

EXPRO

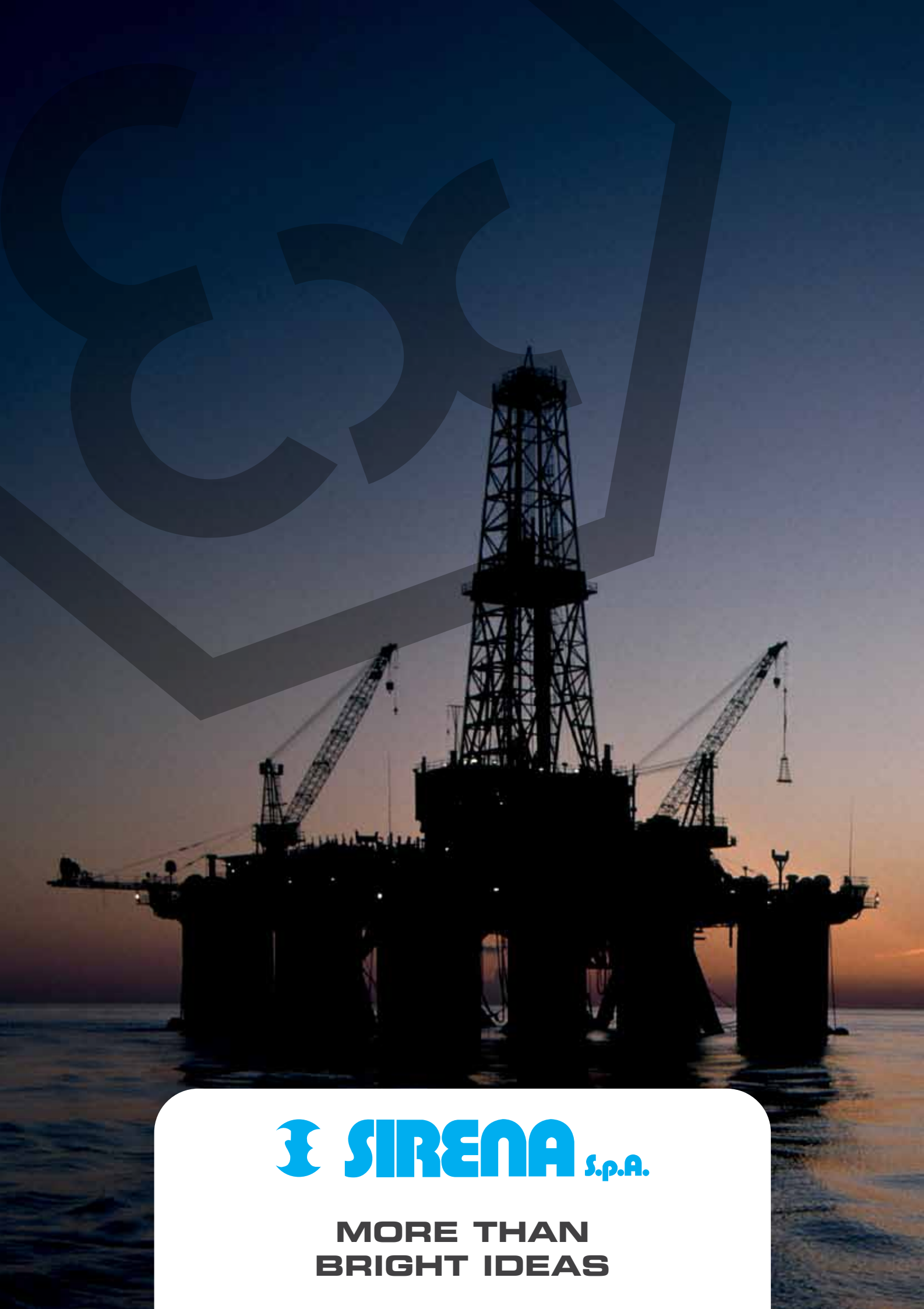
Explosion-proof ATEX Ex-d range

**HIGH-QUALITY ACOUSTIC AND LUMINOUS
SIGNALING DEVICES ENGINEERED
FOR APPLICATIONS IN ZONES
WITH EXPLOSIVE ATMOSPHERES**



 **SIRENA** S.p.A.

**MORE THAN
BRIGHT IDEAS**



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EXPRO

Explosion-proof ATEX Ex-d range

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EXPRO

Explosion-proof ATEX Ex-d range

INTRODUCTION

Sirena, world leader in the design and manufacture of audible and visual signaling equipment presents its explosion proof, Ex-d class range.

The range, mainly intended for the chemical and petroleum sectors, has been engineered to meet the most demanding market requirements and to guarantee maximum safety and quality, according to extremely high design, production and certification standards.

Since the 1980's, Sirena has been present in the explosion proof market and is renowned as one of the manufacturers offering greater versatility in its range with technical characteristics second to none.

The new ATEX range, completely redesigned from both an electronic and mechanical point of view, allows Sirena's "know-how" and thirty-year experience in the field to be at the hands of all end-users of explosion proof products.

Today, Sirena offers a **complete range of audible and visual signaling devices.**

The acoustic range includes the new **SIAD** bells, available in three different sizes and all voltages, designed to offer a very **high sound output level** together with **unparalleled quality standards.**

The new siren range also sees the introduction of the **new MINICELERE and SUPERCELERE electromechanical sirens**: high performance products designed in great detail to meet the most demanding customer requirements. The acoustic range is complemented by the existing electronic sirens with the same **high efficiency and performance.**

The luminous range, has been completely reviewed both in presentation and content, employing the latest **SMD LED** technology recently introduced and developed by Sirena. A technology that increases both the optical performance and lifetime of the product, as well as virtually eliminating maintenance costs.



In this respect, Sirena has developed **OVOLUX MULTI SMD** and **FLR S**: these products contain years of technological research in a housing developed to guarantee maximum safety in explosive atmospheres.

In addition to the new technology remain the more traditional beacons such as the **MAXIXENOFFLASH** and **STROBOFLASH 6J** and **15J** Xenon beacons and the powerful **ROTALLARM** and **LAMPALLARM** with both filament or halogen H1 bulbs.

The **PAG** range completes Sirena's range of explosion proof products with a choice of pilot lights and switches.

CERTIFICATION

SIRENA'S explosion proof range of products has been approved by **CESI**, Notified Body of the Italian Government, according to (ATEX) Directive 94/9/EC for the certification of explosion proof devices intended for use in potentially explosive atmospheres.

Sirena's entire ATEX range has been certified for use in Group II, that foresees installation in all high risk areas, excluding mines.

Sirena's ATEX range of products has been appointed category 2, that allows use in Zone 1, 2, 21 and 22, in both the presence of gas (G) as well as dust (D).

Certification is according to EN/IEC 60079 directive that allows the use of the Ex identifying mark. Protection of the device is provided by an explosion proof housing with increased safety guaranteeing "de" status.

The proven explosion group, particularly important for use in explosive atmospheres due to gas, is IIC, the most dangerous, that includes Hydrogen and Ethyl Acetate.

The whole range is certified for use in class **T6 temperature**, that guarantees a maximum surface temperature of the housing of just 85 degrees celsius, that is the most difficult to obtain.

The range has also been **granted a protection degree of IP 66** that means it is totally protected from dust and powerful jets of water.



EXPRO High-end explosion-proof ATEX Ex-d range





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Explosion-proof ATEX Ex-d range

ACOUSTIC RANGE

**SIAD
SIADEL**



**MINICELERE
MINICELEREST**



**SUPERCELERE
SUPERCELEREST**



**ETH 12
ETH 20**



EX 165 SIAD
EX 165 SIADEL



EX 215 SIAD
EX 215 SIADEL



EX 265 SIAD
EX 265 SIADEL



SIAD / SIADEL

| | | | | | | |
|----|---|-------------|-----|-----|------|------|
| V | ~ | 12 | 24 | 48 | 110 | 240 |
| | | 12 | 24 | 48 | 110 | 240 |
| A | ~ | 1 | 0.5 | 0.3 | 0.1 | 0.06 |
| | | 0.55 | 0.3 | 0.2 | 0.06 | 0.03 |
| dB | ~ | 100 | | | | |
| | | 98 | | | | |
| Hz | ~ | 1500; 10000 | | | | |
| | | 1500; 10000 | | | | |

| | | |
|-------|------|------------|
| IP 66 | On ∞ | °C -20 +50 |
| | | M25x1.5 |

| CODES | 12V | 24V | 48V | 110V | 240V |
|---------------|-------|-------|-------|-------|-------|
| EX 165 SIAD | 62258 | 62259 | 62260 | 62261 | 62262 |
| EX 165 SIADEL | 62273 | 62274 | 62275 | 62276 | 62277 |
| EX 215 SIAD | 62263 | 62264 | 62265 | 62266 | 62267 |
| EX 215 SIADEL | 62278 | 62279 | 62280 | 62281 | 62282 |
| EX 265 SIAD | 62268 | 62269 | 62270 | 62271 | 62272 |
| EX 265 SIADEL | 62283 | 62284 | 62285 | 62286 | 62287 |

SPARE STRIKER 165 84080
 SPARE STRIKER 215 84081
 SPARE STRIKER 265 84082

SIAD SIADEL

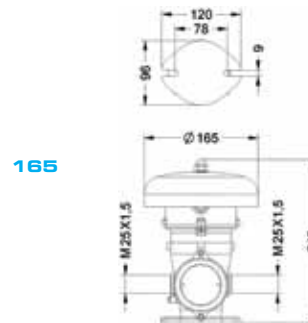
Explosion-proof bells available in three dimensions: 165, 215 and 265 mm. Specifically designed and made according to the highest quality standards, these products guarantee a sound level that meets the most demanding customer requirements making the SIAD - SIADEL range one of the most effective on the market.

Explosion-proof bells for use in Group II areas, Zones 1, 2 explosive atmospheres.



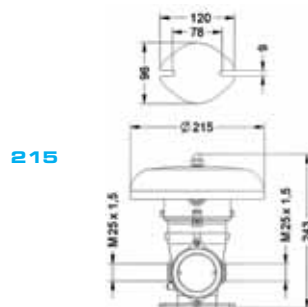
II 2G Ex d e IIC T6

- Approval: **CESI 10 ATEX 042 X**
- Housing in copper-free aluminium alloy
- Polyester paint RAL 3020
- Voltages available:
 - SIAD: 12V-24V-48V-110V-240V AC
 - SIADEL: 12V-24V-48V-110V-240V DC
- Audibility: max. 100 dB(A)1m
- Protection: IP 66
- Maximum surface temperature: T6



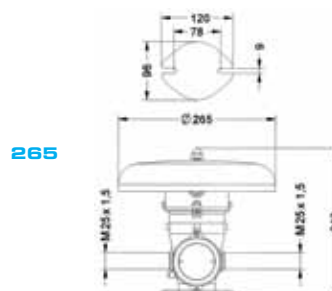
165

Kg: 2.32



215

Kg: 2.95



265

Kg: 3.78

ELECTROMECHANICAL SIRENS

EX 055 MCL



EX 055 MCT



MCL / MCT

| | | | | | | |
|----|---|----------|----|-----|------|------|
| V | ~ | 12 | 24 | 48 | 110 | 240 |
| A | | 4 | 2 | 1.3 | 0.55 | 0.32 |
| dB | | 92 | | | | |
| Hz | | 1100:100 | | | | |

| | | |
|-------|-------------------------|------------|
| IP 66 | On: 2 Min. Off: 15 Min. | °C -20 +50 |
| | | |

MINICELERE MINICELEREST

Explosion-proof electromechanical sirens engineered and manufactured according to the strictest certification and electromagnetic compatibility standards. The MINICELERE range of sirens are of high mechanical precision and guarantee maximum performance with regard to sound level and product reliability.

Explosion-proof electromechanical sirens for use in Group II areas, Zones 1, 2, and 21, 22 explosive atmospheres.



**II 2GD Ex d e IIC T6 Ex tD A21 IP66
T85 °C**

- Approval: **CESI 10 ATEX 038 X**
- Housing in copper-free aluminium alloy
- Polyester paint RAL 3020
- Voltages available:
- 12V-24V-48V-110V-240V ACDC
- Audibility: max. 92 dB(A)1m
- Protection: IP 66
- Maximum surface temperature: T6

MCL



Kg: 2.40

MCT



Kg: 2.73

| CODES | 12V | 24V | 48V | 110V | 240V |
|------------|-------|-------|-------|-------|-------|
| EX 055 MCL | 62253 | 62254 | 62255 | 62256 | 62257 |
| EX 055 MCT | 62248 | 62249 | 62250 | 62251 | 62252 |

EX 065 SCL



EX 065 SCT



SCL / SCT

| V | ~ | 24 | 48 | 110 | 240 |
|----|---|---------------------|------|-----|------|
| A | | 8 | 6.75 | 1.9 | 1.35 |
| dB | | 107 (SCL) 106 (SCT) | | | |
| Hz | | 1000:100 | | | |

| | | |
|-------|-------------------------|------------|
| IP 66 | On: 2 Min. Off: 30 Min. | °C -20 +50 |
| | | |

SUPERCELERE SUPERCELEREST

Explosion-proof electromechanical sirens, larger in size compared to the MINICELERE range, specifically engineered and manufactured for installation in areas where a higher sound level is required. The SUPERCELERE range is a unique combination of precision and technology representing the 30 years experience that SIRENA has established in the electromechanical siren field.

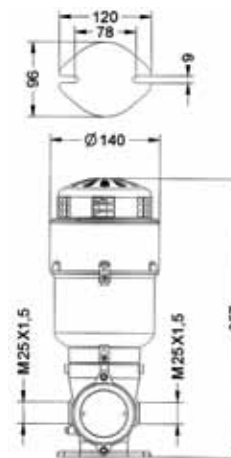
Explosion-proof electromechanical sirens for use in Group II areas, Zones 1, 2, and 21, 22 explosive atmospheres.



**II 2GD Ex d e IIC T6 Ex tD A21 IP66
T85 °C**

- Approval: **CESI 10 ATEX 038 X**
- Housing in copper-free aluminium alloy
- Polyester paint RAL 3020
- Voltages available:
 - 24V-48V-110V-240V ACDC
- Audibility: max. 107 dB(A)1m
- Protection: IP 66
- Maximum surface temperature: T6

SCL



Kg: 4.10

SCT



Kg: 4.43

| CODES | 24V | 48V | 110V | 240V |
|------------|-------|-------|-------|-------|
| EX 065 SCL | 62244 | 62245 | 62246 | 62247 |
| EX 065 SCT | 62240 | 62241 | 62242 | 62243 |

ELECTRONIC SIRENS

ETH 12 MD



32

ETH 20 MD



5

ETH 12 MD

| | | | |
|-----|--------------------|-----|-----|
| V ~ | 12/24 | 110 | 240 |
| V = | | - | - |
| mA | 865 | 45 | 30 |
| dB | Min. 91 - Max. 109 | | |

ETH 20 MD

| | | |
|-----|---------------------|-----|
| V ~ | 12/24 | 240 |
| V = | | - |
| mA | 550 | 25 |
| dB | Min. 101 - Max. 112 | |

| | | |
|-------|------|------------|
| IP 65 | On ∞ | °C -20 +50 |
| | | Ø 3/4" NPT |

ETH 12 MD ETH 20 MD

The explosion-proof electronic range of sirens, manufactured according to the highest quality standards, guarantee a high range sound level and the possibility to choose from different tones.

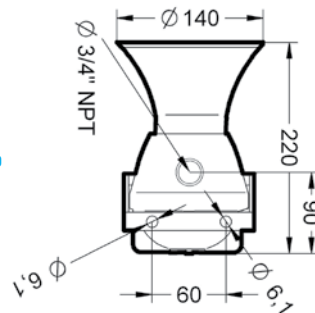
Explosion-proof electronic sirens for use in Group II areas, Zones 1, 2, and 21, 22 explosive atmospheres.



**II 2GD Ex d e IIC T6 Ex tD A21 IP65
T85 °C**

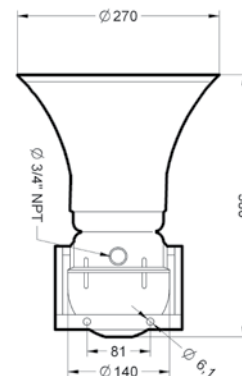
- Approval ETH12 MD: **INERIS 02 ATEX 0074**
- Approval ETH20 MD: **ISSeP 01 ATEX 014**
- Housing in copper-free aluminium alloy
- Epoxyvinyl paint RAL 3000
- Voltages available:
 - ETH12 MD: 12/24V ACDC, 110V-240V AC
 - ETH20 MD: 12/24V ACDC, 240V AC
- Audibility:
 - ETH12 MD: max. 109 dB(A)1m
 - ETH20 MD: max. 112 dB(A)1m
- Protection: IP 65
- Maximum surface temperature: T6

ETH 12 MD



Kg: 1.40

ETH 20 MD



Kg: 3.35

| CODES | 12/24V | 110V | 240V |
|----------|--------|-------|-------|
| ETH12 MD | 57994 | 57997 | 57996 |
| ETH20 MD | 57998 | - | - |



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LUMINOUS RANGE

**OVOLUX MULTI SMD
FLR S**



**MAXIXENOFASH
STROBOFLASH**



**ROTALLARM
LAMPALLARM**



PAG





EX 050 OVO M SMD



| | | | | | |
|---|---|-------|-----|--------|----|
| V | ~ | 12/24 | | 90/240 | |
| V | ≡ | - | | - | |
| mA | ~ | 140 | 175 | 30 | 20 |
| mA | ≡ | 50 | 50 | - | - |
| FPM: STEADY, 0 - 1F, 120±10 2F, 2X90±10 - 3F, 3X140±10 | | | | | |

| | | |
|---------|------|------------|
| IP 66 | On ∞ | °C -25 +50 |
| M25x1.5 | | |

OVOLUX MULTI SMD

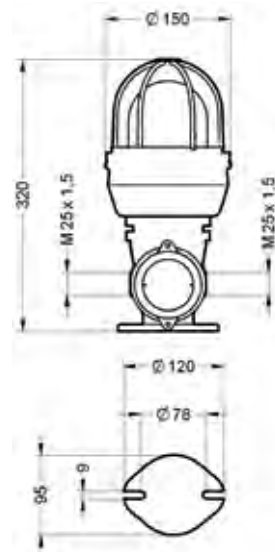
Small integrated LED beacon, ideal for alerting a change in machinery operational circumstances in explosive atmospheres. Designed according to ATEX regulations, OVOLUX MULTI SMD can be used in Group II explosive areas, Zones 1, 2, 21, 22.

Fitted with an electronic SMD LED circuit, OVOLUX MULTI SMD is particularly resistant to vibrations guaranteeing longer lifetime of the product and a significant reduction in maintenance costs. Multifunctional product allowing 4 different light options: steady, single flash, double flash, triple flash selectable via internal dip-switch.



II 2GD Ex de IIC T6 Ex tD A21 IP66 T85 °C

- Approval: **CESI 05 ATEX 043**
- Housing in copper-free aluminium alloy
- Polyester paint RAL 3020
- Voltages available:
 - 12V/24V ACDC, 90/240V AC
- Colors available: blue - amber - red - green - yellow - clear
- Protection: IP 66
- Maximum surface temperature: T6
- High light intensity
- DIP-SWITCH to select the light functions (steady, single flash, double flash, triple flash)



Kg: 2.58

CODES

EX 050 OVO M SMD

| | | | | | | |
|--------------------|-------------------------------------|---------------------------------------|------------------------------------|--------------------------------------|---------------------------------------|--------------------------------------|
| | ● | ● | ● | ● | ● | ○ |
| 12/24V ACDC | 97191 | 97192 | 97193 | 97194 | 97195 | 97196 |
| 90/240V AC | 97201 | 97202 | 97203 | 97204 | 97205 | 97206 |



EX 070 FLR S



| | | | | |
|-------------------|-------|-----|--------|----|
| V ~ | 12/24 | | 90/240 | |
| V = | - | | - | |
| mA ~ | 530 | 325 | 110 | 70 |
| mA = | 280 | 140 | - | - |
| RPM: 140±10 | | | | |
| FPM (3F): 3x85±10 | | | | |

| | | |
|---------|------|------------|
| IP 66 | On ∞ | °C -20 +50 |
| M25x1.5 | | |

CODES

EX 070 FLR S

| | | | | |
|-------------|-------------------------------------|---------------------------------------|------------------------------------|--------------------------------------|
| | ● | ● | ● | ● |
| 12/24V ACDC | 97211 | 97212 | 97213 | 97214 |
| 90/240V AC | 97221 | 97222 | 97223 | 97224 |

* PLEASE INDICATE THE REQUIRED LIGHT OPTION SETTING WHEN ORDERING

FLR S

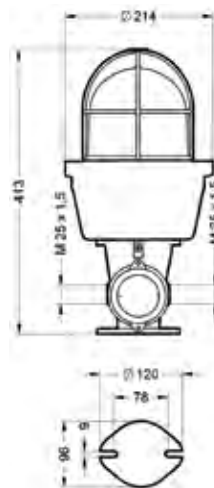
Medium range integrated LED beacon, ideal for alerting a danger situation or a change in machinery operational circumstances in explosive atmospheres. Designed according to ATEX regulations, FLR S can be used in Group II explosive areas, Zones 1, 2, 21, 22.

Fitted with an electronic SMD LED circuit, FLR S is particularly resistant to vibrations guaranteeing longer product lifetime and a significant reduction in maintenance costs. Multifunctional product allowing three different light options*: steady, flashing, rotating.



II 2GD Ex de IIC T6 Ex tD A21 IP66 T85 °C

- Approval: **CESI 05 ATEX 043**
- Housing in copper-free aluminium alloy
- Polyester paint RAL 3020
- Voltages available:
 - 12/24V ACDC, 90/240V AC
- Colors available: blue - amber - red - green
- Protection: IP 66
- Maximum surface temperature: T6
- High optical performance:
 - Steady light: a deep and rich light source ideal for attracting attention yet without disturbing
 - Flashing light: triple-flash (strobe effect) ideal for all applications where an immediate attention gain is mandatory.
 - Rotating light: a unique rotating effect which perfectly simulates the traditional rotating beacons yet without moving parts hence enormously enhancing product lifetime



Kg: 3.35



EX 070 MXF 6J



| | | | | |
|-----------------|-------|------|------|------|
| V ~ | 12/24 | | 110 | 240 |
| V ≡ | | | - | - |
| A | 1.00 | 0.75 | 0.11 | 0.09 |
| Cd(p) | 2700 | 3600 | 1800 | 4500 |
| FPM (1F): 65±10 | | | | |

| | | |
|---------|------|------------|
| IP 66 | On ∞ | °C -20 +40 |
| M25x1.5 | | |

MAXIXENOFASH

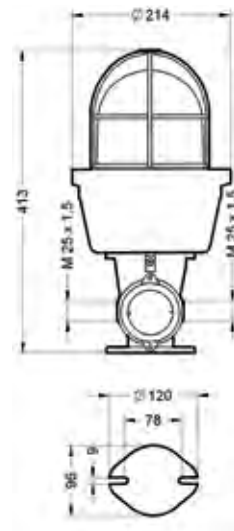
Medium range Xenon Flashing beacon, ideal for alerting a danger situation or a change in machinery operational circumstances in explosive atmospheres. Designed according to ATEX regulations, MAXIXENOFASH can be used in Group II explosive areas, Zones 1, 2, 21, 22.

Fitted with a circuit specifically designed for these applications, MAXIXENOFASH guarantees high light output thanks to the powerful 6J flash.



II 2GD Ex de IIC T6 Ex tD A21 IP66 T85 °C

- Approval: **CESI 05 ATEX 043**
- Housing in copper-free aluminium alloy
- Polyester paint RAL 3020
- Voltages available:
 - 12/24V ACDC, 110V-240V AC
- Colors available: blue - amber - red - green - yellow - clear
- Protection: IP 66
- Maximum surface temperature: T6
- 6J xenon discharge tube



Kg: 4.83

CODES

EX 070 MXF 6J

| | | | | | | |
|--------------------|-------------------------------------|---------------------------------------|------------------------------------|--------------------------------------|---------------------------------------|--------------------------------------|
| | ● | ● | ● | ● | ● | ○ |
| 12/24V ACDC | 95641 | 95642 | 95643 | 95644 | 95645 | 95646 |
| 110V AC | 95651 | 95652 | 95653 | 95654 | 95655 | 95656 |
| 240V AC | 95661 | 95662 | 95663 | 95664 | 95665 | 95666 |

XENON BEACONS



EX 0100 STF 15J



| | | | | |
|-----------------|-------|-------|------|-------|
| V ~ | . | . | 110 | 40 |
| V = | 12/24 | . | . | . |
| A | 2.5 | 1.2 | 0.13 | 0.15 |
| Cd(p) | 19500 | 20000 | 4200 | 16500 |
| FPM (1F): 65±10 | | | | |

| | | |
|---------|------|------------|
| IP 66 | On ∞ | °C -20 +40 |
| M25x1.5 | | |

STROBOFLASH

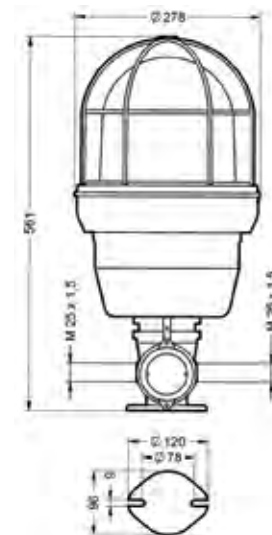
Larger size Xenon flashing beacon, ideal for alerting a danger situation or a change in machinery operational circumstances in explosive atmospheres. Designed according to ATEX regulations, the STROBOFLASH can be used in Group II explosive areas, Zones 1, 2, 21, 22.

Fitted with a circuit specifically designed for these applications, STROBOFLASH guarantees high light output thanks to the powerful 15J flash.



II 2GD Ex de IIC T6 Ex tD A21 IP66 T85 °C

- Approval: **CESI 05 ATEX 043**
- Housing in copper-free aluminium alloy
- Polyester paint RAL 3020
- Voltages available:
 - 12/24V DC, 110V-240V AC
- Colors available: blue - amber - red - green - yellow - clear
- Protection: IP 66
- Maximum surface temperature: T6
- 15J xenon discharge tube

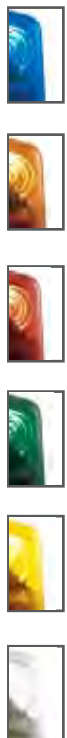


Kg: 11.0

CODES

EX 0100 STF 15J

| | | | | | | |
|------------------|-------------------------------------|---------------------------------------|------------------------------------|--------------------------------------|---------------------------------------|-------------------------------------|
| | ● | ● | ● | ● | ● | ● |
| 12/24V DC | 96551 | 96552 | 96553 | 96554 | 96555 | 96556 |
| 110V AC | 96561 | 96562 | 96563 | 96564 | 96565 | 96566 |
| 240V AC | 96571 | 96572 | 96573 | 96574 | 96575 | 96576 |



EX 080 ROTALLARM EX 080 ROTALLARM H (HALOGEN)



EX 080 RA

| | | | | | | |
|-------------|------|------|------|------|------|------|
| V ~ | 12 | 24 | - | 48 | 110 | 240 |
| V --- | 12 | 24 | 48 | - | - | - |
| A | 4 | 2.1 | 1 | 0.74 | 0.31 | 0.15 |
| Cd(p) | 5900 | 5900 | 5900 | 540 | 460 | 360 |
| RPM: 160±30 | | | | | | |

EX 080 RA H

| | | |
|-------|------|------|
| V ~ | 12 | 24 |
| V --- | 12 | 24 |
| A | 4.8 | 3.1 |
| Cd(p) | 9000 | 9000 |

| | | |
|---------|-------------|------------------------|
| IP 66 | On ∞ | °C -20 +50 H1: -25 +40 |
| M25x1.5 | | |

CODES EX 080 RA

| | | | | | | |
|---------|-------|-------|-------|-------|-------|-------|
| 12V DC | 95941 | 95942 | 95943 | 95944 | 95945 | 95946 |
| 12V AC | 95951 | 95952 | 95953 | 95954 | 95955 | 95956 |
| 24V DC | 95961 | 95962 | 95963 | 95964 | 95965 | 95966 |
| 24V AC | 95971 | 95972 | 95973 | 95974 | 95975 | 95976 |
| 48V DC | 95981 | 95982 | 95983 | 95984 | 95985 | 95986 |
| 48V AC | 95991 | 95992 | 95993 | 95994 | 95995 | 95996 |
| 110V AC | 96001 | 96002 | 96003 | 96004 | 96005 | 96006 |
| 240V AC | 96011 | 96012 | 96013 | 96014 | 96015 | 96016 |

EX 080 RA H1

| | | | | | | |
|--------|-------|-------|-------|-------|-------|-------|
| 12V DC | 96021 | 96022 | 96023 | 96024 | 96025 | 96026 |
| 12V AC | 96031 | 96032 | 96033 | 96034 | 96035 | 96036 |
| 24V DC | 96041 | 96042 | 96043 | 96044 | 96045 | 96046 |
| 24V AC | 96051 | 96052 | 96053 | 96054 | 96055 | 96056 |

ROTALLARM

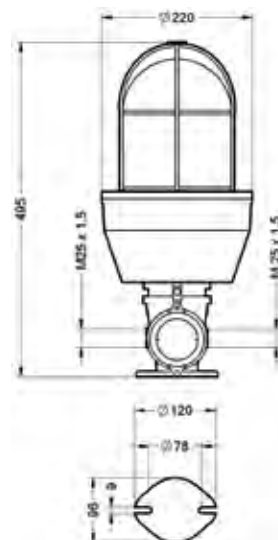
Traditional rotating beacon, available with either a filament bulb or halogen type H1 bulb. Large size beacon ideal for alerting a danger situation or a change in machinery operational circumstances in explosive atmospheres.

Designed according to ATEX regulations, ROTALLARM can be used in Group II explosive areas, Zones 1, 2, 21, 22.



II 2GD Ex de IIC T6 Ex tD A21 IP66 T85 °C

- Approval: **CESI 05 ATEX 043**
- Housing in copper-free aluminium alloy
- Polyester paint RAL 3020
- Voltages available:
 - EX 080 RA: 12V-24V-48V DC, 48V - 110V-240V AC
 - EX 080 RA H: 12V-24V DC, 12V-24V AC
- Colors available: blue - amber - red - green - yellow - clear
- Protection: IP 66
- Maximum surface temperature: T6
- Available with filament (EX 080 RA) or halogen (EX 080 RA H) bulbs



Kg: 7.42

EX 080 LA F (STEADY)
EX 080 LA L (FLASHING)
EX 080 LA L H (FLASHING HALOGEN)



EX 080 LA F

| | | | | | |
|-------|-----|------|------|------|------|
| V ~ | 12 | 24 | 48 | 110 | 240 |
| A | 3.3 | 1.65 | 0.83 | 0.36 | 0.17 |
| Cd(p) | 720 | 900 | 720 | 67 | 135 |

EX 080 LA L

| | | | | | |
|-------------|-----|-----|------|------|------|
| V ~ | - | 24 | 48 | 110 | 240 |
| V ≡ | 12 | 24 | 48 | - | - |
| A | 3.4 | 1.7 | 0.83 | 0.36 | 0.17 |
| Cd(p) | 720 | 900 | 720 | 67 | 135 |
| FPM: 110±20 | | | | | |

EX 080 LA L H

| | | |
|-------------|-----|-----|
| V ~ | 12 | 24 |
| V ≡ | 12 | 24 |
| A | 4.6 | 2.9 |
| Cd(p) | 720 | 720 |
| FPM: 110±20 | | |

| | | |
|---------|------|------------|
| IP 66 | On ∞ | °C -25 +50 |
| M25x1.5 | | |

CODES EX 080 LA F

| | | | | | | |
|-----------|-------|-------|-------|-------|-------|-------|
| 12V ACDC | 96171 | 96172 | 96173 | 96174 | 96175 | 96176 |
| 24V ACDC | 96181 | 96182 | 96183 | 96184 | 96185 | 96186 |
| 48V ACDC | 96191 | 96192 | 96193 | 96194 | 96195 | 96196 |
| 110V ACDC | 96201 | 96202 | 96203 | 96204 | 96205 | 96206 |
| 240V ACDC | 96211 | 96212 | 96213 | 96214 | 96215 | 96216 |

EX 080 LA L

| | | | | | | |
|---------|-------|-------|-------|-------|-------|-------|
| 12V DC | 96061 | 96062 | 96063 | 96064 | 96065 | 96066 |
| 24V DC | 96071 | 96072 | 96073 | 96074 | 96075 | 96076 |
| 24V AC | 96081 | 96082 | 96083 | 96084 | 96085 | 96086 |
| 48V DC | 96091 | 96092 | 96093 | 96094 | 96095 | 96096 |
| 48V AC | 96101 | 96102 | 96103 | 96104 | 96105 | 96106 |
| 110V AC | 96111 | 96112 | 96113 | 96114 | 96115 | 96116 |
| 240V AC | 96121 | 96122 | 96123 | 96124 | 96125 | 96126 |

EX 080 LA L H1

| | | | | | | |
|--------|-------|-------|-------|-------|-------|-------|
| 12V DC | 96131 | 96132 | 96133 | 96134 | 96135 | 96136 |
| 12V AC | 96141 | 96142 | 96143 | 96144 | 96145 | 96146 |
| 24V DC | 96151 | 96152 | 96153 | 96154 | 96155 | 96156 |
| 24V AC | 96161 | 96162 | 96163 | 96164 | 96165 | 96166 |

LAMPALLARM

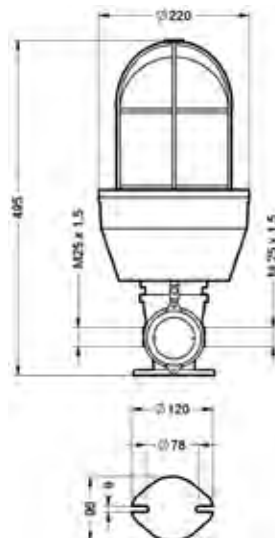
Traditional flashing beacon with either a filament bulb or halogen type H1 bulb. Large size beacon ideal for alerting a danger situation or a change in machinery operational circumstances in explosive atmospheres.

Designed according to ATEX regulations, LAMPALLARM can be used in Group II explosive areas, Zones 1, 2, 21, 22.



**II 2GD Ex de IIC T6 Ex tD A21 IP66
T85 °C**

- Approval: **CESI 05 ATEX 043**
- Housing in copper-free aluminium alloy
- Polyester paint RAL 3020
- Voltages available:
 - EX 080 LA F: 12V-24V-48V 110V-240V DC/AC
 - EX 080 LA L: 12V-24V-48V DC, 24V-48V-110V-240V AC
 - EX 080 LA L H: 12V-24V AC, 12V-24V DC
- Colors available: blue - amber - red - green - yellow - clear
- Protection: IP 66
- Maximum surface temperature: T6
- Available with filament (EX 080 LA F o L) or halogen (EX 080 LA L H) bulbs



Kg: 7.36



EX 025 PAG



EX 045 LD PAG SP



EX 045 LD PAG SP

| | | | | | |
|-----|----|----|----|-----|-----|
| V ~ | 12 | 24 | 48 | 110 | 240 |
| V = | | | | - | - |
| mA | 27 | 20 | 20 | 17 | 18 |

| | | |
|--------------|-------------|------------|
| IP 66 | On ∞ | °C -20 +50 |
| Ø 1" ISO 7/1 | | |

CODES

EX 045 LD PAG SP

| | | | | | |
|----------|-------|-------|-------|-------|-------|
| | ● | ● | ● | ● | ○ |
| 12V ACDC | 97051 | 97053 | 97054 | 97055 | 97056 |
| 24V ACDC | 97061 | 97063 | 97064 | 97065 | 97066 |
| 48V ACDC | 97071 | 97073 | 97074 | 97075 | 97076 |
| 110V AC | 97081 | 97083 | 97084 | 97085 | 97086 |
| 240V AC | 97091 | 97093 | 97094 | 97095 | 97096 |

EX 025 PAG

96699

PAG PAG SP

Switches and pilot lights designed according to ATEX regulations, can be used in Group II explosive areas, Zones 1, 2, 21, 22.

EX 025 PAG: Explosion proof emergency switch ideal for activating alarm systems in explosive atmospheres, guaranteeing safety and long lifetime.

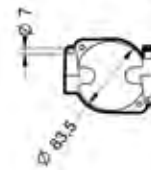
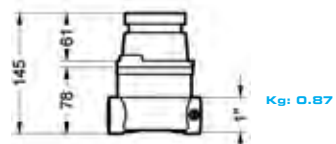
EX 045 LD PAG SP: Explosion proof pilot light, ideal for signaling the correct functioning of alarm/warning systems installed in explosive atmospheres.



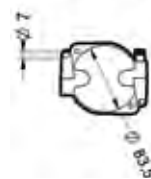
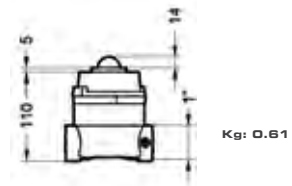
II 2GD Ex de IIC T6 Ex tD A21 IP66 T85 °C

- Approval **CESI 05 ATEX 062**
- Housing in copper-free aluminium alloy
- Polyester paint RAL 3020
- Voltages available:
 - EX 045 LD PAG SP: 12V-24V-48V ACDC, 110V-240V AC
- Colors available: blue - amber - red - green - yellow - clear
- Protection: **IP 66**
- Maximum surface temperature: **T6**

EX 025 PAG



EX 045 LD PAG SP



EXPRO

Explosion-proof ATEX Ex-d range

DIRECTIVE

Sirena's explosion proof range of products is approved according to "ATEX" regulations (ATMOSPHÈRE EXPLOSIVE) 94/9/EC.

Directive 94/9/EC defines an **explosive atmosphere** as a mixture of inflammable substances (in the presence of gas, vapours, mist saline or dust) **with air**, in **certain atmospheric conditions**, if an ignition has occurred, combustion spreads to the entire inflammable mixture. **An atmosphere** that can **become potentially explosive** in **certain working conditions and/or due to the surrounding environment** is defined a **potentially explosive atmosphere**.

Products certified according 94/9/EC Directive are defined to be suitable for use in potentially explosive atmospheres.

Furthermore, the **ATEX Directive** foresees that **manufacturers of electrical equipment to be used in zones with potentially explosive atmospheres** have an approved **Quality System** that is subject to constant control by an authorized body. Sirena has obtained the Masini Institute certificate, notified body n° 0068. The certificate proving conformity to the ATEX Directive specifications is 0068/QPR-AT/031-2005.



Electrical Equipment for use in explosive atmospheres

GROUPS - CATEGORIES - ZONES

The devices are divided into two groups, depending on the environment in which they are to operate:

- **Group I:** electrical equipment for use in mines and underground installations susceptible to firedamp
- **Group II:** electrical equipment for use in non-mining surface installations

Each group is classified in categories according to the level of protection that the devices must have:

| GROUP I Equipment for underground and installations in mining surfaces in the presence of firedamp and inflammable dust | | |
|--|--|--|
| Equipment category | M1 | M2 |
| Protection level | Very high (Device must continue to operate when explosive atmosphere is present) | High (Power supply to the device must be interrupted when explosive atmosphere is present) |

| GROUP II Equipment for non-mining surface installations | | | | | | |
|--|--|----------|---------------------------------------|--------|--|--------|
| Equipment category | 1 | | 2 | | 3 | |
| Protection level | Very high | | High | | Normal | |
| Explosive atmosphere | Present continuously (or for long periods) | | Likely to occur (in normal operation) | | Not likely to occur (or for short periods - never in normal operation) | |
| Nature of the atmosphere: G= Mixture of air and gas, vapours or mist saline D= Mixture of air inflammable dust | G gas | D dust | G gas | D dust | G gas | D dust |
| Zones where power supply and operation of the device is allowed | 0-1-2 | 20-21-22 | 1-2 | 21-22 | 2 | 22 |

Group II equipment intended for use in gas explosive atmospheres are divided into **explosion groups** according to the nature of the gas itself and in relation to a parameter defined maximum experimental safe gaps (**MESG**) and the minimum ignition energy of a gas (**MIC**: MINIMUM IGNITING CURRENT).

| EXPLOSION GROUP | GAS EXAMPLE | MESG | MIC |
|-----------------|------------------------|-----------------|---------------|
| II A | Propane | >0,9 mm | >0,8 |
| II B | Ethylene | da 0,5 a 0,9 mm | da 0,45 a 0,8 |
| II C | Hydrogen and Acetylene | >0,5 mm | >0,45 |

TYPES OF PROTECTION

Types of protection define design standards for devices to be used in hazardous environments due to potentially explosive atmospheres.

Types of protection for the presence of potentially explosive atmospheres with GAS

| TYPES OF PROTECTION | CODE | DESCRIPTION |
|--|---------------|---|
| Containment | | The explosion is confined inside the enclosure avoiding propagation to the surrounding atmosphere |
| Explosion proof enclosure (EN 60079-1) | Ex "d" | Type of protection in which the parts which can ignite an explosive atmosphere are placed in an enclosure which can withstand the pressure developed during an internal explosion of an explosive mixture which prevents the transmission of the explosion to the explosive atmospheres surrounding the enclosure |
| Prevention | | This technique increases the reliability of the electrical components which during normal operation cannot spark or reach a dangerous surface temperature |
| Increased Safety (EN 60079-7) | "e" | Type of protection in which measures are applied so as to prevent, with a higher degree of safety, the possibility of excessive temperatures and of the occurrence of arcs or sparks in the interior and on the external parts of electrical apparatus, which does not produce them in normal service |
| Intrinsically safety (EN 60079-11) | "i" | Type of protection when no spark or any thermal effect in the circuit, produced in the test conditions prescribed in the standard (which includes normal operation and specific fault conditions), is capable of causing ignition |
| Method of protection "n" (EN 60079-15) | "n" | Type of protection applied to electrical material so as to prevent ignition in surrounding explosive atmospheres in normal working conditions or in certain anomaly conditions specified by the standard |
| Segregation | | This method physically separates or isolates live electrical parts or hot surfaces from the explosive mixture so that they never come in contact with the ignition source |
| Internal pressure (EN 60079-2) | "p" | Type of protection in which the protective inert gas inside the enclosure is maintained at a higher Internal pressure than that of the surrounding atmosphere |
| Encapsulation (EN 60079-18) | "m" | Type of protection in which the parts which can ignite an explosive atmosphere are enclosed in a resin sufficiently resistant to the environmental influences in such a way that this explosive atmosphere cannot be ignited by either sparking or heating which may occur within the encapsulation |
| Immersion (EN 60079-6) | "o" | Type of protection in which the electrical apparatus is immersed in oil |
| Powdery filling (EN 60079-5) | "q" | Type of protection in which the enclosure is filled with a material in a finely granulated state |

Types of protection for electrical apparatus for use in DUST atmospheres

| | | | |
|--|-------------|---|-------------|
| Protection by enclosure (EN 61241-1) | "tD" | Protection by Intrinsic safety (EN 61241-1.1) | "iD" |
| Protection by Internal pressure (EN 61241-4) | "pD" | Protection by encapsulation (EN 61241-18) | "mD" |

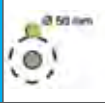

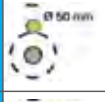



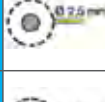





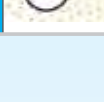

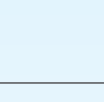
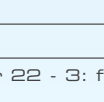
Temperature classes for Group II apparatus in atmospheres with GAS

Equipment, suitable for use in a potentially gas explosive atmosphere, must comply with another specification relating to the maximum surface temperature reached during operation that must be lower than the ignition or the explosive mixture. The maximum surface temperature is the highest temperature reached during the operation in normal conditions, at any point on the surface of the electrical device.


The temperature class is assigned to a device according to its maximum surface temperature. This latter must therefore always be lower than the temperature of inflammation of the gas present in the surrounding atmosphere:

| TEMPERATURE CLASS | MAXIMUM SURFACE TEMPERATURE | INFLAMMABLE GAS TEMPERATURE |
|-------------------|-----------------------------|-----------------------------|
| T1 | 450 °C | > 450 °C |
| T2 | 300 °C | > 300 °C |
| T3 | 200 °C | > 200 °C |
| T4 | 135 °C | > 135 °C |
| T5 | 100 °C | > 100 °C |
| T6 | 85 °C | > 85 °C |

DEGREE OF PROTECTION (EN 60529)

| First digit: protection against accidental contact and penetration by solid foreign bodies | | | Second digit: protection against penetration of liquids | | |
|--|---|---|---|---|--|
| IP | | | IP | | |
| 0 |  | No particular protection | 0 |  | No particular protection |
| 1 |  | Protection against solid bodies over 50mm and against contacts by large surfaces of the human body (e.g. the hands) | 1 |  | Protection against the vertical fall of drops of water (e.g. condensation) |
| 2 |  | Protection against solid bodies over 12,5 mm and against finger contact | 2 |  | Protection against the vertical fall of drops of water with a maximum incline of 15° |
| 3 |  | Protection against solid bodies over 2,5 mm (e.g. tools, wires) | 3 |  | Protection against the vertical fall of drops of water with a maximum incline of 60° |
| 4 |  | Protection against penetration of solid bodies with a diameter or thickness over 1 mm (e.g. wires) | 4 |  | Protection against splashes of water from all directions |
| 5 |  | Dust penetration is not fully excluded, but the quality that penetrates causes no damaging effects | 5 |  | Protection against jets of water from all directions |
| 6 |  | No dust penetration is permitted | 6 |  | Protection against waves of water or powerful jets |
| | | | 7 |  | Protection against the effects of immersion |
| | | | 8 |  | Protection against the effects of prolonged immersion under pressure |

Symbols

| | |
|---|--|
|  | "Ex" distinguishes apparatus that can be used in potentially explosive atmosphere zones |
| II | Groups (I: for mines - II: for non-mining surface installations) |
| 2 | Categories (1: for use in zones 0 or 20/1 or 21/2 or 22 - 2: for use in zones 1 or 21/2 or 22 - 3: for use in zones 2 or 22) |
| GD | G = Gas - D = Dust (for installation in presence of gas and inflammable dust) |
| Ex | According to EN 60079-0: 2006, EN 60079-1: 2007, EN 60079-7: 2007, EN 61241-0: 2006, EN 61241-1: 2004, EN 13463-1: 2009 Norms |
| de | de: (Increased safety explosion proof enclosure) Types of protection (for devices to be used in dangerous areas due to gas potentially explosive atmospheres) |
| IIC | Explosion Group (specified only for devices to be used in gas explosive atmospheres): IIC (highly dangerous group, e.g. Hydrogen and Acetylene) |
| T6 | Temperature class (assigned according to maximum surface temperature of the device) |
| tD | Types of protection (for devices to be used in dangerous areas due to the presence of dust potentially explosive atmospheres): tD (by enclosure) |
| A21 | Method to determine dust penetration (according to IEC 60529): A21 (for enclosures intended for use in zones 20, 21 and 22) |
| IP 66 | IP Rating (specified only for devices intended for use in dust explosive atmospheres) |
| T 85 °C | Maximum surface temperature (specified for devices intended for use in dust explosive atmospheres) |
| Ta -20+50°C | Assigned Ambient Temperature Range |
|  | Graphic Symbol " European Community " indicates that the product conforms with Directive specifications relating to material, public health, consumer safety etc. etc. |
| 0068 | N° of the notified body responsible for supervision of production according to ATEX Directive 94/9/EC |
| CESI 10 ATEX 038 X | "EC type" Examination Certificate No.: identification entity who issued the certificate, the year of issue and the number of the certificate |

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