HAZARDOUS AREAS
Ex APPROVED EXPLOSION-PROOF PRODUCTS
APPLICATIONS FIELDS

Safety of people, equipment & infrastructure

- Visual signal
- Lighting
- Lighting
- Receptacles
- Lighting
- Receptacles
- Lighting
- Receptacles

Technor®
in a potentially explosive atmosphere
EUROPEAN DIRECTIVE 94/9/EC
ATEX Directive 94/9/EC is a “new approach” directive that applies to protective systems against explosions as well as all equipment used in or related to explosive atmospheres, such as electrical and non-electrical equipment, components and safety devices, control and adjustments necessary for the safe operation of this equipment and protective systems. As a “new approach” directive, the 94/9/EC Directive defines the essential requirements for the safety and health which shall be respected by all manufacturers. Devices falling within the scope of the European Directive and responding to the essential requirements for the safety and health are identified by a marking plate on which the ☐️ logo appears.

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

International scheme : IECEx
IECEx Scheme: A voluntary certification scheme complying with international standards for electrical equipment only for use in explosive atmospheres.
Its aim is to facilitate the international flow of electrical equipment intended to be used in potentially explosive atmospheres in compliance with one or more international standards defining the type of protection against the risk of explosion and thus avoiding multiple national certifications and at the same time ensuring an appropriate level of safety. The IECEx certification scheme allows the manufacturers of “Ex proof” equipment to obtain a Certificate of Conformity that would be accepted in Member States in which this certification scheme is recognized.

CONDITIONS FOR EXPLOSION
- Ignition source with enough energy or high temperature
- Oxygen in the air
- Flammable substances in explosive limit
### AREA CLASSIFICATION DEFINED BY DIRECTIVE 1999/92/EC

<table>
<thead>
<tr>
<th>Probability of ATEX presence</th>
<th>Very High</th>
<th>High and Normal</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Definition</strong></td>
<td>Location where an explosive atmosphere is permanently present or where it exists frequently or for long periods.</td>
<td>Location in which an explosive atmosphere occurs occasionally during normal operation.</td>
<td>Location where an explosive atmosphere is not likely to occur during normal operation or, if it does, is only short-lived (foreseeable abnormal operation).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Zoning for gas &amp; vapors (1999/92/EC)</th>
<th>Zone 0</th>
<th>Zone 1</th>
<th>Zone 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zoning for dust &amp; fiber (1999/92/EC)</td>
<td>Zone 20</td>
<td>Zone 21</td>
<td>Zone 22</td>
</tr>
</tbody>
</table>

### ATEX / IECEX CLASSIFICATION

<table>
<thead>
<tr>
<th>ATEX Category</th>
<th>IEC protection Level (EPL)</th>
<th>Zone of installation</th>
<th>Atmosphere</th>
</tr>
</thead>
<tbody>
<tr>
<td>1G</td>
<td>Ga</td>
<td>0</td>
<td>GAS</td>
</tr>
<tr>
<td>2G</td>
<td>Gb</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>3G</td>
<td>Gc</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>1D</td>
<td>Da</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>2D</td>
<td>Db</td>
<td>21</td>
<td>DUST</td>
</tr>
<tr>
<td>3D</td>
<td>Dc</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>M1</td>
<td>Ma</td>
<td>MINING</td>
<td>COAL DUST METHANE</td>
</tr>
<tr>
<td>M2</td>
<td>Mb</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
GAS AND VAPORS CLASSIFICATION AND TEMPERATURE CLASSIFICATION

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

The IEC also defines different groups of gases and vapors.

The IEC and North American groups are viewed as fundamentally the same, see the following table.

<table>
<thead>
<tr>
<th>Gas group</th>
<th>En / IEC</th>
<th>North America</th>
<th>Typical gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>IIC</td>
<td>A</td>
<td>Acetylene</td>
<td></td>
</tr>
<tr>
<td>IIC</td>
<td>B</td>
<td>Hydrogen</td>
<td></td>
</tr>
<tr>
<td>IIB</td>
<td>C</td>
<td>Ethylene, Ethyl ether, Cyclopropane, Butadene 1-3</td>
<td></td>
</tr>
<tr>
<td>IIA</td>
<td>D</td>
<td>Propane, Ethane, Butane, Heptane, Acetone, Ethyl Alcohol</td>
<td></td>
</tr>
</tbody>
</table>

DUST CLASSIFICATION

IEC / EN definition for classifications of dust:

<table>
<thead>
<tr>
<th>Dust group</th>
<th>Definition</th>
<th>Dust type</th>
<th>Size</th>
<th>Resistivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>IIIA</td>
<td>combustible flyings</td>
<td>&gt; 500 µm</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>IIIB</td>
<td>non-conductive dust</td>
<td>≤ 500 µm</td>
<td>&gt; 10³ Ω.m</td>
<td></td>
</tr>
<tr>
<td>IIIC</td>
<td>conductive dust</td>
<td>≤ 500 µm</td>
<td>≤ 10³ Ω.m</td>
<td></td>
</tr>
</tbody>
</table>
## TEMPERATURE CLASSES

<table>
<thead>
<tr>
<th>Self ignition temperature of the gases/vapors</th>
<th>T6</th>
<th>T5</th>
<th>T4</th>
<th>T3</th>
<th>T2</th>
<th>T1</th>
</tr>
</thead>
<tbody>
<tr>
<td>85°C ≤ Temp ≤ 100°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100°C &lt; Temp ≤ 135°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>135°C &lt; Temp ≤ 200°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200°C &lt; Temp ≤ 300°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>300°C &lt; Temp ≤ 450°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>450°C &lt; Temp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

### Explanation of marking

#### Manufacturer identification:
- Name and trademark
- Address

#### Identification of notifying body in charge of the quality surveillance:
- Ex: 0080 = INERIS and 0081 = LCIE

#### Mark for product in the scope of directive 94/9/EC and in compliance with ERSH

#### Directive 94/9/EC marking:
- II: Equipment group = surface industry
- 2: Equipment category
- GD: Gas or Dust atmosphere

#### European certificate number
- (which can be follow by IECEx certificate number ex: IECEx INE 10.0015X)

#### Marking for Gas standards
- Type AQ 8
- 380/415V 50/60Hz 63A
- Max Dis. P. 55W
- Ex e IIC T6 Gb
- Ex tb IIIC T85°C Db IP66
- T amb. -20/40°C
- Serial Nr. 13112452

#### Marking for Dust standards
- Ambient temperature range which shall be marked when different than -20°C / +40°C

#### WARNING - DO NOT OPEN WHEN ENERGIZED

### ERSH
- Essential requirements for the safety and health

### Product type

#### Electrical parameters for the safe use of equipment

<table>
<thead>
<tr>
<th>* : Gas details</th>
<th>** : Dust details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ex: Electrical apparatus intended to be installed in hazardous location</td>
<td>Ex: Electrical apparatus intended to be installed in hazardous location</td>
</tr>
<tr>
<td>e: type of protection (e = increased safety)</td>
<td>tb: type of protection (tb = protection by enclosure)</td>
</tr>
<tr>
<td>IIC: Gas group / Subdivision C</td>
<td>IIC: Dust group / Subdivision C</td>
</tr>
<tr>
<td>T6: temperature class</td>
<td>T85°C: Maximum surface temperature</td>
</tr>
<tr>
<td>Gb: Equipment protection level b [use in zone 1 and 2]</td>
<td>Db: Equipment protection level b [use in zone 21 and 22]</td>
</tr>
<tr>
<td></td>
<td>IP66: degree of protection provided by the enclosure</td>
</tr>
</tbody>
</table>
The most common types of protection

**FLAMEPROOF « Ex d » EQUIPMENT**

A flameproof enclosure is an enclosure in which the parts which can ignite an explosive gas atmosphere are placed and which can withstand the pressure developed during an internal explosion of an explosive mixture, and which prevents the transmission of the explosion to the explosive gas atmosphere surrounding the enclosure.

A flameproof enclosure must be able to fulfil three criteria:
- Contain an internal explosion without permanent distortion.
- Guarantee that the explosion cannot be transmitted to the surrounding atmosphere.
- Exhibit a temperature at all points on the surface which is lower than the spontaneous ignition temperature of the surrounding gases or vapors.

There are 2 construction values which make it impossible for an explosion to answer to the 3 criteria:
- the flange length (L)
- the gap (i)

These values depend on the gas group and the authorized maximum gap depends on the flange length.

It is necessary to lubricate the thread and to ensure that at least 5 threads are engaged for metric thread and at least 3.5 threads are engaged for NPT threads.

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

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

In order to successfully retain the flameproof character of the equipment:
- Care must be taken before starting up to ensure that all the screws for closing the covers and cable entries are firmly tightened and for GUB enclosure that the blocking device is well tightened.
- Modification of the original predrilled holes is prohibited.

**PRODUCTS MARKED « Ex de »**

Equipment marked Ex de have a combined protection type « d » and « e » and are commonly used. Certain products such as power receptacles, lampholders, etc, whose design creates arcs and sparks in normal operation, cannot be produced with protection mode « e » only.
- The part where the electric arc is produced is enclosed in a small flameproof chamber.
- The connection terminals are « e » increased safety.
- The assembly is mounted in an « e » increased safety enclosure.

**Cable entries**

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

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

- national rules (Example NFC 15-100 + condition BE3 for France),
- EN /IEC 60079-14,
- IEC / EN 60079-17.

## EQUIPMENT SELECTION (EXCEPT CABLE ENTRIES)

<table>
<thead>
<tr>
<th>Zones</th>
<th>Type of protection</th>
<th>Marking</th>
<th>EN/IEC standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>General requirements</td>
<td>-</td>
<td>60079-0</td>
</tr>
<tr>
<td>For use in Zones 1, 2</td>
<td>Flameproof enclosure</td>
<td>Ex d</td>
<td>60079-1</td>
</tr>
<tr>
<td>For use in Zones 1, 2</td>
<td>Increased safety</td>
<td>Ex e</td>
<td>60079-7</td>
</tr>
<tr>
<td>For use in Zones 0, 1, 2, 20, 21, 22</td>
<td>Intrinsic safety</td>
<td>Ex i</td>
<td>60079-11</td>
</tr>
<tr>
<td>For use in Zones 1, 2</td>
<td>Pressurisation</td>
<td>Ex p</td>
<td>60079-2</td>
</tr>
<tr>
<td>For use in Zones 0, 1, 2, 20, 21, 22</td>
<td>Encapsulation</td>
<td>Ex m</td>
<td>60079-18</td>
</tr>
<tr>
<td>For use in Zones 1, 2</td>
<td>Oil immersion</td>
<td>Ex o</td>
<td>60079-6</td>
</tr>
<tr>
<td>For use in Zones 1, 2</td>
<td>Powder filling</td>
<td>Ex q</td>
<td>60079-5</td>
</tr>
<tr>
<td>For use in Zone 2</td>
<td>&quot;Non sparking&quot;</td>
<td>Ex n</td>
<td>60079-15</td>
</tr>
<tr>
<td>For use in Zones 20, 21, 22</td>
<td>Dust atmospheres</td>
<td>Ex t</td>
<td>60079-31</td>
</tr>
</tbody>
</table>
A complete range of lighting with dedicated designs for hazardous areas. Manufactured either in stainless steel, marine grade aluminium and cast steel with an extra Polyurethane painting. Every single light provides excellent photometric properties.
EV Series

H.I.D.

- II 2G Ex d IIC Gb or II 2G Ex de IIC Gb
- II 2D Ex tb IIIC Db IP66
- Copper free aluminum
- Available with HPS, MH & MV lamps
- Provided in a wide range of wattages
- Option: Instant restrike

EV PT Series

Halogen

- II 2G Ex d IIC Gb or II 2G Ex de IIC Gb
- II 2D Ex tb IIIC Db IP66
- Copper free aluminum
- This type of light is used where high illumination is required

LED EV Series

LED

- II 2G Ex de IIC Gb
- II 2D Ex tb IIIC Db IP66
- Copper free aluminum
- This type of light is used where high illumination is required

LED FL Series

LED

- II 2G Ex d IIB T6 Gb or Ex d IIB+H2 T6 Gb
- II 2D Ex tb IIIC T85°C Db IP66
- Copper free aluminum + tempered glass
- Available with pole mounting and ceiling mounting
- Available with battery pack for 3h

FL Series

LED & Halogen

- II 2G Ex d IIB T3 Gb or Ex d IIB+H2 T3 Gb
- II 2D Ex tb IIIC T200°C Db IP66
- Copper free aluminum + tempered glass
- Available in AISI316 SS
- Available with all lamp types
- Option: Instant restrike
CONTROL STATIONS

Increased Safety // Flameproof

Ex d, Ex e, Ex de, Ex dem
Range of GRP, Copper free aluminium or Stainless Steel control stations designed to offer flexible, lightweight and cost effective solutions tailor made upon customer request. The EF Series are to be assembled with Ex de operators and the CP and EPKZM Series are to be assembled with PL operators.

Increased Safety

EFXE Series

II 2G Ex de IIC Gb, Ex mb IIC Gb
II 2D Ex tb IIC Db IP66/67
- Stainless steel AISI-316L
- From -20°C to +60°C
- Hidden hinges
- Custom sizes up to 910x1140x500mm
- Equipped with Ex de certified operators

EFXE Series

II 2G Ex de IIC Gb, Ex mb IIC Gb
II 2D Ex tb IIC Db IP66/67
- Copper free aluminum
- From -20°C to +60°C
- Custom sizes up to 600x600x200mm
- Equipped with Ex de certified operators

EFE Series

II 2G Ex de IIC Gb, Ex mb IIC Gb,
II 2D Ex tb IIC Db IP66/67
- Glass-fiber reinforced polyester material
- From -20°C to +60°C
- Custom size up to 405x400x120mm
- Equipped with Ex de certified operators
Flameproof

CP/EFDCN Series - Push Button Stations

- II 2G Ex d IIC Gb
- II 2D Ex t IIIc Db IP66
- II 2G Ex db IIC Gb
  - Copper free aluminum
  - From -50°C to +60°C (ATEX)
  - From -60°C to +60°C (IECEx)
  - Equipped with Ex de certified operators

CP/ EFSRC Series - Selector Switches

- II 2G Ex d IIC Gb
- II 2D Ex t IIIc Db IP66
- II 2G Ex db IIC Gb
  - Copper free aluminum
  - From -50°C to +60°C (ATEX)
  - From -60°C to +60°C (IECEx)
  - Equipped with Ex de certified operators

EPKZM Series – Motor Protector

- II 2G Ex d IIC Gb
- II 2D Ex tb IIIc T85°C Db IP66/67
- II 2G Ex db IIC Gb
  - Copper free aluminum
  - From -50°C to +60°C (ATEX)
  - From -60°C to +60°C (IECEx)
  - Equipped with Ex de certified operators
  - Used to house motor protector circuit breakers up to 63A

More information on technor.com
Increased Safety

The Ex de components range features a large push button selection with a choice of momentary or push-push actuation mode; pilot lamps and selector switches with plastic or metal bezel.

These components offer unrivaled flexibility with a modular design accommodating up to 6 contacts per operator head.

Pushbuttons

Flush

II 2G Ex de IIC Gb, II 2D Ex tb IIIC Db
IP66

- Metal bezel
- White, black, green, red, yellow, blue
- From -20°C to +80°C

- Maximum 10A
- Unique flexibility with modular design
- Accommodating up to six contacts per operator head

Projecting

II 2G Ex de IIC Gb, II 2D Ex tb IIIC Db
IP66

- Metal bezel
- White, black, green, red, yellow, blue
- From -20°C to +80°C

- Maximum 10A
- Unique flexibility with modular design
- Accommodating up to six contacts per operator head

Silicone Boot

II 2G Ex de IIC Gb, II 2D Ex tb IIIC Db
IP66

- Metal or plastic bezel
- White, black, green, red, yellow, blue
- From -20°C to +80°C

- Maximum 10A
- Unique flexibility with modular design
- Accommodating up to six contacts per operator head

Mushroom Stop

II 2G Ex de IIC Gb, II 2D Ex tb IIIC Db
IP66

- Metal or plastic bezel
- White, black, green, red, yellow, blue
- From -20°C to +80°C

- Maximum 10A
- Unique flexibility with modular design
- Accommodating up to six contacts per operator head

Emergency Stop

II 2G Ex de IIC Gb, II 2D Ex tb IIIC Db
IP66

- Metal or plastic bezel
- With or without key
- From -20°C to +80°C
- Maximum 10A

- Unique flexibility with modular design
- Accommodating up to six contacts per operator head
Selector Switches

**Standard**
- II 2G Ex de IIC Gb
- II 2D Ex tb IIIC Db
- IP66
  - Metal or plastic bezel
  - Various Stay Put & Spring Return options
  - From -20°C to +80°C
  - Maximum 10A
  - Unique flexibility with modular design
  - Accommodates up to six contacts per operator head

**Extended Handle**
- II 2G Ex de IIC Gb
- II 2D Ex tb IIIC Db
- IP66
  - Metal bezel
  - Various Stay Put & Spring Return options
  - From -20°C to +80°C
  - Maximum 10A
  - Unique flexibility with modular design
  - Accommodates up to six contacts per operator head

**Keyed**
- II 2G Ex de IIC Gb
- II 2D Ex tb IIIC Db
- IP66
  - Metal bezel
  - Various Stay Put & Spring Return options
  - Left/Right/0 Key withdrawal
  - From -20°C to +80°C
  - Maximum 10A
  - Unique flexibility with modular design
  - Accommodates up to six contacts per operator head

**Contacts – NO or NC**
- II 2G Ex de IIC Gb
- IP66
  - Maximum 10A
  - Unique flexibility with modular design

**Lamps**
- II 2G Ex de IIC Gb
- II 2D Ex td A21 Db IP66
  - Spare pilot light body
  - White, red, yellow, blue, green
  - Unique flexibility with modular design

More information on technor.com
**Ex d COMPONENTS**

**Flameproof**

Ex d components are available in a wide range of operators.

PL series includes standard push buttons, emergency push buttons, key selector switches, pilot lights and mechanical operators. There is a maximum of four contacts.

PSRC series includes on-load switches, change over switches, step switches and selectors customized upon request.

**Pushbuttons**

**Momentary Non-Locking/Locking**

- **II 2G Ex d IIC**
  - **II 2D Ex tD A21 IP66/67**
  - Black, red, green, blue, yellow, white
  - Temperature from -50°C to +60°C
  - Maximum 6A
  - Metric M32x1.5, barrel thread
  - Compact design
  - Fast installation and changes
  - Low maintenance costs

**Mushroom Twist/Mushroom Keyed**

- **II 2G Ex d IIC**
  - **II 2D Ex tD A21 IP66/67**
  - Red color
  - With or without key
  - Temperature from -50°C to +60°C
  - Maximum 6A
  - Metric M32x1.5, barrel thread
  - Compact design
  - Fast installation and changes
  - Low maintenance costs

**Mechanical Operators**

- **II 2G Ex d IIC**
  - **II 2D Ex tD A21 IP66/67**
  - Green, red, black
  - Temperature from -50°C to +60°C
  - Maximum 6A
  - Metric M32x1.5, barrel thread
  - Compact design
  - Fast installation and changes
  - Low maintenance costs
Switches

Keyed Selector

II 2G Ex d IIC
II 2D Ex tD A21 IP66/67
- With or without key withdrawal
- Temperature from -50°C to +60°C
- Maximum 6A
- Metric M32x1.5, barrel thread
- Compact design
- Fast installation and changes
- Low maintenance costs

On-load Switches

II 2G Ex d IIC
II 2D Ex tD A21 IP66/67
- From 1 to 4 poles
- From 20A to 200A
- Temperature from -50°C to +60°C
- Maximum 6A
- Metric M32x1.5, barrel thread
- Compact design
- Fast installation and changes
- Low maintenance costs

Contacts

Normally Open

- Temperature from -50°C to +60°C
- Maximum 6A
- Fast installation and changes
- Low maintenance costs

Normally Closed

- Temperature from -50°C to +60°C
- Maximum 6A
- Fast installation and changes
- Low maintenance costs

Pilot Lights & Lamps

Pilot Lights

II 2G Ex d IIC
II 2D Ex tD A21 IP66/67
- Lockable momentary push buttons
- White, red, green, yellow and blue
- Temperature from -50°C to +60°C
- Maximum 6A
- Metric M32x1.5, barrel thread
- Compact design
- Fast installation and changes
- Low maintenance costs

LED Lamps

II 2G Ex d IIC
II 2D Ex tD A21 IP66/67
- LED type
- White, red, green, yellow and blue
- Temperature from -50°C to +60°C
- 12V/24V/48V/110V/220V
- Maximum 6A
- Metric M32x1.5, barrel thread
- Compact design
- Fast installation and changes
- Low maintenance costs

More information on technor.com
ENCLOSURES

Explosion Group IIB + H₂

EJB Series
Aluminum

II 2G Ex d IIB Gb or Ex d IIB+H2 Gb
II 2D Ex tb IIC Db IP65 or 66 or 67
• Copper free aluminum
• Suited for indoor and outdoor applications
• From -50°C to +60°C
• Painted or non-painted
• Several standard sizes
• Min 300x240x175 mm
• Max 830x610x400 mm
• Variety of accessories

EJB Series
Stainless or Carbon Steel

II 2G Ex d IIB Gb or Ex d IIB+H2 Gb
II 2D Ex tb IIC Db IP65 or 66 or 67
• AISI316 L Stainless Steel or Galvanized Carbon Steel
• Suited for indoor and outdoor applications
• From -50°C to +60°C
• Painted or non-painted
• Several standard sizes
• Min 300x240x175 mm
• Max 830x610x400 mm
• Variety of accessories

Explosion Group IIB+H₂

Ex d IIB, IIB+H2 and IIC
• High level of corrosion resistance
• Robust construction
• Consolidated safety product
• Highest level of achievable safety
• Ideal for extreme conditions
• Non Ex components [QPREX]
Explosion Group IIC

QPREX Series
Pressurized Cabinets
- II 2G Ex px/b/pzc IIC T6 to T4 Gb/Gc
- II 2D Ex px/b/pzc IIC T85°C to T135°C C Db/Dc
  - Modular and adaptable system
  - Customized volume up to 10m³
  - Ability to mount non Ex components
  - Available in AISI316L SS, INOX 384 SS or painted steel

GUB Series
- II 2G Ex d IIC Gb
- II 2D Ex db IIC Gb
  - Copper free aluminum
  - AISI316L SS
  - Suited for indoor and outdoor applications
  - Can be equipped with different components like push buttons, rotating switches
  - From -50°C to +55°C (ATEX)
    From -60°C to +60°C (IECEx)

GUB/QL Series
- II 2G Ex d IIC Gb
- II 2D Ex tb IIC Db IP66
  - Copper free aluminum
  - Suited for indoor and outdoor applications
  - Can be equipped with different components like push buttons, rotating switches
  - From -50°C to +55°C (ATEX)
    From -60°C to +60°C (IECEx)

GUB/EMH Series
- II 2G Ex d IIC Gb
- II 2D Ex tb IIC Db IP66
  - Copper free aluminum
  - Suited for indoor and outdoor applications
  - From -50°C to +55°C (ATEX)
    From -60°C to +60°C (IECEx)
  - Window diameter from 155 to 230 mm

CPS/EMH
- II 2G Ex d IIC Gb
- II 2G Ex db IIC Gb
  - Copper free aluminum
  - Suited for indoor and outdoor applications
  - From -50°C to +60°C (ATEX)
    From -60°C to +60°C (IECEx)

More information on technor.com
Increased Safety // Flameproof

**Ex d, Ex e and Ex ia**

The AQ/AR/SB range of junction boxes are used as instrument and electrical terminal boxes where an explosive atmosphere may be present. They are especially recommended for chemical environments, sea-water corrosion resistance and for both offshore and onshore installations. The CP/CPS range of copper free aluminium enclosures are used for terminal wiring and grants Ex d or Ex e mode of protection. This series is customized to customer specifications, including quantity and type of terminals. These boxes are suitable for hazardous areas of industrial plants for indoor and outdoor applications.

**Increased Safety**

**AQ/AR Series**

**GRP**

- II 2G Ex e IIC Gb / Ex ia IIC Gb
- II 2D Ex tb IIC Db IP66/67
- Glass-fiber reinforced polyester material
- From -50°C to +60°C
- Several standard sizes

**Aluminum**

- Low Thickness

- II 2G Ex e IIC Gb / Ex ia IIC Gb
- II 2D Ex tb IIC Db IP66/67
- Copper free aluminum
- From -50°C to +60°C
- Several standard sizes

**High Thickness**

- II 2G Ex e IIC Gb / Ex ia IIC Gb
- II 2D Ex tb IIC Db IP66/67
- Copper free aluminum
- From -50°C to +60°C
- Several standard sizes

**SB Series**

**AISI 316L Stainless Steel**

- II 2G Ex e IIC Gb / Ex ia IIC Gb
- II 2D Ex tb IIC Db IP66/67
- Made of AISI 316L Stainless steel
- Dimension can be customized up to 1000mm x 2000mm x (depth upon request)
- From -50°C to +60°C

**B2x Series**

**GRP**

- II 2G Ex e IIC Gb / Ex ia IIC Gb
- II 2D Ex tb IIC Db IP66/67
- From -20°C to +60°C
- 2 Sizes 120x120 mm, 168x160 mm
- Available with hinges

**Flameproof**

**CP/CPS Series**

**Aluminum**

- II 2G Ex d IIC Gb
- II 2D Ex tb IIC Db IP66
- 2G Ex db IIC Gb
- Copper free aluminum + threaded hubs
- From -50°C to +60°C (ATEX)
- From -60°C to +60°C (IECEx)
- Configured to customer specifications

More information on technor.com
CABLE GLANDS & FITTINGS

Unarmored Cable // Armored Cable // Fittings

Ex d/e

Single seal and double seal cable glands suitable for unarmored and armored cables. Nickel-chrome plated brass, stainless steel and aluminum construction. Hexagon shape and EPDM oil resistant gaskets. These cable glands are suitable for Category I & II hazardous areas.

Unarmored Cable

Single/Double Seal

II 2GD Ex db/eb IIC
 I M2 Ex db/eb I
Ex tb IIIC IP66
- Nickel chrome plated brass AISI 316L
- Stainless steel
- Internal seals are EPDM
- From -52°C to +110°C
- Robust
- Suitable for offshore application

Armored Cable

Single/Double Seal

II 2GD Ex db/eb IIC
 I M2 Ex db/eb I
Ex tb IIIC IP66
- Nickel chrome plated brass AISI 316L
- Stainless steel
- Internal seals are EPDM
- From -52°C to +110°C
- Robust
- Suitable for offshore application

Fittings

Unions

Sealing fittings

Nipples

Couplings

Female-Female Elbow

Open Elbows

Bushings

Hexagonal Plugs

Reductions

Adaptors

More information on technor.com
Warning Lights // Aircraft Obstruction Signals

**EV/ROT Series**
Rotating Signal
- II 2G Ex d IIC Gb or Ex de IIC Gb
- II 2D Ex tb IIIC Db IP66
- Copper free aluminum
- Tempered glass
- Range of rotating lamp visual signals
- The lamp is red (other colors are available upon request)
- From -52°C to +60°C

**EV/XN-MXN Series**
Xenoflash
- II 2G Ex d IIC Gb or Ex de IIC Gb
- II 2D Ex tb IIIC Db IP66
- Copper free aluminum
- Tempered glass
- Range of xenoflash visual signals complete with Fresnel lens available in 3 different luminous intensities: 2J, 6J, 15J
- The lamp is red (other colors are available upon request)
- From -52°C to +60°C

**EV/WA Series**
Low Intensity (LIOL)
- II 2G Ex d IIC Gb, or Ex de IIC Gb
- II 2D Ex tb IIIC Db IP66
- Copper free aluminum
- Range of low intensity aircraft warning lights for structures below 45m
- Available with halogen or LED lamp
- The lamp is red (other colors are available upon request)
- From -52°C to +60°C

**EVCC Series**
Medium Intensity (MIOL)
- II 2G Ex d IIC Gb
- II 2D Ex tb IIIC Db IP66
- Copper free aluminum
- Range of medium intensity aircraft warning lights for structures above 45m
- Lamps colors: Red, white or red and white
- LED technology provides efficiency & long operating life (up to 100k hours)

The state-of-the-art in Aircraft Warning Lights made with LED technology that offers reliable long life. Made in compliance with ICAO and FAA standards.
Transport of dangerous flammable fuels and liquids, such as gasoline and diesel fuel involves a serious risk of uncontrolled discharge of static charges that may have accumulated on the tanker.

The GUMT Control & Discharge System controls this discharge by driving them through a dedicated and safe path. The system is complete with arrest/consensus optical warnings capability and changeover contacts.

**GUMT**

- **II 2G Ex d IIC T5 Gb**
- **II 2D Ex tb IIC T100°C Db IP66**
- Copper free aluminum
- System is complete with arrest/consensus optical warning and changeover contact
- From -20°C to +55°C
- 3 entries M20x1.5, one complete with brass nickel chrome plated plug

**PTA Series**

- **II 2G Ex d IIC T6**
- **II 2D Ex tD A21 IP65 T85°C**
- Reliable, robust, handy and easy to use
- Can be easily connected to any grip
- 11 m of cable length
- From -20°C to +55°C
PLUGS, RECEPTACLES & BOXES


The plugs and receptacles; as well as, receptacle boxes and junction boxes in this range are meant for use in hazardous areas in compliance with the ATEX 94/9/EC Directive and as per the IECEx in zones 1 and 2 (Gas) and zones 21 and 22 (Dust).

Power Connectors

DXN

II2 G D Ex de IIC Gb
Ex tb IIIC Db
• 20A/32A/63A
• Integrated load-break switch
• Robust and compact design
• High performance GRP casing
• Self-ejecting version available
• IP66/IP67 water & dust-tight
• Optional locking provisions

DX

II2 G D Ex de IIC
Ex tD A21 IP65
• 20A/32A/63A/125A/200A
• Integrated load-break switch
• May be locked in the on or off positions
• Corrosion-free metal casing
• IP65 water & dust-tight

Multipins

PXN12C / DXN25C / DXN37C

II2 G D Ex e IIC Gb
Ex tb IIIC Db
• Max 10A
• From 12 to 37 contacts
• Crimp or soldered contact
• Quick and easy assembly and disassembly
• May be locked in connected or disconnected position
• Corrosion-free metal casing

More information on meltric.com
Single-Pole Power Connectors

**SPeX**
- II2 GD Ex e IIC Gb
- Ex tb IIIC Db IP65/66
- 680A
- Electromechanical interlocking system
- Mechanical and visual keying
- High performance poly casing
- IP65/IP66 water & dust-tight

Compact Connectors

**PNCX**
- II 2 GD Ex e IIC Gb
- Ex tb IIIC Db
- 5A
- 5 contacts
- Compact and easy to use
- Long life
- IP66/IP67 watertight (IP68 according to specification)

Receptacle Boxes & Junction Boxes

**MXBS / B2X**
- II2 GD Ex e IIC
- Ex tD A21
- Up to 350A
- Combination of multi-contact connectors and receptacles on the same distribution box
- Glass reinforced, graphite-filled polyester resin enclosures
- IP66 water & dust-tight
**Configure your own Control Station**

### Area of information

**ZONING**
- GAS: 1
- DUST: 21

**EXPLOSION GROUP**
- IIA
- IIB
- IIC

**TEMPERATURE CLASS**
- T4
- T5
- T6

**TEMPERATURE AMBIENT**
- °C
  - UP TO +°C

**RATED VOLTAGE:**

**MODE OF PROTECTION:**
- EXD
- EXE
- EXI

**MATERIAL:**
- ALUMINUM
- STAINLESS STEEL
- GRP

**NUMBER OF ACTIVATOR ON FRONT SIDE:**

<table>
<thead>
<tr>
<th>LEGEND</th>
<th>REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PUSH BUTTON MOMENTARY</td>
</tr>
<tr>
<td>2</td>
<td>PUSH BUTTON STEADY</td>
</tr>
<tr>
<td>3</td>
<td>EMERGENCY P.B.</td>
</tr>
<tr>
<td>4</td>
<td>2 POS. SELECTOR</td>
</tr>
<tr>
<td>5</td>
<td>3 POS. SELECTOR</td>
</tr>
<tr>
<td>6</td>
<td>KEY SELECTOR SWITCH</td>
</tr>
<tr>
<td>7</td>
<td>PILOT LIGHT</td>
</tr>
<tr>
<td>8</td>
<td>SPECIAL SELECTOR (PROVIDE DIAGRAM)</td>
</tr>
<tr>
<td>9</td>
<td>METER: TO BE SPECIFIED</td>
</tr>
<tr>
<td>10</td>
<td>OTHER: TO BE SPECIFIED</td>
</tr>
</tbody>
</table>

**WIRING:**
- YES
- NO (DIRECT WIRING)

**ENTRY SPECIFICATION:**
- METRIC
- INCHES

### COMPLEMENTARY INFORMATION:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

### CONTACT DETAILS

**REQUEST FOR QUOTATION**

- NAME:
- COMPANY:
- EMAIL ADDRESS:
- ADDRESS:

**REQUEST FOR SALES ENGINEER VISIT**

- PHONE NUMBER:
- FAX NUMBER:
- COMMENTS:
### Area of information

#### ZONING
- GAS: 1, 2
- DUST: 1, 2

#### EXPLOSION GROUP
- IIA, IIB, IIC

#### TEMPERATURE CLASS
- T1, T2, T3, T4, T5, T6

#### TEMPERATURE AMBIENT
- °C: \(-\) \(\text{up to} +\) °C

### Rated Voltage:
- V: [ ]
- Frequency: [ ]

### Mode of Protection:
- EXD, EXE, OTHER: [ ]

#### Material:
- ALUMINUM, STAINLESS STEEL

#### Type of Lamp:
- FLUORESCENT, SODIUM, METAL HALIDE, MERCURY, HALOGEN, LED

#### IP:
- 65, 66, 67

#### Type of Lighting:
- 1 TUBE, LANTERN/ WELLGlass, 2 TUBES, FLOODLIGHT

#### Mounting Support:
- WALL, CEILING, POLE

#### Emergency Version:
- YES, DURATION TIME: 60 MIN, 90 MIN, 120 MIN

### Entry Specs:

<table>
<thead>
<tr>
<th>Number of Entries</th>
<th>M20</th>
<th>M25</th>
<th>M32</th>
<th>M40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size needed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Armored cable: Yes
- No

- Cable detail:

### Contact Details

Request for Quotation
- NAME: 
- COMPANY: 
- EMAIL ADDRESS: 
- ADDRESS: 

Request for Sales Engineer Visit
- PHONE NUMBER: 
- FAX NUMBER: 
- COMMENTS: 

- ADDRESS: 

---

**Lighting Requirements**
### Area of information

<table>
<thead>
<tr>
<th>ZONING</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GAS</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>DUST</td>
<td>21</td>
<td>22</td>
</tr>
<tr>
<td>EXPLOSION GROUP</td>
<td>IIA</td>
<td>IIB</td>
</tr>
<tr>
<td>TEMPERATURE CLASS</td>
<td>T1</td>
<td>T2</td>
</tr>
<tr>
<td>TEMPERATURE AMBIENT</td>
<td>°C</td>
<td>UP TO</td>
</tr>
</tbody>
</table>

### APPROVAL REQUEST

|       | ATEX | IECEx | IMMETRO | OTHER |

### NETWORK INFO

| VOLTAGE | NOMINAL CURRENT | A |

### TYPE PROTECTION REQUEST

|       | EXd | EXe | EXi | OTHER |

### MATERIAL

| ALUMINUM | STAINLESS STEEL | GRP |

### LABELING INFO

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### NUMBER OF TERMINAL REQUEST

| 4 mm² | 6 mm² | 10 mm² | 16 mm² | 25 mm² | 35 mm² | 50 mm² | 70 mm² |

### ENTRY SPECIFICATION

| SIZE | METRIC | INCHES |

| ENCLOSURE SIDE | A | B | C | D | A | B | C | D | A | B | C | D | A | B | C | D | A | B | C | D |
| RESIN GLAND    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| METAL GLAND    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| ARMORED GLAND  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| RESIN PLUG     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| METAL PLUG     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

### COMPLEMENTARY INFORMATION: WIRING, CABLE TYPE AND SIZE, ATTACHED DRAWINGS, TYPE OF GLAND REQUEST

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### CONTACT DETAILS

#### REQUEST FOR QUOTATION

| NAME : | |
| COMPANY : | |
| EMAIL ADDRESS : | |
| ADDRESS : | |

#### REQUEST FOR SALES ENGINEER VISIT

| PHONE NUMBER : | |
| FAX NUMBER : | |
| COMMENTS : | |
NON Ex PRODUCTS FOR SAFE AREAS

Industrial Power Supply

SWITCH-RATED PLUGS & RECEPTACLES
20A to 250A
- DSN, DS & DB switch-rated plugs & receptacles ranges cover applications from 20 A to 250 A.
- Motor ratings up to 75 Hp
- Safety shutter and dead front design prevent access to live parts and exposure to arcing
- Available with up to 6 auxiliary contacts for signal and control

Signal & Control

MULTIPIN CONNECTORS
5 to 37 contacts - 5A to 30A
Low currents: 4 mA to 20 mA
- Multipin/connectors can hook up equipment to a power supply and transmit data.
- The silver-nickel alloy used for the butt contacts provides exceptional conductivity and longevity.
- Excellent resistance, even in harsh conditions, thanks to GRP or metal casing.
- The connectors can be mated and unmated quickly and easily.

High Ampacity

PLUGS & RECEPTACLES
Up to 700A - 1000V
- Meltric high ampacity connectors offer a reliable and easy to operate solution for connections even under the harshest environments.

NON CONTRACTUAL DOCUMENT AND PICTURES
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