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To be sure to be safe.

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2012

Explosion proof electrical equipment  
QUICK REFERENCE GUIDE



To be sure to be safe.

# PRODUCTS



**CORTEM GROUP**  
To be sure to be safe



Since 1968, Cortem S.p.A. has been designing and manufacturing explosion-proof and weather-proof electrical equipment addressed to hazardous areas. Thanks to a continuous effort in technical innovation and improvement, it's today a leader in this field, able to provide a whole range of products, meeting on-shore and off-shore applications.

The peculiarity of the Technology Group Cortem, formed by Cortem, Elfit and Fondisondo companies, is the experience gained in the Ex field which results not only in the furniture of simple Ex-products, but also in engineered and customized solutions. All our products are designed and manufactured internally according to different methods of protection such as 'Ex d' flameproof, 'Ex e' increased safety, 'Ex ed' mixed and 'Ex n' no sparking, using primary aluminium alloys, tited steels and plastic materials that assure resistance and duration. The aluminum alloy used by Cortem has passed all tests required by EN 60068-2-30 Standard (hot/humid cycles) and EN 60068-2-11 Standard (salt spray test). All our products in aluminium alloy are protected by an epoxy coating RAL 7035. This treatment, only provided by Cortem Group, guarantees a durable protection.

Cortem production range can be summarized as follows:

- Lighting fixtures, obstruction lighting fixtures, floodlights and hand lamps.
- Junction and pulling boxes, control stations.
- Signalling and control equipment, plugs and sockets.
- Cable glands and electrical fittings.
- Special executions: switchgears and panel boards according to customer's specifications.

90% of our production are located in the Oil & Gas sector both off-shore and on-shore, but also in chemical, pharmaceutical plants and in all those manufacturing areas where the presence of explosive atmospheres may occur such as grain silos, woodworks and paper mills. We invest every year some of our resources to develop innovative products that meet the market needs and, for this reason, our R&D department studies the best solution valuating normative and market price issues, plant and security aspects.

With more than 30 agencies, 90 distributors, 7 partners and 3 production centers displaced, Cortem provides a local and qualified presence around the world. For Cortem "displacing" does not means transferring facilities, resources and know-how in low cost Countries, but replicating a successful model of industrial organization in which environment safety, product quality, compliance with standards, technical and after-sales services are the fundamentals of our corporate mission.

The pay-off "to be sure to be safe" represents our pride and passion for what we design and manufacture.

## LIGHTING FIXTURES FOR ENERGY SAVING LAMPS



### EV, EVE SERIES

EV and EVE lighting fixtures are designed for the petrochemical industry, combining aesthetics with functionality, performance with simplicity in full compliance with the severity of Ex regulations. The aluminium alloy with low copper content, the shock-resistant borosilicate glass and the electropolished stainless steel make this fixture strong to corrosion agents of salt atmospheres and of industrial pollutions.

- Easy to install, economic maintenance.
- EVE fixtures have an Ex e internal terminal junction box which allows the connection with an Ex e cable gland (not barrier).
- Suitable for discharge lamps up to 500W.

Group II, Category 2GD

EV series  
Ex d IIC T... - Ex tD A21  
EVE series  
Ex de IIC T... - Ex tD A21

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

Ambient temperature  
Standard  
- 20°C + 55°C  
Special  
- 50°C + 60°C

## LIGHTING FIXTURES FOR DISCHARGE LAMPS



### EW, EWA, EWE, EWAE SERIES

EW, EWA, EWE, EWAE series lighting fixtures for discharge lamps are designed for installation in all those areas of a facility defined hazardous for the presence of explosive gas and dust, where is necessary an efficient localized light distribution in accordance to ATEX Directive 94/9/EC.

- EW and EWE series are equipped with cooling fins for a better heat dissipation. They have an internal Ex e terminal junction box which allows the connection with an Ex e cable gland (not barrier).
- Globe in borosilicate glass with high thermal and mechanical stability.
- Suitable for discharge lamps up to 150W (EW, EWE) and up to 400W (EWA, EWAE).

Group II, Category 2GD

EW, EWA series  
Ex d IIC T... - Ex tD A21  
EWE, EWAE series  
Ex de IIC T... - Ex tD A21

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

Ambient temperature  
Standard  
- 20°C + 55°C  
Special  
- 50°C + 60°C

## LIGHTING FIXTURES FOR DISCHARGE LAMPS



### EWN SERIES

EWN lighting fixtures are able to mix structural strength and resistance to chemically aggressive environments with a lighting efficiency and a optimal distribution for industrial process areas where both the lighting of on-walk-way and working surfaces (Horizontal Lux) and the lighting of potential obstructions (Vertical Lux) are required. The Ex nR (restricted briefing) mode of protection, obtained thanks to the use of special silicone gaskets, resistant to ageing and wear, makes EWN series a "Category 3" equipment.

- Simplified re-lamping.
- High resistance to corrosion and extreme weather conditions.
- Suitable for discharge lamps up to 400W.

Group II, Category 3GD

Ex nR II T3/T4 - Ex tD A22

IP66

Zone 2-22

Low copper content aluminium alloy

Ambient temperature  
Standard  
- 25°C + 60°C  
Special  
- 50°C + 60°C



## LIGHTING FIXTURES FOR DISCHARGE LAMPS



### RLFE SERIES

These fixtures for discharge lamps are suitable for lighting large areas, specifically for chemical and petrochemical industry, off-shore and on-shore. The body is made of aluminium alloy with low copper content, the globe is of borosilicate glass. They have a high thermal and mechanical stability. The borosilicate globe has an impact strength up to 4 joules.

- Quick and simple maintenance.
- Robust and reliable over time.
- Suitable for discharge lamps up to 400W.

Group II, Category 2GD

Ex de IIC T... - Ex tD IIIC Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

Ambient temperature  
- 20°C + 60°C

## LIGHTING FIXTURES FOR FLUORESCENT TUBES



### FLFE, FLF SERIES

FLFE and FLF series lighting fixtures consist of two heads in aluminum alloy with low copper content provided with a G13 lamp holders, a tempered borosilicate glass tube heat resistant and an internal white painted aluminium reflector. These fixtures are more powerful thanks to the use of the glass tube, instead of plastic, thus ensuring a high aging coefficient and, therefore, a long reflectance.

- Excellent "CX" coefficient, less wind resistance and less accumulation of dust.
- Easy re-lamping thanks to the frame that houses the electrical part which slides on guide rails.
- FLFE fixtures have an Ex e internal terminal junction box which allows the connection with an Ex e cable gland (not barrier).
- Suitable for fluorescent tubes up to 2 x 58W.

Group II, Category 2GD

FLFE series  
Ex de IIC T6 - Ex tD A21  
FLF series  
Ex d IIC T6 - Ex tD A21

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

Ambient temperature  
Normal operation  
- 20°C + 55°C  
Emergency operation  
- 20°C + 50°C

## LIGHTING FIXTURES FOR FLUORESCENT TUBES



### EVFD SERIES

Thanks to the mechanical strength, EVFD series fluorescent fixtures are suggested for the use in all areas where hazardous vapors, gases and dusts are constantly present. They are designed for an uniform illumination of locations and facilities that require compact devices and high luminous efficiency. The exclusive curvature of the reflector, combined with the transparency of the protective tube, allows a wide spread of light, less wearing and more comfortable in any environment.

- Constant lighting performance.
- Wide-ranging spread light.
- Model with single-lamp or with a kit for two-lamps version.
- Suitable for fluorescent tubes up to 2 x 58W.

Group II, Category 2GD

Ex d IIC T5/T6 - Ex tD A21

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

Ambient temperature  
- 20°C + 55°C

## LIGHTING FIXTURES FOR FLUORESCENT TUBES



### EXEN, EXEL, EXEL...E SERIES

EXEN and EXEL series fluorescent lighting fixtures have a great mechanical strength and they can be installed in hazardous areas where a high protection against corrosion, dust, water and humidity is required. They have a high reliability thanks to the EOL Protected system which allows the fluorescent tube to exhaust and shut down safely and securely. Thanks to the dual-channel electronic ballast, if one of the two tubes fails, the other continues to operate independently.

- Opening and closing slide system controlled by an hexagonal wrench.
- Body in black antistatic polyester resin reinforced with fiberglass shock and UV resistant. Diffuser in transparent polycarbonate, shock and UV resistant.
- Loop-in/Loop-out connection on both sides.
- Suitable for fluorescent tubes up to 2 x 36W.

EXEL series  
Group II, Category 2GD  
Ex ed IIC T4/T5 - Ex tD A21 IP66  
Zone 1-2-21-22

EXEN series  
Group II, Category 3GD  
Ex nA II T4/T5 - Ex tD A22 IP 66

Zone 2-22

Antistatic glass reinforced polyester

Ambient temperature  
Standard  
- 40°C + 50°C  
Special  
- 40°C + 55°C

## STAINLESS STEEL LIGHTING FIXTURES FOR FLUORESCENT TUBES



### EXEL-V... S SERIES

These increased safety fixtures consist of a body and an internal reflector in AISI 304L stainless steel (AISI 316L upon request) and a diffuser in tempered glass resistant to impacts and high temperatures. This particular construction makes them particularly suitable for applications requiring greater protection against chemically aggressive environments or with high risk of mechanical shock.

- Single and double channel electronic ballast.
- Flat glass anti-light pollution.
- Stainless steel locking.
- Loop-in/Loop-out connection on both sides.
- EOL Protected system.
- Suitable for fluorescent tubes up to 2 x 36W.

Group II, Category 2GD

Ex ed IIC T4/T5 Ex tD A21

IP66

Zone 1-2-21-22

AISI 304L stainless steel

Ambient temperature  
Standard  
- 40°C + 50°C  
Special  
- 40°C + 55°C

## LIGHTING FIXTURES FOR FLUORESCENT TUBES



### LXB, LN SERIES

LXB and LN series lighting fixtures for fluorescent bi-pin tubes are safe, easy and quick to maintain ensuring a high luminous efficiency. The exclusive curvature of the reflector "epoxy painted" and the transparency of the protective tube allow a wide spread of light, less wearing and more comfortable in any environment. In addition to polycarbonate tubes, they can be supplied with glass tubes, recommended especially in plants with the presence of ammonia and urea.

- They are available in normal operation, emergency (type EE ...) or normal + emergency (EF ...).
- Body in aluminium alloy and reflector in white painted aluminium.
- LXB series has the EOL Protected system.
- Suitable for fluorescent tubes up to 2 x 36W

LXB series  
Group II, Category 2GD  
Ex ed IIC T5/T6 - Ex tD A21 IP65  
Zone 1-2-21-22  
Ambient temperature  
Standard - 20°C + 55°C  
Special - 20°C + 40°C

LN series  
Group II, Category 3D  
Ex nA II T4/T5 - Ex tD A22 IP 65  
Group II, Category 3D  
Ex tD A22 IP65  
Zone 2-22  
Ambient temperature  
Standard - 25°C + 55°C  
Special - 25°C + 40°C  
Low copper content aluminium alloy

## LIGHTING FIXTURES FOR FLUORESCENT TUBES



### AVN SERIES

The integration between performance and design make these lighting fixtures suitable for different applications (Zone 2, 21, 22). Savings in installation and maintenance costs and luminous efficiency are the main features of this fixture. Furthermore, AVN series, since it's addressed to high-risk areas, provides mechanical properties that ensure reliability and safety. IP 65 body in polyester resin reinforced with glass fiber and diffuser in transparent polycarbonate for T8 fluorescent lamps.

- Stainless steel clips operable without tools.
- Simple installation.
- EOL Protected system.
- Suitable for fluorescent tubes up to 2 x 58W.

Group II, Category 3GD  
Ex nA II T4/T5 - Ex tD A22 IP65

Group II, Category 3D  
Ex tD A22 IP 65 T4/T5  
Ex tD A21 IP 65 T4/T5

IP65

Zone 2-21-22

Antistatic glass reinforced polyester

Ambient temperature  
Standard  
- 25°C + 50°C  
Special  
- 25°C + 55°C  
- 25°C + 40°C

## TANK AND VESSEL INSPECTION LIGHT



### EVO SERIES

EVO series inspection lights are designed to improve the monitoring of a product and its level in boilers, tanks, bunkers, silos, pipelines and other containers that are normally closed in all those areas where hazardous vapors, gas, dust or other fuels are present during normal plant operation.

- Stainless steel screws, neoprene gaskets.
- Suitable for lamps up to 140W.

Group II, Category 2GD

Ex d IIC T... - Ex tD A21

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

Ambient temperature  
Standard  
- 20°C + 55°C  
Special  
- 50°C + 60°C

## BULKHEAD LIGHTING FIXTURES



### HI SERIES

HI series bulkhead lighting fixtures are ideal for lighting narrow settings with danger of explosion and fire such as tunnels, passages, corridors, staircases, boiler rooms, storage areas, perimeter walls, walkways, handrails ...

- Designed to withstand thermal and mechanical shocks.
- Can also be installed in presence of hydrogen (IIC).
- Flat glass anti-light pollution
- Suitable for lamps up to 100W.

Group II, Category 2GD

Ex d IIC T3/T6 IP 65 - Ex tD A21

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

Ambient temperature  
- 20°C + 55°C

## LED LIGHTING FIXTURES AND FLOODLIGHTS



### EWL 80 SERIES

LED floodlights and fixtures series EWL-80 are designed according to the LED technical requirements in order to make the most of this new technology. The project combines a lightweight and compact design with high performance in terms of reliability, safety, efficiency and energy savings ensuring, in a life-cycle of 100.000 hours, unalterable brightness and light quality.

- Heat dissipation body which guarantees the LED plate long duration.
- As lighting fixture, the LED plate can be accompanied by an optics that vary the photometry.
- Simple installation and continuous illumination even in the event of failure of some LEDs.
- EWL 80 fixtures have an Ex e internal terminal junction box which allows the connection with an Ex e cable gland (not barrier).
- 65W LED plate designed to replace traditional 150W metal halide lamps, 250W mercury lamps and 500W incandescent lamps.

Group II, Category 2GD

Ex de IIC T5 Gb - Ex tb IIIC T100°C Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

Ambient temperature  
- 20°C + 60°C

## VERTICAL RECTANGULAR FLOODLIGHTS



### SLFE SERIES

SLFE series floodlights are designed to ensure a symmetrical distribution and a light power in all those areas that require an intense and concentrated stream of light. Their rectangular shape makes them unique and innovative in the design for their maintenance function; in fact, through a side access, it's possible to replace the bulb without removing the front glass.

The electrical connection to the floodlight is made through a terminal inserted into an "Ex e" enclosure which allows the entry by a cable gland with an "Ex" sealing ring (no barrier).

- Flat glass anti-light pollution.
- Reinforced steel bracket for moving structures upon request.
- Suitable for lamps up to 600W.

Group II, Category 2GD

Ex de IIB T2/T3 - Ex tD A21

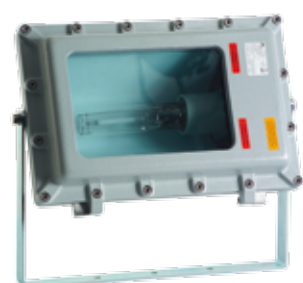
IP66

Zone 1-2-21-22

Low copper content aluminium alloy

Ambient temperature  
Standard  
- 20°C + 55°C  
Special  
- 50°C + 55°C

## HORIZONTAL RECTANGULAR FLOODLIGHTS



### SLEE SERIES

SLEE series floodlights are suitable for installation in environments where hydrogen (H2) is present. They are certified with a high degree of mechanical protection (IP67) and they provide a symmetrical and concentrated distribution of the luminous flux. The electrical connection to the floodlight is made through a terminal inserted into an "Ex e" enclosure which allows the entry by a cable gland with an "Ex" sealing ring (no barrier).

- Flat glass anti-light pollution.
- Reinforced steel bracket for moving structures upon request.
- Suitable for lamps up to 400W.

Group II, Category 2GD

Ex de IIB + H2 T2/T3/T4 - Ex tD A21

IP66/67

Zone 1-2-21-22

Low copper content aluminium alloy

Ambient temperature  
Standard  
- 20°C + 55°C  
Special  
- 50°C + 55°C

## RECTANGULAR FLOODLIGHTS



### TIGER SERIES

These floodlights are ideal for lighting large areas, if equipped with symmetrical reflector, or for a selective concentration of light on specific areas when equipped with asymmetric reflector. The high degree of protection IP66 combined with an optimum efficiency at low (-50° C) and high (+60° C) temperatures, make TIGER floodlights suitable for the use in all environments where climatic conditions are extreme.

- Fast maintenance.
- Simple wiring thanks to the use of marked terminals.
- Anti-corrosion aluminium clips.
- Flat glass anti-light pollution.
- Suitable for lamps up to 400W.

Group II, Category 3GD

Ex nR II T2/T3 - Ex tD A22

IP66

Zone 2-22

Die-cast aluminium

Ambient temperature  
Standard  
- 25°C + 60°C  
Special  
- 50°C + 60°C

## ROUND FLOODLIGHTS



### RLEE SERIES

RLEE series floodlights are designed for a narrow beam symmetric illumination of areas with danger of explosion. They have a mobile support structure with a base for an easy directional pointing. It allows a 360° beam orientation, both vertically and horizontally. They are supplied with the electrical part in a separate house, thus facilitating maintenance operations.

- Symmetric distribution of the light beam.
- Suitable for discharge lamps up to 1000W.
- Excellent mechanical strength, flat glass anti-light pollution.

Group II, Category 2GD

RLEE-35/55  
Ex d IIC T3 - Ex tD A21

RLEE-107  
Ex d IIB T2/T3 - Ex tD A21

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

Ambient temperature  
- 20°C + 55°C

## LED OBSTRUCTION LIGHTING FIXTURES



### XLFE-4 SERIES

XLFE-4 obstruction lighting fixtures are suitable for installation on towers or high buildings as obstruction signal thanks to light signals emitted by 4 LED of high power and luminous efficiency. The use of LED technology provides low power consumption, long life (approx. 50.000 hours) and, consequently, a reduction in maintenance costs.

- Fixtures in red color complies with ICAO Standard (International Civil Aviation Organization): luminous flux of 360° on the ground plane and less than 10° in the vertical plane.
- 32 candles low intensity obstruction fixtures.
- Different colors available.

Group II, Category 2GD

Ex de IIC T.. Gb; Ex tb IIIC T.. Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

Ambient temperature  
- 20°C + 55°C

## OBSTRUCTION LIGHTING FIXTURES



### XLI, XLF 1-2 SERIES

XLI and XLF 1-2 series lighting fixtures are ideal for installation on towers and high buildings as obstruction signal with a fixed light (XLI) or with a flashing light (XLF 1-2). Their mechanical strength combined with the functionality and security make them durable even in the presence of salt atmosphere and industrial pollutions.

- Possibility of double lighting fixture wired and sealed to the junction box.
- Different colors available.
- XLI series is suitable for lamps up to 100W.
- XLF 1-2 series is suitable for lamps up to 16 Joule.

Group II, Category 2GD

XLI series  
Ex d IIC T3/T4 - Ex tD A21

IP66

Ambient temperature  
- 20°C + 55°C

XLF 1-2 series  
Ex d IIC T5; Ex tD A21

IP65

Zone 1-2-21-22

Ambient temperature  
- 20°C + 55°C

Low copper content aluminium alloy



## EMERGENCY SIGNALING LIGHTING FIXTURES FOR FLUORESCENT TUBES



### EVF-18EX SERIES

Emergency lights EVF-18EX are designed for illuminate public places and structures that require compact devices and high light performance, especially near exits or escape routes. EVF-18 EX series is equipped with an electronic ballast for 8W fluorescent lamps.

- Two-color LED (green/red) which monitors batteries operation, warning the user in case of failure.
- They may be supplied with pictograms of security.
- Suitable for fluorescent tube up to 1 x 8W.

Group II, Category 2GD

Ex d IIC T5 - Ex tD A21

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

Ambient temperature  
- 20°C + 55°C

## LED TRAFFIC LIGHTS



### CCA-02E/S...LD SERIES

CCA-02E/S...LD traffic light system, thanks to the LED technology, is able to achieve optimum light efficiency, immediately power response times and very low energy consumption. The traffic light is suitable for the traffic regulation in chemical aggressive industrial environments or potentially hazardous areas, including marine one.

- One, two or three signalers and combinations of colors like green, yellow and red.
- Estimated life of 50.000 hours.
- 4 LED installed on a plate (in case of failure of one or more LED the fixture continues to operate).
- 6W LED plate.

Group II, Category 2GD

Ex d IIC T6 - Ex tD A21

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

Ambient temperature  
Standard  
- 20°C + 55°C  
Special  
- 40°C + 55°C

## HAND LAMPS



### SECURLUX, HHL, HEL SERIES

SECURLUX torch and LED hand lamps series HHL/HEL are suitable to be used for inspection, operation and plant maintenance. SECURLUX battery recharge must be done in safe area, either from the electrical distribution network or in 12V DC through two power cables supplied. The discharge time with a continuous light is of 4 hours. HHL/HEL series LED torches, available in three models, are waterproof, dustproof, explosion-proof and resistant to impacts.

- SECURLUX: tempered front glass, IP66.
- HHL/HEL series: high level of ergonomics, protection IP67.

SECURLUX  
Group II, Category 2G  
Ex e ib IIC T3

IP66

Zone 1-2

Thermoplastic material  
Ambient temperature  
- 20°C + 40°C

HHL/HEL  
Group I/II, Category M2/1G  
Ex ia I/IIC T4

IP67

Zone 0-1-2

Polypropylene  
Ambient temperature  
- 20°C + 50°C

## FLUORESCENT HAND LAMPS



### FHL SERIES

FHL series hand lamps for compact fluorescent tubes of 24/36 W, are designed for the inspection and maintenance operations in all those places with the presence of potentially explosive gas and dust. Due to their special construction, robust, easy to handle with a high degree of protection, they provide excellent performance in any position and ambient temperature.

- Built-in electronic ballast.
- Power supply 24 V dc.
- Protection IP66.
- Suitable for fluorescent tube up to 1x36W

Group II, Category 2GD

Ex d IIC T6 Gb; Ex tb IIIC T85°C Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

Ambient temperature  
- 40°C + 50°C

## JUNCTION BOXES



### EJB, EJB...A, EJB...W SERIES

EJB and EJB...A series junction boxes are used either as junction boxes with/without terminals or for installation of electrical equipment such as circuit breakers, signals, remote control switches, transformers. The cover may be equipped with a borosilicate, rectangular window to visualize instruments mounted inside. EJB...W series instrument housing boxes, with one or two circular windows, are suitable for containing analogical and digital measuring instruments. The full series has casting hinges.

- EJB...series has a ribbed lid whereas EJB...A series has an un-ribbed lid which can set up more operators.
- Body and cover can be drilled and threaded according to customers' specification.
- Stainless steel screws, neoprene gaskets.

Group II, Category 2GD/ 2(1)GD

Ex d [ia] IIB Ex tD A21 T5/T6  
Ex d IIB + H2 Ex tD A21 T5/T6

IP65/66/67

Zone 1-2-21-22

Low copper content aluminium alloy

## JUNCTION BOXES



### EJB...X SERIES

EJB...X series junction boxes in stainless steel have mechanical and anti-corrosion features superior than boxes in aluminium alloy making them suitable for chemically aggressive and extreme environments as marine one. They are used either as junction boxes with/without terminals or for installation of electrical equipment.

- Stainless steel hinges with mounting brackets included.
- Body and cover can be drilled and threaded according to customers' specification.
- Stainless steel screws.

Group I/II, Category M2/2GD/2(1)GD

Ex d[ia] I  
Ex d [ia] IIB Ex tD A21 T4/T5/T6  
Ex d IIB + H2 Ex tD A21 T4/T5/T6

IP65/66/67

Zone 1-2-21-22

AISI 316L Stainless steel

## JUNCTION BOXES



### GUB, GUB...V SERIES

GUB series junction boxes have a screw cap and are used either as junction boxes with/without terminals or for installation of electrical equipment such as fuses, relays, disconnectors, remote control switches, transformers, ballast. GUB...V series instrument housings, supplied with a circular borosilicate window, are used to contain analogical and digital instruments such as ammeters and voltmeters.

- Casting fixing lugs and neoprene gaskets.
- Stainless steel screws.

Group II, Category 2GD/ 2(1)GD

Ex d IIC T6/T5 Ex tD A21  
Ex d [ia] IIC T5/T6 Ex tD [iaD] A21

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

## JUNCTION BOXES



### CCA...E, CCA...EH, CCA...C,

CCA...series junction boxes are used either as junction boxes with/without terminals or for installation of electrical equipment. CCA...C series can be equipped with control devices whereas CCA...EH series instrument housings, supplied with a borosilicate glass round window, are used to contain analogical and digital instruments.

- In CCA...E and CCA...EH series, the internal components can be easily installed thanks to the external flange structure.
- CCA...C series boxes are equipped with a cylindrical coupling joint so that they can be equipped with control devices. Inged cover.
- Stainless steel screws.

CCA...E and CCA...EH series  
Group II, Category 2GD/2(1) GD  
Ex d IIC T5/T6 Ex tD A21  
Ex d [ia] IIC T5/T6 Ex tD [iaD] A21

CCA...C series  
Group II, Category 2GD/2(1) GD  
Ex d IIC T5/T6 Ex tD  
Ex d [ia] IIC Ex tD A21

IP66

Low copper content aluminium alloy

## JUNCTION BOXES

### CCAI SERIES



CCAI series junction boxes are made of stainless steel. They are used either as junction boxes with/without terminals or for installation of electrical equipment. Their square shape, without external flanges, allows building modular panels certified for gases of IIC group. They can be equipped with control devices.

- Wall and cover can be drilled and threaded according to customers' specification.
- Internal and external stainless steel earth screws.
- Fixing lugs.
- Inger cover.

Group I/II, Category M2/2GD/2(1)GD

Ex d I  
Ex d IIC T5/T6 Ex tD  
Ex d [ia] IIC T5/T6 Ex tD [iaD] A21

IP66

Zone 1-2-21-22

AISI 316L Stainless steel.

## CONTROL STATIONS

### A, I, P SERIES



A, I and P series control stations are ideal to house on the cover electrical equipment as control and signalling devices. They are suitable for chemical, petrochemical and pharmaceutical industries and they can be installed either on board machine or by remote control.

- A series is in aluminium alloy, I series is in stainless steel while P series is in glass reinforced resin.
- A, I, P series are supplied with cable gland. Wide range of models and accessories available.
- Stainless steel screws.

Group II, Category 2GD

Ex ed IIC T5/T6 Ex tD A21

IP66

Zone 1-2-21-22

Low copper content aluminium alloy, stainless steel, GRP

## ROUND JUNCTION BOXES

### S, SF, SSC SERIES



S, SF, and SSC series junction boxes are suitable for installation along piping as junction boxes and distribution boxes for conductors. Several models are available in relation to size and to holes number. They can be supplied as pulling boxes or as terminal boxes with multipolar or modular terminal boards.

- SF series has a wall mounting bracket whereas SSC series has a ceiling mounting bracket.
- Stainless steel screws.

Group II, Category 2GD/2(1) GD

Ex d IIC T... - Ex tD A21  
Ex e II T... - Ex tD A21  
Ex i IIC T... - Ex tD A21  
Ex d (i) IIC T... - Ex tD A21

IP 66/67

Zone 1-2-21-22

Low copper content aluminium alloy

## JUNCTION BOXES

### SAG SERIES



SAG series junction boxes, aluminium alloy made, are suitable for electrical installations as increased safety boxes or intrinsically safety boxes. Thanks to the walls thickness (7 mm), they can be directly connected to pipes and conical threaded unions. They can be supplied with multipolar or modular terminal boards and they can be equipped with pilot lights, push buttons and measuring instruments to assemble control and signalling panels.

- Greater walls thickness.
- RAL 7035 (Ex e) o RAL 5015 (Ex i) epoxy coating.
- They can be drilled according to customers' specification.
- Stainless steel screws.

Group II, Category 1/2(1)/2GD

Ex e II T5/T6 Ex tD A21  
Ex e[ia] IIC - T5/T6 Ex tD A21  
Ex ia IIC T5/T6 Ex tD A21  
Ex ed IIC T5/T6 Ex tD A21

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

## ROUND JUNCTION BOXES FOR THERMOCOUPLES

### SWS SERIES



SWS series junction boxes, in Ex d execution, are usually suitable for containing temperature sensors such as thermocouples.

- Stainless steel screws.
- A galvanized steel chain prevents from losing the lid.

Group II, Category 2GD/2(1) GD

Ex d IIC T... - Ex tD A21  
Ex e II T... - Ex tD A21  
Ex i IIC T... - Ex tD A21  
Ex d (i) IIC T... - Ex tD A21

IP 66/67

Zone 1-2-21-22

Low copper content aluminium alloy

## JUNCTION BOXES

### SA...SS SERIES



SA...SS series junction boxes, AISI 316L stainless steel made, are suitable for electrical installations as increased safety boxes or intrinsically safety boxes. They can be supplied with multipolar or modular terminal boards and they can be equipped with pilot lights, push buttons and measuring instruments to assemble control and signalling panels with IP66 protection degree.

- Upon request, they can be supplied with hinged and lockable lid.
- Stainless steel screws. Neoprene gaskets.

Group II, Category 1/2(1)/2GD

Ex e II T5/T6 Ex tD A21  
Ex e[ia] IIC T5/T6 Ex tD A21  
Ex ia IIC T5/T6 Ex tD A21  
Ex ed IIC T5/T6 Ex tD A21

IP66

Zone 1-2-21-22

AISI 316L stainless steel

## JUNCTION BOXES

### SA, SA/P SERIES



SA and SA/P series junction boxes are suitable for electrical installations as increased safety boxes or intrinsically safety boxes. They can be supplied with multipolar or modular terminal boards and they can be equipped with pilot lights, push buttons and measuring instruments to assemble control and signalling panels.

- SA junction boxes are made in low copper content aluminium alloy whereas SA/P boxes are in glass reinforced resin.
- RAL 7035 (Ex e) or RAL 5015 (Ex i) epoxy coating for SA series.
- They can be drilled and threaded according to customers' specification.
- Stainless steel screws.

Group II, Category 1/2(1)/2GD

Ex e II T5/T6 Ex tD A21  
Ex e[ia] IIC T5/T6 Ex tD A21  
Ex ia IIC T5/T6 Ex tD A21  
Ex ed IIC T5/T6 Ex tD A21

IP66

Zone 1-2-21-22

Low copper content aluminium alloy, GRP

## JUNCTION BOXES

### CTB...CSTB SERIES



CTB...CSTB series junction boxes, stainless steel made, are suitable for electrical installations as increased safety boxes or intrinsically safety boxes. They can be supplied with multipolar or modular terminal boards and they can be equipped with pilot lights, push buttons and measuring instruments to assemble control and signalling panels with IP66 protection degree.

- Upon request can be supplied with removable gland plates, hinged and lockable lid.
- Stainless steel screws. Neoprene gaskets.

Group II, Category 1/2(1)/2GD

Ex e II T4/T5/T6 Ex tD A21  
Ex e [ia] IIC T4/T5/T6 Ex tD (iaD) A21  
Ex ia IIC T4/T5/T6 Ex tD A20

IP 66

Zone 1-2-21-22

AISI 316L stainless steel



## LIMIT SWITCHES



### YFC SERIES

YFC limit switches are used as protection and reset switches, devices for presence recognition or objects count and transit, measurement on / off, position measurement. Easy wiring and quick installation, solidity, reliability in time are the main advantages. Furthermore, they are provided with a wide range of actuators and contacts combinations which allow offering the best solution for proper functioning of a system in dangerous zone.

- 25 different types of interchangeable 90° step adjustable positionable heads.
- Visibility during operation, able to switch high electrical currents (max.10A), contacts electrically separated, definite and adjustable points of intervention.
- Stainless steel screws.

Group II, Category 2GD

Ex d IIC T6 Ex tD A21 T85°C

IP 66/67

Zone 1-2-21-22

Low copper content aluminium alloy

## ROTARY SWITCHES



### CSC, EFSCO SERIES

CSC and EFSCO series circuit breakers, switches and change-over switches are rotary type models with a control device on the cover. CSC switches have a range of 16A whereas EFSCO series have ranges of 25, 50 and 63A. CSC switches are supplied with Male 1" - Female 3/4" reducer.

- Front aluminium control device.
- Cover fitted with stainless steel closing screw. Fixing lugs.

Group II, Category 2GD

CSC series  
Ex d IIC T6 Ex tD A21  
EFSCO series  
Ex d IIC T5/T6 Ex tD A21

IP 66

Zone 1-2-21-22

Low copper content aluminium alloy

## CONTROL STATIONS



### CSE, CSC, EFDC SERIES

CSE, CSC, EFDC series are suitable as control and signalling devices. They are suitable for chemical, petrochemical and pharmaceutical industries and they can be installed either on board machine or by remote control. CSE series control stations are rectangular whereas CSC, EFDC series are cylindrical. CSC series control stations may be supplied with a single or a double unit. On EFDC control stations may be installed up to four different operators.

- Voltage/ampereage for standard use.
- Stainless steel bushing and push button shaft.
- Cover fitted with stainless steel closing screw. Lugs for wall mounting.

Group II, Category 2GD

CSE series  
Ex d IIB T5/T6 Ex tD A21  
CSC, EFDC series  
Ex d IIC T5/T6 Ex tD A21

IP 66

Zone 1-2-21-22

Low copper content aluminium alloy

## ROUND INSTRUMENT HOUSINGS



### EMHA-9, CSC-H SERIES

EMHA-9 and CSC-H series instrument housings are normally used to enclose analogical instruments such as ammeters and voltmeters. CSC-H series control stations may be supplied with a single or a double unit. Measuring instruments upon request.

- Borosilicate front glass.
- Stainless steel screws. Fixing lugs.

Group II, Category 2GD

CSC-H series  
Ex d IIB T5/T6 Ex tD A21  
EMHA-9 series  
Ex d IIC T5/T6 Ex tD A21

IP 66

Zone 1-2-21-22

Low copper content aluminium alloy

## BREAKER



### EFD3 SERIES

EFD3 series tripolar thermo-magnetic circuit breakers are used for command (start - stop) and protection of three-phase motors. The circuit breaker has an adjustable thermo-magnetic protection and an external control device.

- Stainless steel screws. Fixing lugs.
- Thermal range from 0,16 - 0,25A up to 20,00 - 25,00A.

Group II, Category 2GD

Ex d IIB T5/T6 Ex tD A21

IP 66

Zone 1-2-21-22

Low copper content aluminium alloy

## THERMOSTAT



### GUAB37TE SERIES

GUAB37TE series thermostat can be used to read and control temperatures in all those areas at risk of explosion and in highly chemically aggressive environments including marine locations.

- Stainless steel screws.
- Sensor IMIT.
- AISI 316 stainless steel sensor sleeve.

Group II, Category 2GD

Ex d IIC T6 - Ex tD A21

IP 66/67

Zone 1-2-21-22

Low copper content aluminium alloy

## ACOUSTIC SIGNALS



### ETH, ETS60 SERIES

ETH and ETS60 series acoustic signals and sirens are recommended when it's necessary the use of a signalling bell and/or alarm in areas with potentially explosive atmosphere such as chemical plants, refineries, pumping plants, dip plats, silos and wheat conveyer. ETH series has five sounds to select with different intensity and frequency in order to cover the main warning regulation: bi-tone - yelp - wail - intermittent - fixed note. ETS60 series is ideal for noisy environments, thanks to their high acoustic power.

- Stainless steel screws. Ral 7000 epoxy coating.
- ETH series: two sizes available and different colors upon request.
- ETS60 series: mounting bracket with fixing holes and different power voltages VAC/VDC upon request.

ETS60 series  
Group II, Category 2GD  
Ex d IIC T6 - Ex tD A21 IP65

ETH series  
ETH-12  
Group II, Category 2GD  
Ex d IIC T6- Ex tD A21 IP65

ETH-20  
Group II, Category 2GD  
Ex d IIB + H<sub>2</sub> T4  
Ex d IIC T4

Low copper content aluminium alloy

## ELECTRONIC GROUNDING SYSTEM



### GRD 4200 SERIES

GRD 4200 series electronic grounding equipment provides the earthing for tankers during loading and unloading operations of flammable liquids in hazardous areas. Its operation consists in reading the resistive parameter which guarantees the earthing connection and the control of the pump during loading and unloading operations.

- Connecting clamp complete with a not armed cable which has mechanical properties such as resistance to abrasion and crushing, full manageability even at -40° C.
- Stainless steel screws. Fixing lugs.
- Nickel-plated brass cable gland.

Group II, Category 2(1)GD

Ex d [ia] ia IIB + H<sub>2</sub> T6 Ex tD [ia D] A21

IP65/66

Zone 1-2-21-22

Low copper content aluminium alloy

## PLUGS AND SOCKETS



### PY, SPY SERIES

PY series sockets, with a interlocked disconnecting switch included, are suitable for every explosive atmosphere. They are joined up to SPY plugs and, thanks to their construction features, they can't be combined with industrial plugs. SPY plugs can be used with industrial sockets in accordance with European directive CEE 17. Rated voltage identification by ring color.

- Voltage range from 16A to 32A.
- PY socket has a PVC blinding plug with a chain which prevents from losing it.
- Brass pins. Fixing lugs.

Group II, Category 2GD

Ex d IIC T5 Ex tD A21

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

## PLUGS AND SOCKETS



### FSQC, FP SERIES

FSQC series sockets and FP series plugs are made in two pole or three pole models plus earth. Equipment energizing is achieved by inserting the plug, which acts on the internal circuit breaker, avoiding the formation of arcs between the cavities and the pins both in plug and socket. The circuit is breaker closure is possible only with the plug inserted and its extraction is possible only with the circuit breaker in the "open" position.

- Voltage range from 32A to 63A.
- Socket has a PVC blinding plug with a chain which prevents from losing it.
- Automatic circuit breaker. Brass pins. Fixing lugs.

Group II, Category 2GD

FSQC series

Ex d IIC T6 Ex tD A21

AP series

Ex d IIC T5/T6 Ex tD A21

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

## PLUGS AND SOCKETS



### EPC, EPRC, AP SERIES

EPC, EPRC series sockets, characterized by a voltage range from 63A to 125A, are suitable for the powering of welding equipment, compressors, generators and large mobile equipment in general. AP series plugs are available in two or three poles models plus earth. The circuit breaker can be closed only when the plug is inserted and the plug can be extracted only when the circuit breaker is in the "open" position.

- Socket has a PVC blinding plug with a chain which prevents from losing it.
- Automatic circuit breaker. Brass pins. Fixing lugs.

Group II, Category 2GD

Ex d IIC T5/T6 Ex tD A21

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

## CONTROL DEVICES



### M-O... SERIES

M-O... series control devices are normally installed as external operators on "Ex d" and "Ex e" enclosures suitable for all kind of industry where an explosive atmosphere may be present. Push buttons have an axial motion, the handles have a rotating motion to start up electrical or mechanical contacts inside the cases. The body is in aluminium with a black anodized finish, pin and spring are in stainless steel, silicone gaskets.

- High mechanical strength; easy contacts replacement and cables connection.
- Protection class to meet harsh environments with IP66 as standard.
- High operational reliability and cost efficiency, reduced maintenance costs.

Group II, Category 2GD

Ex d IIC Ex tD A21

Ex de IIC Ex tD A21

Ex e IIC Ex tD A21

IP66

Zone 1-2-21-22

Aluminium

## CABLE GLANDS FOR ARMORED AND NON-ARMORED CABLES



### FL, FAL, FG, FGF, FGA, FGAD, XP, XPA SERIES

FL, FG, FGF and XP series cable glands are used for the direct insertion of non-armored cables into Ex d, Ex e or Ex i equipment or enclosures placed in areas at risk of explosion whereas FAL, FGA series, with double seal, and FGAD, XPA series, with a single seal, are used for the direct insertion of armored cables. They can be easily installed and the taper fit guarantees the best earthing continuity.

- Nickel-plated brass. Other materials (galvanized steel - aluminium - stainless steel) upon request.
- Many accessories available.
- Different threads available.

Group II, Category 2GD

FL, FAL, FG, FGF, FGA, FGAD series  
Ex d IIC Ex tD A21  
Ex e II Ex tD A21  
Ex i II Ex tD A21  
IP 66/67

XP, XPA series  
Ex e II Ex tD A21  
IP 66/68

Zone 1-2-21-22

Nickel-plated brass standard

## BARRIER CABLE GLANDS FOR ARMORED AND NON-ARMORED CABLES



### FB, FGAB SERIES

FB and FGAB series barrier cable glands are used for the direct insertion of cables into Ex d boxes. Every single conductor is locked and sealed into the bushing using a special sealing compound which prevents the propagation of flames. Therefore, they are used instead of the locking joint in conduit installation. They are supplied with a resin finishing kit. Many accessories are available: shrouds, earthing ring, locknut and gasket for parallel threads.

- Nickel-plated brass. Other materials (galvanized steel - aluminium - stainless steel) upon request.
- Bi-component polyurethane resin. Epoxy resin for temperatures from -40° to +110° C upon request.
- Different threads available.

Group II, Category 2GD

Ex d IIC Ex tD A21  
Ex e II Ex tD A21  
Ex i II Ex tD A21

IP 66/67

Zone 1-2-21-22

Nickel-plated brass standard

## CABLE GLANDS FOR ARMORED CABLES



### MAL SERIES

MAL series cable glands are ideal for applications where an IP 66/68 and an explosion-proof seal on the protective sheath are required. "Minier" cable glands are used for armored cables which have a metallic braid or filament sheath. They are easy to install and to handle thanks to their smaller dimensions. They are designed and manufactured to guarantee a hard internal and external seal on the cable.

- Materials: from 3/8" to 3/4" AISI 304 Stainless steel. From 1" to 2" UNI 5705 Nickel-plated brass.
- Standard santoprene gaskets (from -40° C to +110°C).
- Different threads available.

Group I/II, Category M2/2GD

Ex d I/IIC Ex tD A21  
Ex e I/II Ex tD A2

IP 66/68

Zone 1-2-21-22

Stainless steel and nickel-plated brass.

## POLYAMIDE CABLE GLANDS FOR NON-ARMORED CABLES



### UNI, UNP SERIES

UNI and UNP series cable glands in polyamide are used for the direct insertion of non-armored cables into Ex e (UNI, UNP...XE) or Ex i (UNI, UNP...XI) equipment or junction boxes. They can be easily installed and the clamping is obtained on the cable external sheath.

- Polyamide 6, neoprene gaskets.
- ISO lead 1,5 thread for UNI series and PG DIN 40430 thread for UNP series.
- Ral 9005 black color (Ex e) or Ral 5015 blue color (Ex i).

Group II, Category 2GD

Ex e II Ex tD A21  
Ex i II Ex tD A21

IP 66/68

Zone 1-2-21-22

Polyamide



## LOCKNUTS, EARTHING RINGS, PVC SHROUDS, GASKETS



### DL, DL...EP, DL...A, A, PGA, GRN SERIES

These materials are used as cable gland accessories. DL, DL...EP and DL...A series are used as locknuts with parallel thread. Earthing rings A series are used inside boxes and their connection is guaranteed by the coupling of cable gland and its locknut. PGA series shrouds, PVC made, are ideal to guarantee a further protection to cable glands against dust and liquids. Furthermore, GNR gaskets in Teflon are used to guarantee, together with the cable gland, the IP protection of enclosures threaded hubs.

- Locknuts threads: DL and DL...A series ISO 228; DL...EP series ISO lead 1,5. Other threads upon request.
- Earthing rings: nickel plated brass. Stainless steel earth screw. Other materials upon request.

Locknuts materials:

DL series galvanized steel or aluminium;

DL...A series carbon steel or aluminium; DL...EP series polyamide.

## THREE PIECES UNIONS



### BFF, BMF, BMM SERIES

Three pieces unions for gas group IIB are used to guarantee an independent rotation and the connection between pipes of an electrical equipment, enclosures or different devices of an explosion-proof system.

- BFF series (female/female); BMF series (male/female); BMM series (male/male).
- Galvanized steel.
- Other materials and different threads available.

Group II, Category 2GD

Ex d IIB Ex tD A21

IP 66/67

Zone 1-2-21-22

Galvanized steel.

## THREE PIECES UNIONS



### RFF, RMF, RMM SERIES

Three pieces unions for gas group IIC are ideal to guarantee an independent rotation and the connection between pipes of an electrical equipment, enclosures or different devices of an explosion-proof system.

- RFF series (female/female); RMF series (male/female); RMM series (male/male).
- Galvanized steel. ISO 7/1 thread.
- Other materials and different threads available.

Group II, Category 2GD

Ex d IIC Ex tD A21

IP 66/67

Zone 1-2-21-22

Galvanized steel

## ELBOWS AND OPEN ELBOWS



### ELF, ELM, ELMF, LBH, LBHS SERIES

90° non-inspectable elbows are used in conduit system of electrical equipment. They are available in the following configurations: ELF series (female/female), ELM series (male/male) and ELMF series (male/female). The male entry for ELM and ELMF series elbows is obtained with the addition of a nipple NP series. LBH and LBHS series L shaped open elbows are used for the cables insertion in conduit system of electrical installations. The flanged opening enables an easy inspection and insertion of electrical cables.

- ELF, ELM, ELMF series: low copper content aluminium alloy.
- LBH, LBHS series: body and cover in low copper content aluminium alloy. Galvanized screws.
- Different threads available.

Group II, Category 2G

ELF, ELM, ELMF series  
Ex d IIC Ex tD A21 IP 66/67  
Ex e II Ex tD A21 IP 66/67  
LBH, LBHS series  
Ex d IIB

Zone 1-2

Low copper content aluminium alloy

## PULLING BOXES



### EKC SERIES

EKC pulling boxes are used in conduit system of electrical equipment to facilitate the cables insertion. The flanged opening enables an easy inspection and insertion of electrical cables.

- Body and cover in low copper content aluminium alloy.
- Galvanized screws.
- Stainless steel screws.
- Different threads available.

Group II, Category 2G

Ex d IIB

Zone 1-2

Low copper content aluminium alloy

## VERTICAL AND HORIZONTAL SEALING FITTINGS



### EYS, EYD, EZS SERIES

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 an easy insertion of glass-fiber and sealing compound resin. 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 supplied in a precise quantity along with the fitting.

- Other sealing compounds are not allowed.
- Possibility to add an ECD valve to drain the condensation inside the conduit. Code EYD... series.
- Different threads available.

Group II, Category 2GD

Ex d IIC Ex tD A21

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

## REDUCERS AND ADAPTORS



### RE, REB, REM, REN SERIES

Reducers and adaptors are used to connect equipment, enclosures, pipes and hubs of different diameters and threads. The series of adaptors is as follows: RE series reduces a female hub or increases a male hub; REB series increases a female hub or reduces a male hub; REM series is used to vary the diameter of a male hub transforming it into a female hub; on the contrary, REN series varies the diameter of a female hub transforming it into a male hub.

- Galvanized steel or low copper content aluminium alloy.
- Different threads available.
- Other materials (brass, stainless steel).

Group II, Category 2GD

Ex d IIC Ex tD A21

Ex e II Ex tD A21

IP 66/67

Zone 1-2-21-22

Galvanized steel or low copper content aluminium alloy

## DRAIN AND BREATHER VALVES



### ECD SERIES

ECD drain or breather valves are used on EYD or EZD series sealing fittings and on any type of explosion-proof devices where it's necessary to drain the condensation inside the conduit or to breathe out possible internal vapors.

- AISI 316 stainless steel. Aluminium alloy upon request.
- Different threads available.

ECD 1... series  
Group II, Category 2G  
Ex d IIC  
ECD 2... series  
Group II, Category 2GD  
Ex d IIC/IIB - Ex e II Ex tD A21

IP66

Zone 1-2

Stainless steel

## NIPPLES AND SEALED BUSHINGS



### NP, NPS, TP, CP SERIES

Sealed bushings and nipples are suitable to interconnect junction boxes, electrical motors, panel boards, switch racks and other electrical devices. The standard sealed bushings are: TP threaded sealed bushings, CP sealed bushing with cylindrical joint, NPS sealed nipple. The cables are sealed using a sealing compound bi-component resin set around each conductor. NP series nipples are used to connect equipment or other unions with female hub.

- NPS, TP, CP series are made in brass with bi-component resin. Other materials upon request.
- NP series are made in galvanized steel or stainless steel. Other threads upon request.

NPS, TP, CP series  
Group II, Category 2GD  
Ex d IIC  
Zone 1 - 2

NP series  
Group II, Category 2GD  
Ex d IIC Ex tD A21  
Ex e II Ex tD A21

IP 66/67

Zone 1 - 2 - 21 - 22

Brass, galvanized steel, stainless steel

## COUPLINGS, BUSHINGS AND PLUGS



### EM, DB...A, DB...PVC, DBT, MC, PLG SERIES

EM series couplings are used for the connection of pipes with threaded male ends. DB...A and DBT series bushings are made in aluminium whereas DB...PVC in PVC. 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 it. MC series female plugs and PLG series male plugs are used to close pipes ends and unused entries.

- DBT series are equipped with earth screw for reduction grounding.
- PLG series plugs have a hexagonal head so that they can be opened with proper tools only.

EM, PLG series  
Group II, Category 2GD  
Ex d IIC Ex tD A21  
Ex e II Ex tD A21

IP 66/67

Zone 1 - 2 - 21 - 22

EM series in galvanized steel. MC and PLG series in galvanized steel or low copper content aluminium alloy.

## SADDLES, CONDUIT CLAMPS AND U-BOLTS



### GF, MP, MT, UBD SERIES

GF series saddles are used to fix conduits/rigid pipes (carrying cables) on walls or on flat surfaces. MP and MT series conduit clamps are ideal to mount conduit pipes in parallel or in perpendicular to the support structure. UBD series are used to fix rigid conduit pipes to flat surfaces.

- Galvanized steel standard or aluminium for GF series saddles. Stainless steel upon request for GF and UBD series.
- Galvanized bolts and nuts for MP and MT series.

## FLEXIBLE AND RIGID CONDUITS



### SP, BC SERIES

SP series flexible conduits are used to connect offset equipment or devices subject to vibrations such as electrical motors. Furthermore, they are suitable for installation of lighting fixtures and, in alternative, to rigid conduits when they are difficult to install. BC series rigid conduits are used in hazardous areas to connect electrical equipment setting up a complete explosion-proof system through blocking and connecting unions and sealing fittings.

- SP series conduits have a good flexibility and an excellent damping effect against vibrations.
- BC series conduits are drawn inside so that all roughness, which could damage the electrical cables, are eliminated.
- BC series standard bar length: 6 meters. Plastic couplings for thread protection.

SP flexible conduits  
Group II, Category 2GD  
Ex d IIB Ex tD A21  
Ex d IIC Ex tD A21

IP 66/67

Zone 1 - 2 - 21 - 22

Galvanized steel

## SPECIAL EXECUTION

## SWITCHGEAR AND PANEL BOARD

Cortem Group manufactures electrical panels and control batteries, according to customer's specification, using junction boxes in low copper content aluminium alloy, in glass reinforced polyester or in stainless steel. Such equipment can be installed in lighting, motive power distribution and motor control valves systems and in panels with sockets. They are provided with various current rated switches, control or signal electrical and electronic devices. They are made in accordance to the main types of protections suitable for heavy-duty environments, ready-to-use and finished with epoxy powder paint.



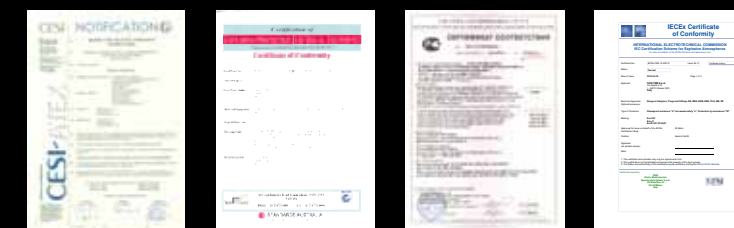
Example of Cortem Marking Label

## SAFETY AND QUALITY



## QUALITY AND ENVIRONMENTAL CERTIFICATIONS

Cortem Group manufactures its products using modern processes, plants and qualified personnel. There's an internal control system of all the productive-cycle which guarantees more efficiency, autonomy and velocity. The Quality Management System conforms to UNI EN ISO 9001:2008 Standard. The Environmental Management System is also a part of the Organization overall management system which promotes activities in order to maintain and improve the environment and territory quality. It conforms to UNI EN ISO 14001:2004 Standard.



## PRODUCT CERTIFICATIONS

The explosion-proof and weather-proof electrical equipment manufactured by Cortem Group are certified in accordance with the European standard ATEX and the International regulation IEC Ex, also obtained the certifications for the Russian market and the Australian one (AUS Ex). Respecting these strict international construction rules, Cortem guarantees the safety of people and environment.

FOR FURTHER INFORMATION ON OUR PRODUCTS AND CERTIFICATIONS DOWNLOAD  
VISIT US AT [WWW.CORTEMGROUP.COM](http://WWW.CORTEMGROUP.COM).