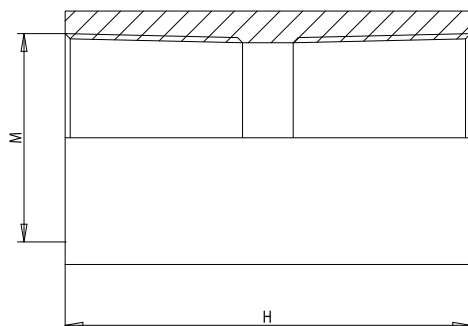
### MARKING

II 2GD  
Ex d/e IIC Gb  
Ex tb IIIC Db IP66/67

## TECHNICAL FEATURES

<b>Material</b>	Galvanised steel (AISI316L upon request)
<b>IP rating</b>	IP66/IP67
<b>Ambient temperature range</b>	ATEX Galvanised steel: -40°C to +150°C Stainless Steel: -55°C to +150°C (upon request) IEC Ex Galvanised steel: -40°C to +150°C (upon request) Stainless Steel: -50°C to +150°C (upon request)
<b>Approvals</b>	CESI 01 ATEX 104U IECEX CES 15.0005U EAC
<b>Thread</b>	NPT, UNI-6125

### Dimensions EM



### Coupling - EM

CODE	TYPE	SIZE	THREAD	LENGHT H
C040434120201	EM-1N	1/2"	NPT	39
C040434220201	EM-2N	3/4"	NPT	39
C040434320201	EM-3N	1"	NPT	51
C040434420201	EM-4N	1" 1/4	NPT	51
C040434520201	EM-5N	1" 1/2	NPT	51
C040434620201	EM-6N	2"	NPT	51
C040434720201	EM-7N	2" 1/2	NPT	65
C040434820201	EM-8N	3"	NPT	65



# FITTINGS

## ELF Series - Elbows



90° non-inspectable elbows are used in conduit system of electrical equipment.

### MARKING

II 2GD  
Ex d/e IIC Gb  
Ex tb IIIC Db IP66/67

## TECHNICAL FEATURES

**Material** Aluminium with low content of copper

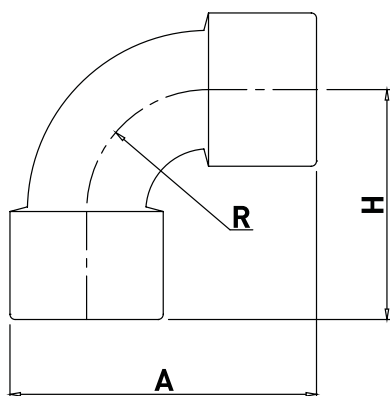
**IP rating** IP66/IP67

**Ambient temperature range** ATEX  
-55°C to +150°C  
IEC Ex  
-50°C to +150°C (upon request)

**Approvals** IECEX CES 15.0005U  
CESI 01 ATEX 104U  
EAC

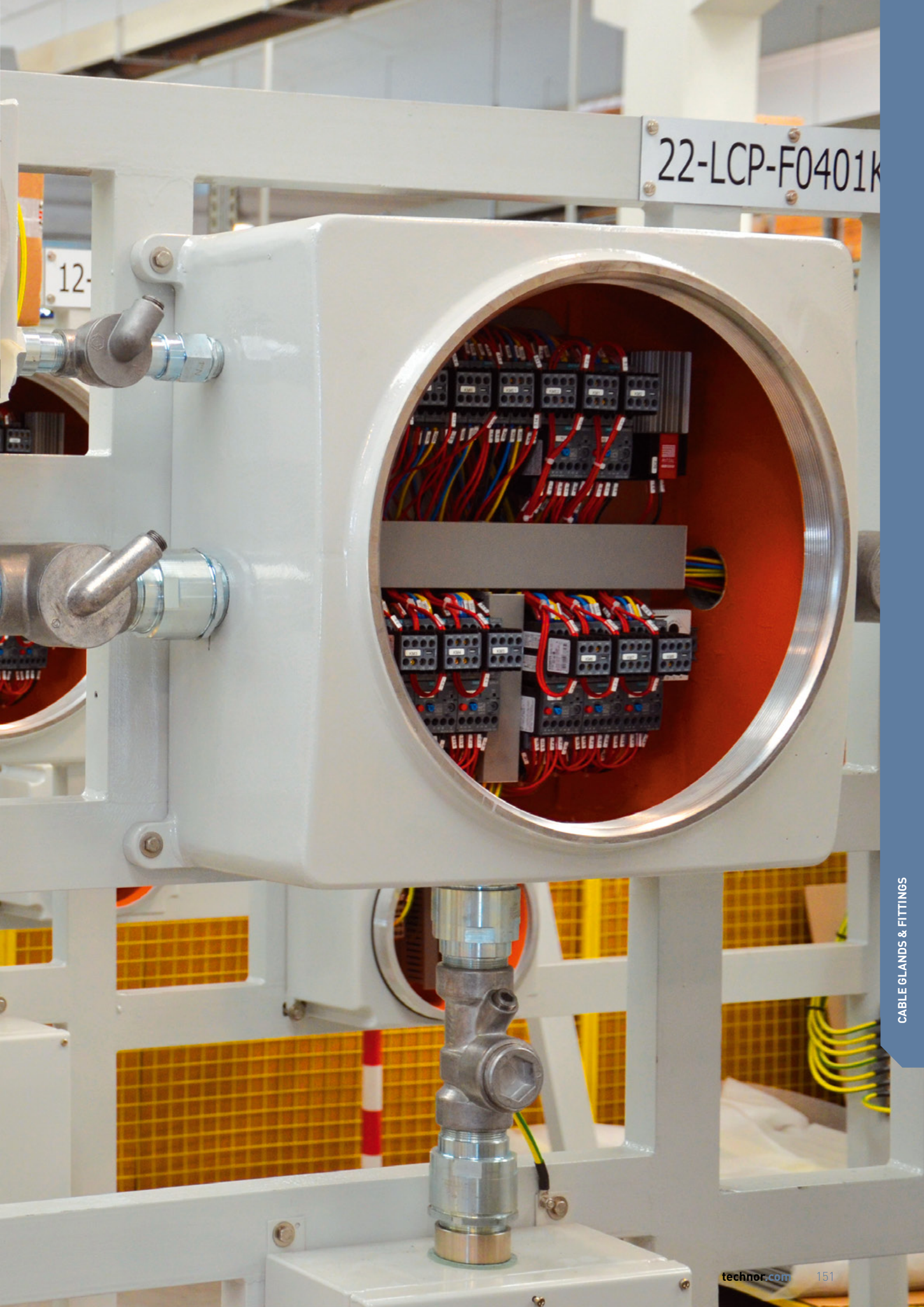
**Thread** NPT, UNI-6125

### Dimensions ELF



### Nipples - NP

CODE	TYPE	SIZE	THREAD	DIMENSIONS (mm)		
				A	H	R
C040331120201	ELF-1	1/2"	NPT	60	45	30
C040331220201	ELF-2	3/4"	NPT	75	55	30
C040331320201	ELF-3	1"	NPT	85	65	35
C040331420201	ELF-4	1" 1/4	NPT	100	75	50
C040331520201	ELF-5	1" 1/2	NPT	110	87	50
C040331620201	ELF-6	2"	NPT	135	98	60
C040331720201	ELF-7	2" 1/2	NPT	175	135	65
C040331820201	ELF-8	3"	NPT	210	160	85



22-LCP-F0401K

12-

## FITTINGS

### DB Series - Aluminium bushings



DB...A series bushings are made of aluminium. They are screwed to the pipe and they work as a cable guard. They prevent the cable from rubbing on any pipe burr/edge which could damage its sheath.

## TECHNICAL FEATURES

### Material

Aluminium with low content of copper

### Thread

NPT, UNI-6125

### Aluminium bushings - DB

CODE	TYPE	SIZE	THREAD
C040501150201	DB-1	1/2"	ISO-228
C040501250201	DB-2	3/4"	ISO-228
C040501350201	DB-3	1"	ISO-228
C040501450201	DB-4	1" 1/4	ISO-228
C040501550201	DB-5	1" 1/2	ISO-228
C040501650201	DB-6	2"	ISO-228
C040501750201	DB-7	2" 1/2	ISO-228
C040501850201	DB-8	3"	ISO-228
C040501120201	DB-1	1/2"	NPT
C040501220201	DB-2	3/4"	NPT
C040501320201	DB-3	1"	NPT
C040501420201	DB-4	1" 1/4	NPT
C040501520201	DB-5	1" 1/2	NPT
C040501620201	DB-6	2"	NPT
C040501720201	DB-7	2" 1/2	NPT
C040501820201	DB-8	3"	NPT



## FITTINGS

### PLG Series - Recessed hexagonal plugs



PLG series plugs are used to close the unused entries. They have an hexagonal head so that they can be opened with proper tools only.

#### MARKING

II 2GD

Ex d IIC Gb/Ex e IIC Gb

Ex tb IIIC Db IP66/67

## TECHNICAL FEATURES

#### Material

Galvanized steel , Aluminium with low content of copper

#### IP rating

IP66/IP67

#### Ambient temperature range

-20°C +80°C - galvanized steel

-40°C +150°C - brass nk or aluminum

-50°C +150°C - stainless steel

#### Approvals

CESI 02 ATEX 049 X

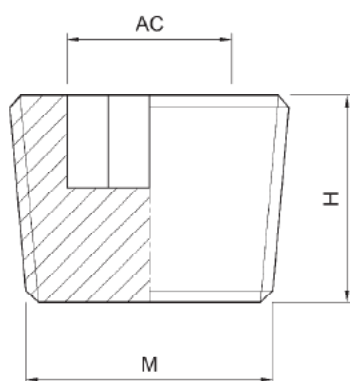
IECEX CES 10.0001X

EAC

#### Thread

NPT, UNI-6125

#### Dimensions PLG



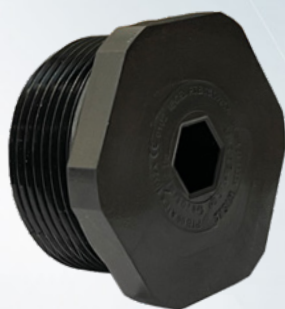
#### Recessed hexagonal plugs - PLG

CODE	TYPE	SIZE	THREAD	MATERIAL	DIMENSIONS [mm]	
					AC	H
C020212302001	PLG-1	1/2"	NPT	GALV. STEEL	13	18
C020222302001	PLG-2	3/4"	NPT	GALV. STEEL	17	18
C020232302001	PLG-3	1"	NPT	GALV. STEEL	19	24
C020242102001	PLG-4	1" 1/4	NPT	ALUMINIUM	24	24
C020252102001	PLG-5	1" 1/2	NPT	ALUMINIUM	35	24
C020262102001	PLG-6	2"	NPT	ALUMINIUM	36	24
C020272102001	PLG-7	2" 1/2	NPT	ALUMINIUM	50	30
C020282102001	PLG-8	3"	NPT	ALUMINIUM	50	30



# FITTINGS

## TR Series - Polyamide hexagonal plugs



Series polyamide plugs are used to close the unused entries in case of Ex e/Ex i certified enclosures (for intrinsically safe circuits, plugs can be supplied blue coloured).

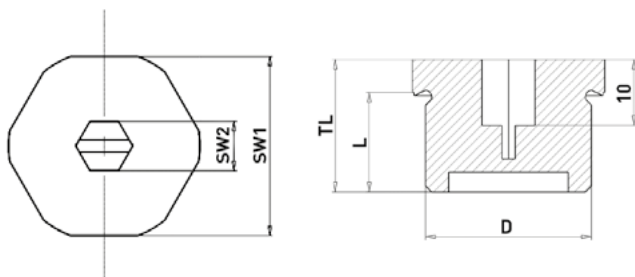
### MARKING

II 2 D Ex tb IIIC Db  
II 2 G Ex eb IIC Gb

## TECHNICAL FEATURES

<b>Material</b>	Black polyamide EPDM for gasket
<b>IP rating</b>	IP66/IP68
<b>Ambient temperature range</b>	-40 °C to +75°C
<b>Approvals</b>	PTB 06 ATEX 1032 X IECEX PTB 16.0025X
<b>Thread</b>	Metric pitch 1,5, PG
<b>Optional accessories</b>	Locknut

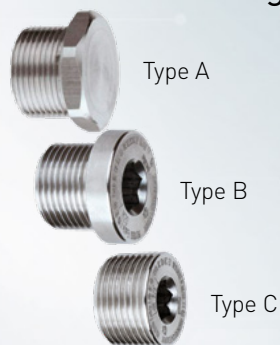
### Dimensions TR



CODE	TYPE	DIMENSIONS [mm]				
		D	L	SW1	SW2	TL
C020401505001	TR-16	M16X1,5	15	20	8	19
C020411505001	TR-20	M20X1,5	15	24	8	19
C020421505001	TR-25	M25X1,5	15	29	8	20
C020431505001	TR-32	M32X1,5	15	36	8	20
C020441505001	TR-40	M40X1,5	15	46	8	20
C020451505001	TR-50	M50X1,5	15	55	8	20
C020461505001	TR-63	M63X1,5	15	68	8	20

# FITTINGS

## T Series - Exagonal plugs



T.. series hexagonal plugs are used to close the unused entries, they have both Ex d and Ex e mode of protection.

### MARKING

II 2GD  
Ex d/e IIC Gb  
Ex tb IIIC Db IP66/68

I M2  
Ex d/e I Mb

### Material

Nickel chrome plated brass  
AISI 316 L Stainless steel  
(other materials upon request)

### IP rating

IP66/IP68

### Ambient temperature range

-40°C +100°C with EPDM or Nylon gaskets  
-65°C +220°C with Silicone gaskets  
-65°C +400°C without gaskets

### Approvals

Certified 12ATEX 0089X  
IEC Ex INE 10.0014X  
EAC

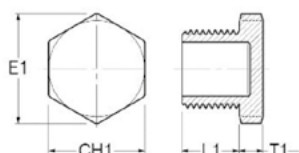
### Thread

Metric pitch 1,5, NPT (other threads upon request)

### Optional accessories

Locknut, Gasket

### Dimensions



### T.. Series Hexagonal head plugs

CODE		TYPE	SIZE	THREAD	DIMENSIONS [mm]				TYPE
BRASS	AISI 316 L				L1	T1	CH1	E1	
C020111203001	C020111403001	T20	M20 X 1,5	METRIC	15	5	24	26	A - B
C020121203001	C020121403001	T25	M25 X 1,5	METRIC	15	5	30	33	A - B
C020131203001	C020131403001	T32	M32 X 1,5	METRIC	15	5	36	40	A - B
C020141203001	C020141403001	T40	M40 X 1,5	METRIC	15	5	45	50	A - B
C020151203001	C020151403001	T50	M50 X 1,5	METRIC	15	8	55	60	A - B
C020161203001	C020161403001	T63	M63 X 1,5	METRIC	15	8	68	74	A - B
C020171203001	C020171403001	T75	M75 X 1,5	METRIC	20	8	80	86	A - B
C020181203001	C020181403001	T80	M80 X 1,5	METRIC	20	8	100	107	A - B
C020112203001	C020112403001	T1N	1/2"	NPT	15	5	26	28,6	C
C020122203001	C020122403001	T2N	3/4"	NPT	15	5	30	33	C
C020132203002	C020132403001	T3N	1"	NPT	16	5	36	39,6	C
C020142203001	C020142403001	T4N	1" 1/4	NPT	17	5	45	46,5	C
C020152203001	C020152403001	T5N	1" 1/2	NPT	17	8	50	55	C
C020162203001	C020162403001	T6N	2"	NPT	18	8	68	74	C
C020172203001	C020172403001	T7N	2" 1/2	NPT	20	8	80	86	C
C020182203001	C020182403001	T8N	3"	NPT	20	8	100	107	C

## FITTINGS

### A../R.. Series - Reductions and adaptors



Reductions and adaptors are used to connect pipes of an electrical equipment and enclosures or different devices of an explosion-proof equipment with different entries sizes.

#### MARKING

II 2GD  
Ex d/e IIC Gb  
Ex tb IIIC Db IP66/68  
I M2  
Ex d/e I Mb

## TECHNICAL FEATURES

#### Material

Nickel chrome plated brass AISI 316 L  
Stainless steel  
Galvanized steel, aluminium with low content of copper upon request

#### IP rating

IP66/IP68

#### Ambient temperature range

-40°C +100°C with EPDM or Nylon gaskets  
-65°C +220°C with Silicone gaskets  
-65°C +400°C without gaskets

#### Approvals

Certified 12ATEX 0089X  
IEC Ex INE 10.0014X  
EAC

#### Thread

ISO METRIC pitch 1,5, NPT (other thread upon request)

## A../R..Series

		MALE - M							
		M20	M25	M32	M40	M50	M63	M75	M80
FEMALE - F	M20	-	R2520	R3220	R4020	-	-	-	-
	M25	R2025	-	R3225	R4025	R5025	-	-	-
	M32	R2032	R2532	-	R4032	R5032	R6332	-	-
	M40	R2040	R2540	R3240	-	R5040	R6340	R7540	-
	M50	-	R2550	R3250	R4050	-	R6350	R7550	R8050
	M63	-	-	R3263	R4063	R5063	-	R7563	R8063
	M75	-	-	-	R4075	R5075	R6375	-	R8075
	M80	-	-	-	-	R5080	R6380	R7580	-

		MALE - M							
		M20	M25	M32	M40	M50	M63	M75	M80
FEMALE - F	1/2"	A201N	A251N	A321N	A401N	-	-	-	-
	3/4"	A202N	A252N	A322N	A402N	A502N	-	-	-
	1"	A203N	A253N	A323N	A403N	A503N	A633N	-	-
	1 1/4"	A204N	A254N	A324N	A404N	A504N	A634N	A754N	-
	1 1/2"	-	A255N	A325N	A405N	A505N	A635N	A755N	A805N
	2"	-	-	A326N	A406N	A506N	A636N	A756N	A806N
	2 1/2"	-	-	-	A407N	A507N	A637N	A757N	A807N
	3"	-	-	-	-	A508N	A638N	A758N	A808N

		MALE - M							
		1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
FEMALE - F	1/2"	-	R21N	R31N	R41N	-	-	-	-
	3/4"	R12N	-	R32N	R42N	R52N	-	-	-
	1"	R13N	R23N	-	R43N	R53N	R63N	-	-
	1 1/4"	R14N	R24N	R34N	-	R54N	R64N	R74N	-
	1 1/2"	-	R25N	R35N	R45N	-	R65N	R75N	R85N
	2"	-	-	R36N	R46N	R56N	-	R76N	R86N
	2 1/2"	-	-	-	R47N	R57N	R67N	-	R87N
	3"	-	-	-	-	R58N	R68N	R78N	-

		MALE - M							
		1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
FEMALE - F	M20	A120N	A220N	A320N	A420N	-	-	-	-
	M25	A125N	A225N	A325N	A425N	A525N	-	-	-
	M32	A132N	A232N	A332N	A432N	A532N	A632N	-	-
	M40	A140N	A240N	A340N	A440N	A540N	A640N	A740N	-
	M50	-	A250N	A350N	A450N	A550N	A650N	A750N	A850N
	M63	-	-	A363N	A463N	A563N	A663N	A763N	A863N
	M75	-	-	-	A475N	A575N	A675N	A775N	A875N
	M80	-	-	-	-	-	A680N	A780N	A880N



**DANGER**  
**HAZARD**  
**AREA**



# DECONTACTOR™ & CONNECTORS

DECONTACTOR™

Connectors

PAG  
160-165

166

# DECONTACTOR™ FROM 20 A TO 63 A

## DXN Series



Plugs and socket outlets with integrated switches for industrial applications in potentially explosive atmospheres

DECONTACTOR™ DXN FACILITATE THE COMPLIANCE OF:

- electrical machinery to the Machinery European Directive regarding isolation device and to EN 60204-1 standard: Safety of machinery electrical equipment of machines,
- electrical installation to national regulation relating to the improvement of the safety and health of workers (in Italy, Spain, Belgium, France,...) and to the installation standards: IEC/EN 60079-14, IEC/HD 60364 (international).

### MARKING

II 2G D Ex db eb IIC, Ex tb IIIC

## TECHNICAL FEATURES

### Material

GRP (Glassfiber reinforced polyester)  
Metal casing coming soon

### IP rating

IP66/67

### Ambient temperature range

-40°C to +60°C

### Approvals

ATEX, IECEX, TR CU, CSA, INMETRO, SANS, KGS, CMLEx.

### Standards

International and European IEC/ EN standards  
60079-0, 60079-1, 60079-7, 60079-31, 60309-1, 60309-4, 60947-3

### Voltage range

20-24 V AC
220-250 V AC
380-440 V AC
380-440 V AC
480-500 V AC
480-500 V AC

### SOCKET-OUTLET



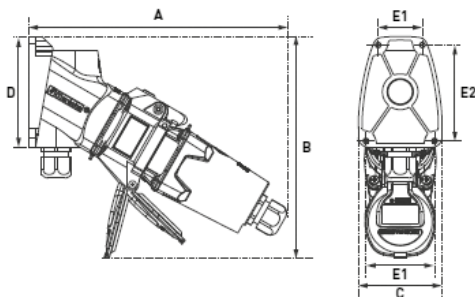
### INLET











For other currents, voltages, frequencies is necessary to ask to the Sales Dept.




Note: These range of products is available for a use in potentially explosive atmospheres zones 2 and 22 without breaking capacities (connectors).

### Dimensions PLUG ON 30° WALL MOUNTED SOCKET OUTLET





TYPE	DIMENSIONS [mm]					
	A	B	C	D	E1	E2
DXN1 (20A)	209	180	68	90	36/56	79
DXN3 (32A)	226	191	84	84	71	71
DXN6 (63A)	265	225	89	100	77	81

OPTIONS	
LOCKING PIN FOR 2 PADLOCKS Ø 4 TO 8 MM (PADLOCK NOT SUPPLIED)	
	
SAFETY HASP FOR UP TO 6 PADLOCKS	
	
LARGER RELEASE BUTTON	
	
INLET CAP IP66/IP67 (INCLUDED WITH DXN1'S INLET)	
	
IN-LINE CONNECTIONS (A PAIR OF FINGER DRAW PLATES TO AID CLOSING)	
	
SELF CLOSING/SELF RETURNING LID	
	
COMPATIBILITY WITH DSN SOCKET-OUTLET (INDUSTRIAL RANGE)	
	
SELF-EJECTION (NOT AVAILABLE FOR ZONE 2-22)	
	

HANDLES	Cable outer Ø
POLY HANDLE WITH GLAND EX POLY	
	FROM 5 MM TO 32 MM
POLY HANDLE WITH EX POLY GLAND FOR SELF-EJECTION OPTION	
	FROM 10 MM TO 32 MM
STRAIGHT POLY HANDLE WITH METAL CABLE GLAND WITH EARTH CONTINUITY	
	FROM 8 MM TO 24 MM

WALL BOX	Inclined angle	Cable outer Ø or Threads
WALL BOX POLY WITH EX POLY CABLE GLAND		
	30°	FROM 5 MM TO 18 MM
WALL BOX POLY WITHOUT CABLE GLAND		
	30°	FROM M16 TO M25
WALL BOX POLY WITH EX POLY CABLE GLAND		
	70°	FROM 8 MM TO 32 MM
WALL BOX POLY WITH METAL CABLE GLAND WITH EARTH CONTINUITY		
	70°	FROM 6 MM TO 24 MM
WALL BOX POLY WITH TERMINAL BLOCKS (IEC EX LCIE 16.0042X/LCIE 16 ATEX 3054X)		
	70°	FROM 8 MM TO 32 MM

\*Delivered with two predrilled entries fitted with 1 cable gland and 1 stopping plugs, 8+2 pre-wired terminals up to 16 mm<sup>2</sup>. For other configurations, contact us.

SLEEVE	Inclined angle
INCLINED POLY SLEEVE	
	30°
	70°



# DECONTACTOR™ 20 A DXA1



Plugs and socket outlets with integrated switches for industrial applications in potentially explosive atmospheres

DECONTACTOR™ DXA1 FACILITATE THE COMPLIANCE OF:

- electrical machinery to the Machinery European Directive regarding isolation device and to EN 60204-1 standard: Safety of machinery electrical equipment of machines,
- electrical installation to national regulation relating to the improvement of the safety and health of workers ( in Italy, Spain, Belgium, France,...) and to the installation standards: IEC/EN 60079-14, IEC/HD 60364 international

## MARKING

II 2 G D

Ex db eb IIC T6/T5 Gb

Ex tb III T68 °C/T88 °C Db

## TECHNICAL FEATURES

### Material

Metal

### IP rating

IP66/ IP67

### Ambient temperature range

-55°C to +60°C

### Approvals

LCIE 15 ATEX 3033X

IECEX LCIE 15.0030X

### Standards

International and European IEC/ EN standards

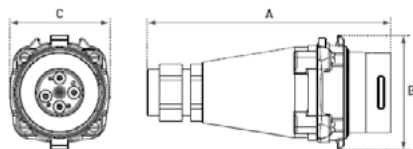
60079-0, 60079-1, 60079-7, 60079-31, 60309-1, 60309-4, 60947-3

### Voltage range

20-24 V AC
220-250 V AC
380-440 V AC
380-440 V AC
480-500 V AC
480-500 V AC

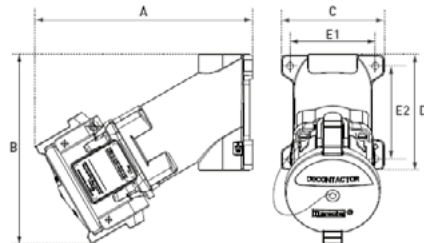
For other voltages and frequencies is necessary to ask to the Sales Dept.

### Dimensions plugs



DIMENSIONS [mm]		
A	B	C
170	79	70

### Socket mounted on 30° wall box M20-M25



DIMENSIONS [mm]					
A	B	C	D	E1	E2
178	156	84	95	70	76

## The different possible installation

SOCKET-OUTLET  
female



INLET  
male



WALL MOUNTING  
SOCKET-OUTLET  
female



PLUG  
male



INCLINED  
SOCKET-OUTLET  
female



INCLINED  
APPLIANCE INLET  
male



PORTABLE  
SOCKET-OUTLET  
female



WALL MOUNTING  
INLET  
male



### OPTIONS

LOCKING PIN FOR 2 PADLOCKS Ø 4 TO 8 mm  
(PADLOCKS NOT SUPPLIED)



INLET CAP IP66/IP67



IN-LINE CONNECTIONS  
(A PAIR OF FINGER DRAW PLATES TO AID CLOSING)



# DECONTACTOR™ FROM 20 A TO 200 A

## DX Series



Plugs and socket outlets with integrated switches for industrial applications in potentially explosive atmospheres

DECONTACTOR™ DX FACILITATE THE COMPLIANCE OF:

- electrical machinery to the Machinery European Directive regarding isolation device and to EN 60204-1 standard: Safety of machinery electrical equipment of machines,
- electrical installation to national regulation relating to the improvement of the safety and health of workers (in Italy, Spain, Belgium, France,...) and to the installation standards: IEC/EN 60079-14, IEC/HD 60364 (international).

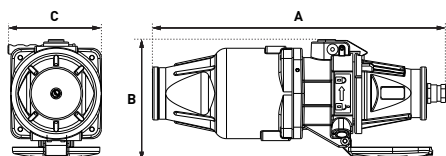
### MARKING

II 2G D Ex de IIC, tD A21, IP65

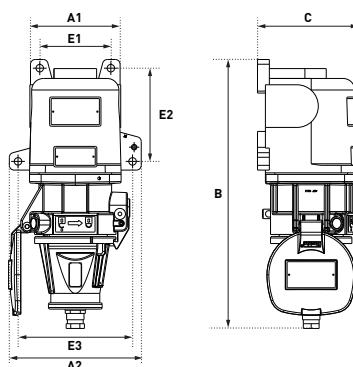
## TECHNICAL FEATURES

<b>Material</b>	Metal
<b>IP rating</b>	IP65/IP66
<b>Ambient temperature range</b>	-40°C to +60°C [ DX6, DX9, DX2] -25°C to +60°C [ DX1, DX3]
<b>Approvals</b>	<div> DX1, DX3  LCIE ATEX 6127  IECEX LCI 09.0014  TRCU B.00298-19 </div> <div> DX6, DX9, DX2  LCIE 04ATEX 6038  IECEX LCI 09.0015  TRCU B.00298-19  Ex:Korea : 19-GA4BO-0080X &amp;  19-GA4BO-001X ( only for DX2) </div>
<b>Standards</b>	International and European IEC/ EN standards 60079-0, 60079-1, 60079-7, 60079-31, 60309-1, 60309-4
<b>Dimensions</b>	

### COUPLER




### PLUGS ON WALL MOUNTED SOCKET




TYPE	DIMENSIONS [mm]		
	A	B	C
DX1	116	154	352
DX3	116	154	352
DX6	582	212	160
DX9	582	212	160
DX2	582	212	160


DIMENSIONS [mm]						
A1	A2	B	C	FIXING		
				E1	E2	E3
115	145	341	129	90	118	168
115	145	341	129	90	118	168
156	221	511	173	130	173	195
156	221	511	173	130	173	195
156	221	511	173	130	173	195

## References accessories

WALL BOX	Cable gland entry	Cable outer Ø
<b>WALL BOX METAL 90° EX METAL CABLE GLAND INCLUDED*</b>		
	M25	9-16 mm
	M32	12-21 mm
	M40	16-27 mm

\* Optional versions for earth continuity are available, please contact us

OPTIONS
<b>INLET CAP IP66/IP67</b>


HANDLES	Cable gland entry	Cable outer Ø
<b>STRAIGHT HANDLE METAL BOX EX METAL CABLE GLAND INCLUDED*</b>		
	M25	9-16 mm
	M32	12-21 mm
	M40	16-27 mm



# CONNECTORS

## MULTICONTACTS/SPeX/PNCX

### TECHNICAL FEATURES



#### PXN12C/DXN25C/ DXN37C

##### MULTICONTACTS CONNECTORS - 10 A

###### II2 G D Ex e IIC, Ex tb IIIC

- From 12 to 37 contacts
- Locking in connected or disconnected position
- Corrosion-free metal casing



#### SPeX

##### SINGLE POLE POWER CONNECTOR 680 A

###### II2 G D Ex e IIC, Ex tb IIIC

- IP65/IP66
- Electromechanical interlocking system
- Mechanic and visual keying
- High performance poly casing



#### PNCX

##### COMPACT CONNECTOR - 5 A

###### II2 G D Ex e IIC, Ex tb IIIC

- Can be used in zones 1 and 2 (gas), 21 and 22 (dust)
- Compact and easy to use
- Standard IP66/IP67
- Long life, 2000 operations




**Ex REGULATIONS**



# European ATEX Directive

## EUROPEAN DIRECTIVE 2014/34/EU

ATEX Directive 2014/34/EU is a "new approach" directive that applies to protective systems against explosions as well as all equipment used in or related to explosive atmospheres, such as electrical and non-electrical equipment, components and safety, control and adjusting devices that are necessary for the safe operation of those equipment and protective systems. As a "new approach" directive, the 2014/34/EU Directive defines the essential requirements for the safety and health which shall be respected by all manufacturers. Devices falling within the scope of the European Directive and answering to the essential requirements for the safety and health are identified by a marking plate on which the  logo appears.

## EUROPEAN DIRECTIVE 1999/92/EC

- The 1999/92/EC Directive aims to improve the safety and health protection of workers who may be exposed to potentially explosive atmospheres. The site manager has the obligation:
- to prevent the formation of explosive atmospheres or if this is not possible, prevent ignition of explosive atmospheres,
- to assess the specific risks arising from explosive atmospheres ; to draw up and keep up to date an explosion protection document,
- to classify places where explosive atmospheres may occur into zones,
- to mitigate the detrimental effects of an explosion to protect the health and safety of workers (install appropriate equipment, take organizational measures such as staff training, ...).

# International scheme : IECEx

IECEx Scheme: A voluntary certification scheme complying with international standards for electrical and non-electrical equipment for use in explosive atmospheres.

Its aim is to facilitate the international flow of equipment intended to be used in potentially explosive atmospheres (in compliance with one or more international standards

defining the type of protection against the risk of explosion) and thus avoiding multiple national certifications and at the same time ensuring an appropriate level of safety. The IECEx certification scheme allows the manufacturers of "Ex proof" equipment to obtain a Certificate of Conformity that would be accepted in Member States in which this certification scheme is recognized.

# Hazardous areas

## EXPLOSION

An explosion is a release of energy (mechanical, chemical...) in a sudden and often violent manner with high temperature and high pressure due to oxidation or another exothermic reaction.

## EXPLOSIVE ATMOSPHERE

An explosive atmosphere is a result of the mixture with air, under atmospheric conditions, and flammable substances in the form of gas, vapor, dust, fibers or flyings which, after ignition, permits self-sustaining propagation.

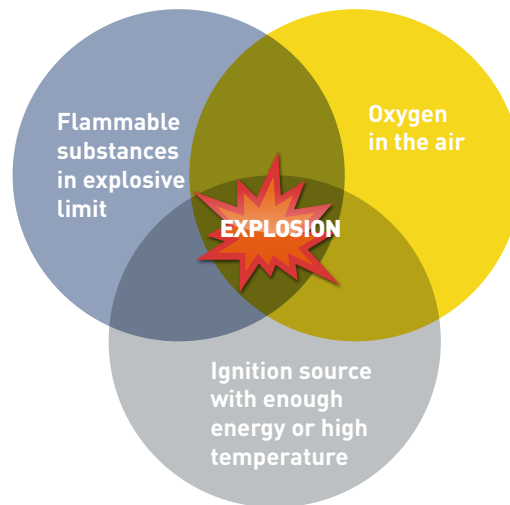
## A POTENTIALLY EXPLOSIVE ATMOSPHERE

An atmosphere is defined as potentially explosive when its usual composition is not explosive, but due to unforeseen circumstances, it can vary to such an extent that it becomes explosive (the danger exists as a potential state). Main foreseeable circumstances are as follow:

- various stages of a manufacturing process,
- incidents or accidents (rupture of a pipe-line, leak, supply loss),
- meteorological conditions (high ambient temperature, air movements).

# Ex REGULATIONS

## CONDITIONS FOR EXPLOSION



## AREAS CLASSIFICATION DEFINED BY DIRECTIVE 1999/92/EC

Probability of ATEX presence	Very High	High and Normal	Low
<b>Definition</b>	Location where an explosive atmosphere is present continuously or for a long period or frequently.	Location in which an explosive atmosphere occurs occasionally during normal operation.	Location where an explosive atmosphere is not liable to occur during normal operation or, if it does, is only short-lived (foreseeable abnormal operation).
<b>Zoning for gas &amp; vapours (1999/92/EC)</b>	Zone 0	Zone 1	Zone 2
<b>Zoning for dust &amp; fiber (1999/92/EC)</b>	Zone 20	Zone 21	Zone 22

## ATEX/IECEX CLASSIFICATION

ATEX Category	IEC protection Level (EPL)	Zone of installation	Atmosphere
1G	Ga	0	GAS
2G	Gb	1	
3G	Gc	2	
1D	Da	20	DUST
2D	Db	21	
3D	Dc	22	
M1	Ma	MINING	COAL DUST METHANE
M2	Mb		

## GAS AND VAPOURS EXPLOSION

In general, the substances, gases, liquids or vapors which can be at the origin of explosion are:

- heating gas,
- hydrocarbons,
- glue and adhesive solvents,
- varnishes and resins,
- manufacturing additives for pharmaceutical products, artificial dyes, aromas and perfumes,
- manufacturing agents for the following materials : plastics, rubbers, man-made textiles and chemical cleaning products,
- products used in the treatment and manufacturing of alcohols and derivatives...



## DUST EXPLOSION

Organic and metallic products which create powder and dust form can also in certain conditions become active agents of an explosion.

These are powders and dust of:

- magnesium,
- aluminum,
- sulfur,
- cellulose,
- corn starch,
- epoxy resins,
- polystyrenes,
- dust of plastic,
- coal,
- wood,
- medics,
- sugar (icing sugar),
- flour...

## GAS AND VAPOURS CLASSIFICATION AND TEMPERATURE CLASSIFICATION

Gases are divided into

- three groups by IEC/EN standards
- four groups by the CEC (Canadian Electrical Code) and the NEC (National Electrical Code - US) standards.

The groups defined in European, International and North American standards are fundamentally the same, as illustrated by the following table.

Gas group		Typical gas
IEC/EN	North America	
IIC	A	Acetylene
IIC	B	Hydrogen
IIB	C	Ethylene, Ethyl ether, Cyclopropane, Butadiene 1-3
IIA	D	Propane, Ethane, Butane, Heptane, Acetone, Ethyl Alcohol

IEC/EN defined a temperature classification for materials used in hazardous areas. CEC and NEC have also been modified to include a temperature classification.

Temperatures (°C)	Temperature Classification	
	For IEC/EN	For North America
450	T1	T1
300	T2	T2
280	T2	T2A
260	T2	T2B
230	T2	T2C
215	T2	T2D
200	T3	T3
180	T3	T3A
165	T3	T3B
160	T3	T3C
135	T4	T4
120	T4	T4A
100	T5	T5
85	T6	T6

# Ex REGULATIONS

## DUST CLASSIFICATION

IEC/EN defined a classification of dust:

Dust group	Definition		
	Dust type	Size	Resistivity
IIIA	combustible flyings	> 500 µm	-
IIIB	non-conductive dust	≤ 500 µm	> 10 <sup>3</sup> Ω.m
IIIC	conductive dust	≤ 500 µm	≤ 10 <sup>3</sup> Ω.m

## EXAMPLES OF FLAMMABLE SUBSTANCES

Gas/Vapors	Boiling temperature	Flash point	Self-ignition temperature	Ideal conditions for explosion LEL - UEL	Temperature class	Gas group
Formaldehyde (= Methanal)	-6°C	60°C	424°C	7% - 73%	T2	IIB
Ether	35°C	-45°C	175°C	1.7%-39.2%	T4	IIB
Aniline Oil	184°C	75°C	615°C	1.2%-11%	T1	IIA
Ethanol (= Ethyl alcohol)	78°C	12°C	400°C	3,1% - 19,0% @ 60°C 3.1% - 27,7% @ 100°C	T2	IIB
Formic acid	101°C	42°C	525°C	18%-57%	T2	IIA
Acetic acid	118°C	39°C	510°C	4% 19.9%	T1	IIA
Diethyl sulfate	208°C	104°C	360°C		T2	IIA
Methanol	65°C	9°C	440°C	6%-36% @ 60°C 6%-50% @ 100°C	T2	IIA
Isopropyl alcohol	83°C	12°C	399°C	2%-12.7%	T2	IIA
Acetone	56°C	<-20°C	539°C	2.5%-14.3% @ 100°C	T1	IIA
n propyl alcohol	97°C	15°C	385°C	2.1%-17.5%	T2	IIB
n butyl alcohol	118°C	35°C	343°C	1.4%-12%	T2	IIA
n amyl alcohol	138°C	42°C	320°C	1.06%-10.5%	T2	IIA
Benzene	80°C	-11°C	498°C	1.2%-8.6%	T1	IIA
Natural gas	-162°C	gas	600°C	4.4%-17%	T1	IIA
Ethane	-86°C	gas	515°C	2.4%-15.5%	T1	IIA
Ethylene	-104°C	gas	440°C	2.3%-36%	T2	IIB
Acetylene		gas	305°C	2.3%-100%	T2	IIC
Methyl chloride	-24°C	gas	625°C	7.6%-19%	T1	IIA
Methylamine	-6°C	gas	430°C	4.2%-20.7%	T2	IIA
Bromoethane	38°C		511°C	6.7%-11.3%	T1	IIA
Propane	-42°C	gas	450°C	1.7%-10.9%	T2	IIA
Vinyl Chloride	-14°C	gas	415°C	3.6%-33%	T2	IIA
Methyl cyanide	82°C	2°C	523°C	3%-16%	T1	IIA
Acetaldehyde	20°C	-38°C	155°C	4%-60%	T4	IIA
carbon disulphide	46°C	-30°C	90°C	0.6%-60%	T6	IIC
Cyclopropane	-33°C	gas	500°C	2.4%-10.4%	T1	IIA
ethylene oxide	20°C	gas	429°C	2.6%-100%	T2	IIB
Iso Butane	-12°C	gas	460°C	1.3%-9.8%	T1	IIA
Vinydene fluoride	-86°C	gas	380°C	3.9%-25.1%	T2	IIA
Nitromethane	101°C	35°C	414°C	7.3%-63%	T2	IIA
propylene oxide	34°C	-37°C	430°C	1.9%-37%	T2	IIB
Isobutanol	108°C	28°C	408°C	1.4%-11%	T2	IIA
Isobutanol	64°C	-22°C	165°C	1.6%-11%	T4	IIA
s-butyle chloride	68°C	-21°C	415°C	2%-8.8%	T2	IIA
Propylene dichloride	96°C	15°C	557°C	3.4%-14.5%	T1	IIA
s-butyl alcohol	99°C	24°C	406°C	1.7%-9.8%	T2	IIA
Acrylic acid	141°C	55°C	406°C	2.4%-8%	T2	IIB

Gas/Vapors	Boiling temperature	Flash point	Self-ignition temperature	Ideal conditions for explosion LEL - UEL	Temperature class	Gas group
Nitroethane	114°C	27°C	412°C	3.4%	T2	IIB
Diisopropyl	58°C	<-20°C	396°C	1%	T2	IIA
Isobutyric acid	155°C	58°C	443°C	2%-10%	T2	IIA
Naphthalene	218°C	77°C	540°C	0.6% to150°C – 5.9%	T1	IIA
Methylcyclopentane	72°C	<-10°C	258°C	1%-8.4%	T3	IIA
Mirbane Oil	211°C	88°C	481°C	1.4%-40%	T1	IIA
Isopropyltoluene	177°C	47°C	436°C	0.7%-5.6%	T2	IIA
Styrene	145°C	30°C	490°C	1%-8%	T1	IIA
s-butac	112°C	-18°C	422°C	1.3%-7.5%	T2	
Diethyl carbonate	126°C	24°C	450°C	1.4%-11.7%	T2	IIB
Dichloride	174°C	66°C	648°C	2.2%-9.2%	T1	IIA
Oxirane (chloromethyl)	116°C	28°C	385°C	2.3%-34.4%	T2	IIB
Allyl glycidyl ether	154°C	45°C	249°C		T3	IIB
Bromo propyne	89°C	10°C	324°C	3%	T2	
Allyle chloride	45°C	-32°C	390°C	2.9%-11.2%	T2	IIA
Ethylene chloride	84°C	13°C	438°C	6.2%-16%	T2	IIA
Ethylene chlorohydrin	128°C	55°C	425°C	4.9%-16%	T2	IIA
Vinyl cianide, VCN	77°C	-5°C	480°C	2.8%-28%	T1	IIB
Allylic Alcohol	97°C	21°C	378°C	2.5%-18%	T2	IIB
Propargyl Alcohol	115°C	33°C	346°C	2.4%	T2	IIB
Chloromethoxyl methane	59°C	-8°C				IIA
Methylformate	32°C	-20°C	525°C	5%-23%	T2	IIA
Vinyl acetate	72°C	-7°C	385°C	2.6%-13.4%	T2	IIA
Iso acetone propyl	116°C	16°C	475°C	1.2%-8%	T1	IIA
Ether diisopropyle	69°C	-28°C	405°C	1%-21%	T2	IIA
iso-propyl acetate	90°C	1°C	425°C	1.7%-8.1%	T2	IIA
acetic anhydride	140°C	49°C	316°C	2%-10.3%	T2	IIA
methylcyclohexane	101°C	-4°C	250°C	1-6%.7%	T3	IIA
toluene	111°C	4°C	530°C	1-7%.8%	T1	IIA
Chlorobenzene	132°C	28°C	593°C	1,3%-11,0%	T1	IIA
Cyclohexylamine	134°C	27°C	275°C	1,1%-9,4%	T3	IIA
Cyclohexanol	161°C	61°C	300 °C	1,2%-11,1%	T3	IIA
Cyclohexanone	156°C	43°C	419°C	1,3%-9,4%	T2	IIA
Phenol	182°C	75°C	595°C	1,3%-9,5%	T1	IIA
n- propyl acetate acid	102°C	10°C	430°C	1.7%-8%	T2	IIA
n-Pentane	36°C	-40°C	243°C	1.1%-8.7%	T3	IIA
ethylene glycol monomethyl ether	104°C	39°C	285°C	1.8%-20.6%	T3	IIB
dimethoxymethane	43°C	-21°C	235°C	2.2%-19.9%	T3	IIB
diethamine	56°C	-23°C	312°C	1.7%-10.1%	T2	IIA
Formic acid ethyl ester	54°C	-20°C	440°C	2.7%-16.5%	T2	IIA
Ethyl ester of nitrous acid	17°C	-35°C	95°C	3%-50%	T6	IIA
Oxolan	64°C	-14°C	230°C	1.5%-12.4%	T3	IIB
Furane	32°C	<-20°C	390°C	2.3%-14.3%	T2	IIB
Tetrahydrothiophene	121°C	13°C	200°C	1.1%-12.3%	T4	IIA
divenylenesulfide	84°C	-9°C	395°C	1.5%-12.5%	T2	IIA
Formal butyl	103°C	6°C	206°C	1.4%-9.5%	T3	
Cyclohexane	81°C	-17°C	244°C	1%-8%	T3	IIA
Cyclohexene	83°C	-17°C	244°C	1.1%-8.3%	T3	IIA
Pyridine	116°C	18°C	482°C	1.7%-12.4%	T1	IIA
morpholins	129°C	33°C	275°C	1.4%-15.2%	T3	IIA
Diisobutylamine	139°C	26°C	256°C	0.8%-3.6%	T3	IIA
Azepane	135°C to 137°C	23°C	279°C		T3	IIA

# Ex REGULATIONS


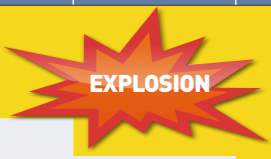
Gas/Vapors	Boiling temperature	Flash point	Self-ignition temperature	Ideal conditions for explosion LEL - UEL	Temperature class	Gas group
n- Octane	126°C	13°C	206°C	0.8%-6.5%	T3	IIA
Tetramethylene cyanide	295°C	93°C	550°C	1.7%-5%	T1	
Ethylene glycol monobutyl ether	171°C	61°C	238°C	1.1%-12.7%	T3	
Nonane (= nonyl hydride)	151°C	30°C	205°C	0.7%-5.6%	T3	IIA
Decyl Alcohol	230°C	82°C	288°C	0.7%-5.5%	T3	
Dihéxyl ether	227°C	75°C	187°C		T4	IIA
Propene	-48°C	Gas	455°C	2-11.1%	T1	IIA
Wood Ether	-25°C	Gas	240°C	2.7-32%	T3	IIB
Isobutylene	-7°C	Gas	483°C	1.6-10%	T1	IIA
tetrafluoroethylene	-76°C	Gas	255°C	10-59%	T3	IIB
triethylamine	89°C	-8°C	215°C	1.2-8%	T3	IIA
diacetone	166°C	58°C	680°C	1.8-6.9%	T1	IIA
Isoamyl Alcohol	131°C	42°C	339°C	1.3-10.5%	T2	IIA
acetylacetone	140°C	34°C	340°C	1.7%	T2	IIA
n butylester acetic acid	127°C	22°C	390°C	1.2%-8.5%	T2	IIA
Octanal	171°C	52°C	200°C		T4	IIA
Dimethylamine	7°C	Gas	400°C	2.8%-14.4%	T2	IIA
Chloroprene	60°C	-29°C	320°C	1.9%-20%	T2	
Ethyl esters of acrylic acid	100°C	9°C	350°C	1.4%-14%	T2	IIB
aminoethane-2	172°C	85°C	410°C		T2	IIA
Ethyl esters of acetic acid	77°C	-4°C	470°C	2%-12.8%	T1	IIA
Ether dibutyl	141°C	25°C	175°C	0.9%-8.5%	T4	IIB
Cyclobutane	13°C	Gas		1.8%		IIA
Cyclopentane	49°C	-37°C	320°C	1.4%	T2	IIA
Cycloheptane	119°C	6°C		1.1%-6.7%		IIA
Piperylene	41°C	<-31°C	361°C	1.2%-9.4%	T2	IIA
Amylene	38°C	-53°C	290°C	1.3%-6.6%	T3	IIA
phenylacetylene	142°C	41°C	420°C		T2	IIB
iso-Octane	99°C	-12°C	413°C	0.7%-6%	T2	IIA
Acetyl fluoride	21°C	<-17°C	434°C	5.6%-19.9%	T2	IIA
carbon monoxide (in 18% water vapor-saturated air)		Gas	607°C	10.9%-74%	T1	IIB
Acetyl ketene	127°C	33°C	262°C		T3	IIB
acryloyl chloride	74°C	-8°C	463°C	2.68%-18%	T1	IIA
Decene 1	172°C	47°C	235°C	0.55%-5.7%	T3	
xylidene (isomers mixture)		90°C to 98°C	500°C to 545°C	1%-7%	T1	
Cresol (isomers mixture)		81°C	557°C	1.1%	T1	IIA
Hydrogen	-253°C	Gas	560°C	4%-77%	T1	IIC
Ester isopropyl of nitric acid	101°C	11°C	175°C	2.0%-100%	T4	IIB
anhydrous ammonia	-33°C	Gas	630°C	15%-33.6%	T1	IIA
hydrogen sulphide	-60°C	Gas	260°C	4%-45.5%	T3	IIB
Petrol (= Fuel)		-46°C	280°C	1.4%-7.6%	T3	
Turpentine oil	154°C to 170°C	35°C	253°C	0.8%	T3	IIA
Kerosene (= Gas oil No. 1) (= Oil No. 1)		38°C to 72°C	210°C	0.7%-5%	T3	IIA
Phenol hexahydroxymethyl	155°C to 180°C	68°C	295°C		T3	IIA
paraformaldehyde		70°C	380°C	7%-73%	T2	IIB
Diesel No. 2 (= Gas oil No. 2) (= Oil No. 2)		52°C to 96°C	254°C to 285°C	0.6%-6.5%	T3	
crude gas		Gas				IIB or IIC
Oil -6		66°C to 132°C				

# How choose the equipment?

## GAS/VAPOR

Gas/vapor Subdivision	Equipment groups (according type of protection) which can be used		
	Increased safety "e"	Flameproof enclosure "d"	Associated type of protection "d" + "e"
A	IIA-IIIB-IIC	IIA-IIIB-IIC	IIA-IIIB-IIC
B	IIB-IIC	IIB-IIC	IIB-IIC
C	IIC	IIC	IIC

## TEMPERATURE CLASSES

Self ignition temperature of the gases/vapors	T6	T5	T4	T3	T2	T1
85°C ≤ Temp ≤ 100°C						
100°C < Temp ≤ 135°C						
135°C < Temp ≤ 200°C						
200°C < Temp ≤ 300°C						
300°C < Temp ≤ 450°C						
450°C < Temp						

Equipment must never be used in an atmosphere capable of ignition at the temperature indicated on the marking (temperature class).

Application area	IIA																				IIB			IIC			Self-ignition temp + gas group + temp class					
	Acetone	Industrial methane	Ethyl acetate	Methanol	Butane	Propane	Hexane	Ammoniac	Carbon monoxide	Pentane	Heptane	Iso-octane	Decane	Benzene	Xylene	Cyclohexane	Butanone	Methyl acetate	n-propyl acetate	n-butyl acetate	Amyl acetate	Butanol	Ethyle nitrate	Ethylene	Butadiene 1,3	Ethylene oxide		Hydrogen	Carbon disulphide	Acetylene		
	T1 539 °C	T1 600 °C	T2 470 °C	T2 440 °C	T2 372 °C	T2 450 °C	T3 225 °C	T1 630 °C	T1 607 °C	T3 243°C	T3 204 °C	T2 413°C	T3 235 °C	T1 498 °C	T1 470 °C	T3 244 °C	T2 404 °C	T1 505 °C	T2 450 °C	T2 422°C	T2 360 °C	T2 343 °C	T6 90 °C	T2 423 °C	T2 420 °C	T2 429 °C		T1 560 °C	T6 90 °C	T2 305 °C		
Cleaning product industry	•		•											•	•	•	•	•						•							244°C – T3 – IIB	
Pharmaceutical industry		•	•	•															•	•			•				•				90°C – T6 – IIC	
Dye industry		•		•										•	•		•	•													404°C – T2 – IIA	
Artificial rubber industry		•	•											•						•				•	•				•		305°C – T2 – IIC	
Perfumery	•		•	•										•	•							•									360°C – T2 – IIA	
Spirits 375				•																		•									360°C – T2 – IIA	
Artificial fruit flavourings			•																		•		•								90°C – T6 – IIA	
Artificial textile manufacture			•						•					•		•								•		•		•	•			90°C – T6 – IIC
Paint manufacture	•		•											•			•	•		•	•	•				•					343 – T2 – IIB	
Varnish manufacture	•		•											•			•	•		•	•	•				•					343 – T2 – IIB	
Grease solvent	•							•						•																	498°C – T1 – IIA	
Resin solvent	•			•													•	•				•									343°C – T2 – IIA	
Plastic manufacture	•	•																		•		•		•			•		•		305°C – T2 – IIC	
Hydrocarbons		•			•	•	•			•	•	•	•	•	•	•												•			90°C – T6 – IIC	
Gas used as a fuel		•		•	•	•																					•		•		305°C – T2 – IIC	
Fertiliser manufacture								•																			•				560°C – T1 – IIC	



# Ex REGULATIONS

## Explanation of marking

Manufacturer identification:

- Name and trademark
- Address

Identification of notify body  
in charge of the quality  
surveillance (ex: **0080** =  
certified and INERIS)



Mark for product in the scope of directive  
2014/34/EU and in compliance with EHSR

Conformity to all  
relevant European  
directives

Mark for product in the scope of  
directive 2014/34/EU and in compliance  
with EHSR

Product type

Electrical parameters for a  
safe use of equipment

 <b>TECHNOR ITALSMEA</b> <small>A COMPANY OF MARECHAL ELECTRIC Via Italia 33 - 20060 Gessate (MI) ITALY</small>		<b>CE</b> 0080  II 2G II 2D <b>FIDI 21 ATEX 0090 X</b> <b>IECEX FIDI 21.0015X</b> Year of construction:
<b>MADE IN ITALY</b>		<b>ATEX CERTIFICATE</b> <b>IECEX CERTIFICATE</b>
Type: SB-151510 xxVAC    xxHz    xxA Max Dis. P. xxW	Ex db eb IIC T6 Gb Ex tb IIIC T85°C Db T.amb. -50°C + 95°C Serial Nr. xxxxxxxx	Marking for Gas according standards (*) Marking for Dust according standards (**)
WARNINGS : DO NOT OPEN WHEN ENERGIZED WARNING-POTENTIAL ELECTROSTATIC CHARGING HAZARD - SEE INSTRUCTIONS		

Safety WARNING






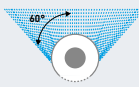

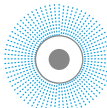

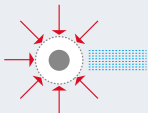

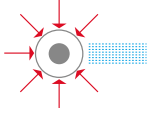
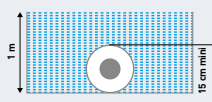
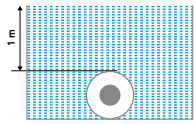
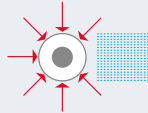
Ambient temperature  
range which shall be  
marked when different  
than -20°C/+40°C

* : Gas details	** : Dust details
<b>Ex:</b> Electrical apparatus intended to be installed in hazardous location <b>db:</b> in case the component is installed <b>eb:</b> type of protection (e = increased safety) <b>IIC:</b> Gas group/Subdivision C <b>T6:</b> temperature class <b>Gb:</b> Equipment protection level b (use in zone 1 and 2)	<b>Ex:</b> Electrical apparatus intended to be installed in hazardous location <b>tb:</b> type of protection (tb = protection by enclosure) <b>IIIC:</b> Dust group/Subdivision C <b>T85°C:</b> Maximum surface temperature <b>Db:</b> Equipment protection level b (use in zone 21 and 22) <b>IP66:</b> degree of protection provided by the enclosure

EHSR : Essential Health and Safety Requirements

# IP table (IEC/EN 60529)

Protection against ingress of solid foreign objects and against harmful effects due to the ingress of water.

1st digit : protection against ingress of solid objects			2nd digit: protection against the ingress of water		
IP	Explanation		IP	Explanation	
0	No protection		0	No protection	
1		Protected against solid bodies larger than 50 mm (e.g. accidental contact with the hand)	1		Protected against vertically-falling drops of water (condensation)
2		Protected against solid bodies larger than 12.5 mm (e.g. finger of the hand)	2		Protected against drops of water falling at up to 15° from the vertical
3		Protected against solid bodies larger than 2.5 mm (tools, wires)	3		Protected against drops of rainwater at up to 60° from the vertical
4		Protection against solid bodies larger than 1 mm (fine tools, small wires)	4		Protected against projections of water from all directions
5		Protected against dust (no harmful deposit)	5		Protected against jets of water from all directions
6		Completely protected	6		Completely protected against jets of water of similar force to heavy seas
			7		Protected against the effects of temporary immersion
			8		Protected against effects of prolonged immersion under specified conditions
			9k		Protected against jets of water from all directions with significantly increased pressure (vapors)

# IK table (IEC/EN 62262)

Protection provided by enclosures for electrical equipment against external mechanical impacts.

Code	IK 00	IK 01	IK 02	IK 03	IK 04	IK 05	IK 06	IK 07	IK 08	IK 09	IK 10
Shocks energy (in Joules)	0	0,15	0,20	0,35	0,50	0,70	1	2	5	10	20
Corresponds to	0 g	200 g	200 g	200 g	200 g	200 g	500 g	500 g	1700 g	5 Kg	5 Kg
Dropped to	0 cm	2,5 cm	10 cm	17,5 cm	25 cm	35 cm	20 cm	40 cm	29,5 cm	20 cm	40 cm

# Ex REGULATIONS

## Presentation of most common types of protection

### FLAMEPROOF « Ex d » EQUIPMENT

A flameproof equipment offers an enclosure in which the parts which can ignite an explosive gas atmosphere can be placed. It withstands the pressure developed during an internal explosion of an explosive mixture, and prevents the transmission of the explosion to the explosive gas atmosphere surrounding the enclosure.

A flameproof enclosure must meet three criteria:

- Contain an internal explosion without permanent distortions.
- Guarantee that the explosion cannot be transmitted to the surrounding atmosphere.
- Have a temperature at any points on the surface that is lower than the self ignition temperature of the surrounding gases or vapours.

There are two construction values which are essential for a flameproof equipment to answer to the 3 criteria:

- the length of flameproof gasket (L)
- the gap (i)

These values depend on gas group and the maximum allowed gap depends on the length of flameproof gasket.

It is necessary to lubricate the thread and to ensure that at least 5 threads are engaged for metric thread and that 5 threads are present on each parts for NPT threads.

Holes which are not used for cable entries must be blanked using the appropriate blanking plugs.

The equipment is supplied with the lubricated gasket. When the equipment is installed, the flamespaths must be lubricated to keep it in good condition. Use a non-hardening, anti-corrosive grease (see technical note).

In order to successfully retain the flameproof character of the equipment:

- Care must be taken before starting up to ensure that all the screws for closing the covers and cable entries are firmly tightened and that the blocking device is well screwed, if necessary.
- Modification of the original predrilled holes is prohibited.

### INCREASED SAFETY « Ex e » EQUIPMENT

Method of protection applicable to electrical equipment such as light fittings, sockets, switches, etc, which consists of preventing the occurrence of any accidental ignition.

The construction principles for increased safety « e » equipment are as follows:

- Use of high-quality insulation materials
- Specially dimensioned clearance and creepage distance
- Electrical connection which cannot become loose
- Minimum IP54 weatherproof protection of the enclosure
- Respect of the temperature classes
- Conformity of cable entries
- Labelling.

These principles are respected by screwing the cable gland directly onto the enclosure or, for untapped holes, by fixing with a locknut. Holes which are not used for cable entries must be blanked using the appropriate blanking plugs.

The equipment has a protection level of at least IP 54; it is therefore important to ensure that the sealing gasket is in good condition when the product is installed.

Defective seals must be systematically replaced.

It is important to be sure that the gasket is properly positioned for the plugs and sockets and for all the luminaries before connecting the male and female parts (for plugs and sockets) and before closing the light transmitting part of the lighting fixture.

For the connection, all technical note or instruction sheet shall be followed.

### PRODUCTS MARKED « Ex de »

Except «Ex d» enclosure, equipment having a combined protection type « d » and « e » are the most commonly used. Some apparatuses such as power sockets, lampholders, etc, which create arcs and sparks in normal operation, can't be designed only with protection mode « e ».

- The part where the electric arc is produced is enclosed in a small flameproof chamber.
- The connection terminals are « e » increased safety.
- The assembly is mounted in an « e » increased safety enclosure.

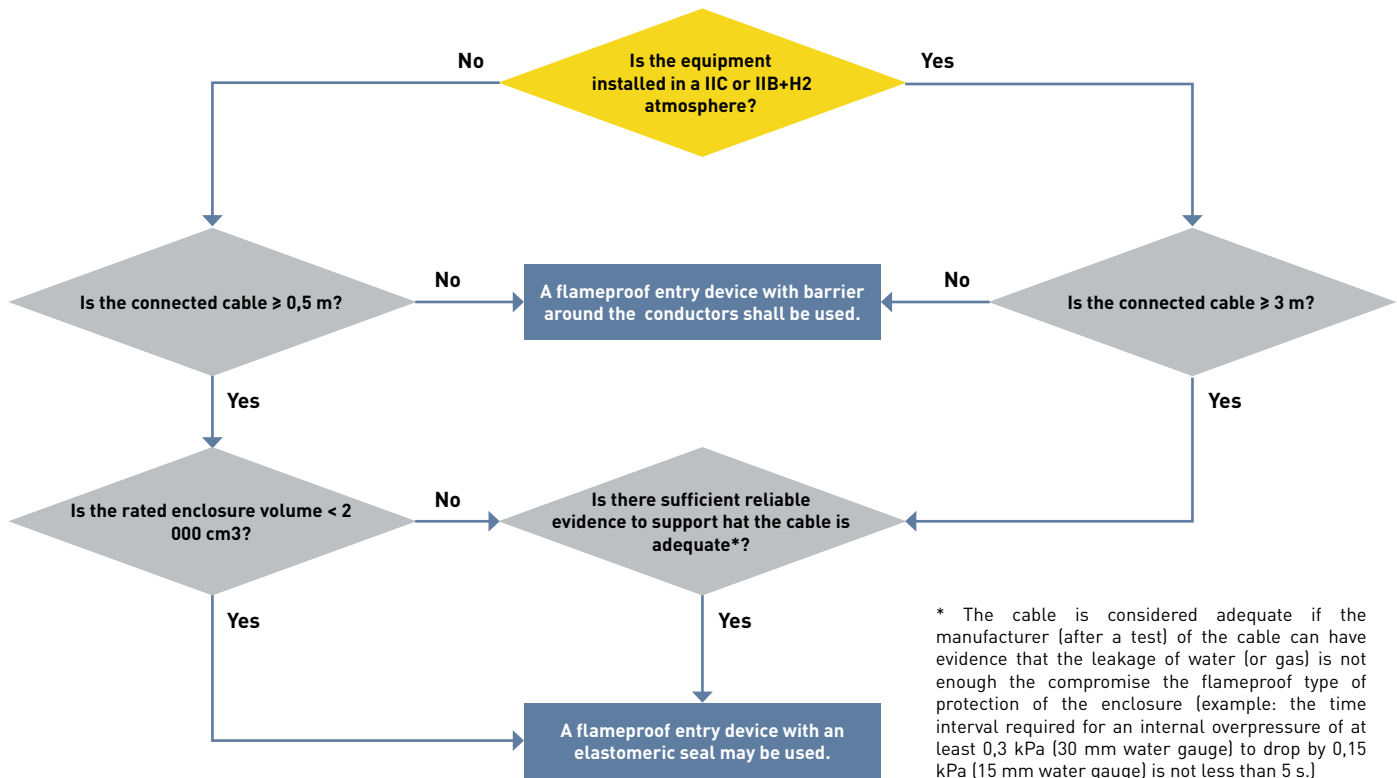
## Cables entries

The connection of cables to the electrical equipment shall maintain the explosion protection integrity of the relevant type of protection. When the cable gland certificate has an 'X' marking, this cable gland shall only be used for fixed installations. When the equipment is only portable, cable glands without 'X' marking shall be used.

## Cable Entries into Ex d Enclosures

Two situations can be considered, direct cable entry (Ex d enclosures) and indirect cable entry (Ex d e enclosures - on Ex e part).

For the direct cable entry, to choose the correct cable gland the scheme shall be followed if it is not tested with the equipment.



# Installation recommendation

## GENERAL REQUIREMENTS

Electrical installations for explosive atmosphere must comply with the requirements concerning installations in both non hazardous and hazardous locations:

- national rules
- EN/IEC 60079-14,
- IEC/EN 60079-17.

## EQUIPMENT SELECTION (EXCEPT CABLE ENTRIES)

Zones	Type of protection		Marking	EN/IEC standard
-	General requirements		-	60079-0
For use in Zones 1, 2	Flameproof enclosure		<b>Ex d</b>	60079-1
For use in Zones 1, 2	Increased safety		<b>Ex e</b>	60079-7
For use in Zones 0, 1, 2, 20, 21, 22	Intrinsic safety		<b>Ex i</b>	60079-11
For use in Zones 1, 2	Pressurisation		<b>Ex p</b>	60079-2
For use in Zones 0, 1, 2, 20, 21, 22	Encapsulation		<b>Ex m</b>	60079-18
For use in Zones 1, 2	Oil immersion		<b>Ex o</b>	60079-6
For use in Zones 1, 2	Powder filling		<b>Ex q</b>	60079-5
For use in Zone 2	"Non sparking"		<b>Ex n</b>	60079-15
For use in Zones 20, 21, 22	Dust atmospheres		<b>Ex t</b>	60079-31

# Ex REGULATIONS

## EXTERNAL INFLUENCES

The material must be selected and installed so that it is protected against external, chemical, mechanical, thermal and electrical influences, vibrations, humidity, etc., which are likely to counteract the protection modes provided.

## PROTECTION AGAINST DANGEROUS SPARKS

Limitation of earth fault currents. It is difficult to cover all systems, but the methods presented in EN/IEC 60079-14 represent general cases.

These systems can be used in Zones 1 and 2 up to 1 000 V~/1 500 V. (Low voltage equipment).

Nota: the equipment intended to be used in explosive atmosphere are not in the scope of LVD 2006/95/EC dated 12/12/2006.

## EQUALIZATION OF POTENTIALS

All exposed conductive parts and all extraneous metallic parts must be connected to the equipotential connection system. The connection system may comprise protective conductors, metal pipes in metal cable ducts and metallic structural

elements, but must not include the neutral conductor.

It must be impossible for connections to come loose by themselves.

## CABLES

Cables and accessories should be installed such that they are not exposed to mechanical damage, vibration and corrosive or chemical influences, for example due to solvents, and the effects of heat.

When this type of exposure is inevitable, protective measures must be taken to install or to select appropriate cables (using reinforced cables with shielding inside a seamless aluminum conduit, cables with a mineral insulation casing, a semi-rigid metal casing ...).

## CABLE JOINTING

Whenever possible, complete cable lengths shall be installed in hazardous locations. Where this is impossible, a cable joint must be made to the mechanical, electrical or chemical constraints; it must also be enclosed in an enclosure in which the protection mode is appropriate for the Zone like junction boxes (AQR, EJB, GUB,...).

## ADDITIONAL REQUIREMENTS FOR TYPE OF PROTECTION 'd' – FLAMEPROOF ENCLOSURES

### Solid obstacles

When installing equipment, care shall be exercised to prevent the flameproof flange joint approaching nearer than the distance specified in table below to any solid obstacle which is not part of the equipment, such as steelwork, walls, weather guards, mounting brackets, pipes or other electrical equipment.

Minimum distance of obstruction from the flameproof flange joints related to the gas group of the hazardous area	
Gas group	Minimum distance (mm)
IIA	10
IIB	30
IIC	40

### Protection of flameproof joints

Flameproof joints shall be protected against corrosion. Flameproof joints shall not be painted. (WARNING: Painting of the enclosure after complete assembly is permitted. The application of grease to the flameproof joint faces will reduce, but not eliminate, the quantity of paint penetrating the gap (Silicone based greases are often suitable for this purpose) – see § ELECTRICAL INSTALLATIONS INSPECTION AND MAINTENANCE).



**Cable glands shall:**

- be appropriate to the type of cable employed,
- maintain the type of protection,
- be in accordance with § CABLE GLANDS.

Thread engagement shall be at least five full threads (5 threads engaged for metric threaded, 3.5 threads engaged for NPT). Suitable grease may be used provided it is non setting, non-metallic and non-combustible and any earthing between the two is maintained.

Where the threaded entry or hole size is different to that of the cable gland, a flameproof threaded adapter complying with IEC 60079-1 shall be fitted which complies with thread engagement requirements detailed above.

Only one adapter is authorized.

Unused cable entries shall be sealed with a flameproof blanking element complying with IEC 60079-1.

**Conduit systems**

Conduit sealing devices shall be provided, either as part of the flameproof enclosure or immediately or as close as practical to the entry to the flameproof enclosure using a minimum number of fittings.

Conduit sealing devices, having parallel threads may be fitted with a sealing washer between the device and the flameproof enclosure providing that after the washer has been fitted, the applicable thread engagement is still achieved. Thread engagement shall be at least five full threads. (5 threads engaged for metric threaded, 3.5 threads engaged for NPT). Suitable grease may be used provided it is non-setting and any earthing between the two is maintained.

**ADDITIONAL REQUIREMENTS FOR TYPE OF PROTECTION 'e' – INCREASED SAFETY**

Enclosures containing bare live parts shall have a degree of ingress protection of at least IP54, whereas enclosures containing insulated parts shall only have a degree of ingress protection of at least IP44.

The connection of cables to increased safety equipment shall be effected by means of cable glands appropriate to the type of cable used. Cable entries shall also respect « e » protection mode and must incorporate an appropriate sealing element in order to obtain a minimum degree of protection at least equal to IP54 at the enclosure connection. Some terminals (e.g. slot types) may permit the entry of more than one conductor. Where more than one conductor is connected to the same terminal, care shall be taken to ensure that each conductor is adequately clamped.

Unless authorized by the documentation supplied with the

equipment, two conductors with different diameters must not be connected to the same terminal, unless they have firstly been fixed by means of a single compression sleeve. To avoid the risk of short-circuits between adjacent conductors in terminal blocks, the insulation of each conductor shall be maintained up to the metal of the terminal.

Combination of terminals and conductors in connection boxes and junction boxes: Care shall be taken to ensure that the heat dissipated within the enclosure does not result in temperatures in excess of the required equipment temperature class. This can be achieved by:

- a) following the guidance technical note given relating to the permissible number of terminals, the conductor size and the maximum current, or
- b) contacting us.

**ADDITIONAL REQUIREMENTS FOR TYPE OF PROTECTION 'i' – INTRINSIC SAFETY**

The aim of the installation rules for intrinsically safe circuits is to maintain separation from other circuits.

**Requirements of EPL 'Gb' or 'Gc'**

In installations to meet the requirements of EPL 'Gb', the intrinsically safe apparatus and the intrinsically safe parts of associated apparatus shall comply at least to level of protection 'ib'.

In installations to meet the requirements of EPL 'Gc', the intrinsically safe apparatus and the intrinsically safe parts of associated apparatus shall comply at least to level of protection 'ic'.

Simple apparatus need not be marked, but shall comply with the requirements of IEC 60079-0 and IEC 60079-11, in so far as intrinsic safety is dependent on them. No certification is required for a simple apparatus.

Associated apparatus should preferably be located outside the hazardous area or, if installed inside a hazardous area, shall be provided with another appropriate type of protection in like inside a EJB enclosures.

All apparatus forming part of an intrinsically safe system should, where reasonably practicable, be identifiable as being part of an intrinsically safe system. If sheaths or coverings are marked by a colour, the colour used for cables containing intrinsically safe circuits shall be light blue. Where intrinsically safe circuits have been identified by the use of light blue covered cable, then light blue covered cable shall not be used for other purposes in a manner or location which could lead to confusion or detract from the effectiveness of the identification of intrinsically safe

circuits. If all intrinsically safe circuit cables or all cables of circuits which are not intrinsically safe are armoured, metal sheathed or screened, then marking of intrinsically safe circuit cables is not required.

Alternative marking measures shall be taken inside control cabinets:

- combining the cores in a common light blue harness,
- labelling,
- clear arrangement and spatial separation.

The installation shall ensure that intrinsically safe circuit cables cannot be inadvertently connected to circuit cables which are not intrinsically safe. This may be achieved by:

- a) separating the different types of circuit cables, or
- b) placing the cables so as to protect against the risk of mechanical damage, or
- c) using cables which are armoured, metal sheathed or screened for specific types of circuits (e.g. all circuits which are not intrinsically safe are run in armoured cable or all intrinsically safe circuits are armoured).

Terminals for intrinsically safe circuits shall be separated from terminals of circuits which are not intrinsically safe:

- a) When separation is accomplished by distance, then the clearance between terminals shall be at least 50 mm,
- b) When separation is accomplished by use of an insulating partition or earthed metal partition, the partitions used shall extend to within 1,5 mm of the walls of the enclosure, or alternatively provide a minimum measurement of 50 mm between the terminals when taken in any direction around the partition.

The minimum clearances between the bare conducting parts of external conductors connected to terminals and earthed metal or other conducting parts shall be 3 mm.

The clearance between the bare conducting parts of field wiring terminals of separate intrinsically safe circuits shall be such that there is at least 6 mm between the bare conducting parts of connected external conductors.

The terminals of the intrinsically safe circuits shall be marked as such. This marking may be by the use of colour, in which case it shall be light blue.

## Electrical installations inspection and maintenance

Standard EN/IEC 60079-17 covers factors directly related to the inspection and maintenance of electrical installations within hazardous areas only, where the hazard may be caused by flammable gases, vapours, mists, dusts, fibers or flyings. This standard stipulates that the inspection and maintenance of installations shall be carried out only by experienced personnel, whose training has included instruction on the various types of protection and installation practices, the requirements of this standard, the relevant national regulations/company rules applicable to the installation and on the general principles of area classification.

Three inspections are normally requested:

- initial inspection before plant or equipment is brought into service,
- regular inspections in time,
- inspection following any adjustment, maintenance, repair, reclamation, modification or replacement.

### Frequency of inspection

The determination of the time interval between inspections shall be taken into account the process and the factors effecting the deterioration of equipment (susceptibility to corrosion, exposure to chemicals or solvents, likelihood of accumulation of dust or dirt, likelihood of water ingress, exposure to excessive ambient temperature, risk of mechanical damage, exposure to undue vibration, training and experience of personnel, likelihood of unauthorized modifications or adjustments and likelihood of inappropriate maintenance, for example that which is not in accordance with the manufacturer's recommendation).

But the interval between periodic inspections shall not exceed three years without seeking expert advice.

### Degree of inspection

- Visual inspection: faults directly visible such as missing buttons or missing gasket, not well screw cable entries,...
- Close inspection: visual inspection and in addition detection faults (Close inspection does not normally require the enclosure to be opened, nor the equipment switched off).
- Detailed inspection: such as loose connections, detected after opening the enclosure.

## SPECIFIC REQUIREMENTS

### “Ex d” equipment:

It is preferable to obtain new parts from the manufacturer. Particular attention shall be paid to the correct assembly of flameproof enclosures after repair or overhaul, in order to ensure that the flameproof joints comply with the requirements of the standard. The flameproof enclosure are not gasketed thus they may be protected by the use of grease, non-setting sealing compound or non-hardening tape applied externally in accordance with IEC 60079-14. The drilling of holes into a flameproof enclosure is forbidden. No re-cement or repair light-transmitting parts shall be made and only complete replacement assemblies, as specified by the manufacturer, shall be used. No modification affecting the explosion protection shall be carried out on parts of a flameproof enclosure.

### “Ex n” or “Ex e” equipment:

Care shall be taken when refurbishing terminations to maintain clearance and creepage distances. Any replacement

terminals, bushings or parts should be obtained from us or shall conform to the relevant certification documents only for the enclosure. It is preferable to obtain new parts from the manufacturer to guarantee the preservation of the degree of ingress protection and temperature classification as stipulated on the certification label.

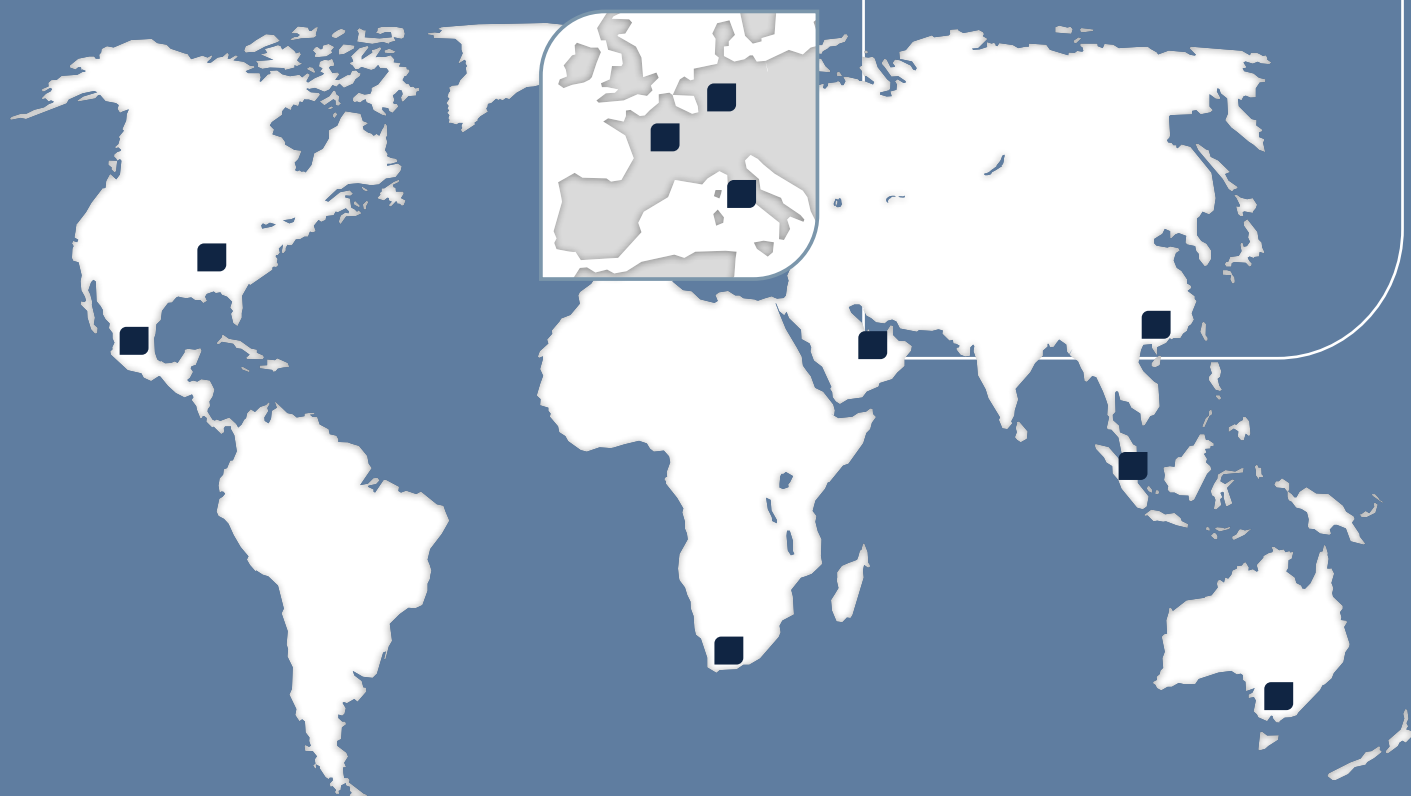
### All equipment:

For equipment with a gasket, replacements shall be of the same materials and dimensions as the original. Any proposed change of material shall be referred to the equipment manufacturer, user or certification authority. For luminaries: Light-transmitting or other parts made from plastics shall not be cleaned with solvents. Household detergents are recommended for this purpose. The maximum wattage of lamps specified shall not be exceeded. Care shall be taken when changing surface finish, paint, etc., as this may affect the surface temperature of the enclosure and thus the temperature classification. Care shall be taken to ensure that the specified type of protection and degree of ingress protection are maintained.

## INSPECTION PROGRAM

Check that	Ex d	Ex e	Ex n	Ex t
<b>EQUIPMENT</b>				
Equipment is appropriate to the EPL/Zone requirements of the location	•	•	•	•
Apparatus group is correct	•	•	•	•
IP grade of equipment is appropriate to conductivity of dust				•
Equipment temperature class is correct	•	•	•	
Equipment maximum surface temperature is correct				•
Equipment circuit identification is correct	•	•	•	•
Equipment circuit identification is available		•	•	•
Enclosure, glass parts and glass-to-metal sealing gaskets and/or compounds are satisfactory	•	•	•	•
There are no unauthorized modifications	•	•	•	•
There are no visible unauthorized modifications	•	•	•	•
Bolts, cable entry devices (direct and indirect) and blanking elements are of the correct type and are complete and tight	•	•	•	•
Flange faces are clean and undamaged and gaskets, if any, are satisfactory	•			
Lamp rating, type and position are correct	•	•	•	•
Breathing and draining devices are satisfactory	•	•	•	
<b>INSTALLATION</b>				
The installation is such as to minimize the risk of dust accumulations				•
Type of cable is appropriate	•	•	•	•
There is no obvious damage to cables	•	•	•	•
Sealing of trunking, ducts, pipes and/or conduits is satisfactory	•	•	•	•
Stopping boxes and cable boxes are correctly filled	•	•	•	•
Earthing connections, including any supplementary earthing bonding connections are satisfactory (for example connections are tight and conductors are of sufficient cross-section)	•	•	•	•
Insulation resistance is satisfactory	•	•	•	•
Specific conditions of use (if applicable) are complied with	•	•	•	•
Obstructions adjacent to flameproof flanged joints are in accordance with IEC 60079-14	•			
Variable voltage/frequency installation in accordance with documentation	•	•	•	•
Cables not in use are correctly terminated		•	•	•
<b>ENVIRONMENT</b>				
Equipment is adequately protected against corrosion, weather, vibration and other adverse factors	•	•	•	•
No undue accumulation of dust and dirt	•	•	•	•
Electrical insulation is clean and dry	•	•	•	

# WORLD PRESENCE



## TECHNOR ITALSMEA S.p.A.

Via Italia 33, 20060 Gessate (MILANO) - Italia  
Tel. : +39 02 95 00 151  
sales@italsmea.com

## MARECHAL ELECTRIC S.A.S (Head Office)

5 avenue du chemin de Presles  
94410 Saint-Maurice, FRANCE  
Tel.: +33 (0)1 45 11 60 00  
contact@marechal.com

### Africa SADC area

#### MARECHAL ELECTRIC AFRICA (PTY) LTD.

PO Box 13875 Witfield 1467  
Unit A1 Harvard Lane  
Aero Star Business Park  
Jet Park Road, Jet Park  
South Africa  
Tel.: +27 11 894 7226/7/8  
sales.za@marechal.com

### Australia

#### MARECHAL AUSTRALIA PTY LTD

20 A Technology Circuit  
HALLAM VIC 3803  
Australia  
Tel. : +61 (0)3 8786 2500  
sales@marechal.com.au

### Germany/Austria/Switzerland/ East Europe/Russia

#### MARECHAL GmbH

Im Lössenfeld 8  
D-77731 Willstätt-Sand  
Germany  
Tel.: +49 (0)7852/91 96-0  
info.de@marechal.com

### USA/Canada

#### MELTRIC Corporation

4765 W. Oakwood Park Drive  
Franklin WI 53132, USA  
Tel.: +1 414 433 2700  
mail@meltric.com

### Mexico

#### MELTRIC Corporation

Insurgente Sur 863 - Piso 7  
Napoles, Benito Juarez,  
D. F. Mexico, C.P 03810  
Tel.: +52 55 50056752  
mail@meltric.com

### Asia

#### MARECHAL ELECTRIC Asia Pte Ltd

9 Tagore Lane  
#01-05 9@Tagore  
Singapore 787472  
Tel.: +65 6554 2722  
sales.asia@marechal.com

### China

#### MARECHAL ELECTRIC (CHINA) Co., Ltd

11 North Xiangshui Road,  
West Dayawan District,  
Huizhou.P.R.C  
Tel.: +86 (0)752-5319536  
sales.cn@marechal.com

### Middle East

#### MARECHAL ELECTRIC Middle East Trading LLC

80 Street, Shed-01B ALFA3  
Complex  
Jebel Ali Industrial 1 - Dubai, UAE  
Tel. : +971 4 226 8400  
sales.me@marechal.com

For any other country or area,  
please contact head office.

**technor.com**



A COMPANY OF MARECHAL ELECTRIC



MARECHAL® TECHNOR® MELTRIC®