



2024

## Explosion-protected electrical equipment QUICK REFERENCE GUIDE





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

## Italian Manufacturer

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.

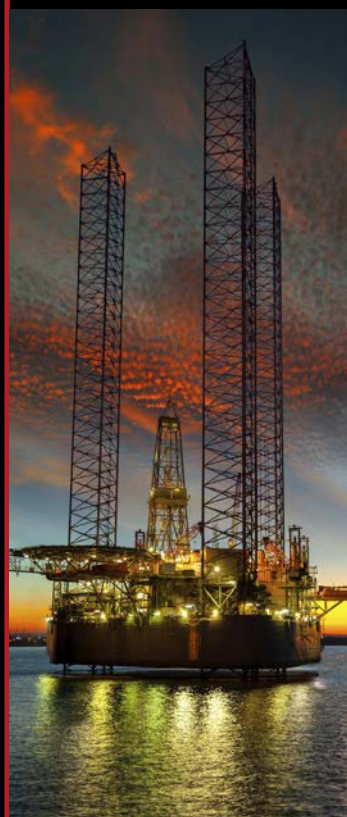
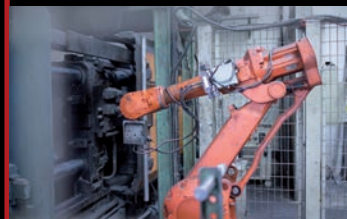
The peculiarity of the Technology Group Cortem, formed by Cortem, Elfit and Fondisonzo companies, is the experience gained in the Ex field which results not only in the furniture of simple Ex-products, but also in engineered and customized solutions. All our products are designed and manufactured internally according to different methods of protection such as 'Ex db' flameproof, 'Ex eb' increased safety, 'Ex de' mixed and 'Ex nR' restricted breathing, using primary aluminium alloys, stainless 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 polyester 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 4 Sister Companies, 10 Distribution Hubs and a wide sales network, Cortem provides a local and qualified presence around the world. For Cortem "displacing" does not mean 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.





## SOME OF OUR MAIN CUSTOMERS

ABB S.p.A.

ABU DHABI COMPANY FOR ONSHORE OIL OP.  
(ADCO)

ADGAS

ADMA-OPCO

ADNOC

AG&P

AMEC FOSTER WHEELER

ANSALDO

ASIAN ENGINEERING & CONTRACTORS

BASSELL POLYOLEFINE

CHINA PETROLEUM ENG & CONSTRUCTION

CHIYODA CORPORATION

DAELIM INDUSTRIAL CO. LTD.

DAEWOO ENGINEERING & CONSTRUCTION

DANGOTE

DUQM REFINERY

ENEL

ENI REFINING & MARKETING

ENNPI

ENOC

ERG RAFFINERIE MEDITERRANEE

EXXON MOBIL CORPORATION

FINCANTIERI

FLUOR CORPORATION

GAZPROM

GE NUOVO PIGNONE

GS ENGINEERING & CONSTRUCTION CORP.

HELLENIC PETROLEUM

HYUNDAI ENGINEERING AND CONSTRUCTION  
CORP.

HYUNDAI HEAVY INDUSTRIES CO.LTD

IRASCO

JGC CORPORATION

KUWAIT NATIONAL PETROLEUM COMPANY

KUWAIT OIL COMPANY

KUWAIT PARAXYLENE PRODUCTION COMPANY  
(KPPC)

MARIE TECNIMONT

mitsubishi heavy industries

NATIONAL IRANIAN GAS COMPANY NIGC

NATIONAL IRANIAN OIL COMPANY NIOC

NOVARGI INDUSTRIES

NPCC

NVENT THERMAL EUROPE

ORPIC

PEMEX

PETROBEL

PETROBRAS

PETROCHEMICAL IND. DES. & ENG. CO - PIDEC

PETROCHEMICAL INDUSTRIES COMPANY (PIC)

PETROFAC INTERNATIONAL

PETROLEUM DEVELOPMENT OMAN (PDO)

PETRONAS

QATAR GAS

QATAR PETROLEUM

RAS GAS

SABIC

SAIPEM

SAIMEXICANA S.A. de C.V.

SAMSUNG ENGINEERING & CONSTRUCTION

SAUDI ARAMCO

SATORP

SINOPEC

SK ENGINEERING & CONSTRUCTION

SONATRACH

STAATSOLIE

TECHINT

TECHNIP

TECNICAS REUNIDAS

TECNIMONT

TOYO ENGINEERING CORPORATION

TOTAL

USTAY

WOOD

YPF



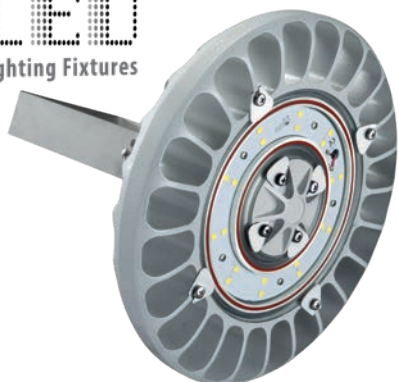


# PRODUCTS



## LED LIGHTING FIXTURES HIGH BAY

**LED**  
Lighting Fixtures



## FLOWEX SERIES

The FlowEx series is made up of three lamp body sizes and is the LED alternative for all those areas where it was customary for low and medium power discharge lighting fixtures over 400W to be installed.

The design of the finned body, made of aluminium alloy, acts as an excellent heat sink for the LED board, allowing the heat generated during normal LED operation to dissipate quickly and effectively.

Designed according to the principles of lean manufacturing, this lighting fixture is light and easy to install, while also being robust and durable.

- Maximum overall efficiency 151 l/W, real and constant.
- Available in two different configurations depending on the installation area.
- Different wattages available for each model with different light output (from 4785 lm to 27961 lm).

Group II, Category 2GD/3G

FLOWEX-ME  
II 2GD - Ex eb mb IIC T.. Gb  
Ex tb IIC T.. °C Db

FLOWEX-MN  
II 3G - Ex nR IIC T.. Gc  
Ex tb IIC T.. °C Db

IP66

Zone 1-2-21-22

Aluminium alloy with low copper content

## LED LIGHTING FIXTURES LOW BAY

**LED**  
Lighting Fixtures



## EVML-50 SERIES

EVML lighting fixtures have been conceived to offer a Low Bay lighting fixture that could replace incandescent equivalents at lower costs. They are suitable for the illumination of small areas in which it's necessary to limit the obstruction such as tunnels, passages, corridors, stairways, perimeter walls and command and control cabins. The model with the side entry meets, at last, some specific installation needs, reducing the overall dimensions (code EVML-50L).

- 'Ex e mb' method of protection.
- Models for low supply voltages available.
- EVML-50P hand-held model available.
- Available also EVML-50/G series obstruction lighting fixtures with a LED plate and a globe of different colours.

Group II, Category 2GD

Ex eb mb op is IIC T.. Gb  
Ex tb op is IIC T.. °C Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

## LED STREET LIGHTING FIXTURES

**LED**  
Lighting Fixtures



## STREETEX SERIES

STREETEX series LED lighting fixtures are suitable for outdoor and perimeter street lighting of industrial areas, especially for the chemical and petrochemical, on-shore and off-shore sectors. STREETEX can be supplied in versions with direct horizontal/vertical pole mount or with a mounting bracket and cable gland. Different types of optics can also be installed directly on the LED plate. Optics is a crucial part of street lighting as it determines the direction of light on the road surface according to different requirements: light concentrated in a specific direction or evenly diffused light.

- 'Ex e mb' protection method.
- Available in two sizes.
- Different wattages available with different light output (from 3432 to 24503 lumen)

Group II, Category 2GD/3G

STREETEX-ME  
Ex eb mb IIC T.. Gb  
Ex tb IIC T.. °C Db

STREETEX-MN  
Ex nR IIC T.. Gc

IP66

Zone 1-2-21-22

Aluminium alloy with low copper content

## TANK AND VESSEL INSPECTION LED LIGHTING FIXTURES

**LED**  
Lighting Fixtures



## EVML-50/O.. SERIES

EVML-50/O.. series lighting fixtures have been designed to illuminate and monitor hazardous materials contained inside tanks and cisterns thanks to a bracket for the coupling with the porthole flange.

- 'Ex e mb' method of protection.
- Four different size of flange.

Group II, Category 2GD

Ex eb mb op is IIC T.. Gb  
Ex tb op is IIC T.. °C Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy



## LIGHTING FIXTURES FOR ENERGY SAVING LAMPS



### EV, EVE -5050/-5060 SERIES

EV-5050, EV-5060, EVE-5050, EVE-5060 are lighting fixtures 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 electro-polished stainless steel make this fixture strong to corrosion agents of salt atmospheres and of industrial pollutions.

- Globe in borosilicate glass with high thermal and mechanical stability.
- EVE fixtures have an 'Ex e' internal terminal junction box which allows the connection with an 'Ex e' cable gland (not barrier).

Group II, Category 2GD

EV series  
Ex d IIC T.. Gb - Ex tb IIIC T.. °C Db

EVE series  
Ex de IIC T.. Gb - Ex tb IIIC T.. °C Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

## LIGHTING FIXTURES FOR DISCHARGE LAMPS



### RLFE SERIES

RLFE series lighting 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 an high thermal and mechanical stability.

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

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

## LINEAR LED LIGHTING FIXTURE - ALUMINUM

**LED**  
Lighting Fixtures



### LIFEX-M SERIES

LifEx-M lighting fixtures feature a high-quality anodised aluminium body and a glass diffuser which is resistant to impact and high temperatures. They have an innovative bracket mechanism, with no fixed interaxis spacing limitations, which makes them easy to install or retrofit and means the lighting fixture can be rotated to -30°/0°/+30°. The LifEx range comes in different lengths with a wide array of voltage and power specifications. The range has been optimally designed and certified according to the installation zone and, in addition to passing all tests required by the regulations, it has passed additional mechanical and electrical tests such as vibration testing, IP66, soft start, surge testing and more.

- Complete with high luminous efficiency LED strip lights.
- Available in two different configurations for different applications.

Group II, Category 2GD/3GD

LifEx-ME  
II 2GD - Ex db eb mb IIC T.. Gb  
Ex tb IIIC T.. °C Db

LifEx-MN  
II 3GD - Ex ec IIC T.. Gc  
Ex tb IIIC T.. °C Db

IP66

Zone 1-2-21-22

Aluminium alloy extrusion and end caps

## LED Lighting Fixtures

### LIGHTING FIXTURES FOR LED TUBES



#### FLF-L, FLFE-L SERIES

FLF-L and FLFE-L series lighting fixtures are available for LED tubes. They 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.

- FLF-L, FLFE-L series: excellent "CX" coefficient, less wind resistance and less accumulation of dust.
- FLFE-L fixtures have an 'Ex e' internal terminal junction box which allows the connection with an 'Ex e' cable gland (not barrier).

Group II, Category 2GD

FLF-L, FLFE-L series  
Ex db op is IIC T6 Gb - Ex tb op is IIC T80°C Db  
Ex db eb op is IIC T6 Gb - Ex tb op is IIC T80°C Db

IP66  
Zone 1-2-21-22

Low copper content aluminium alloy

### LINEAR LED LIGHTING FIXTURE - PLASTIC MATERIAL

## LED Lighting Fixtures



#### LIFEX-P SERIES

The LifEx-P series lighting fixtures are characterised by an impact (IK09) and UV-resistant polycarbonate and GRP body with a transparent part for light transmission.

An innovative bracket mechanism, with no fixed interaxis spacing limitations, makes them easy to install or retrofit. Versions with emergency operation can be accessorized with battery boxes to facilitate maintenance and/or battery replacement, or with special batteries for applications with ambient temperatures down to -60°C.

The use of high-power LED strips provides lumen output ranging from 1,500 lm to 12,500 lm with high efficiency and guaranteed durability.

Group II, Category 2GD/3GD

LifEx-PE  
II 2GD - Ex db eb mb IIC T.. Gb  
Ex tb IIC T..°C Db

LifEx-PN  
II 3G - Ex ec IIC T.. Gc  
Ex tb IIC T..°C Db

IP66  
Zone 1-2-21-22

Aluminium alloy extrusion and end caps

### LED FLOODLIGHTS

## LED Lighting Fixtures



#### EVL SERIES

The LED EVL series floodlights combines a light and compact design with great versatility, ease of installation and high lighting performance thanks to high intensity and efficiency LED plates which may be combined along with lens available with light beam with different shades.

Furthermore, the air particles around the floodlight do not ionize, an intrinsic characteristic of LED technology that limits the attraction of dust and insects thanks to the absence of UV emission. EVL series floodlights can be powered through an electric cable and a simple 'Ex e' cable gland (no barrier).

- Four lighting fixtures sizes:  
EVL-060, EVL-070, EVL-080, EVL-100.
- Different powers available for each model with different lumen output.
- Different optics available for different light beams required.

Group II, Category 2GD

Ex db eb op is IIC T.. Gb  
Ex tb op is IIC T..°C Db

IP66  
Zone 1-2-21-22

Low copper content aluminium alloy

## LED FLOODLIGHTS

**LED**  
Lighting Fixtures



### EVNL SERIES

EVNL series floodlights, suitable for plants in zone 2 and 22, keeping cost reductions at the foreground, improving the quality of the product and increasing the lighting solution specifications. The advantage of the EVNL is the implementation of the "Ex nR" version combined with the "Ex op is" which classifies the equipment as a restricted breathing device with certified optical safety. The careful design, together with the meticulous choice of materials to seal the lighting fixture, limits the entry of flammable gases, vapours or mists during normal operation of the floodlight.

- Four sizes: EVNL-060, EVNL-070, EVNL-080, EVNL-100.
- New supply voltages available (from 120-277 Vac).
- Different powers available for each model with different lumen output.
- Different optics available for different light beams required.

Group II, Category 2D/3GD

Ex II 2D Ex tb op is IIC T.. Db  
Ex II 3GD Ex nR IIC T.. °C Gc

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

## LED FLOODLIGHTS

**LED**  
Lighting Fixtures



### SLED-ME SERIES

SLED-ME series floodlights with LED technology combine lightweight, compact design and high performance in terms of reliability, safety, efficiency and energy saving. The finned body of the floodlight acts as a heat sink for the LED plate, allowing the installation of greater light output without incurring the deterioration of the LEDs.

- Colour rendering index > 70.
- Galvanized steel adjustable bracket.
- Different powers available for each model with different lumen output.
- Different optics available for different light beams required.

Group II, Category 2GD

Ex db eb IIB+H2 T... Gb  
Ex tb IIC T... °C Db  
Zone 1-2-21-22

IP66

Aluminium alloy with low copper content

## LED FLOODLIGHTS

**LED**  
Lighting Fixtures



### SLED-MN SERIES

The SLED-MN series LED floodlights are designed with the 'Ex nR' and 'Ex tb' protection method to be installed in ATEX classified areas "Zone 2" and "Zone 21", where the equipment must guarantee a level of normal protection in the presence of mixtures of gases, vapors, and mists (Zone 2), and a high level of protection against dust and combustible particles (Zone 21).

- Colour rendering index > 70.
- Galvanized steel adjustable bracket.
- Different powers available for each model with different lumen output.
- Maximum overall efficiency 127 l/W, real and constant.

Group II, Category 3GD

Ex nR IIC T.. Gc  
Ex tb IIC T... °C Db  
Zone 2-21-22

IP66

Aluminium alloy with low copper content



## LED LIGHTING FIXTURES FOR SAFETY WARNINGS



**LED**  
Lighting Fixtures

### CCA-03EX SERIES

CCA-03EX series LED lighting fixtures for safety warnings are designed for installation in areas with risk of explosion where lighting may be stopped due to abnormal, unusual or accidental situations. The CCA-03EX lighting fixture can be installed in indoor and outdoor environments and it can operate both in normal and emergency service, with a maximum duration of about 2 hours. In case of interruption of the supply voltage, electronics automatically turn on the lighting fixture.

- Simple wiring, two threaded hubs studied for the through-wiring.
- Compact size, two directional LED spotlights.
- LED COB (Chip on Board: high performance in terms of lumens, low maintenance costs and long life.
- Color temperature 3.500°C, 595 lm for each LED.

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

## LED OBSTRUCTION LIGHTING FIXTURES

**LED**  
Lighting Fixtures



### XLFE-LIB, -MIB, -MIA, -MIC SERIES

XLFE-LIB, XLFE-MIB, XLFE-MIA and XLFE-MIC obstruction lighting fixtures are suitable for installation on towers or high buildings as obstruction signal thanks to light signals emitted by LEDs 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.

- Lighting fixtures complies with ICAO Standard (International Civil Aviation Organization).
- Max. 20000 cd for medium intensity type A, 2000 cd for medium intensity type B, 32 cd for low intensity obstruction lighting fixtures.

Group II, Category 2GD

XLFE-MIA, XLFE-MIC  
II 2GD Ex db eb IIC T.. Gb; Ex tb IIIC T..°C Db  
XLFE-MIB  
II 2GD Ex db eb op is IIC T4 Gb; Ex tb op is IIIC T110°C Db IP66  
XLFE-LIB  
Ex de IIC T6 Gb; Ex tb IIIC T.. Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

## LED WARNING LIGHTING FIXTURES

**LED**  
Lighting Fixtures



### VSE SERIES

The VSE series warning lighting fixtures with flashing or fixed light are suitable for industrial signalling. The flashing can be adjusted via internal DIP switch with a frequency of 20 to 70 flashes per minute. The VSE lighting fixture, available in different colors, is equipped with LEDs installed on the electronic plate with a single circuit and an internal reflector.

- Power consumption: 6W
- Low intensity
- Different colors available.

Group II, Category 2GD

Ex db eb op is IIC T6 Gb;  
Ex tb op is IIIC T75°C Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

**LED**  
Lighting Fixtures



## EMERGENCY SIGNALLING LIGHTING FIXTURES FOR LED STRIPS AND FLUORESCENT TUBES



## LFED, LFEE, EVF-18EX SERIES

Emergency lighting fixtures LFEE and LFED series are designed for the lighting and identification of emergency exits or escape routes in case of danger. LFEE and LFED series are made of a aluminium or stainless steel AISI 316L enclosure, a window with a screen-printed pictogram and an LED strip.

EVF-18EX series is equipped with an electronic ballast for 8W fluorescent lamps.

- LFEE, LFED: 'Ex op is' method of protection, models for normal and emergency operation available.
- EVF-18EX: suitable for fluorescent tube up to 1 x 8W, two-color LED (green/red) which monitors batteries.

Group II, Category 2GD

LFED  
Ex db op is IIB+H2 T6 Gb  
Ex tb op is IIIC Db

LFEE  
Ex db eb mb op is IIC T5/T6 Gb  
Ex tb op is IIIC T70/T60 °C Db

EVF-18EX  
Ex d IIC T5 - Ex 1D A21

IP66  
Zone 1-2-21-22

Low copper content aluminium alloy or  
AISI 316L stainless steel

## LED TRAFFIC LIGHTS



**LED**  
Lighting Fixtures

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

MSU and CCA-02E/S...LD series traffic light systems are suitable for the traffic regulation in chemical aggressive industrial environments or potentially hazardous areas, including marine one.

- Two, three, four or five signallers and combinations of colors (for MSU).
- One, two or three signallers and combinations of colors like green, yellow and red (for CCA-02E/S...LD).

Group II, Category 2GD

(CCA-02E/S...LD)  
Ex d IIC T6 Gb - Ex tb IIIC T85 °C Db

(MSU)  
Ex eb mb op is IIC T.. Gb - Ex tb op is  
IIIC T.. °C Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

## FLUORESCENT AND LED HAND LAMPS



**LED**  
Lighting Fixtures

## L, FHL, LHL-P SERIES

Hand lamps are suitable to be used for inspection, operation and plant maintenance. L-5, L-5R series have a light sensor for saving energy and batteries level information. They can be mounted on fire helmets. L-3000 series has 2 LEDs of 135 lumens each in a double optic with different light beams and Led Engine technology with a step light system. FHL series hand lamps are suitable for compact fluorescent tubes of 24/36 W whereas LHL...P series for LED tubes of 9/17W. Thanks to their special construction, robust and easy to handle, they provide excellent performance in any position and ambient temperature.

- L-3000: swivelling head with 3 positions 0° | 45° | 90°.
- FHL series: built-in electronic ballast, power supply 24 V dc.
- LHL...P: light color temperature around 5500 K, 72 LEDs, lifespan > 50.000 hours, stainless steel hook and 5m cable.

L-5, L-5R, L-5S SERIES  
Group II, Category 1GD  
Ex ia IIC T4 Ga - Ex ia IIIC T85 °C Da  
L-3000 SERIES  
Group II, Category 1GD/1D  
Ex ia IIC T4 Ga | Ex ia IIIC T85 °C Da  
IP67  
Zone 0-1-2-21-22  
Thermoplastic resin

FHL  
Group II, Category 2GD  
Ex d IIC T6 Gb; Ex tb IIIC T85 °C Db  
Aluminium alloy  
LHL-P  
Group 2, Category 2G  
Ex mb IIIC T95 °C/T130 °C (Db)  
Ex mb IIIC T95 °C/T130 °C (Db)  
Polycarbonate and PVC  
IP66  
Zone 1-2-21-22

## JUNCTION BOXES



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

EJB, 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.

- Stainless steel hinges as standard on the long side with predisposition of mounting on the short side.
- Body and cover can be drilled and threaded according to customers' specification.
- Stainless steel screws.

Group II, Category 2GD

Ex d IIB+H2 Gb - Ex tb IIIC Db  
Ex d IIB+H2 T... Gb - Ex tb IIIC  
T... °C Db  
Ex d [ia Ga] IIB+H2 T... Gb - Ex tb [ia  
Da] IIIC T... °C Db

IP66/67

Zone 1-2-21-22

Low copper content aluminium alloy

## JUNCTION BOXES



### EJBX... SERIES

EJBX... 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.

- Stainless steel hinges as standard on the long side with predisposition of mounting on the short side.
- Body and cover can be drilled and threaded according to customers' specification.
- Stainless steel screws.

Group II, Category 2GD/ M2

Ex d IIB+H2 Gb - Ex tb IIIC Db  
Ex d IIB+H2 T... Gb - Ex tb IIIC  
T... °C Db  
Ex d [ia Ga] IIB+H2 T... Gb - Ex tb [ia  
Da] IIIC T... °C Db  
Ex d I mb

IP66/67

Zone 1-2-21-22

AISI 316L Stainless steel

## JUNCTION BOXES



### EJBC SERIES

The EJBC series junction boxes have been carefully designed to allow their installation in areas with danger of explosion and/or fire due to the presence of all Gases of Group IIA - IIB - IIC classified as Zone 1, 2, 21, 22. The peculiar multi-step joint, obtained thanks to the high quality and precision of the machining, has allowed, in fact, the extension of the protection of gases to Group IIC [Acetylene (C2H2), Carbon disulphide, Hydrogen (H2)].

- Zone 1, 2, 21, 22
- Group IIC.
- Aluminium junction boxes.
- IP 66/67.

Group II, Category 2GD

II 2GD Ex db IIC T4/T5/T6 Gb Ex tb  
IIIC T85 °C/T100 °C/T135 °C Db  
II 2GD Ex db [ia Ga] IIC T4/T5/T6 Gb  
Ex tb [ia Da] IIIC T85 °C/T100 °C/  
T135 °C Db

IP66/67

Zone 1-2-21-22

Low copper content aluminium alloy

## JUNCTION BOXES



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

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. Hinged cover.
- Stainless steel screws.
- Zone 1-2-21-22
- Low copper content aluminium alloy

CCA...E and CCA...EH series

Group II, Category 2GD

Ex d IIC Gb - Ex tb IIIC Db  
Ex d IIC T6, T5 Gb - Ex tb IIIC T85 °C,  
T100 °C Db  
Ex d IIC T6/T5 - Ex tb IIIC T85 °C/  
T100 °C Db -  
Ex d [ia Ga] IIC T... °C, Gb - Ex tb [ia  
Da] IIIC T... °C Db

CCA...C series

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

Ex d IIC Gb - Ex tb IIIC Db  
Ex d IIC T6, T5 Gb - Ex tb IIIC T85 °C,  
T100 °C Db  
Ex d IIC T6/T5 - Ex tb IIIC T85 °C/  
T100 °C Db  
Ex d [ia Ga] IIC T... °C, Gb - Ex tb [ia  
Da] IIIC T... °C Db  
IP66



## JUNCTION BOXES



## SX7E, SX9GUB SERIES

SX7E and SX9GUB series junction boxes are UL certified. SX7E and SX9GUB may be used either as junction boxes with/without terminals or for installation of electrical equipment. SX9GUB series is suitable for installation along pipe courses as junction boxes and distribution boxes for conductors. They are available in many and different dimensions.

- SX7E and SX9GUB series: cover in low copper content aluminum alloy, stainless steel screws, mounting plate, fixing lugs, epoxy coating.

Class I, Groups C and D; Class II, Groups E, F and G

Directive

NEC, CEC, NFPA

Standards

NEMA 7, NEMA 9, NEMA 4X, NEMA 3, UL 886, UL 1203, NEC Art 500-503

## 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 to realise 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.
- Hinged cover.

Group I/II, Category M2/2GD

Ex d I Mb  
Ex d IIC Gb - Ex tb IIIC Db  
Ex d IIC T6, T5 Gb - Ex tb IIIC T85,  
T100 °C Db  
Ex d IIC T6/T5 - Ex tb IIIC T85 °C/  
T100 °C  
Ex d [ia Ga] IIC T... Gb - Ex tb [ia Da]  
IIIC T... °C Db

IP66

Zone 1-2-21-22

AISI 316L Stainless steel.

## JUNCTION BOXES WITH SCREW COVER



## CCAIF, CCAIF...H SERIES

CCAIF and CCAIF...H series junction boxes in stainless steel have a screw cover with or without round window. They are used either as junction boxes with/without terminals. The body can be drilled and threaded according to customers' specification.

- AISI 316L stainless steel.
- Stainless steel bolts and screws.
- Internal/external earth screws.

Group II, Category 2 GD

Ex d IIC Gb Ex tb IIIC Db

IP66

Zone 1-2-21-22

AISI 316L Stainless steel

## JUNCTION BOXES



## CTB...CSTB...CTBE... SERIES

CTB...CSTB...CTBE... 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 strips 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 (no CTBE).
- Stainless steel screws.
- CTBE series now available.

Group II, Category 2GD

Ex eb IIC T... Gb - Ex tb IIIC T... Db  
Ex eb ia IIC T... Gb - Ex ia IIIC T... Db  
Ex eb ia IIC T... Gb - Ex tb ia IIIC T... Db  
Ex de IIC T6/T5 Gb - Ex tb IIIC T85 °C/  
T100 °C Db

IP 66

Zone 1-2-21-22

AISI 316L stainless steel

## 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 strips 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.

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 de IIC T5/T6 Gb Ex tb IIC  
T100°C÷T85°C Db

IP66

Zone 1-2-21-22

AISI 316L stainless steel

## JUNCTION BOXES



### SA/P SERIES

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 strips and they can be equipped with pilot lights, push buttons and measuring instruments to assemble control and signalling panels.

- SA/P boxes are in glass reinforced resin.
- They can be drilled and threaded according to customers' specification.
- Stainless steel screws.

Group II, Category 2GD

Ex e IIC T.. Gb - Ex tb IIC T.. Db  
Ex ia IIC T.. Gb - Ex tb IIC T.. Db  
Ex e ia IIC T.. Gb - Ex tb ia IIC T.. Db  
Ex de IIC T6/T5 Gb - Ex tb IIC  
T85°C/T100°C Db

IP66

Zone 1-2-21-22

GRP

## 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 strips 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) polyester coating.
- They can be drilled and threaded according to customers' specification.
- Stainless steel screws.

Group II, Category 2GD

Ex e IIC T.. Gb - Ex tb IIC T.. Db  
Ex ia IIC T.. Gb - Ex tb IIC T.. Db  
Ex e ia IIC T.. Gb - Ex tb ia IIC T.. Db  
Ex de IIC T6/T5 Gb - Ex tb IIC T85°C/  
T100°C Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

## CONTROL STATIONS



### A, I, CMD SERIES

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

Group II, Category 2GD

A, I Series  
Ex de IIC T5 Ex tD A21

CMD Series  
Ex db eb IIC T.. Gb; Ex tb IIC T.. °C Db

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 strips.

- SF series has a wall mounting bracket whereas SSC series has a ceiling mounting bracket.
- Stainless steel screws.
- Available SF...S and SSC...S series in stainless steel.

Group II, Category 2GD

Ex d IIC Gb - Ex tb IIC Db  
Ex d IIC T... Gb - Ex tb IIC T... Db  
Ex e IIC T... Gb - Ex tb IIC T... Db  
Ex i IIC T... Gb - Ex tb IIC T... Db

IP 66/67

Zone 1-2-21-22

Low copper content aluminium alloy and stainless steel

## ROUND JUNCTION BOXES



## SWS SERIES

SWS series junction boxes, are suitable for containing temperature sensors such as thermocouples.

- Stainless steel screws.
- SWS series features a galvanized steel chain which prevents from losing the lid.

Group II, Category 2GD

SWS SERIES

Ex d IIC T... Gb - Ex tb IIC T... Db  
Ex e IIC T... Gb - Ex tb IIC T... Db  
Ex i IIC T... Gb - Ex tb IIC T... Db  
Ex d IIC Gb - Ex tb IIC Db

IP 66/67

Zone 1-2-21-22

Low copper content aluminium alloy

## JUNCTION BOXES FOR EX DE PANEL BOARDS



## EJBE, EJBXE SERIES

EJBE, EJBXE series is composed by one 'Ex d' EJB (aluminium) or EJBX (stainless steel) series junction box and one 'Ex e' CTB series connection box through the flange assembly. Viewing windows are available on 'Ex d' enclosure for the visualization of indicators, displays and monitoring devices.

- AISI 316L stainless steel or copper free aluminium alloy.
- Stainless steel bolts and screws.
- Internal/external earth screws.

Group II, Category 2GD

Ex de IIB+H, T5/T6 Gb  
Ex tb IIC T85°C T100°C Db

IP66

Zone 1-2-21-22

AISI 316L stainless steel or copper free aluminium alloy

## JUNCTION BOXES FOR EX DE PANEL BOARDS



## GUBE, GUBE...H SERIES

GUBE series control panels, consisting of a 'Ex d' junction box CCAIF series and a 'Ex e' junction box CTB series in stainless steel AISI316L, have been specifically designed for the offshore market. The 'Ex d' junction box is used for the installation of electrical components such as measuring instruments, PLCs, etc., while the 'Ex e' increased safety junction box is used for the installation of terminal strips for the connection of incoming cables.

- GUBE...H series features a circular viewing windows.
- AISI 316L stainless steel.
- Stainless steel bolts and screws.
- Internal/external earth screws.

Group II, Category 2GD

Ex de IIC T5/T6 Gb - Ex tb IIC T85°C T100°C Db

IP66

Zone 1-2-21-22

AISI 316L stainless steel



## CONTROL PANEL 'Ex tb'



## SA SAG, SA/P, CTB SERIES

The control, monitoring and signalling units SA, SA/P, CTB include a series of enclosures with "Ex tb" protection available in aluminium, polyester or stainless steel and in different measures.

According to the size and the material chosen, there are three maximum dissipation limits that correspond to each of the three maximum optional ambient temperatures: + 40°C, + 55°C and + 60°C.

- Several IECEx/ATEX certified devices can be mounted on the enclosure faces.
- A glass or polycarbonate window can also be fixed to the lid.
- Various electronic devices can be installed internally such as terminals, analog and digital instruments, control and measurement devices, circuit breakers and IECEx / ATEX certified battery packs.

Group II, Category 2D

Ex tb IIC T80 °C Db

IP 66

Zone 21-22

Low copper content aluminium alloy, stainless steel, GRP

## LIMIT SWITCHES



## YFC SERIES

YFC series 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 features. 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

### ROUND INSTRUMENT HOUSINGS



## CSC, EFSCO, EMHA-9, CSC-H 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.

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

IP 66

Zone 1-2-21-22

Low copper content aluminium alloy

## CONTROL STATIONS



## CSE, EFDC SERIES

CSE, 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 EFDC series are cylindrical. On EFDC control stations may be installed up to four different control devices.

- Voltage/ampere 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  
EFDC 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

## AUDIBLE WARNINGS, LOUDSPEAKER AND ROTATING ELECTROMECHANICAL SIRENS



## ETH, ETH20MDLOUD/TR, ETS60 SERIES

ETH series audible warnings are recommended when it's necessary the use of a signalling bell and/or alarm in areas with potentially explosive atmosphere. The explosion-proof loudspeakers ETH20MDLOUD series are suitable for connection to standard amplification system with output 100V, to alarm systems and for public address.

ETS60 series sirens are recommended when it's necessary the use of a signalling bell and/or alarm in areas with potentially explosive atmosphere.

- ETH series: two sizes available and different colors upon request. Five sounds with different intensity and frequency: bi-tone - yelp - wail - intermittent - fixed note.
- ETH20MDLOUD/TR: equipped with a transformer offering the possibility to adapt and select the sound level.
- ETS60 series: ideal for noisy environments, mounting bracket with fixing holes and different power voltages VAC/VDC upon request.

ETH-12

Group II, Category 2GD

Ex d IIC T6 Gb - Ex tb IIIC T85°C IP65

ETH-20

Group II, Category 2G

Ex d IIC - IIB+H<sub>2</sub> T4 Gb IP6x

Zone 1-2-21-22

ETH20MDLOUD/TR

Group II, Category 2GD

Ex d IIB+H<sub>2</sub> T6/T5 Gb - Ex tb IIIC T85°C/T100°C Db

ETS60 series

Group II, Category 2GD

Ex d IIC T6 - Ex tD A21 IP65

Low copper content aluminium alloy

## ELECTRONIC EARTHING SYSTEM 'Ex d/tb' e 'Ex eb/tb'



## GRD-4200 AND GRDE-4200 SERIES

GRD-4200 and GRDE-4200 electronic equipment ensures tankers are earthed when loading and unloading flammable liquids in environments where there is an explosion hazard. They operate by reading the resistive parameter ensuring earthing and controlling the loading and unloading pump.

- Connection pliers with 8 metres of cable.
- GRD-4200 certified SIL 2.
- GRDE-4200 casing 'Ex eb / tb' and resistant to knocks IK10.
- GRDE-4200 available in aluminium alloy with low copper content or polyester resin.

(GRD-4200)

Group II, Category 2(I)GD

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

(GRDE-4200)

Group II, Category 2GD

Ex db eb mb [ia Ga] IIC T... Gb

Ex tb [ia Da] IIIC T...°C Da

IP66

Zone 1-2-21-22

Low copper content aluminium alloy or GRP

## ELECTRONIC CAPACITIVE EARTHING SYSTEM 'Ex eb / tb'



## GRDC-4200 SERIES

The GRDC-4200 is a capacitive electronic earthing system. The system analyses the overall capacitance of the vehicle, to provide consent for load activation, only in the case of actual connection. Thanks to the electrical capacitance reading of the connected device, the GRDC-4200 can distinguish whether it has been connected to the tank or to another metal object (pipe, ladder, etc.), thereby increasing the level of reliability and safety.

- Casing Ex eb/tb
- Connection pliers with 8 metres of cable.
- Available in aluminium alloy with low copper content or polyester resin.

Group II, Category 2GD

Ex db eb mb [ia Ga] IIC T... Gb - Ex tb [ia Da] IIIC T...°C Db

IP66

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

## PLUGS AND SOCKETS



### PY, SPY SERIES

PY series sockets, with an 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 T6 Gb; Ex tb IIIC T76 °C Db

IP65

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 of 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 breaker can be closed 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 Gb Ex tb IIIC T85 °C Db

FP series

Ex d IIC T6 Gb Ex tb IIIC T85 °C Db

IP 65

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

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", "Ex e", "Ex tb" 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.
- Indicator lights available for -60°C.

Group II, Category 2GD

Ex d IIC Ex tD A21

Ex e IIC Gb; Ex tb IIIC Db

Ex II 2D Ex tb IIIC Db IP66

IP66

Zone 1-2-21-22



## ELECTRICAL CONNECTORS



### FASTEx-M SERIES

FastEx-M electrical connectors are used to connect equipment to an electrical circuit or to other equipment quickly and safely, ensuring system modularity. Available in versions with 3 and 5 poles, they are robust and practical to use, meaning circuits can be activated quickly. They are error-proof and protect environments from the risk of explosions and accidental disconnections.

- Standard aluminium alloy. Other materials (nickel-plated brass - stainless steel) on request.
- Anodising surface treatment.
- Acid- and hydrocarbon-resistant silicone gasket
- Max. rated voltage 320 V AC/DC – 110-320 VDC
- Max. cable cross-section 1.5 mm<sup>2</sup>.
- Rated current: 15 A.

Group II, Category 2GD

FastEx-ME..  
Ex eb IIC Gb; Ex tb IIC Db

FastEx-MN..  
Ex ec IIC Gb; Ex tc IIC Db

IP66

Zone 1-2-21-22

Low copper content aluminium alloy

## CABLE GLANDS FOR ARMORED AND NON-ARMORED CABLES



### NAV, NEV, NAVF, NAVN SERIES

NAV and NEV series cable glands are suitable for the direct insertion of non-armoured and armored cables into explosion-proof junction boxes and/or lighting fixtures, plugs and sockets. They have three type of protection 'Ex d', 'Ex e' and 'Ex tb' and they are equipped with one sealing ring on the inner and outer sheath of the cable. NAV series has a single sealing ring which tightens the incoming cable ensuring the 'Ex d' way of protection. NEV series has a second sealing ring that tightens on the outer sheath of the cable to ensure the IP66/68 avoiding the ingress of water, moisture, rain and dust. NAVF (female threaded entry) and NAVN (male threaded entry) series cable glands have the technical features of NAV series.

- Nickel-plated brass standard. Other materials (galvanized steel - stainless steel) upon request.
- High-tech and high mechanical performance compression rings and gaskets with high-temperature resistance.

Group II, Category 2GD

Ex db IIC Gb  
Ex eb IIC Gb  
Ex tb IIC Db

IP66/68

Zone 1-2-21-22

Nickel-plated brass standard

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



### NAVB, NEVB SERIES

NAVB and NEVB series barrier cable glands are used for the direct insertion of cables into 'Ex d' boxes. Every single conductor is locked and 'Ex d' 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 epoxy resin for extreme temperatures
- Different threads available.

Group II, Category 2GD/3G

Ex db IIC Gb - Ex eb IIC Gb  
Ex tb IIC Db  
Ex nR IIC Gc

IP 66/67

Zone 1-2-21-22

Nickel-plated brass standard

## POLYAMIDE CABLE GLANDS FOR NON-ARMORED CABLES



### NAVJ SERIES

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

- Polyamide 6, silicone gaskets.
- ISO lead 1,5 thread.
- Ral 9005 black color (Ex e) or Ral 5015 blue color (Ex i).
- 7J impact resistance.

Group II, Category 2GD

Ex eb IIC Gb  
Ex tb IIC Db  
IP 66/68

Zone 1-2-21-22

Polyamide

### THREE PIECES UNIONS ELBOWS AND OPEN ELBOWS



### BFF, BMF, BMM, RFF, RMF, RMM SERIES ELF, ELM, ELMF, LBH, LBHS SERIES

Three pieces unions for gas group 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.

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

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.

- BFF, RFF series (female/female); BMF, RMF series (male/female); BMM, RMM series (male/male).
- ELF 90° elbow series: low copper content aluminium alloy.
- LBH, LBHS series: body and cover in low copper content aluminium alloy. Galvanized screws.

B... R... Series  
Group II, Category 2GD  
Ex db IIB/IIC Gb Ex tb IIIC Db  
Galvanized steel or stainless steel.

LBH, LBHS Series  
Group II, Category 2G  
Ex d IIB

ELF, ELM, ELMF Series  
Group II, Category 2GD  
Ex db IIC Gb Ex tb IIIC Db  
Ex eb IIC Gb Ex tb IIIC Db

IP66/67

Low copper content aluminium alloy

### VERTICAL, HORIZONTAL SEALING FITTINGS AND PULLING BOXES



### EYS, EYD, EZS, EKC 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.

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.

- 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.

EYD, EYD, EZS series  
Group II, Category 2GD  
Ex d IIC Ex tD A21  
IP66  
Zone 1-2-21-22

Serie EKC  
Group II, Category 2G  
Ex d IIB  
Zone 1-2

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, ECDE SERIES

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

ECDE series automatic drainage and breather valves facilitate a continuous drainage and breathing of 'Ex e' junction box, avoiding the periodic manual discharge while ensuring a suitable IP degree of protection.

- ECD series: AISI 316 stainless steel or aluminium alloy upon request. Different threads available.
- ECDE series: AISI 316 stainless steel or nickel-plated brass. Silicone gaskets. Internal filter and seeger in stainless steel.

ECD 1... series  
Group II, Category 2G  
Ex d IIC Gb  
Ex d IIB Gb

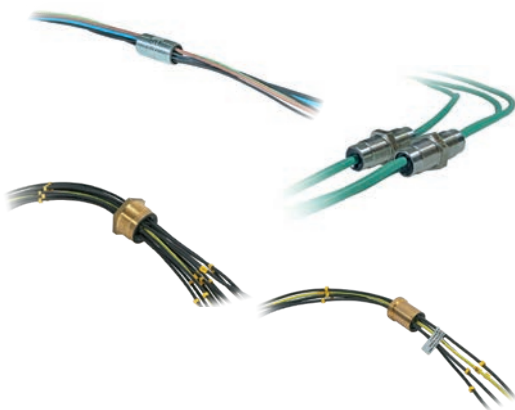
ECDE 2... series  
Group II, Category 2GD  
Ex d IIC Gb/IIB Gb - Ex e IIC Gb/IIB Gb - Ex tb IIIC Db

ECDE... series  
Group II, Category 2GD  
Ex db IIC Gb Ex tb IIIC Db  
IP66

Zone 1-2

Stainless steel or nickel-plated brass

## NIPPLES AND SEALED BUSHINGS



### 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.

- NPS, TP, CP series are made in brass, galvanized steel and stainless steel with bi-component resin.
- NPS series is also available for thermocouples.

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

Brass and other materials.

## NIPPLES, COUPLINGS, BUSHINGS AND PLUGS



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

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

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. NP series are made in galvanized steel or stainless steel. Other threads upon request

- 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

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

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

## 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



### ESP, SP, BC SERIES

ESP and 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.

- ESP flexible pipes have a mechanical assembly without welding.
- SP flexible pipes offer good flexibility and excellent damping 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.
- ISO7/1 thread. Other threads available.

ESP flexible pipes  
Group II, Category 2GD  
Ex II 2 GD Ex eb IIC Gb  
Ex tb IIIC Db  
IP 66

SP flexible conduits  
Group II, Category 2GD  
Ex d IIB Gb Ex tb IIIC Db  
Ex d IIC Gb Ex tb IIIC Db

IP 66/67

Zone 1 - 2 - 21 - 22

Galvanized steel



## WATERPROOF JUNCTION BOXES



### CS, CSG, CS.../P, CS...SS SERIES

CS series waterproof junction boxes, in aluminium alloy, GRP and stainless steel, are suitable for containing any electrical and electronic equipment. Thanks to their design and features, they are ideal for any industrial environment.

- Stainless steel screws and bolts.
- Silicone gasket.
- Internal/external earth screws.
- Fixing lugs. RAL 7035 polyester coating for aluminium version.

### CTBEW SERIES

CTBEW series waterproof junction boxes, in stainless steel, are suitable for containing any electrical and electronic equipment. They feature a wall thickness of 1,5 mm.

IP66

Low copper content aluminium alloy, GRP and stainless steel.

## CONDULET



### C, LB, LL, LR, LU, T, TB, X SERIES

These boxes are used in conduit installations as pulling boxes to prevent the entry of solids and liquids.

- Cover complete with elastomeric gasket and with galvanized steel fixing screws.
- ISO 228 parallel threaded hubs.
- Coating and other threads upon request.

IP55

Body and cover in low copper content aluminium alloy.

## LOCKNUTS, EARTHING RINGS, PVC SHROUDS, GASKETS



### DL, DL...EP, DL...A, A, PGA, GRN, RDI 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, TPV 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.
- RDI serrated or shake-proof washers act as an anti-vibration device to prevent the cable gland from loosening. It can be also used as an earth enhancing device on painted enclosures.

Locknuts materials:

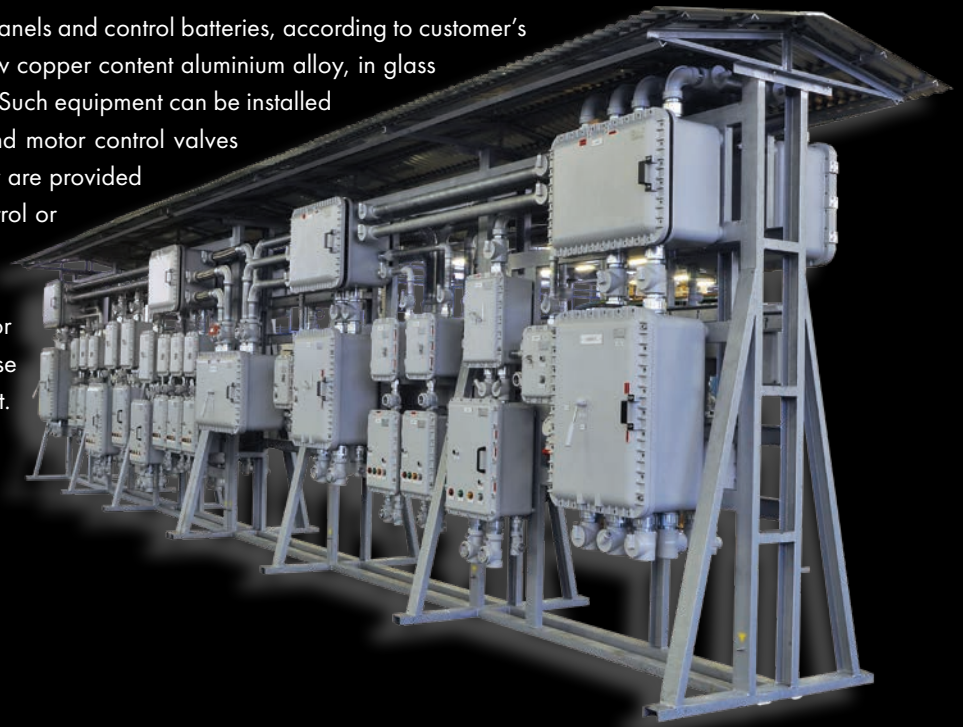
DL series galvanized steel or aluminium;

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

[illegible]

## SWITCHGEARS AND PANEL BOARDS

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 polyester powder paint.



Example of Cortem Marking Label

## SAFETY AND QUALITY

### MANAGEMENT SYSTEM 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 9001:2015 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 14001:2015 Standard.

Furthermore, Cortem Group has developed an Occupational Safety and Health Management System certified according to UNI EN ISO 45001:2018 Standard.



### PRODUCT CERTIFICATIONS

The explosion-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 Brazilian INMETRO, the English UKEX, the Emirati ECASEx, the Indian CCoE, the Chinese CCC and the TR CU certification. Respecting these strict international construction rules, Cortem guarantees the safety of people and environment





## "NO FAKE" PROJECT

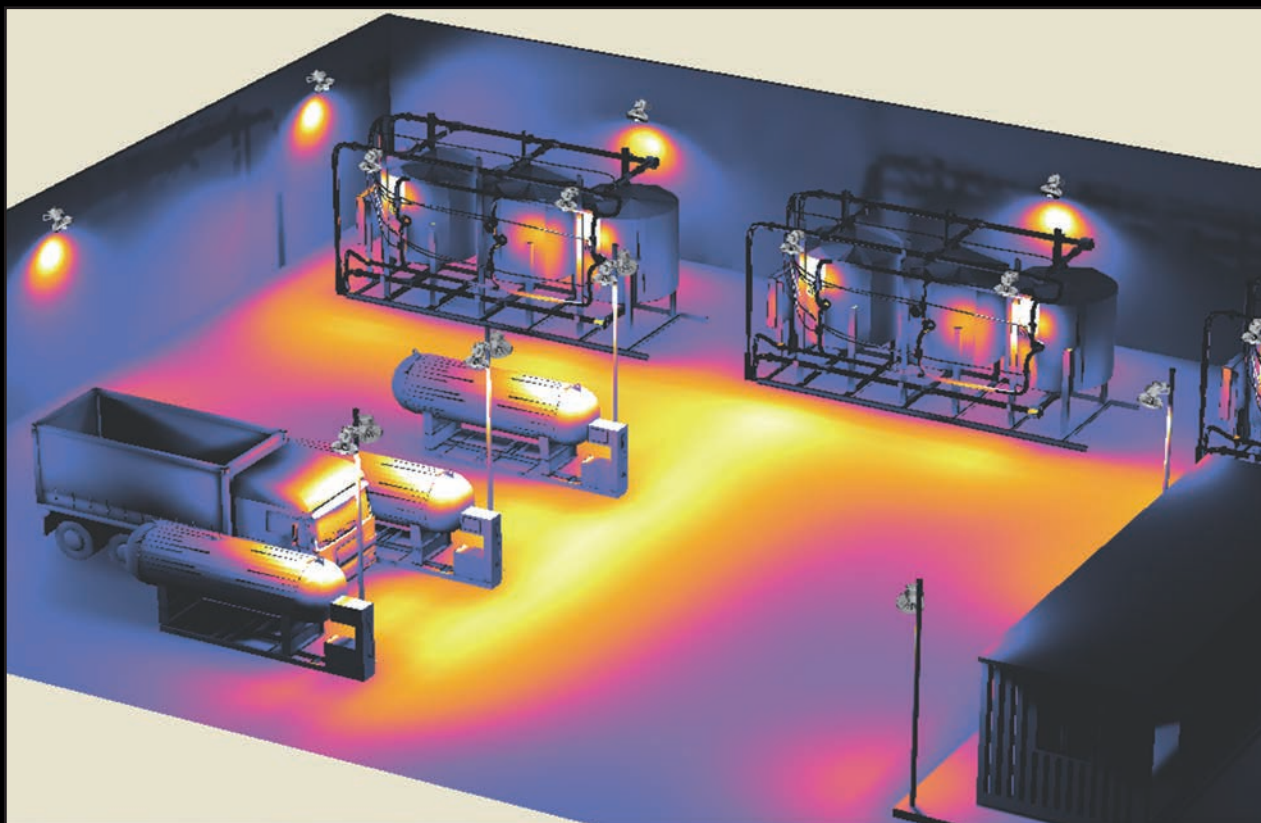
Cortem Group "No Fake" project tackles the counterfeiting of products. The authenticity of Cortem products is guaranteed by the application of an adhesive label with holographic image, an alphanumeric code and a QR code for smartphone readers. The correctness of the alphanumeric code can be checked on Cortem web site [www.cortemgroup.com](http://www.cortemgroup.com).

The material is a new tamper-evident metallic base for high refractive index holograms, while the image was originated on Cortem Group graphics with technologies used by current banknote and document of identity applications.



## PHOTOMETRIC FILES FOR LIGHTING PROJECTS

On Cortem Group web site you can download .LDT and .IES lighting data files for the design and simulation of lighting levels in 2D and 3D, rendering and ray tracing. These files can be used with LITESTAR lighting design software for internal and external able to make simple and effective the job of lighting designers. Entering the photometric files of the selected models along with architectural data, you obtain graphs, curves, installation diagrams and a virtual image with the real lighting effect. The software, available in several languages, can be free downloaded from [www.oxytech.it](http://www.oxytech.it) with the manual of use.



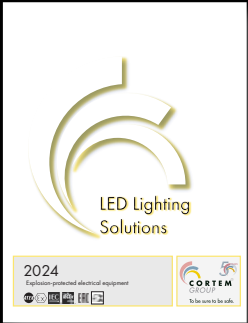
FOR FURTHER INFORMATION ON OUR PRODUCTS AND CERTIFICATIONS DOWNLOAD  
VISIT US AT [WWW.CORTEMGROUP.COM](http://WWW.CORTEMGROUP.COM).

# Cortem Catalogs List



Signal and control equipment,  
sockets and plugs

## LED Lighting Solutions



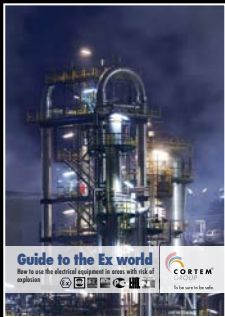
Lighting and Signalling

## Junction Boxes







Cable glands and  
elettrical fittings

## Guide to the Ex world



The IEC and NEC  
certification system

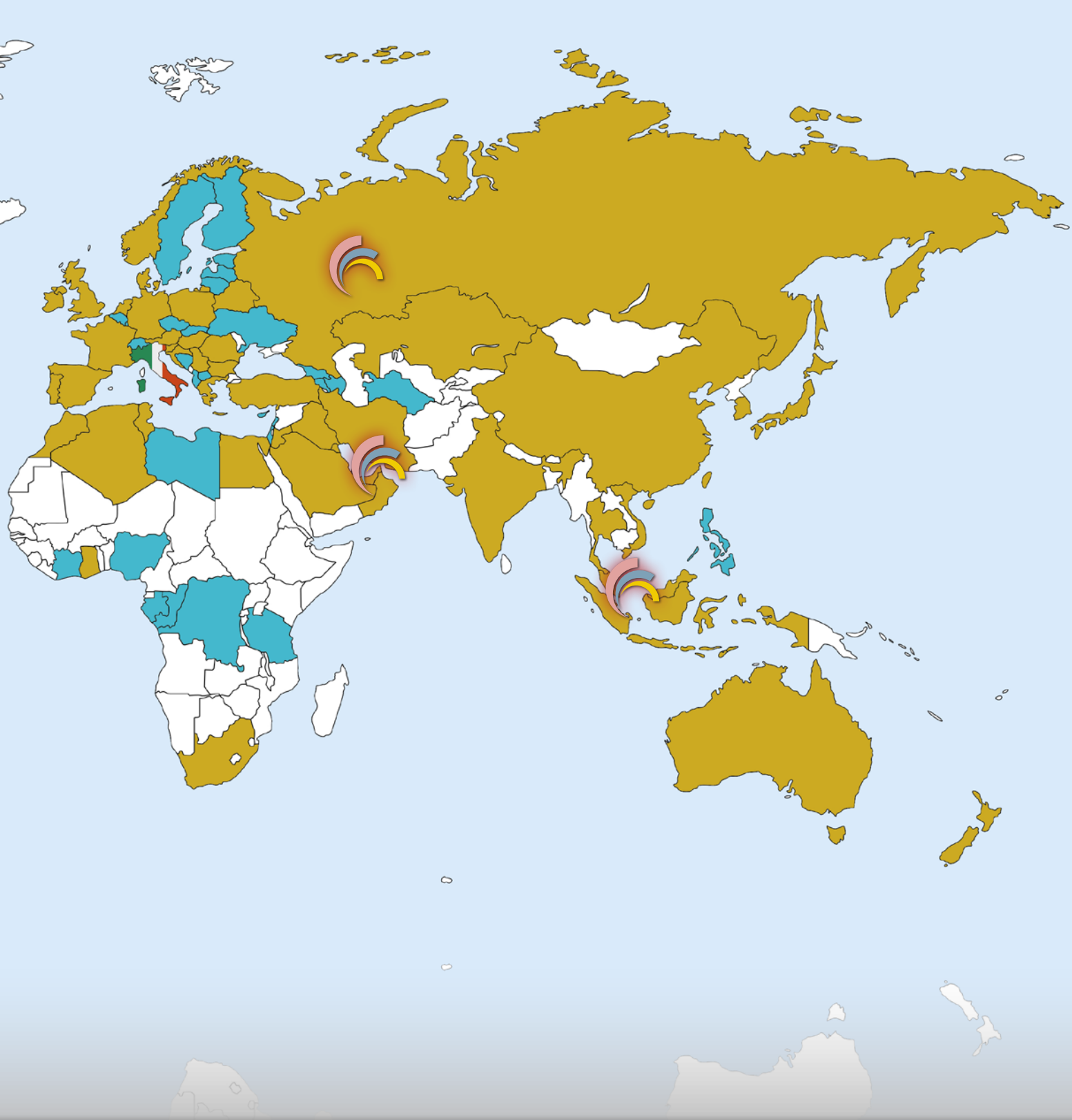
# Market Coverage

-  Headquarters
-  Branch office
-  Worldwide Network
-  Sales



To be sure to be safe





### Product modifications and warranty

Cortem Group reserves the right, at its sole discretion, to make any modifications (at any time and without notice) in order to improve the functionality and performance of its products or meet technical and manufacturing requirements. The measurements and drawings of the products and their parts are indicative only and not binding, because they can be modified without notice.

The latest updated information, data and certificates of our products are available on [www.cortemgroup.com](http://www.cortemgroup.com) web site.

All Cortem Group products are covered by warranty for a period of twelve months from the delivery date. For more information, refer to the "General Terms and Conditions of Sale" on [www.cortemgroup.com](http://www.cortemgroup.com) web site.

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