



**ELECTROUSTIC**  
DISTRIBUTION OF CONNECTIVITY SOLUTIONS

# ATEX GENERAL CATALOGUE



 **SCAME**  
electrical solutions

**2016-2018**



AT EX  
CATALOGUE  
2016-2018  
[www.scame.com](http://www.scame.com)

# Scame: a growing group

IN LESS THAN FIFTY YEARS  
WE HAVE BUILT AN  
INDUSTRIAL BUSINESS THAT  
HAS ALWAYS PRESERVED  
THE SPIRIT OF ITS ORIGINS



Scame was founded amidst the enthusiasm of the Italian economic boom of the 60's and has always pursued its reason for being in thriving by improving. Today it is an international industrial group of about 800 people employed in 18 subsidiary and associated companies operating under the parent company headquartered in Parre (Bergamo) in Alta Valle Seriana. Scame has a capillary presence throughout Italy with its own sales agencies and operates worldwide with branches and loyal distributors.





**Italy**  
Parre (Bergamo)

 **SCAME**<sub>ARGENTINA</sub>  
Argentina

 **SCAME**<sub>BULGARIA</sub>  
Bulgaria

 **SCAME**<sub>BRASIL</sub>  
Brazil

 **SCAME**<sub>CHILE</sub>  
Chile

 **SCAME-TOP**  
China

 **SCAME-HR**  
Croatia

 **SCAME-CZ**  
Czech Republic

**SOBEM**  **SCAME**  
France

 **SCAME**<sub>INDIA</sub>  
India



 **SCAME**<sub>POLSKA</sub>  
Poland

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Portugal

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Romania

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Spain

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U.A.E.

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SEND AN E-MAIL TO THE  
ADDRESS [infotech@scame.com](mailto:infotech@scame.com)  
AND YOU'LL RECEIVE THE  
ANSWERS TO ALL YOUR  
QUESTIONS ABOUT TECHNICAL  
ASPECTS, INSTALLATION AND  
CONFORMITY WITH THE  
STANDARDS .



The Scame technical information centre is able to promptly provide clear and complete answers to all your questions regarding the Scame products. The leading distributors of electrical material, with the support of our sales agencies and technical promoters, represent an additional capillary reference network. Information and updates can be found in the Info-point section of the internet site and in the newsletter sent periodically to the registered users.



[infotech@scame.com](mailto:infotech@scame.com)

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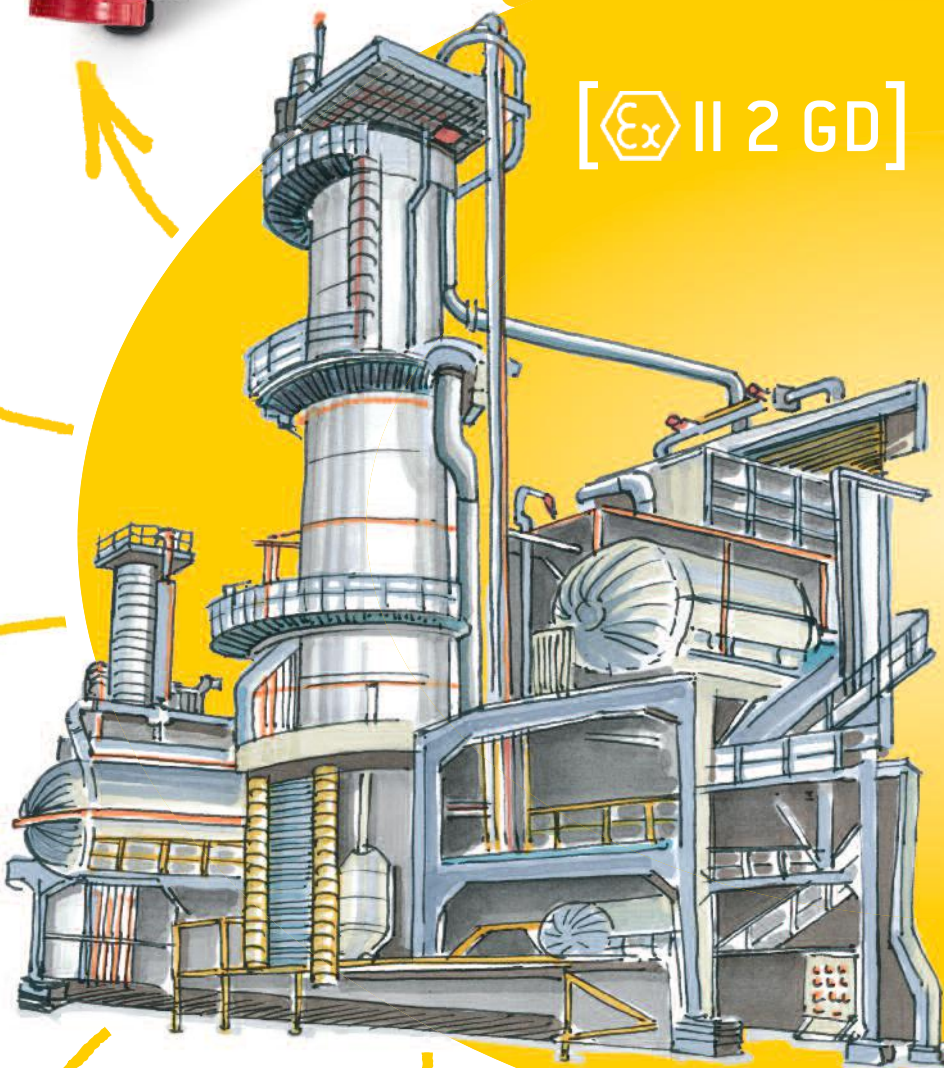


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# Guide to the ATEX directives

## 1. INTRODUCTION

### What is ATEX?

**“ATEX” is the acronym for “ATmosphere EXplosive”, i.e., explosive atmosphere.**

An explosive atmosphere is a mixture of flammable gases, vapours, mists or dusts with air, under specific atmospheric conditions in which, after ignition has occurred, combustion propagates to the flammable mixture.

In order for a potentially explosive atmosphere to form, the flammable substances must be present in a certain concentration. If the concentration is too low (lean mixture) or too high (rich mixture), no explosion occurs; instead there is just a slow combustion reaction or no reaction at all.

Thus the explosion can occur only in the presence of an ignition source and when the concentration is within the explosive range of the substances, i.e., between the lower explosive limit (LEL) and upper explosive limit (UEL). The explosive limits depend on the ambient pressure and the percentage of oxygen in the air.

### ATEX DIRECTIVES

The European Union, regarding the hazard caused by a potentially explosive atmosphere, has adopted two harmonized directives on health and safety, known as ATEX 94/9/EC (also ATEX 100a, which, as of 20th April 2016, will be replaced by the new directive 2014/34/EU) and ATEX 99/92/EC (also ATEX 137). The ATEX Directive 94/9/EC sets out the Essential Safety Requirements for products and protective systems intended for use in potentially explosive atmospheres and the respective conformity assessment procedures. The ATEX Directive 99/92/EC, on the other hand, defines minimum health and safety requirements for workplaces with a potentially explosive atmosphere; in particular, it divides the workplaces into zones according to the probability of having an explosive atmosphere and specifies the basic criteria by which the equipment is selected within these zones. The ATEX Directive 94/9/EC was implemented in Italy with Legislative Decree 126/98 and applies to products placed on the market and/or

in service after 1 July 2003. The ATEX Directive 99/92/EC was implemented in Italy with Legislative Decree 233/03 and came into effect on 10 September 2003. The subsequent Legislative Decree 81/08 of 9 April 2008 (particularly Title XI- Protection from explosive atmospheres) and its update (Lgs.D. 106/2009 of 3/08/09, in effect as of 20 August) have since surpassed Lgs.D. 233/03. The figure below provides a schematic overview of the ATEX Directives and their correlation.

### NEW ATEX DIRECTIVE

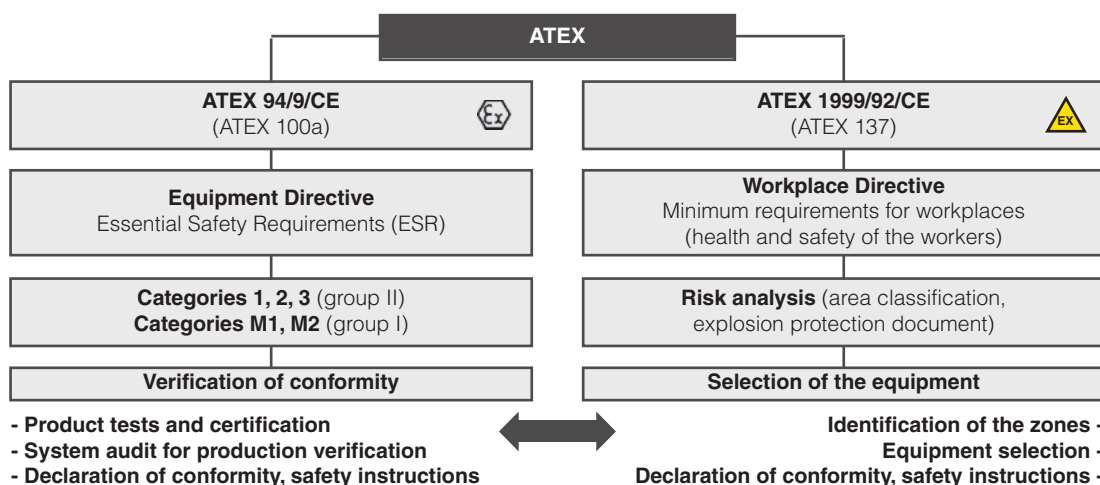
On 29th March 2014, the new ATEX directive 2014/34/EU was published. This new directive repeals, effective as from 20th April 2016, the Directive ATEX 94/9/EC.

The revision does not introduce substantial changes compared to the previous version; however, it pays more attention to the obligations of the various operators along the production chain, such as manufacturers, authorized representatives, importers and distributors.

The products and equipment placed on the market which complied with the previous directive can continue to be marketed on EU territory even after the new directive has become effective, provided they conform to the technical standards in force at that moment (indicated in the declaration of conformity of the product). As from 20th April 2016, the declarations of conformity of the products must obligatorily comply with the new directive.

### SCOPE OF THE ATEX GUIDE

This document is a simple guide to the ATEX Directives, their meaning and how to select the best products suited for explosion hazard areas. The scope of the SCAME guide is to support, and not replace, the ATEX Directives by trying to provide valid information about the primary types of installations on which the ATEX Directives have an impact and inform the installer about the criteria for recognizing, selecting and correctly installing the SCAME products and solutions whose characteristics best suit the environment in question.



## 2. ATEX DIRECTIVE 94/9/EC: EQUIPMENT

The ATEX Directive has been effective throughout the European Union since 1 July 2003, replacing the various existing national and European legislations regarding explosive atmospheres; after that date it has been possible to market only those products conforming to the directive and supplied with the ATEX CE marking and EC declaration of conformity. It applies to all the electrical and mechanical equipment intended for use in explosion hazard areas, ranking among the directives that allow free trade of the goods and define the essential safety requirements (ESR) of the equipment which it covers. In particular, the directive defines the product categories and the characteristics the products must satisfy in order to be installed in explosion hazard areas.

It also describes the procedures that must be followed in order to obtain conformity.

The Directive's field of application also extends to safety, control and regulation devices that are installed outside the potentially explosive area, but on which the safety of the products installed in the explosive atmosphere depend.

### PRODUCT CLASSIFICATION

The directive includes mining and surface installation materials since the hazard, protective measures and test methods are similar for both materials. The primary distinction is made with the division of the materials into two groups.

- **group I:** products to be used in gassy mines;
- **group II:** equipment intended for use on the surface.

Directive 94/9/EC classifies the products in categories, in relation to the level of protection and based on the degree of riskiness of the environment where they will be installed.

### GROUP I PRODUCTS

The mining products are divided into 2 categories:

**category M1:** equipment or protective systems that guarantee a very high level of protection;

**category M2:** equipment or protective systems that guarantee a high level of protection; they must be able to be disconnected in the presence of the gas.

### GROUP II PRODUCTS

The surface equipment (group II) is divided into 3 categories, based on the level of protection (zone of use); the categories

are identified by the number 1, 2, 3 followed by the letter G (Gas) or D (Dust).

- **category 1:** equipment or protective systems that guarantee a very high level of protection;
- **category 2:** equipment or protective systems that guarantee a high level of protection;
- **category 3:** equipment or protective systems that guarantee a normal level of protection.

### CONFORMITY PROCEDURES

For marking purposes, there are various conformity procedures depending on the product and the category to which it belongs.

All **category 1 and category 2 electrical equipment** must mandatorily be **certified** by **ATEX Notified Bodies**, i.e., those bodies to which the national authority has assigned the task of verifying conformity with the Directive (in Italy, for example: IMQ, CESI, ICEPI, TUV, etc.).

The updated list of ATEX Notified Bodies (NB) is available on the site:

<http://ec.europa.eu/enterprise/newapproach/nando/>

For companies that manufacture category 1 and category 2 electrical equipment, the notification and monitoring of the quality system through an ATEX NB is also mandatory; the identification number of the body is reported on the plate along with the CE marking.

**Self-certification is provided for all category 3 equipment** with internal manufacturing control; in SCAME's case, the manufacturing control is fulfilled by the ISO 9001: 2008 company quality certification, issued by CSQ. The manufacturer must prepare the technical documentation that demonstrates the equipment's conformity with the requirements of the Directive; the documentation must remain available for at least 10 years after the last introduction on the market.

**All products (category 1, 2 and 3) must mandatorily be accompanied by the written EC declaration of conformity and the instructions for use.**

The table below specifies the type of certification required based on the category of the products.

| Product category | EPL | Product certification by NB | Company certification by NB | Self-certification | Declaration of conformity and instructions for use |
|------------------|-----|-----------------------------|-----------------------------|--------------------|----------------------------------------------------|
| M1               | Ma  | YES                         | YES                         | NO                 | YES                                                |
| M2               | Mb  | YES                         | YES                         | NO                 | YES                                                |
| 1G               | Ga  | YES                         | YES                         | NO                 | YES                                                |
| 1D               | Da  | YES                         | YES                         | NO                 | YES                                                |
| 2G               | Gb  | YES                         | YES                         | NO                 | YES                                                |
| 2D               | Db  | YES                         | YES                         | NO                 | YES                                                |
| 3G               | Gc  | Optional                    | NO                          | YES                | YES                                                |
| 3D               | Dc  | Optional                    | NO                          | YES                | YES                                                |

# Guide to the ATEX directives

## MARKING

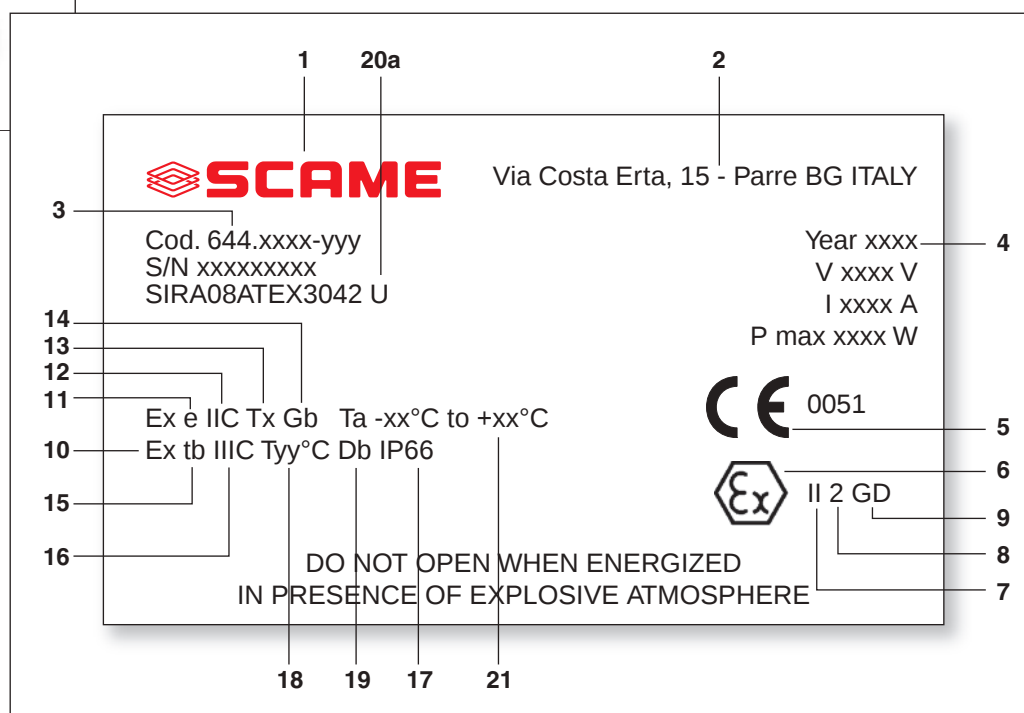


The products must be equipped with the appropriate identification plate which must have, in addition to the CE marking, the specific marking of explosive protection (**Epsilon-x**, in the hexagon) followed by the **group** (I or II) and **category**; for **group II**, the letter **G** is added for equipment for Gas while equipment for dust is identified by the letter **D** (Dust).

In addition to the data required by the ATEX Directive, the plate must also indicate the type of protection as provided for by the standard and the information useful for correct identification and use of the product.

The table below specifies the main information provided on the product plates with relative explanatory notes and their meaning, with reference to the symbol numbers on the example plate.

## MARKING EXAMPLE



## GENERAL INFORMATION

| N° | Marking                              | Meaning                | Variants |
|----|--------------------------------------|------------------------|----------|
| 1  | SCAME                                | Manufacturer           | -        |
| 2  | Via Costa Erta 15 PARRE (BG) – ITALY | Manufacturer's address | -        |
| 3  | Cod. 644.xxx-yyy                     | Product designation    | -        |

| N° | Marking                                                                           | Meaning                                  | Variants                                                                                |
|----|-----------------------------------------------------------------------------------|------------------------------------------|-----------------------------------------------------------------------------------------|
| 4  | 2015                                                                              | Year of manufacture                      | -                                                                                       |
| 5  |  | Conformity mark                          | For categories 1 and 2 it must be followed by the number of the notified body (*)       |
| 6  |  | Specific marking of explosive protection | -                                                                                       |
| 7  | II                                                                                | Equipment group                          | I: electrical equipment for mines<br>II: electrical equipment for surface installations |
| 8  | 2                                                                                 | Product category                         | 1 for category 1<br>2 for category 2<br>3 for category 3                                |
| 9  | GD                                                                                | Type of explosive atmosphere             | G: gas<br>D: dust<br>GD: gas and dust                                                   |

(\*) Number (4-digit number) of the notified body responsible for ATEX company monitoring (for example: the number 0051 corresponds to IMQ, the number 0722 corresponds to CESI, etc.).

#### GAS (SPECIFIC INFORMATION)

|    |     |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----|-----|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10 | Ex  | Prefix of the types of protection for electrical equipment | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 11 | e   | Type of protection applied                                 | Types of protection for GAS:<br>- "d": explosion-proof enclosure<br>- "e": increased safety<br>- "ia" or "ib" or "ic": intrinsic safety, level of protection "ia" or "ib" or "ic"<br>- "ma", "mb" or "mc": encapsulation, level of protection "ma" or "mb"<br>- "nA": type of protection "nA"<br>- "nC": type of protection "nC"<br>- "nR": type of protection "nR"<br>- "o": oil immersion<br>- "px" or "py" or "pz": pressurized apparatus, level of protection "px" or "py" or "pz"<br>- "q": powder filling |
| 12 | IIC | Flammable gas group                                        | Group to which the flammable gas present on the installation belongs: IIA, IIB or IIC                                                                                                                                                                                                                                                                                                                                                                                                                           |

(continue)

# Guide to the ATEX directives

(follow)

## GAS (SPECIFIC INFORMATION)

| N° | Marking | Meaning                                                                         | Variants                                                                                                                                        |
|----|---------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| 13 | Tx      | Temperature class = maximum temperature that the electrical equipment can reach | Temperature class (Group II):<br>T1 = 450°C<br>T2 = 300°C<br>T3 = 200°C<br>T4 = 130°C<br>T5 = 100°C<br>T6 = 85°C                                |
| 14 | Gb      | EPL Gas                                                                         | Gas equipment protection level (EPL):<br>Ga: very high (suited for zone 0)<br>Gb: high (suited for zone 1)<br>Gc: increased (suited for zone 2) |

## DUST (SPECIFIC INFORMATION)

|    |       |                                                                     |                                                                                                                                                                                                                                                                                                        |
|----|-------|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 15 | tb    | Type of production applied                                          | Types of protection for dust:<br>- "ta", "tb" or "tc": protection by enclosure<br>- "ia", "ib" or "ic": intrinsic safety protection<br>- "ma", "mb" or "mc": protection with encapsulation<br>- "px" or "py" or "pz": protection with pressurized enclosures, level of protection "px" or "py" or "pz" |
| 16 | IIIC  | Group of combustible dust                                           | Group to which the combustible dust present on the installation belongs: IIIA: fibres<br>IIIB: non-conductive dust<br>IIIC: conductive dust                                                                                                                                                            |
| 17 | IP66  | Degree of protection (IP)                                           | IP6X: apparatus suitable for Zone 22 with the presence of conductive dust<br>IP5X: apparatus suitable for Zone 22 with the presence of non-conductive dust                                                                                                                                             |
| 18 | Tyy°C | Maximum surface temperature that the electrical equipment can reach | Tyy°C: maximum surface temperature of the equipment expressed in °C                                                                                                                                                                                                                                    |
| 19 | Db    | EPL Dust                                                            | Combustible dust equipment protection level (EPL):<br>Da: very high (suited for zone 20)<br>Db: high (suited for zone 21)<br>Dc: increased (suited for zone 22)                                                                                                                                        |

## ADDITIONAL INFORMATION

|     |                   |                                   |                                                                                                                                  |
|-----|-------------------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| 20a | U                 | Indicates the ATEX components     | "U": indicates an EX component                                                                                                   |
| 20b | X                 | Particular additional information | "X": indicates the presence of special conditions for safe use (to be checked on the certificate or in the instructions for use) |
| 21  | Ta -xx°C to +xx°C | Ambient temperature range         | If not indicated, the range is: -20°C +40°C                                                                                      |

## REFERENCE STANDARDS FOR ELECTRICAL EQUIPMENT

The list below specifies the primary standards applicable for the construction and certification of the equipment, subdivided for gas and dust.

### ELECTRICAL EQUIPMENT FOR GAS

| IEC Standard        | EN Standard        | Contents                                                                       |
|---------------------|--------------------|--------------------------------------------------------------------------------|
| <b>IEC 60079-0</b>  | <b>EN 60079-0</b>  | General requirements                                                           |
| <b>IEC 60079-1</b>  | <b>EN 60079-1</b>  | Construction and testing of flameproof enclosures "d" for electrical equipment |
| <b>IEC 60079-2</b>  | <b>EN 60079-2</b>  | Electrical equipment, type of protection "p"                                   |
| <b>IEC 60079-5</b>  | <b>EN 60079-5</b>  | Powder filling "q"                                                             |
| <b>IEC 60079-6</b>  | <b>EN 60079-6</b>  | Oil immersion "o"                                                              |
| <b>IEC 60079-7</b>  | <b>EN 60079-7</b>  | Increased safety "e"                                                           |
| <b>IEC 60079-11</b> | <b>EN 60079-11</b> | Intrinsic safety "i"                                                           |
| <b>IEC 60079-15</b> | <b>EN 60079-15</b> | Electrical equipment with type of protection "n"                               |
| <b>IEC 60079-18</b> | <b>EN 60079-18</b> | Encapsulation "m"                                                              |

### ELECTRICAL EQUIPMENT FOR DUST

| IEC Standard        | EN Standard        | Contents                                                                                     |
|---------------------|--------------------|----------------------------------------------------------------------------------------------|
| <b>IEC 60079-0</b>  | <b>EN 60079-0</b>  | General requirements for equipment for use in atmospheres with the presence of gas and dust. |
| <b>IEC 60079-31</b> | <b>EN 60079-31</b> | Protection by enclosures "t"                                                                 |
| <b>IEC 60079-2</b>  | <b>EN 60079-2</b>  | Protection by pressurization "p"                                                             |
| <b>IEC 60079-11</b> | <b>EN 60079-11</b> | Protection by means of intrinsic safety "i"                                                  |
| <b>IEC 60079-18</b> | <b>EN 60079-18</b> | Protection by encapsulation "m"                                                              |

Note: Always check the validity of the current standards on the site: <http://www.ceiweb.it>

1

ATEX-IECEX  
[ II 2 GD]

Zone 1 (Gb)

Zone 2 (Gc)

Zone 21 (Db)

Zone 22 (Dc)

GAS & DUST



## 1.1

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ZENITH-P Series..... PAGE 36



## 1.5

UNION-EX Series ..... PAGE 54

1.1



1.2



1.3



1.4



1.5



# ADVANCE-GRP[GD] Series

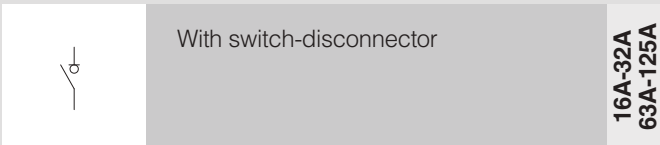


ATEX [Ex II 2 GD]

## SWITCHED INTERLOCKED SOCKET OUTLETS



## VERSIONS WITH MECHANICAL INTERLOCK



## PRODUCTS FOR USE IN A POTENTIALLY EXPLOSIVE ENVIRONMENT

Scame offers products suitable for installation into environments under potential risk of explosion identified as Zone 1/2 and 21/22 and that enter into the field of application for the ATEX Directive (European Directive 94/9/CE and IECEx).



**SOCKET LABEL  
ADVANCE-GRP[GD] SERIES**

504.1683 2015

INERIS 15ATEX0017X

IECEx INE15.0033X

Ex d e IIC T6 Gb

Ex tb IIIC T80°C Db IP66

Tamb. -35/+60°C



**SCAME**

Via Costa Erta 15 Parre BG ITALY



2P+⊕16A  
6h 200-250V~

WARNING: DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT

## REFERENCE STANDARDS

ATEX  
IECEx

**IEC/EN 60079-0**  
Electrical apparatus for use  
in the presence of combustible dust.  
*Part 0: General requirements.*

ATEX  
IECEx

**IEC/EN 60079-1**  
Explosive Atmospheres.  
*Part 1: equipment protection  
by flameproof enclosures "d"*

ATEX  
IECEx

**IEC/EN 60079-31**  
Electrical apparatus for use  
in the presence of combustible dust.  
*Part 31: Protection by enclosures 'tD'.*

ATEX  
IECEx

**IEC/EN 60079-7**  
Explosive Atmospheres.  
*Part 7: equipment protection  
by increased safety "e"*

### IEC/EN 60309-1

Plugs, socket outlets and couplers for industrial purposes.  
*Part 1: general requirements.*

### IEC/EN 60309-2

Plugs, socket outlets and couplers for industrial purposes.  
*Part 2: dimensional interchangeability requirements for pin  
and contact-tube accessories of harmonised configurations.*

### IEC/EN 60309-4

Plugs, socket-outlets and couplers for industrial purposes.  
*Part 4: Switched socket-outlets  
and connectors with or without interlock.*

## ■ BEHAVIOUR WITH CHEMICAL AND ATMOSPHERIC AGENTS

| Saline solution | Acids              |           | Bases              |           | Solvents  |           |           |           | Mineral oil | UV rays   |
|-----------------|--------------------|-----------|--------------------|-----------|-----------|-----------|-----------|-----------|-------------|-----------|
|                 | Concentrated       | Diluted   | Concentrated       | Diluted   | Hexane    | Benzol    | Acetone   | Alcohol   |             |           |
| Resistant       | Limited Resistance | Resistant | Limited Resistance | Resistant | Resistant | Resistant | Resistant | Resistant | Resistant   | Resistant |

For specific substances please contact our technical service.

## ■ TECHNICAL CHARACTERISTICS

|                                                  |                                                                                                    |
|--------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Rated current:                                   | <b>16A-32A-63A-125A</b>                                                                            |
| Rated voltage:                                   | <b>50÷690V~</b>                                                                                    |
| Frequency:                                       | <b>50÷60Hz</b>                                                                                     |
| Insulating voltage:                              | <b>690V~</b>                                                                                       |
| Switch-disconnectors:                            | <b>16A-32A-63A:<br/>COMMAND-EX Series<br/>125A:<br/>CZ0513</b>                                     |
| ATEX Code:                                       |  <b>II 2 GD</b> |
| Ex Protection type:                              | <b>Ex d e IIC T4, T5, T6 Gb<br/>Ex tb IIIC T80°C Db IP66</b>                                       |
| Ambient temperature range:                       | <b>-35°C + 60°C<br/>for socket 16/63/125A<br/>-50°C + 60°C for socket 32A</b>                      |
| Maximum permissible surface temperature (DUST):  | <b>T80°C</b>                                                                                       |
| Temperature class (GAS):                         | <b>T4/T5/T6</b>                                                                                    |
| Protection degree:                               | <b>IP66</b>                                                                                        |
| Impact Resistance:                               | <b>7J</b>                                                                                          |
| Switched socket outlets with interlock material: | <b>Dissipative<br/>Thermosetting (GRP)</b>                                                         |
| Colour:                                          | <b>Black RAL9005</b>                                                                               |

## ■ ATEX IECEX CERTIFICATE

ATEX 16A-32A-63A-125A:  
**INERIS 15ATEX0017X**

IECEX 16A-32A-63A-125A:  
**IECEX INE 15.0033X**

## ■ WIRING OPERATIONS

| Rated current (A) | Cable entry | Cable section (max). |
|-------------------|-------------|----------------------|
| <b>16A</b>        | 1xM25 (*)   | 12/18                |
| <b>32A</b>        | 1xM32 (*)   | 16/25                |
| <b>63A</b>        | 1xM40 (*)   | 22/32                |
| <b>125A</b>       | 1xM50 (*)   | 28/38,5              |

(\*) You can request the customised configuration of the cable input for the entire series of the ADVANCE-GRP[GD] socket.  
See table pg. 22.

## ■ ELECTRICAL FEATURES ADVANCE-GRP[GD] SERIES

| Switch Socket Type |              | 16/32A |      |      | 63A  |      |      | CZ0513-180A |
|--------------------|--------------|--------|------|------|------|------|------|-------------|
| Rated Voltage      |              | 400V   | 500V | 690V | 400V | 500V | 690V | 690V        |
| Category           | <b>AC3</b>   | -      | 25A  | -    | -    | 50A  | -    | 125A        |
|                    | <b>AC22A</b> | -      | -    | 32A  | -    | -    | 63A  | 125A        |
|                    | <b>AC23A</b> | -      | 32A  | -    | -    | -    | 63A  | 125A        |

# ADVANCE-GRP[GD] Series



## SPECIAL CHARACTERISTICS

1

ATEX [Ex] II 2 GD]

2

3



### OUTSTANDING IMPACT RESISTANCE

The glass-fibre reinforced polyester used in **ADVANCE-GRP[GD]** and the high thickness of the casing walls guarantee an excellent mechanical resistance to impacts.

The **SMC** technology used to produce the casings makes **ADVANCE-GRP[GD]** an indestructible product.

The impact resistance of the casings is higher than 20J (IK10) according to EN50102, even under limit temperature conditions (-50°C +60°C).



### RESISTANCE TO CHEMICAL AGENTS

The **ADVANCE-GRP[GD]** interlocked sockets and casings, thanks to the glass-fibre reinforced polyester with which they are produced, have excellent resistance to aggressive chemical substances, saline solutions, diluted acids, hydrocarbons, mineral oils, alcoholic substances. They are ideal for use in highly corrosive atmospheres.



### RESISTANCE TO ATMOSPHERIC AGENTS

The structure and materials used also make **ADVANCE-GRP[GD]** a product suited for the most extreme environmental conditions. The degree of protection IP66, guarantees an excellent seal against the entry of solid objects or liquids into the casings. Outstanding resistance to UV radiation, exceptional reliability under environmental stress and use at both low and high ambient temperatures (-40°C +60°C) for 63/125A and (-50°C + 60°C) for 16/32A.



In the chemical and petrochemical plants, or, in general, in all those places where, a production process gives the possibility to forming a potentially explosive atmosphere are necessary electrical equipment that protect from the risk of explosion and they comply at ATEX Directive 94 /92/EC. SCAME complete the ATEX project, which currently covers only the dust area (Zone 21), introducing a safety switch designed and manufactured by SCAME till 80A suitable for GAS environments.

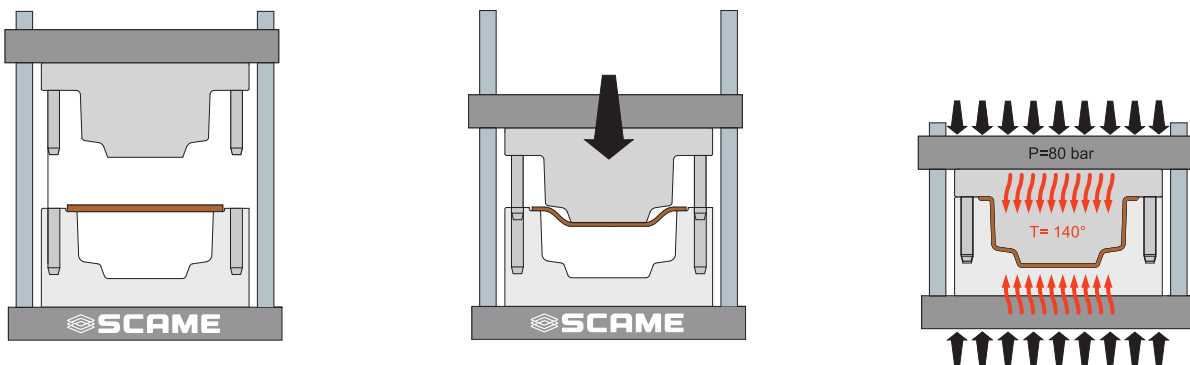
The plugs and sockets for Zone 1 unlike dust, require special design arrangements including the materials and the necessity of having a key insertion to prevent the connection of plugs of other builders, these and other, measures are required to prevent that any spark or arc, is formed through cutting the supply voltage, or at the time to coupling or decoupling plug and socket body, where they can come into contact with the surrounding atmosphere and cause an explosion.

## CHARACTERISTICS

The **ADVANCE-GRP[GD]** product line includes a series of 16A, 32A, 63A, 125A interlocked sockets (compliant with EN60309-4 standards) and the casings to contain them. It's the most complete range of interlocked sockets produced in GRP (Glass Reinforced Polyester) thermosetting material.

A unique feature which enhances the exceptional mechanical strength of **ADVANCE-GRP[GD]** products is the **SMC** (*Sheet Moulding Compound*) production process used for the casings.

**SMC** is a technology which uses exclusively non-woven sheets, pre-impregnated with polyester resin. This method consists in preparing the sheet material inside a mould which, equipped with a negative mould, presses the composite so as to allow compaction.



**SMC** is an advanced technology which enhances the quality of the raw material without reducing the high-strength characteristics during transformation; it's a high-performing technology in terms of the mechanical performance of the resultant product (glass fibre length, homogeneity of the material, integrity of the fibres).

On the contrary, the **BMC** (*Bulk Moulding Compound*) technology is a technology for moulding composite materials which uses a raw material available in "blocks" (short, charged fibres) which are subjected to high thermomechanical stress during the transformation process, consequently diminishing the mechanical properties of the details, thereby reducing the impact strength and flexural strength.

The glass-fibre reinforced polyester used in **ADVANCE-GRP[GD]** guarantees excellent mechanical strength and a long lifetime: this material is highly resistant to contamination, completely corrosion resistant and suited for applications requiring the use of components with low smoke emission and no halogens, **LSOH** (*Low Smoke Zero Halogen*) components. The outstanding properties of the material are also guaranteed over time, thanks to the high **RTI** value (*Relative Temperature Index*), measured to be 20,000h. Numerous verifications and tests have been carried out, even UV resistance tests, in order to guarantee the long duration of the material's initial performance.

The thickness of the walls is sufficient to offer an excellent alternative to aluminium, stainless steel or cast iron.



## OUTSTANDING HEAT AND FIRE RESISTANCE

The glass-fibre reinforced polyester used in **ADVANCE-GRP[GD]** guarantees excellent heat and fire resistance: it does not propagate flames, emit halogens or smoke.

This material has outstanding flame retardancy: Glow Wire 960°C according to EN 60695-2-1; V0 according to UL94.

It's suited for applications requiring the use of components with low smoke emission and no halogens, **LSOH** (*Low Smoke Zero Halogen*).

# ADVANCE-GRP[GD] Series



## ELECTRICAL PARAMETERS - AUXILIARY CONTACT

### ATEX Certification – Auxiliary Contact

| Type                              | V <sub>max</sub> - I <sub>max</sub> | Mode of protection (Nm) | ATEX Certificate     | Ambient Temperature |
|-----------------------------------|-------------------------------------|-------------------------|----------------------|---------------------|
| <b>TECHNOR</b>                    |                                     |                         |                      |                     |
| ZBWE 6                            | 400V – 4A                           | Ex d e IIC              | INERIS 02 ATEX 9007U | -50°C / +75°C       |
| ZBWE 16                           | 600V – 4A                           | Ex d e IIC              | INERIS 02 ATEX 9007U | -50°C / +75°C       |
| <b>CORTEM (only for 63A size)</b> |                                     |                         |                      |                     |
| M-0530<br>M-0531                  | 400V – 4A                           | Ex d e IIC              | CESI 09 ATEX 016 U   | - 40°C / +80°C      |

### IECEx Certification – Auxiliary Contact

| Type                              | V <sub>max</sub> - I <sub>max</sub> | Mode of protection (Nm) | ATEX Certificate   | Ambient Temperature |
|-----------------------------------|-------------------------------------|-------------------------|--------------------|---------------------|
| <b>TECHNOR</b>                    |                                     |                         |                    |                     |
| ZBWE 6                            | 400V – 4A                           | Ex d e IIC              | IECEx INE13.0063U  | -50°C / +75°C       |
| ZBWE 16                           | 600V – 4A                           | Ex d e IIC              | IECEx INE13.0063U  | -50°C / +75°C       |
| <b>CORTEM (only for 63A size)</b> |                                     |                         |                    |                     |
| M-0530<br>M-0531                  | 400V – 4A                           | Ex d e IIC              | IECEx CES 11.0031U | - 40°C / +80°C      |



The ambient temperature is limited by the auxiliary contacts when installed.  
The ambient temperature is marked on the label and should not be used outside this range.

## DRILLING AREA

The drilling area have to drilled respecting the minimum distance, and diameters e number of maximum hole indicated in table (Clearance).

| Drilling Area |            | Socket Size                         | Cable gland size             | Clearance                    |                              |                  | Max. drill holes |
|---------------|------------|-------------------------------------|------------------------------|------------------------------|------------------------------|------------------|------------------|
|               | Dimensions |                                     |                              | A                            | B1 B2                        |                  |                  |
|               | 80x45mm    | 16/32A                              | 20mm<br>25mm<br>32mm         | 21mm<br>26mm<br>33mm         | 39mm<br>46mm<br>56mm         | 2<br>2<br>1      |                  |
|               | 110x55mm   | 63A                                 | 25mm<br>32mm<br>40mm         | 26mm<br>33mm<br>41mm         | 46mm<br>56mm<br>70mm         | 2<br>2<br>1      |                  |
|               | 196x72mm   | 125A<br>top<br>side (A)             | 25mm<br>32mm<br>40mm<br>50mm | 26mm<br>33mm<br>41mm<br>51mm | 46mm<br>56mm<br>70mm<br>78mm | 5<br>3<br>2<br>2 |                  |
|               | 72x72mm    | 125A<br>bottom<br>side<br>(B1) (B2) | 25mm<br>32mm<br>40mm<br>50mm | 26mm<br>33mm<br>41mm<br>51mm | 46mm<br>56mm<br>70mm<br>78mm | 1<br>1<br>1<br>1 |                  |
|               |            |                                     |                              |                              |                              |                  |                  |
|               |            |                                     |                              |                              |                              |                  |                  |

## CROSS SECTIONAL AREAS CONDUCTORS & TORQUE

| TERMINALS CONTACTS - TORQUE |                                                          |                          |
|-----------------------------|----------------------------------------------------------|--------------------------|
| ADVANCE-GRP[GD] – In        | Cross Sectional Areas Conductors                         | Tightening Torque - (Nm) |
| 16/32A                      | Cross Sectional Areas 10 mm <sup>2</sup> finely-stranded | 0.8                      |
|                             | 16 mm <sup>2</sup> single-wire                           | 0.8                      |
| 63A                         | 25 mm <sup>2</sup> finely-stranded                       | 2.5                      |
|                             | 35 mm <sup>2</sup> single-wire                           | 2.5                      |
| 125A                        | 50/70mm <sup>2</sup> finely-stranded                     | 3.5                      |

## EARTH TERMINALS

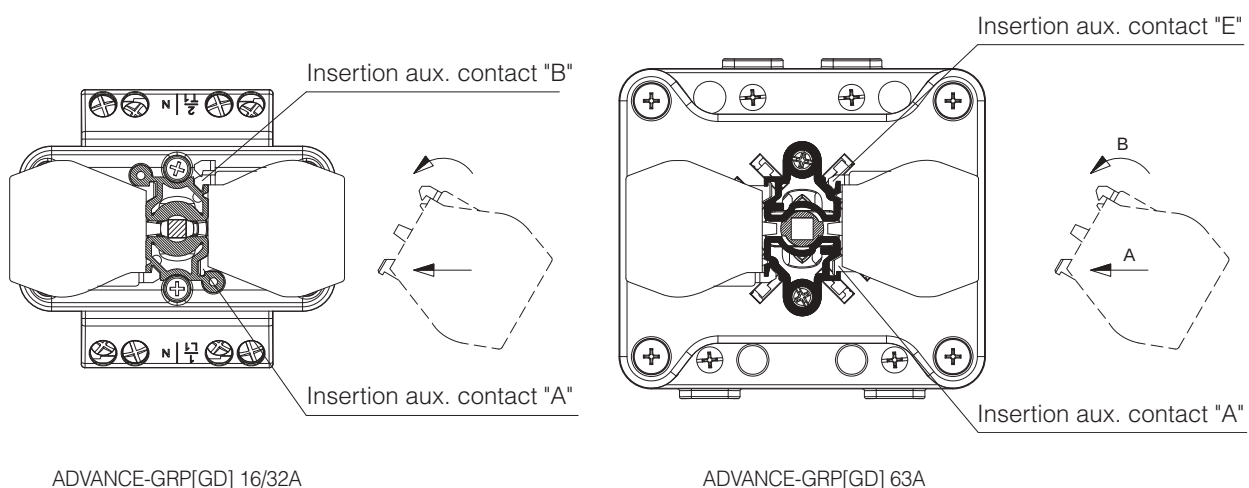
| EARTH TERMINALS CONTACTS - TORQUE |                                                       |                          |
|-----------------------------------|-------------------------------------------------------|--------------------------|
| Type                              | Cross Sectional Areas Conductors                      | Tightening Torque - (Nm) |
| 16/32A                            | 10/16mm <sup>2</sup>                                  | 1.2                      |
| 63A                               | Weidmuller Ex e terminal type WPE35 35mm <sup>2</sup> | 3.5                      |
| 125A                              | 50/70mm <sup>2</sup>                                  | 3.5                      |

## AUXILIARY CONTACTS

In the sockets ADVANCE-GRP[GD] type 16A, 32A, and 63A can be install as optional 2 auxiliary contacts maximum, on model type 125A is not possible to install auxiliary contacts.

They are optional accessories with ATEX/IECEx separate certificates. Installation and maintenance shall be done as prescribed by manufacturer documents.

## HOW TO INSTALL AUXILIARY CONTACT



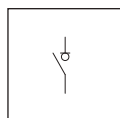
# ADVANCE-GRP[GD] Series



## ATEX / IECEx - 2 GD

| Ambient | Gas    |        | Dust   |         |                 |
|---------|--------|--------|--------|---------|-----------------|
| Zone    | 0 - Ga | 1 - Gb | 2 - Gc | 20 - Da | 21 - Db 22 - Dc |

### SWITCHED INTERLOCKED SOCKET OUTLETS IP66



| Poles  | Hz       | Volt     | Colour         |      | h. | 16A             | 32A             | 63A             | 125A            |
|--------|----------|----------|----------------|------|----|-----------------|-----------------|-----------------|-----------------|
|        |          |          | 16A-32A<br>63A | 125A |    | 1xM25(*)<br>□ 1 | 1xM32(*)<br>□ 1 | 1xM40(*)<br>□ 1 | 1xM50(*)<br>□ 1 |
| 2P+E   | 50/60    | 100-130  |                | -    | 4  | 504.1670        | 504.3270        | -               | -               |
|        | 50/60    | 200-250  |                | -    | 6  | 504.1683        | 504.3283        | -               | -               |
|        | 50/60    | 380-415  |                | -    | 9  | 504.1678        | 504.3278        | -               | -               |
|        | 50/60    | 480-500  |                | -    | 7  | 504.16836       | 504.32836       | -               | -               |
|        | 300÷500  | 50÷500   |                | -    | 2  | 504.16832       | 504.32832       | -               | -               |
|        | d.c.     | 50÷250   |                | -    | 3  | 504.16834       | 504.32834       | -               | -               |
|        | d.c.     | >250÷500 |                | -    | 8  | 504.16838       | 504.32838       | -               | -               |
| 3P+E   | 50/60    | 100-130  |                |      | 4  | 504.1672        | 504.3272        | 504.6372        | 504.12572       |
|        | 50/60    | 200-250  |                |      | 9  | 504.1674        | 504.3274        | 504.6374        | 504.12574       |
|        | 50/60    | 380-415  |                |      | 6  | 504.1686        | 504.3286        | 504.6386        | 504.12586       |
|        | 60       | 440-460  |                |      | 11 | 504.16865       | 504.32865       | 504.63865       | 504.125865      |
|        | 50/60    | 480-500  |                |      | 7  | 504.16866       | 504.32866       | 504.63866       | 504.125866      |
|        | 50/60    | 600-690  |                |      | 5  | 504.16867       | 504.32867       | 504.63867       | 504.125867      |
|        | 50/60    | 380/440  |                |      | 3  | 504.16864       | 504.32864       | 504.63864       | 504.125864      |
|        | 100÷300  | 50÷690   |                |      | 10 | 504.16861       | 504.32861       | 504.63861       | 504.125861      |
|        | >300÷500 | 50÷690   |                |      | 2  | 504.16862       | 504.32862       | 504.63862       | 504.125862      |
| 3P+N+E | 50/60    | 100-130  |                |      | 4  | 504.1679        | 504.3279        | 504.6379        | 504.12579       |
|        | 50/60    | 208-250  |                |      | 9  | 504.1675        | 504.3275        | 504.6375        | 504.12575       |
|        | 50/60    | 346-415  |                |      | 6  | 504.1687        | 504.3287        | 504.6387        | 504.12587       |
|        | 50/60    | 480-500  |                |      | 7  | 504.16876       | 504.32876       | 504.63876       | 504.125876      |
|        | 50/60    | 600-690  |                |      | 5  | 504.16877       | 504.32877       | 504.63877       | 504.125877      |
|        | 60       | 440-460  |                |      | 11 | 504.16875       | 504.32875       | 504.63875       | 504.125875      |
|        | 50/60    | 380/440  |                |      | 3  | 504.16874       | 504.32874       | 504.63874       | 504.125874      |
|        | >300÷500 | 50÷690   |                |      | 2  | 504.16872       | 504.32872       | 504.63872       | 504.125872      |

□ Package/Bulk Pack.

(\*) You can request the customised configuration of the cable input for the entire series of the ADVANCE-GRP[GD] socket.  
See table pg. 22.

## ACCESSORIES

### EARTH STUD



### AUXILIARY CONTACT

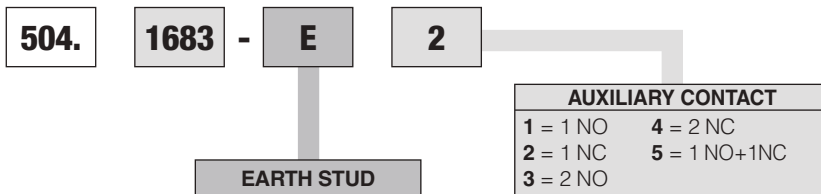


#### Description

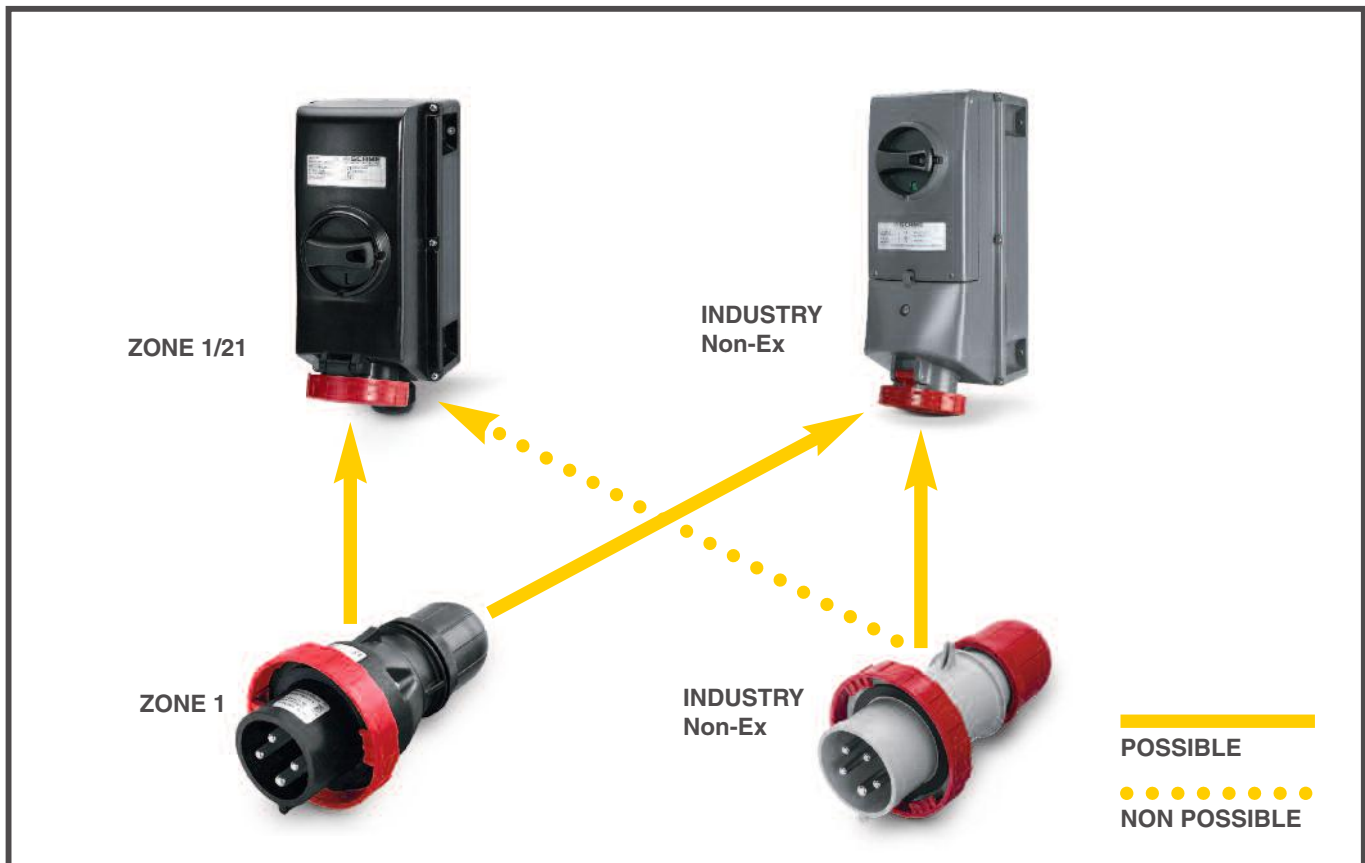
Earth stud.

644.E650

## CONFIGURATION SOCKET OPTIONAL ACCESSORIES



## COMBINATIONS OF “POSSIBLE/NON POSSIBLE” PLUG/SOCKET CONNECTIONS



# OPTIMA-EX[GD] Series



1  
ATEX [Ex II 2 GD]  
2  
3

## PLUGS



## VERSIONS



Plugs

16A-32A  
63A-125A

## PRODUCTS FOR USE IN A POTENTIALLY EXPLOSIVE ENVIRONMENT

Scame offers products suitable for installation into environments under potential risk of explosion identified as Zone 1/2 and 21/22 and that enter into the field of application for the ATEX Directive (European Directive 94/9/CE and IECEx).



PLUG LABEL  
OPTIMA-EX[GD] SERIES

|                                           |      |
|-------------------------------------------|------|
| 219.6336 Via Costa Erta 15 Parre BG ITALY |      |
| INERIS 15ATEX0017X                        | <br> |
| IECEx INE15.0033X                         |      |
| Ex e IIC T6 Gb                            |      |
| Ex tb IIIC T80°C Db IP66                  |      |
| Tamb. -35/+60°C                           |      |
| 3P+ ÷ 63A-6U 380-415V~                    |      |

## REFERENCE STANDARDS

ATEX  
IECEx

**IEC/EN 60079-0**  
Electrical apparatus for use  
in the presence of combustible dust.  
*Part 0: General requirements.*

ATEX  
IECEx

**IEC/EN 60079-1**  
Explosive Atmospheres.  
*Part 1: equipment protection  
by flameproof enclosures "d"*

ATEX  
IECEx

**IEC/EN 60079-31**  
Electrical apparatus for use  
in the presence of combustible dust.  
*Part 31: Protection by enclosures 'tD'.*

ATEX  
IECEx

**IEC/EN 60079-7**  
Explosive Atmospheres.  
*Part 7: equipment protection  
by increased safety "e"*

### IEC/EN 60309-1

Plugs, socket outlets and couplers for industrial purposes.  
*Part 1: general requirements.*

### IEC/EN 60309-2

Plugs, socket outlets and couplers for industrial purposes.  
*Part 2: dimensional interchangeability requirements for pin  
and contact-tube accessories of harmonised configurations.*

## ■ BEHAVIOUR WITH CHEMICAL AND ATMOSPHERIC AGENTS

| Saline solution | Acids              |           | Bases              |           | Solvents  |           |           |           | Mineral oil | UV rays   |
|-----------------|--------------------|-----------|--------------------|-----------|-----------|-----------|-----------|-----------|-------------|-----------|
|                 | Concentrated       | Diluted   | Concentrated       | Diluted   | Hexane    | Benzol    | Acetone   | Alcohol   |             |           |
| Resistant       | Limited Resistance | Resistant | Limited Resistance | Resistant | Resistant | Resistant | Resistant | Resistant | Resistant   | Resistant |

For specific substances please contact our technical service.

## ■ TECHNICAL CHARACTERISTICS

|                                                 |                                                                       |
|-------------------------------------------------|-----------------------------------------------------------------------|
| Rated current:                                  | <b>16A-32A-63A-125A</b>                                               |
| Rated voltage:                                  | <b>50÷690V~</b>                                                       |
| Frequency:                                      | <b>50÷60Hz</b>                                                        |
| Insulating voltage:                             | <b>690V~</b>                                                          |
| ATEX Code:                                      | <b>Ex II 2 GD</b>                                                     |
| Ex Protection type:                             | <b>Ex e IIC T4, T5, T6 Gb<br/>Ex tb IIIC T80°C Db IP66</b>            |
| Ambient temperature range:                      | <b>-50°C + 60°C for plug 16/32A<br/>-35°C + 60°C for plug 63/125A</b> |
| Maximum permissible surface temperature (DUST): | <b>T80°C</b>                                                          |
| Temperature class (GAS):                        | <b>T4/T5/T6</b>                                                       |
| Protection degree:                              | <b>IP66</b>                                                           |
| Impact Resistance:                              | <b>7J</b>                                                             |
| Plugs material:                                 | <b>PA6 - Dissipative</b>                                              |
| Plugs colour:                                   | <b>Black RAL9011</b>                                                  |

## ■ ELECTRICAL FEATURES OPTIMA-EX[GD] SERIES

| Rated Current | Maximun Current |         |         | Max. Cable Entry Temperature when Ta +60°C |
|---------------|-----------------|---------|---------|--------------------------------------------|
|               | Ta 40°C         | Ta 50°C | Ta 60°C |                                            |
| <b>16A</b>    | 16A             | 16A     | 16A     | <b>80°C (*)</b>                            |
| <b>32A</b>    | 32A             | 32A     | 32A     | <b>85°C (*)</b>                            |
| <b>63A</b>    | 63A             | 63A     | 63A     | <b>90°C (*)</b>                            |
| <b>125A</b>   | 100A            | 112A    | 125A    | <b>-</b>                                   |

(\*) WARNING: the cable entry can be reach high temperature; suitable cable can be used.

## ■ ATEX IECEX CERTIFICATE

ATEX 16A-32A-63A-125A: **INERIS 15ATEX0017X**

IECEX 16A-32A-63A-125A: **IECEX INE 15.0033X**

# OPTIMA-EX[GD] Series



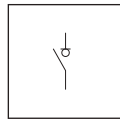
## TECHNICAL FEATURES

1  
2  
3  
ATEX [Ex II 2 GD]

| OPTIMA-EX[GD] SERIES                                                            | Unit               |        | Value     |           |           |            |
|---------------------------------------------------------------------------------|--------------------|--------|-----------|-----------|-----------|------------|
| Rated Current                                                                   |                    |        | 16A       | 32A       | 63A       | 125A       |
| Code                                                                            |                    |        | 219.16... | 219.32... | 219.63... | 219.125... |
| Suitable Size cables<br>Ground-Terminals                                        | (mm <sup>2</sup> ) |        | 2,5       | 6         | 10        | 25         |
| Power Supply Terminals - Tightening-Torque                                      | (Nm)               |        | 1         | 1.5       | 2         | 4          |
| Cable size accepted by Cable-Clamp<br>(eg.H07RN-F)<br>Do not use armoured cable | (mm)               | 2P+E   | 14        | 16        | 21        | 30         |
|                                                                                 |                    | 3P+E   |           |           |           |            |
|                                                                                 |                    | 3P+N+E |           |           |           |            |
| Cable Gland/Cable-Clamp<br>Tightening-Torque                                    | (Nm)               | 2P+E   | 5,6       | 10        | 10        | 25         |
|                                                                                 |                    | 3P+E   |           |           |           |            |
|                                                                                 |                    | 3P+N+E |           |           |           |            |
| Cable-Gland/Cable-Clamp (Screw) - Tightening-Torque                             | (Nm)               |        | 0.8       | 0.8       | 0.8       | 0.8        |
| Handle Screws – Tightening-Torque                                               | (Nm)               |        | 1         | 1         | 1,2       | 1,2        |

| Ambient | Gas    |        |        | Dust    |         |         |
|---------|--------|--------|--------|---------|---------|---------|
| Zone    | 0 - Ga | 1 - Gb | 2 - Gc | 20 - Da | 21 - Db | 22 - Dc |

## PLUGS IP66



| Poles  | Hz       | Volt     | Colour         |      | h. | 16A                    | 32A                    | 63A                   | 125A                 |
|--------|----------|----------|----------------|------|----|------------------------|------------------------|-----------------------|----------------------|
|        |          |          | 16A-32A<br>63A | 125A |    | cable gland<br>□ 10/40 | cable gland<br>□ 10/40 | cable gland<br>□ 6/24 | cable gland<br>□ 1/8 |
| 2P+E   | 50/60    | 100-130  |                | -    | 4  | 219.1630               | 219.3230               | -                     | -                    |
|        | 50/60    | 200-250  |                | -    | 6  | 219.1633               | 219.3233               | -                     | -                    |
|        | 50/60    | 380-415  |                | -    | 9  | 219.1638               | 219.3238               | -                     | -                    |
|        | 50/60    | 480-500  |                | -    | 7  | 219.16336              | 219.32336              | -                     | -                    |
|        | 300÷500  | 50÷500   |                | -    | 2  | 219.16332              | 219.32332              | -                     | -                    |
|        | d.c.     | 50÷250   |                | -    | 3  | 219.16334              | 219.32334              | -                     | -                    |
|        | d.c.     | >250÷500 |                | -    | 8  | 219.16338              | 219.32338              | -                     | -                    |
| 3P+E   | 50/60    | 100-130  |                |      | 4  | 219.1631               | 219.3231               | 219.6331              | 219.12531            |
|        | 50/60    | 200-250  |                |      | 9  | 219.1634               | 219.3234               | 219.6334              | 219.12534            |
|        | 50/60    | 380-415  |                |      | 6  | 219.1636               | 219.3236               | 219.6336              | 219.12536            |
|        | 60       | 440-460  |                |      | 11 | 219.16365              | 219.32365              | 219.63365             | 219.125365           |
|        | 50/60    | 480-500  |                |      | 7  | 219.16366              | 219.32366              | 219.63366             | 219.125366           |
|        | 50/60    | 600-690  |                |      | 5  | 219.16367              | 219.32367              | 219.63367             | 219.125367           |
|        | 50/60    | 380/440  |                |      | 3  | 219.16364              | 219.32364              | 219.63364             | 219.125364           |
|        | 100÷300  | 50÷690   |                |      | 10 | 219.16361              | 219.32361              | 219.63361             | 219.125361           |
|        | >300÷500 | 50÷690   |                |      | 2  | 219.16362              | 219.32362              | 219.63362             | 219.125362           |
| 3P+N+E | 50/60    | 100-130  |                |      | 4  | 219.1632               | 219.3232               | 219.6332              | 219.12532            |
|        | 50/60    | 208-250  |                |      | 9  | 219.1635               | 219.3235               | 219.6335              | 219.12535            |
|        | 50/60    | 346-415  |                |      | 6  | 219.1637               | 219.3237               | 219.6337              | 219.12537            |
|        | 50/60    | 480-500  |                |      | 7  | 219.16376              | 219.32376              | 219.63376             | 219.125376           |
|        | 50/60    | 600-690  |                |      | 5  | 219.16377              | 219.32377              | 219.63377             | 219.125377           |
|        | 60       | 440-460  |                |      | 11 | 219.16375              | 219.32375              | 219.63375             | 219.125375           |
|        | 50/60    | 380/440  |                |      | 3  | 219.16374              | 219.32374              | 219.63374             | 219.125374           |
|        | >300÷500 | 50÷690   |                |      | 2  | 219.16372              | 219.32372              | 219.63372             | 219.125372           |

□ Package/Bulk Pack.

## PLUGS COVER

|  | Description |               | □      |           | Description |                       | □      |           |
|--|-------------|---------------|--------|-----------|-------------|-----------------------|--------|-----------|
|  |             | 2P+E          | 10/100 | 570.90163 | 32A-30A     | 3P+N+E                | 10/100 | 570.90325 |
|  | 16A-20A     | 3P+E          | 10/100 | 570.90164 | 63A-60A     | 2P+E, 3P+E and 3P+N+E | 10/100 | 570.9063  |
|  |             | 3P+N+E        | 10/100 | 570.90165 | 125A-100A   | 2P+E, 3P+E and 3P+N+E | 10/100 | 570.9125  |
|  | 32A-30A     | 2P+E and 3P+E | 10/100 | 570.90324 |             |                       |        |           |

# ISOLATORS-EX[GD] Series



ATEX [Ex] II 2 GD

## SWITCHES DISCONNECTORS



## VERSIONS

|                                                                                     |                                                            |
|-------------------------------------------------------------------------------------|------------------------------------------------------------|
|  | Switch disconnecter<br>Thermosetting - General use         |
|  | Switch disconnecter<br>Thermosetting - Emergency control   |
|  | Switch disconnecter<br>Stainless steel - General use       |
|  | Switch disconnecter<br>Stainless steel - Emergency control |
|  | Switch disconnecter<br>Aluminium - General use             |
|  | Switch disconnecter<br>Aluminium - Emergency control       |

## REFERENCE STANDARDS

|               |                                                                                                                                                                |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ATEX<br>IECEx | <b>IEC/EN 60079-0</b><br>Electrical apparatus for potentially explosive atmospheres.<br><i>Part 0: general requirements.</i>                                   |
| ATEX<br>IECEx | <b>IEC/EN 60079-7</b><br>Electrical apparatus for potentially explosive atmospheres.<br><i>Part 7: equipment protection by increased safety "e".</i>           |
| ATEX<br>IECEx | <b>IEC/EN 60079-31</b><br>Electrical apparatus for potentially explosive atmospheres.<br><i>Part 31: equipment dust ignition protection by enclosures "t".</i> |
| ATEX<br>IECEx | <b>IEC/EN 60079-1</b><br>Electrical apparatus for potentially explosive atmospheres.<br><i>Part 1: flameproof enclosures "d".</i>                              |

|                                                                                                      |
|------------------------------------------------------------------------------------------------------|
| <b>EN 60947-1</b><br>Low-voltage switchgear and controlgear.<br><i>Part 1: general requirements.</i> |
|------------------------------------------------------------------------------------------------------|

|                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>EN 60947-3</b><br>Low-voltage switchgear and controlgear.<br><i>Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units.</i> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|

## TECHNICAL CHARACTERISTICS

|                                          |                                                                                      |
|------------------------------------------|--------------------------------------------------------------------------------------|
| ATEX Code:                               | <b>Ex II 2GD</b>                                                                     |
| Certificate:                             | <b>INERIS 14 ATEX 0030X<br/>IECEx INE 14.0040X</b>                                   |
| Ex Protection type:                      | <b>EX d e IIC T4/T5 Gb<br/>Ex tb IIIC T80°C Db IP66</b>                              |
| Protection degree:                       | <b>IP66</b>                                                                          |
| Ambient temperature:                     | <b>-20°C/-50°C +40°C/+60°C<br/>(see table ambient temperature)</b>                   |
| Maximum permissible surface temperature: | <b>T80°C<br/>(dust)</b>                                                              |
| Ambient temperature:                     | <b>T4/T5 (gas)</b>                                                                   |
| Material:                                | <b>Thermosetting (GRP)<br/>Stainless steel AISI 316L<br/>Aluminium</b>               |
| Colour:                                  | <b>RAL 9006 (aluminium)<br/>Satin (stainless steel)<br/>RAL 9005 (thermosetting)</b> |
| Polarity:                                | <b>2P - 3/4P</b>                                                                     |
| Rated current:                           | <b>20A-25A-32A-40A-63A</b>                                                           |
| Use Category:                            | <b>AC22A - AC23A<br/>AC3 (up to 32A)</b>                                             |

## ■ AMBIENT TEMPERATURE

|                           | ISOLATORS-EX[GD] Series                               |                                      |                           |                                      |                           |                                      |
|---------------------------|-------------------------------------------------------|--------------------------------------|---------------------------|--------------------------------------|---------------------------|--------------------------------------|
|                           | 591.xxx20xx-xxx<br>591.xxx25xx-xxx<br>591.xxx32xx-xxx | 591.xxx40xx-xxx<br>591.Axx63xx-xxx   | 591.Pxx63xx-xxx           |                                      | 591.Sxx63xx-xxx           |                                      |
| Ambient temperature range | Temperature Class for Gas                             | Maximum Surface Temperature for Dust | Temperature Class for Gas | Maximum Surface Temperature for Dust | Temperature Class for Gas | Maximum Surface Temperature for Dust |
| From -20°C to +40°C       | T5                                                    | T80°C                                | T5                        | T80°C                                | T5                        | T80°C                                |
| From -20°C to +50°C       | T5                                                    | T80°C                                | T5                        | T80°C                                | T5                        | T80°C                                |
| From -20°C to +55°C       | T5                                                    | T80°C                                | T5                        | T80°C                                | N/A                       | T80°C                                |
| From -20°C to +60°C       | T4                                                    | T80°C                                | N/A                       | T80°C                                | N/A                       | T80°C                                |
| From -50°C to +40°C       | T5                                                    | T80°C                                | T5                        | T80°C                                | T5                        | T80°C                                |
| From -50°C to +50°C       | T5                                                    | T80°C                                | T5                        | T80°C                                | T5                        | T80°C                                |
| From -50°C to +55°C       | T5                                                    | T80°C                                | T5                        | T80°C                                | N/A                       | T80°C                                |
| From -50°C to +60°C       | T4                                                    | T80°C                                | N/A                       | T80°C                                | N/A                       | T80°C                                |

591.P.../591.S.../591.A... (see table configuration optional accessories pg. 33).

## ■ BEHAVIOUR WITH CHEMICAL AND ATMOSPHERIC AGENTS - THERMOSETTING

| Saline solution | Acids              |           | Bases              |           | Solvents  |           |           |           | Mineral oil | UV rays   |
|-----------------|--------------------|-----------|--------------------|-----------|-----------|-----------|-----------|-----------|-------------|-----------|
|                 | Concentrated       | Diluted   | Concentrated       | Diluted   | Hexane    | Benzol    | Acetone   | Alcohol   |             |           |
| Resistant       | Limited Resistance | Resistant | Limited Resistance | Resistant | Resistant | Resistant | Resistant | Resistant | Resistant   | Resistant |

For specific substances please contact our technical service.

## ■ BEHAVIOUR WITH CHEMICAL AND ATMOSPHERIC AGENTS - STAINLESS STEEL

| Saline solution | Acids              |           | Bases        |           | Solvents  |           |           |           | Mineral oil | UV rays   |
|-----------------|--------------------|-----------|--------------|-----------|-----------|-----------|-----------|-----------|-------------|-----------|
|                 | Concentrated       | Diluted   | Concentrated | Diluted   | Hexane    | Benzol    | Acetone   | Alcohol   |             |           |
| Resistant       | Limited Resistance | Resistant | Resistant    | Resistant | Resistant | Resistant | Resistant | Resistant | Resistant   | Resistant |

For specific substances please contact our technical service.

## ■ BEHAVIOUR WITH CHEMICAL AND ATMOSPHERIC AGENTS - ALUMINIUM

| Saline solution | Acids              |           | Bases        |           | Solvents      |               |               |                    | Mineral oil | UV rays   |
|-----------------|--------------------|-----------|--------------|-----------|---------------|---------------|---------------|--------------------|-------------|-----------|
|                 | Concentrated       | Diluted   | Concentrated | Diluted   | Hexane        | Benzol        | Acetone       | Alcohol            |             |           |
| Resistant       | Limited Resistance | Resistant | Resistant    | Resistant | Not Resistant | Not Resistant | Not Resistant | Limited Resistance | Resistant   | Resistant |

For specific substances please contact our technical service.

# ISOLATORS-EX[GD] Series



## ELECTRICAL FEATURES

|                         |               | Rated Current              |                            |                            |                            |                            |
|-------------------------|---------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| ISOLATORS-EX[GD] Series |               | 591.xGE200X<br>591.xEM200X | 591.xGE250X<br>591.xEM250X | 591.xGE320X<br>591.xEM320X | 591.xGE400X<br>591.xEM400X | 591.xGE630X<br>591.xEM630X |
| Rated Current (In)      |               | 20A                        | 25A                        | 32A                        | 40A                        | 63A                        |
| Max. Voltage (Ui)       |               | 690V                       | 690V                       | 690V                       | 690V                       | 690V                       |
| Category                | Rated Voltage |                            |                            |                            |                            |                            |
| AC22A                   | 690V          | 20A                        | 25A                        | 32A                        | 40A                        | 63A                        |
| AC23A                   | 690V          | -                          | -                          | -                          | 40A                        | 63A                        |
|                         | 500V          | 20A                        | 25A                        | 32A                        | 40A                        | 63A                        |
| AC3                     | 500V          | 20A                        | 25A                        | 25A                        | -                          | -                          |
| Frequency               |               | 50/60Hz                    | 50/60Hz                    | 50/60Hz                    | 50/60Hz                    | -                          |

## TERMINALS CONTACTS - TORQUE

| Terminals Contacts - Torque |                                         |                          |
|-----------------------------|-----------------------------------------|--------------------------|
| Type COMMAND-EX<br>In       | Cross Sectional Areas Conductors<br>mm² | Tightening Torque - (Nm) |
| 32A                         | 10 finely-stranded                      | 0.8                      |
|                             | 16 single-wire                          | 0.8                      |
| 63A                         | 25 finely-stranded                      | 2.5                      |
|                             | 35 single-wire                          | 2.5                      |
| Earth-stud - 32A<br>WPE 10  | 10 finely-stranded                      | 2.4                      |
|                             | 16 single-wire                          | 2.4                      |
| Earth-stud - 63A<br>WPE 35  | 35 finely-stranded                      | 5                        |
|                             | 35 single-wire                          | 5                        |

## CABLE ENTRIES

| Rated Current | Poles | Cable Entries<br>(mm) | Auxiliary Entries<br>(mm) | Breather/Drain Valve<br>(mm) |
|---------------|-------|-----------------------|---------------------------|------------------------------|
| 20 A          | 2     | 2xM25x1,5             | M20x1,5                   | M20x1,5                      |
|               | 3/4   |                       |                           |                              |
| 25 A          | 2     | 2xM25x1,5             | M20x1,5                   | M20x1,5                      |
|               | 3/4   |                       |                           |                              |
| 32 A          | 2     | 2xM25x1,5             | M20x1,5                   | M20x1,5                      |
|               | 3/4   | 2xM32x1,5             |                           |                              |
| 40 A          | 2     | 2xM32x1,5             | M20x1,5                   | M20x1,5                      |
|               | 3/4   | 2xM40x1,5             |                           |                              |
| 63 A          | 2     | 2xM40x1,5             | M20x1,5                   | M20x1,5                      |
|               | 3/4   | 2xM50x1,5             |                           |                              |

## BREATHER/DRAIN VALVE, EARTH-STUD AND AUXILIARY CONTACTS

Optional accessories available on request (see pg. 35)

**CONFIGURATION OPTIONAL ACCESSORIES**

|                                                                          |   |                                                      |    |                                                              |   |                                                                                            |   |   |
|--------------------------------------------------------------------------|---|------------------------------------------------------|----|--------------------------------------------------------------|---|--------------------------------------------------------------------------------------------|---|---|
| 591.                                                                     | P | EM                                                   | 25 | 02                                                           | - | D                                                                                          | E | 1 |
| <b>TYPE</b><br>P = Thermosetting<br>S = Stainless Steel<br>A = Aluminium |   | <b>RATED CURRENT</b><br>20A - 25A - 32A<br>40A - 63A |    | <b>BREATHER/DRAIN VALVE</b><br>D = drain                     |   | <b>AUXILIARY CONTACTS</b><br>1 = 1 NO<br>2 = 1 NC<br>3 = 2 NO<br>4 = 2 NC<br>5 = 1 NO+1 NC |   |   |
| <b>USE</b><br>GE = General use<br>EM = Emergency control                 |   | <b>NUMBER OF POLES</b><br>02 = 2P<br>04 = 4P         |    | <b>EARTH-STUD</b><br>E<br>(only for thermosetting isolators) |   |                                                                                            |   |   |

**APPLICATION EXAMPLES**



# ISOLATORS-EX[GD] Series



## ATEX / IECEx - 2 GD

| Ambient | Gas    |        | Dust   |         |                 |
|---------|--------|--------|--------|---------|-----------------|
| Zone    | 0 - Ga | 1 - Gb | 2 - Gc | 20 - Da | 21 - Db 22 - Dc |

### THERMOSETTING SWITCHES DISCONNECTORS - IP66

| Current | Poles | Cable inlets | Dimensions (mm) |   | <br>GENERAL USE       |             |
|---------|-------|--------------|-----------------|---|----------------------------------------------------------------------------------------------------------|-------------|
|         |       |              |                 |   | <br>EMERGENCY CONTROL |             |
| 20A     | 2     | 2xM25        | 160x160x90      | 1 | 591.PGE2002                                                                                              | 591.PEM2002 |
|         | 3/4   |              | 160x160x90      | 1 | 591.PGE2004                                                                                              | 591.PEM2004 |
| 25A     | 2     | 2xM25        | 160x160x90      | 1 | 591.PGE2502                                                                                              | 591.PEM2502 |
|         | 3/4   |              | 160x160x90      | 1 | 591.PGE2504                                                                                              | 591.PEM2504 |
| 32A     | 2     | 2xM25        | 160x160x90      | 1 | 591.PGE3202                                                                                              | 591.PEM3202 |
|         | 3/4   | 2xM32        | 160x160x90      | 1 | 591.PGE3204                                                                                              | 591.PEM3204 |
| 40A     | 2     | 2xM32        | 250x255x120     | 1 | 591.PGE4002                                                                                              | 591.PEM4002 |
|         | 3/4   | 2xM40        | 250x255x120     | 1 | 591.PGE4004                                                                                              | 591.PEM4004 |
| 63A     | 2     | 2xM40        | 250x255x120     | 1 | 591.PGE6302                                                                                              | 591.PEM6302 |
|         | 3/4   | 2xM50        | 250x255x120     | 1 | 591.PGE6304                                                                                              | 591.PEM6304 |

□ Package/Bulk Pack.

Optional accessories available:  
(E) Earth-stud  
(D) Breather/Drain valve  
(1,2,3,4,5) Auxiliary contacts

(see table configuration optional accessories)

### STAINLESS STEEL SWITCHES DISCONNECTORS - IP66

| Current | Poles | Cable inlets | Dimensions (mm) |   | <br>GENERAL USE       |             |
|---------|-------|--------------|-----------------|---|------------------------------------------------------------------------------------------------------------|-------------|
|         |       |              |                 |   | <br>EMERGENCY CONTROL |             |
| 20A     | 2     | 2xM25        | 141x200x126     | 1 | 591.SGE2002                                                                                                | 591.SEM2002 |
|         | 3/4   |              | 141x200x126     | 1 | 591.SGE2004                                                                                                | 591.SEM2004 |
| 25A     | 2     | 2xM25        | 141x200x126     | 1 | 591.SGE2502                                                                                                | 591.SEM2502 |
|         | 3/4   |              | 141x200x126     | 1 | 591.SGE2504                                                                                                | 591.SEM2504 |
| 32A     | 2     | 2xM25        | 141x200x126     | 1 | 591.SGE3202                                                                                                | 591.SEM3202 |
|         | 3/4   | 2xM32        | 141x200x126     | 1 | 591.SGE3204                                                                                                | 591.SEM3204 |
| 40A     | 2     | 2xM32        | 270x201x160     | 1 | 591.SGE4002                                                                                                | 591.SEM4002 |
|         | 3/4   | 2xM40        | 270x201x160     | 1 | 591.SGE4004                                                                                                | 591.SEM4004 |
| 63A     | 2     | 2xM40        | 270x201x160     | 1 | 591.SGE6302                                                                                                | 591.SEM6302 |
|         | 3/4   | 2xM50        | 270x201x160     | 1 | 591.SGE6304                                                                                                | 591.SEM6304 |

□ Package/Bulk Pack.  
- Earth-stud included

Optional accessories available:  
(D) Breather/Drain valve  
(1,2,3,4,5) Auxiliary contacts

(see table configuration optional accessories)

## ALUMINIUM SWITCHES DISCONNECTORS - IP66

| Current | Poles | Cable inlets | Dimensions (mm) |   |   |                   |
|---------|-------|--------------|-----------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
|         |       |              |                 |   | GENERAL USE                                                                                                                                                             | EMERGENCY CONTROL |
| 20A     | 2     | 2xM25        | 202x232x142     | 1 | 591.AGE2002                                                                                                                                                             | 591.AEM2002       |
|         | 3/4   |              | 202x232x142     | 1 | 591.AGE2004                                                                                                                                                             | 591.AEM2004       |
| 25A     | 2     | 2xM25        | 202x232x142     | 1 | 591.AGE2502                                                                                                                                                             | 591.AEM2502       |
|         | 3/4   |              | 202x232x142     | 1 | 591.AGE2504                                                                                                                                                             | 591.AEM2504       |
| 32A     | 2     | 2xM25        | 202x232x142     | 1 | 591.AGE3202                                                                                                                                                             | 591.AEM3202       |
|         | 3/4   | 2xM32        | 202x232x142     | 1 | 591.AGE3204                                                                                                                                                             | 591.AEM3204       |
| 40A     | 2     | 2xM32        | 202x232x142     | 1 | 591.AGE4002                                                                                                                                                             | 591.AEM4002       |
|         | 3/4   | 2xM40        | 202x232x142     | 1 | 591.AGE4004                                                                                                                                                             | 591.AEM4004       |
| 63A     | 2     | 2xM40        | 202x232x142     | 1 | 591.AGE6302                                                                                                                                                             | 591.AEM6302       |
|         | 3/4   | 2xM50        | 202x232x142     | 1 | 591.AGE6304                                                                                                                                                             | 591.AEM6304       |

□ Package/Bulk Pack.  
- Earth-stud included

Optional accessories available:  
(D) Breather/Drain valve  
(1,2,3,4,5) Auxiliary contacts

(see table configuration optional accessories)

## ACCESSORIES

| EARTH-STUD                                                                         | BREATHER/DRAIN VALVE                                                                | AUXILIARY CONTACTS                                                                    |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |

 Padlockable handle in two positions (ON/OFF).  
OFF position = 3 padlocks  
ON position = 1 padlock

# ZENITH-P Series



ATEX [Ex] II 2 GD

## INCREASED SAFETY ENCLOSURES



## GENERAL DESCRIPTION

The ZENITH-P range includes 19 different sizes of enclosures made in glass-reinforced polyester (GRP), 4 mm thick. The polyester ensures excellent mechanical strength and durability: this material is highly resistant to contamination, totally corrosion-proof and suitable for low smoke zero halogen (LSOH). The material is loaded with carbon black, which reduces the surface resistance of the material and consequently eliminates the risk of ignition sources through static induced sparking resistivity. The mounting holes are incorporated in the profile of the enclosures, however outside the seal gasket. The wall is thick enough to allow entry holes to be machined directly in the walls, using the proper tools, and represents an excellent alternative to aluminum, stainless steel or cast iron.

## APPLICATION

Enclosures may be supplied with pre-fitted terminals, actuators or as a certified empty enclosure. In the latter, case, the final certification must be obtained from the customer, after the enclosure is filled with the necessary components. The ZENITH-P series offers safe protection in various applications, including the industrial sector and potentially explosive environments featuring extremely adverse conditions. They are perfect for a wide variety of uses, for example: OEM applications, fire protection, tunnel wiring, lighting, and as junction and control boxes.

## CERTIFICATIONS

The products have passed laboratory tests and have obtained the safety certification from accredited ATEX-IECEx certification bodies. Scame guarantees that the enclosures were properly manufactured and that they comply with safety regulations.

## REFERENCE STANDARDS

|               |                                                                                                                                                                |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ATEX<br>IECEx | <b>IEC/EN 60079-0</b><br>Electrical apparatus for potentially explosive atmospheres.<br><i>Part 0: general requirements.</i>                                   |
| ATEX<br>IECEx | <b>IEC/EN 60079-7</b><br>Electrical apparatus for potentially explosive atmospheres.<br><i>Part 7: equipment protection by increased safety "e".</i>           |
| ATEX<br>IECEx | <b>IEC/EN 60079-11</b><br>Electrical apparatus for potentially explosive atmospheres.<br><i>Part 11: intrinsic safety "i".</i>                                 |
| ATEX<br>IECEx | <b>IEC/EN 60079-31</b><br>Electrical apparatus for potentially explosive atmospheres.<br><i>Part 31: equipment dust ignition protection by enclosures "t".</i> |

## TECHNICAL CHARACTERISTICS

|                                         |                                                                                                                                                |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| ATEX Code:                              | <b>Ex II 2 GD</b>                                                                                                                              |
| Ex Protection type:<br>Empty enclosures | <b>Ex e IIC Gb<br/>Ex ia IIC Ga<br/>Ex t IIC Db IP6x</b>                                                                                       |
| Junction boxes                          | <b>Ex e IIC Tx Gb<br/>Ex ia IIC Tx Gb<br/>Ex e ia IIC Tx Gb</b>                                                                                |
| Control stations                        | <b>Ex t IIC Txx°C Db IP6x<br/>Ex d e IIC Tx Gb<br/>Ex d e mb IIC Tx Gb<br/>Ex e mb IIC Tx Gb<br/>Ex t IIC Txx°C Db IP6x</b>                    |
| Certificates:<br>- Empty enclosure      | <b>Sira 08ATEX3041U<br/>IECEx SIR 11.0057U</b>                                                                                                 |
| - Junction boxes                        | <b>Sira 08ATEX3042<br/>IECEx SIR 11.0058</b>                                                                                                   |
| - Control station                       | <b>Sira 11ATEX3008<br/>IECEx SIR 11.0059</b>                                                                                                   |
| Degree of protection:                   | <b>IP66<br/>IP65 (644.0595)</b>                                                                                                                |
| Operating temperature range:            | <b>-60°C to +60°C/+75°C</b>                                                                                                                    |
| Temperature class and Ambient:          | <b>Ambient 40°C / T6 Class<br/>Ambient 60°C / T6 Class<br/>Ambient 40°C / T5 Class<br/>Ambient 60°C / T5 Class<br/>Ambient 75°C / T4 Class</b> |
| - Standard                              |                                                                                                                                                |
| - Optional                              |                                                                                                                                                |
| Impact resistance:                      | <b>7 J</b>                                                                                                                                     |
| Material:                               | <b>• Glass Reinforced Polyester (SMC) 4 mm thick<br/>• Loaded with carbon black for antistatic protection</b>                                  |
| Surface resistance:                     | <b>Antistatic properties: &lt; 10<sup>9</sup> Ω</b>                                                                                            |
| Finish:                                 | <b>Natural Black RAL 9005</b>                                                                                                                  |

## ■ RESISTANCE TO CHEMICAL AGENTS

| Saline solution | Acids              |           | Bases              |           | Solvents  |           |           |           | Mineral oil | UV rays   |
|-----------------|--------------------|-----------|--------------------|-----------|-----------|-----------|-----------|-----------|-------------|-----------|
|                 | Concentrated       | Diluted   | Concentrated       | Diluted   | Hexane    | Benzol    | Acetone   | Alcohol   |             |           |
| Resistant       | Limited resistance | Resistant | Limited resistance | Resistant | Resistant | Resistant | Resistant | Resistant | Resistant   | Resistant |

For specific substances please contact our technical service.

## ■ LID FIXING SCREWS



Corrosion-resistant stainless steel (complete with retaining washer) for flat blade screwdriver and PH screwdriver. The assembly holes are outside the sealed area.

## ■ TERMINAL MOUNTING



Terminals will be mounted on rails or on internal plates. DIN rail (TS 15, TS 35): 1 row. Certified terminals with nominal section from 1.5 mm² up to 120 mm². Our assembly service can supply enclosures preassembled with terminals and cable glands, according to the customer's requirements.

## ■ INCLUDED IN THE DELIVERY



- EMPTY ENCLOSURES
- JUNCTION BOXES (with terminals)
- CONTROL STATIONS (with terminals and actuators)

## ■ CERTIFICATION LABEL



Via Costa Erta 15 PARRE BG ITALY

Cod. 644.xxxx-yyy

S/N xxxxxxxxx

SIRA 11ATEX3008

IECEX SIR 11.0059

Ex d e IIC Tx Gb

Ex d e mb IIC Tx Gb

Ex e mb IIC Tx Gb

Ex t IIIC Txx°C IP6x Db

Ta -xx°C to -xx°C

Year 2011

V xxx V

I xxx A

P max xxx W

CE 0051

Ex II2 GD

DO NOT OPEN WHEN ENERGIZED  
IN PRESENCE OF EXPLOSIVE ATMOSPHERE

Certified self-adhesive label.  
On request: stainless steel plate.

## ■ APPLICATION EXAMPLES



# ZENITH-P Series



ATEX [Ex II 2 GD]

## EMPTY ENCLOSURE



The ZENITH-P family, empty enclosure, made of glass reinforced polyester, offers 19 standard dimensions. Empty enclosures are approved as components ("U"). This partial certificate can be used as a base for the certification of a complete system or to ensure IP65/IP66 protection and/or for Zone 2/22 in applications with self-certifications. They are suited for installation in dangerous areas for the presence of gas in Zone 1/2 and/or for dust in Zone 21/22.

## ACCESSORIES

- Plate bottom in zinc-plated steel
- Fixing bracket in stainless steel AISI 316L
- External hinges in thermoplastic material
- Earth continuity plate (internal) in zinc-plated steel
- Earth stud (pin, nuts and washer) in brass (available in stainless steel AISI 316L)
- Drain and breather valve with separate certification
- Cable glands / plugs with separate ATEX-IECEx certification
- Actuators/components with separate ATEX-IECEx certification
- Analog instruments with separate ATEX-IECEx certification

## JUNCTION BOX



The ZENITH-P family, junction box, made of glass reinforced polyester, offers 19 different standard enclosure sizes. The modular dimensions and coupling flanges allow quick construction of personalized enclosures in a wide range of dimensions and forms. The terminals used to interconnect the supply are certified separately, including the use of drain and/or breather valves. Junction boxes can be equipped with Ex terminals and earth terminals, DIN rails, internal bottom plate and cable glands (plastic, brass, nickel-plated brass, stainless steel). They are suited for installation in dangerous areas for the presence of gas in Zone 1/2 and/or dust Zone 21/22.

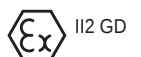
## CERTIFICATION LABEL



Via Costa Erta 15 PARRE BG ITALY

Cod. 644.xxxx-yyy  
S/N xxxxxxxx  
SIRA 08ATEX3042  
IECEx SIR 11.0058  
Ex e IIC Tx Gb  
Ex ia IIC Tx Ga  
Ex e ia IIC Tx Gb  
Ex t IIIC Txx°C IP6x Db  
Ta -xx°C to +xx°C

Year 2011  
V xxx V  
I xxxx A  
P max xxxx W



DO NOT OPEN WHEN ENERGIZED  
IN PRESENCE OF EXPLOSIVE ATMOSPHERE



Empty enclosure



Junction box



Pre-drilled enclosure

## ■ CONTROL STATION



The ZENITH-P family, control station, made of glass reinforced polyester, offers 19 standard dimensions. The control stations can be assembled to hold a wide range of actuators and components with separate ATEX-IECEX certification, including drain and/or breather valves. The control stations can be installed in Zone 1/2 (gas) and/or Zone 21/22 (dust).

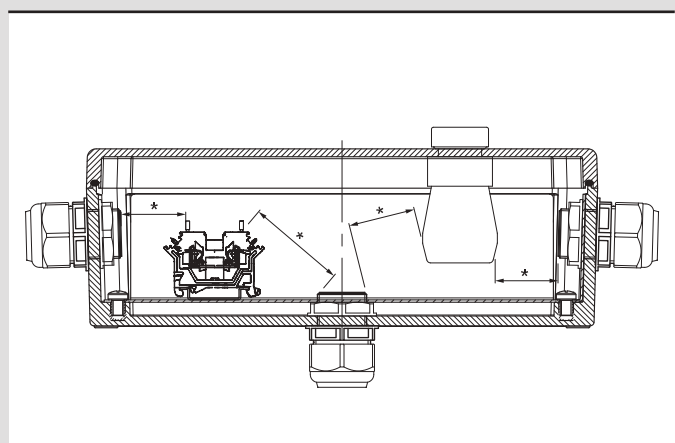
## ■ CUSTOMIZED SOLUTIONS



Scame has an in-house design service (CIT), that can carry out fast feasibility analyses at the customer's request. Moreover, it features equipment and qualified personnel for the construction, mounting and assembly of ZENITH-P Series control boxes.

## ■ SAFETY DISTANCES (EN 60079-7)

| Minimum creepage |         | Minimum clearance |       |
|------------------|---------|-------------------|-------|
| 250 V            | 6.3 mm  | 250 V             | 5 mm  |
| 400 V            | 10 mm   | 400 V             | 6 mm  |
| 500 V            | 12.5 mm | 500 V             | 8 mm  |
| 630 V            | 16 mm   | 630 V             | 10 mm |
| 800 V            | 20 mm   | 800 V             | 12 mm |
| 1000 V           | 25 mm   | 1000 V            | 14 mm |



(\*) Safety distances.



Enclosure + ECP



Enclosure + internal plate



Junction and terminal box without cable glands

# ZENITH-P Series



## MAXIMUM POWER DISSIPATION ALLOWED

|                  | Code     | Enclosure size | Ambient 40°C class T6 |       | Ambient 60°C class T6 |      | Ambient 40°C class T5 |       | Ambient 60°C class T5 |      | Ambient 75°C class T4 |       |
|------------------|----------|----------------|-----------------------|-------|-----------------------|------|-----------------------|-------|-----------------------|------|-----------------------|-------|
|                  |          |                | (▲)                   | (●)   | (▲)                   | (●)  | (▲)                   | (●)   | (▲)                   | (●)  | (▲)                   | (●)   |
| JUNCTION BOXES   | 644.0100 | 75x80x55       | 2.50                  | 4.50  | 1.30                  | 1.50 | 2.55                  | 4.90  | 2.50                  | 2.90 | 2.55                  | 4.90  |
|                  | 644.0200 | 75x80x75       | 2.60                  | 4.60  | 1.30                  | 1.50 | 2.90                  | 5.20  | 2.60                  | 3.10 | 2.90                  | 5.20  |
|                  | 644.0110 | 75x110x55      | 3.20                  | 5.00  | 1.35                  | 1.60 | 3.60                  | 6.00  | 2.85                  | 3.50 | 3.60                  | 6.00  |
|                  | 644.0210 | 75x110x75      | 3.40                  | 5.10  | 1.35                  | 1.65 | 4.00                  | 6.40  | 3.00                  | 3.80 | 4.00                  | 6.40  |
|                  | 644.0120 | 75x160x55      | 4.50                  | 6.00  | 1.40                  | 1.75 | 5.80                  | 8.20  | 3.55                  | 4.80 | 5.80                  | 8.20  |
|                  | 644.0220 | 75x160x75      | 4.70                  | 6.10  | 1.45                  | 1.80 | 6.00                  | 8.40  | 3.60                  | 4.90 | 6.00                  | 8.40  |
|                  | 644.0130 | 75x190x55      | 5.40                  | 6.60  | 1.50                  | 2.00 | 7.00                  | 9.40  | 4.00                  | 5.60 | 7.00                  | 9.40  |
|                  | 644.0230 | 75x190x75      | 5.50                  | 6.70  | 1.55                  | 2.05 | 7.20                  | 9.85  | 4.05                  | 5.70 | 7.20                  | 9.85  |
|                  | 644.0140 | 75x230x55      | 6.50                  | 7.50  | 1.55                  | 2.20 | 8.90                  | 11.30 | 4.60                  | 6.70 | 8.90                  | 11.30 |
|                  | 644.0240 | 75x230x75      | 6.60                  | 7.60  | 1.60                  | 2.25 | 9.20                  | 11.60 | 4.70                  | 6.80 | 9.20                  | 11.60 |
| CONTROL STATIONS | 644.0345 | 120x122x90     | 3.85                  | 5.92  | 1.46                  | 1.85 | 6.03                  | 8.42  | 3.42                  | 3.86 | 6.03                  | 8.42  |
|                  | 644.0350 | 120x220x90     | 3.75                  | 7.00  | 2.30                  | 2.00 | 8.25                  | 16.00 | 3.80                  | 4.50 | 8.25                  | 16.00 |
|                  | 644.0360 | 160x160x90     | 3.00                  | 6.40  | 2.50                  | 1.70 | 6.00                  | 14.50 | 3.20                  | 4.00 | 6.00                  | 14.50 |
|                  | 644.0370 | 160x260x90     | 6.30                  | 8.50  | 2.80                  | 2.50 | 13.5                  | 19.70 | 5.10                  | 5.60 | 13.5                  | 19.70 |
|                  | 644.0380 | 160x360x90     | 7.20                  | 7.40  | 2.75                  | 2.75 | n/a                   | n/a   | n/a                   | n/a  | n/a                   | n/a   |
|                  | 644.0390 | 160x560x90     | 11.70                 | 11.20 | 3.80                  | 4.20 | n/a                   | n/a   | n/a                   | n/a  | n/a                   | n/a   |
|                  | 644.0465 | 250x255x120    | 7.44                  | 9.70  | 1.87                  | 2.80 | 15.27                 | 17.76 | 5.88                  | 6.41 | 15.27                 | 17.76 |
|                  | 644.0485 | 250x400x120    | 9.57                  | 11.94 | 2.12                  | 3.36 | n/a                   | n/a   | n/a                   | n/a  | n/a                   | n/a   |
|                  | 644.0595 | 405x400x165    | 9.57                  | 11.94 | 2.12                  | 3.36 | n/a                   | n/a   | n/a                   | n/a  | n/a                   | n/a   |

(▲) for cage type terminals. (●) for screw type terminals.

## MAXIMUM NUMBER OF TERMINALS – PHYSICAL DIMENSIONS (JUNCTION BOX)

|                  | Code     | Enclosure size | Term. board | Mini 2.5mm <sup>2</sup> | 2.5mm <sup>2</sup> | 4mm <sup>2</sup> | 6mm <sup>2</sup> | 10mm <sup>2</sup> | 16mm <sup>2</sup> | 35mm <sup>2</sup> | 70/90mm <sup>2</sup> | 120/150mm <sup>2</sup> |
|------------------|----------|----------------|-------------|-------------------------|--------------------|------------------|------------------|-------------------|-------------------|-------------------|----------------------|------------------------|
| JUNCTION BOXES   | 644.0100 | 75x80x55       | 6           | 6                       |                    |                  |                  |                   |                   |                   |                      |                        |
|                  | 644.0200 | 75x80x75       | 6           | 6                       |                    |                  |                  |                   |                   |                   |                      |                        |
|                  | 644.0110 | 75x110x55      | 10          | 12                      |                    |                  |                  |                   |                   |                   |                      |                        |
|                  | 644.0210 | 75x110x75      | 10          | 12                      |                    |                  |                  |                   |                   |                   |                      |                        |
|                  | 644.0120 | 75x160x55      | 18          | 22                      |                    |                  |                  |                   |                   |                   |                      |                        |
|                  | 644.0220 | 75x160x75      | 18          | 22                      |                    |                  |                  |                   |                   |                   |                      |                        |
|                  | 644.0130 | 75x190x55      | 24          | 28                      |                    |                  |                  |                   |                   |                   |                      |                        |
|                  | 644.0230 | 75x190x75      | 24          | 28                      |                    |                  |                  |                   |                   |                   |                      |                        |
|                  | 644.0140 | 75x230x55      | 30          | 35                      |                    |                  |                  |                   |                   |                   |                      |                        |
|                  | 644.0240 | 75x230x75      | 30          | 35                      |                    |                  |                  |                   |                   |                   |                      |                        |
| CONTROL STATIONS | 644.0345 | 120x122x90     |             |                         | 12                 | 10               | 7                | 6                 | 4                 | 3                 |                      |                        |
|                  | 644.0350 | 120x220x90     |             |                         | 31                 | 26               | 20               | 16                | 12                | 9                 |                      |                        |
|                  | 644.0360 | 160x160x90     |             |                         | 19                 | 16               | 12               | 10                | 7                 | 5                 |                      |                        |
|                  | 644.0370 | 160x260x90     |             |                         | 32                 | 32               | 25               | 20                | 16                | 12                |                      |                        |
|                  | 644.0380 | 160x360x90     |             |                         | 58                 | 49               | 38               | 30                | 24                | 18                |                      |                        |
|                  | 644.0390 | 160x560x90     |             |                         | 94                 | 81               | 63               | 50                | 41                | 30                |                      |                        |
|                  | 644.0465 | 250x255x120    |             |                         | 36                 | 30               | 23               | 19                | 15                | 11                |                      |                        |
|                  | 644.0485 | 250x400x120    |             |                         | 65                 | 54               | 42               | 33                | 27                | 20                |                      |                        |
|                  | 644.0595 | 405x400x165    |             |                         | 64                 | 54               | 41               | 33                | 27                | 20                | 11                   | 10                     |

The number of terminals (based on Weidmuller terminals) that can be used, which can be fitted in the enclosure (junction box and/or control stations) depend on the internal width. Such number may have to be reduced depending on the actual current flowing in the conductors. If the power dissipation of the terminals exceeds the maximum allowed power specified herein, a different enclosure must be chosen, or the temperature class will need to be changed.

## ■ ATEX-IECEX CERTIFIED TERMINALS

The terminals with separate certification must be selected from the following list of approved manufacturers.

Additional manufacturers are available on requested, subject to approval by our internal laboratory.

Terminal blocks (internal plate mounted) and mini terminals (DIN rail TS15) are suited for use with small enclosures. Standard rail terminals (DIN rail TS35) are suited for use with large enclosures.

When the enclosure is supplied as Ex i (intrinsic safety application), a suitable set of blue terminals is supplied. The terminals can be the screw or spring-cage type.

The cross-section ranges from 1.5 mm<sup>2</sup> to 120 mm<sup>2</sup>.

### WEIDMULLER

Terminal block BK, MK

Mini terminal AKZ

Terminal type: WDU, ZDU, SAK, SAK K.

### WAGO

Terminal block 262, 264

Terminal type: 280, 281, 282, 283, 284 and 2002, 2004, 2006, 2010, 2016.

## ■ METALLIC DIN RAILS

- Steel, cold lamination.
- Electrolytic zinc plating.
- Zinc-plating thickness: 8 micron min.
- Rail length: 2 m.
- Non-drilled rail with drilling points provided.
- Pre-drilled rail with slots.



EX e - Terminals Ex i  
Terminals from 2.5mm<sup>2</sup> to 95/120mm<sup>2</sup>



Terminal blocks EX e  
Terminals from 2.5mm<sup>2</sup> to 95/120mm<sup>2</sup>

## ■ TYPE Ω TS 35

| Dimensions (mm)                                                                             | Description                    | Ⓛ   |         |
|---------------------------------------------------------------------------------------------|--------------------------------|-----|---------|
|  35x7,5x1 | Flat DIN rail                  | 40m | 865.220 |
|                                                                                             | Slotted DIN rail (18x6.3 - 25) | 40m | 865.221 |

Ⓛ Package/Packing.

## ■ TYPE Ω TS 15

| Dimensions (mm)                                                                              | Description                      | Ⓛ    |         |
|----------------------------------------------------------------------------------------------|----------------------------------|------|---------|
|  15x5,5x1 | Flat DIN rail                    | 100m | 865.240 |
|                                                                                              | Slotted DIN rail (12.2x4.2 - 20) | 100m | 865.241 |

Ⓛ Package/Packing.

# ZENITH-P Series

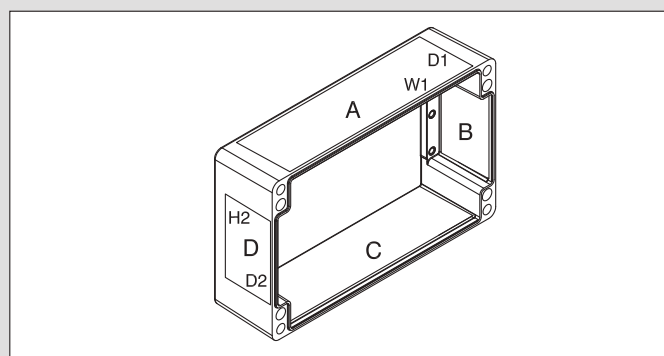


## STANDARD ENTRY ARRANGEMENTS

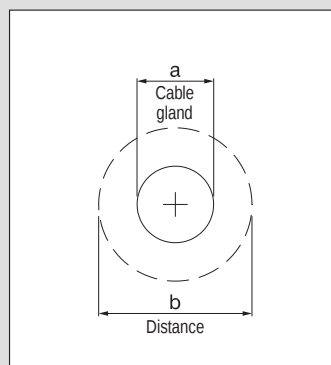
1  
ATEX [Ex II 2 GD]  
2  
3

|                  | Code     | Enclosure size | Top/Bottom sides A/C |     |     |     |     |     |     |     | Left/Right sides B/D |     |     |     |     |     |     |     |
|------------------|----------|----------------|----------------------|-----|-----|-----|-----|-----|-----|-----|----------------------|-----|-----|-----|-----|-----|-----|-----|
|                  |          |                | M12                  | M16 | M20 | M25 | M32 | M40 | M50 | M63 | M12                  | M16 | M20 | M25 | M32 | M40 | M50 | M63 |
| JUNCTION BOXES   | 644.0100 | 75x80x55       | 2                    | 1   | 1   | -   | -   | -   | -   | -   | 1                    | 1   | -   | -   | -   | -   | -   | -   |
|                  | 644.0200 | 75x80x75       | 4                    | 2   | 1   | 1   | -   | -   | -   | -   | 2                    | 2   | -   | -   | -   | -   | -   | -   |
|                  | 644.0110 | 75x110x55      | 3                    | 3   | 2   | -   | -   | -   | -   | -   | 1                    | 1   | -   | -   | -   | -   | -   | -   |
|                  | 644.0210 | 75x110x75      | 6                    | 6   | 3   | 2   | 1   | -   | -   | -   | 2                    | 2   | -   | -   | -   | -   | -   | -   |
|                  | 644.0120 | 75x160x55      | 5                    | 5   | 4   | -   | -   | -   | -   | -   | 1                    | 1   | -   | -   | -   | -   | -   | -   |
|                  | 644.0220 | 75x160x75      | 10                   | 10  | 5   | 3   | 2   | -   | -   | -   | 2                    | 2   | -   | -   | -   | -   | -   | -   |
|                  | 644.0130 | 75x190x55      | 7                    | 6   | 5   | -   | -   | -   | -   | -   | 1                    | 1   | -   | -   | -   | -   | -   | -   |
|                  | 644.0230 | 75x190x75      | 14                   | 12  | 6   | 4   | 3   | -   | -   | -   | 2                    | 2   | -   | -   | -   | -   | -   | -   |
|                  | 644.0140 | 75x230x55      | 8                    | 6   | 4   | -   | -   | -   | -   | -   | 1                    | 1   | -   | -   | -   | -   | -   | -   |
|                  | 644.0240 | 75x230x75      | 16                   | 12  | 6   | 4   | 2   | -   | -   | -   | 2                    | 2   | -   | -   | -   | -   | -   | -   |
| CONTROL STATIONS | 644.0345 | 120x122x90     | 6                    | 5   | 2   | 1   | 1   | -   | -   | -   | 5                    | 5   | 4   | 1   | 1   | -   | -   | -   |
|                  | 644.0350 | 120x220x90     | 14                   | 14  | 9   | 4   | 3   | -   | -   | -   | 5                    | 4   | 2   | 1   | 1   | -   | -   | -   |
|                  | 644.0360 | 160x160x90     | 12                   | 8   | 6   | 3   | 2   | 1   | -   | -   | 6                    | 6   | 4   | 2   | 1   | -   | -   | -   |
|                  | 644.0370 | 160x260x90     | 26                   | 16  | 12  | 6   | 4   | 3   | -   | -   | 6                    | 6   | 4   | 2   | 1   | -   | -   | -   |
|                  | 644.0380 | 160x360x90     | 38                   | 22  | 18  | 9   | 6   | 4   | -   | -   | 6                    | 6   | 4   | 2   | 1   | -   | -   | -   |
|                  | 644.0390 | 160x560x90     | 58                   | 36  | 28  | 14  | 8   | 6   | -   | -   | 6                    | 6   | 4   | 2   | 1   | -   | -   | -   |
|                  | 644.0465 | 250x255x120    | 24                   | 18  | 10  | 8   | 4   | 3   | 2   | 2   | 21                   | 15  | 8   | 6   | 3   | 2   | 2   | 1   |
|                  | 644.0485 | 250x400x120    | 42                   | 33  | 18  | 16  | 6   | 5   | 4   | 3   | 21                   | 15  | 8   | 6   | 3   | 2   | 2   | 1   |
|                  | 644.0595 | 405x400x165    | 70                   | 44  | 27  | 21  | 12  | 10  | 4   | 3   | 65                   | 40  | 24  | 21  | 10  | 10  | 4   | 3   |

## ENCLOSURE DRILLING ENVELOPE



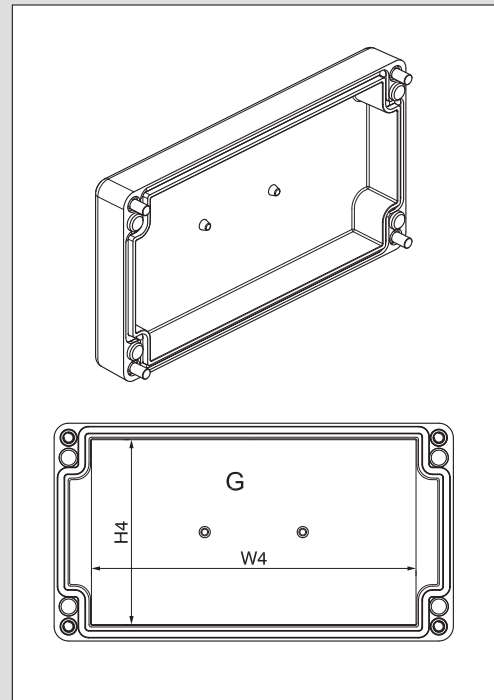
| Cable gland dim.<br>A (mm) | B (mm) |
|----------------------------|--------|
| 12                         | 25     |
| 16                         | 32     |
| 20                         | 39     |
| 25                         | 46     |
| 32                         | 58     |
| 40                         | 68     |
| 50                         | 81     |
| 63                         | 96     |



|                  | Code     | Enclosure size | Top/Bottom sides A/C | Left/Right sides B/D |
|------------------|----------|----------------|----------------------|----------------------|
|                  |          |                | W1xD1                | H2xD2                |
| JUNCTION BOXES   | 644.0100 | 75x80x55       | 48x34                | 28x28                |
|                  | 644.0200 | 75x80x75       | 48x54                | 27x48                |
|                  | 644.0110 | 75x110x55      | 80x34                | 28x28                |
|                  | 644.0210 | 75x110x75      | 80x54                | 27x48                |
|                  | 644.0120 | 75x160x55      | 130x34               | 28x28                |
|                  | 644.0220 | 75x160x75      | 130x54               | 27x48                |
|                  | 644.0130 | 75x190x55      | 160x34               | 28x28                |
|                  | 644.0230 | 75x190x75      | 160x54               | 27x48                |
|                  | 644.0140 | 75x230x55      | 90x34(x2)            | 28x28                |
|                  | 644.0240 | 75x230x75      | 90x54(x2)            | 27x48                |
| CONTROL STATIONS | 644.0345 | 120x122x90     | 75x58                | 60x52                |
|                  | 644.0350 | 120x220x90     | 180x58               | 60x52                |
|                  | 644.0360 | 160x160x90     | 110x65               | 84x56                |
|                  | 644.0370 | 160x260x90     | 210x65               | 84x56                |
|                  | 644.0380 | 160x360x90     | 310x65               | 84x56                |
|                  | 644.0390 | 160x560x90     | 240x65(x2)           | 84x56                |
|                  | 644.0465 | 250x255x120    | 200x88               | 168x81               |
|                  | 644.0485 | 250x400x120    | 345x88               | 168x81               |
|                  | 644.0595 | 405x400x165    | 345x133              | 323x126              |

## LID DRILLING ENVELOPE

| Code     | Enclosure size<br>(H x W x D) | Maximum drilling area<br>G (H4 x W4) | Max no. of holes |          |          |                       |
|----------|-------------------------------|--------------------------------------|------------------|----------|----------|-----------------------|
|          |                               |                                      | Ø30,5 mm         | Ø22,5 mm | Ø32,5 mm | Ø30,8mm (with keyway) |
| 644.0200 | 75x80x75                      | 55 x 45                              | /                | 1        | /        | 1                     |
| 644.0210 | 75x110x75                     | 55 x 75                              | /                | 1        | /        | 1                     |
| 644.0220 | 75x160x75                     | 55 x 125                             | /                | 2        | /        | 2                     |
| 644.0230 | 75x190x75                     | 55 x 155                             | /                | 3        | /        | 2                     |
| 644.0240 | 75x230x75                     | 55 x 195                             | /                | 3        | /        | 3                     |
| 644.0345 | 120x122x90                    | 102 x 80                             | 1                | 2        | 1        | 1                     |
| 644.0350 | 120x220x90                    | 102 x 179                            | 2                | 6        | 2        | 2                     |
| 644.0360 | 160x160x90                    | 140 x 110                            | 2                | 4        | 2        | 2                     |
| 644.0370 | 160x260x90                    | 140 x 210                            | 6                | 6        | 6        | 6                     |
| 644.0380 | 160x360x90                    | 140 x 310                            | 8                | 10       | 8        | 8                     |
| 644.0390 | 160x560x90                    | 140 x 510                            | 13               | 18       | 13       | 13                    |
| 644.0465 | 250x255x120                   | 230 x 205                            | 9                | 12       | 9        | 9                     |
| 644.0485 | 250x400x120                   | 230 x 350                            | 15               | 24       | 15       | 15                    |
| 644.0595 | 405x400x165                   | 385 x 350                            | 25               | 40       | 25       | 25                    |



## DRAIN AND BREATHER VALVE HOLES DRILLING ENVELOPE

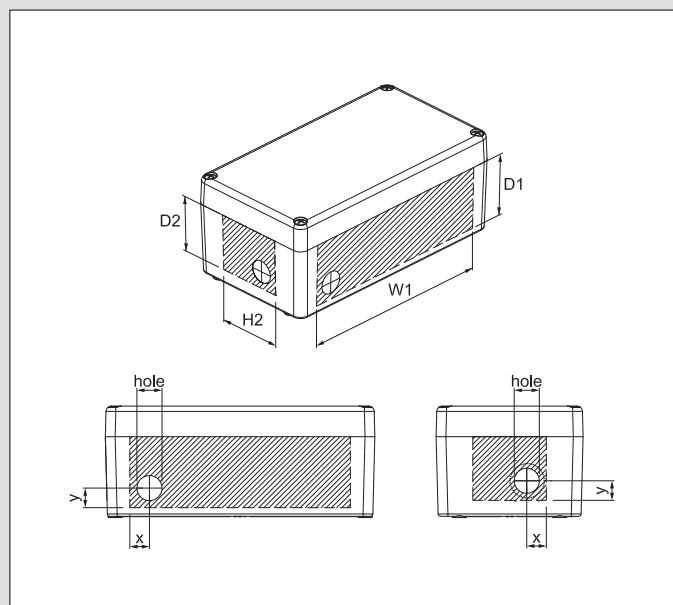
|                  | Code     | Enclosure size | Top/Bottom sides<br>A/C W1xD1 | Left /Right<br>B/D H2xD2 |
|------------------|----------|----------------|-------------------------------|--------------------------|
|                  |          |                |                               |                          |
| JUNCTION BOXES   | 644.0100 | 75x80x55       | 48x34                         | 28x28                    |
|                  | 644.0200 | 75x80x75       | 48x54                         | 27x48                    |
|                  | 644.0110 | 75x110x55      | 80x34                         | 28x28                    |
|                  | 644.0210 | 75x110x75      | 80x54                         | 27x48                    |
|                  | 644.0120 | 75x160x55      | 130x34                        | 28x28                    |
|                  | 644.0220 | 75x160x75      | 130x54                        | 27x48                    |
|                  | 644.0130 | 75x190x55      | 160x34                        | 28x28                    |
|                  | 644.0230 | 75x190x75      | 160x54                        | 27x48                    |
|                  | 644.0140 | 75x230x55      | 90x34 (x2)                    | 28x28                    |
|                  | 644.0240 | 75x230x75      | 90x54 (x2)                    | 27x48                    |
| CONTROL STATIONS | 644.0345 | 120x122x90     | 75x58                         | 60x52                    |
|                  | 644.0350 | 120x220x90     | 180x58                        | 60x52                    |
|                  | 644.0360 | 160x160x90     | 110x65                        | 84x56                    |
|                  | 644.0370 | 160x260x90     | 210x65                        | 84x56                    |
|                  | 644.0380 | 160x360x90     | 310x65                        | 84x56                    |
|                  | 644.0390 | 160x560x90     | 240x65 (x2)                   | 84x56                    |
|                  | 644.0465 | 250x255x120    | 200x88                        | 168x81                   |
|                  | 644.0485 | 250x400x120    | 345x88                        | 168x81                   |
|                  | 644.0595 | 405x400x165    | 345x133                       | 323x126                  |

Table 1

## HOLE DIAMETER

| Hole diameter (mm)<br>M20<br>x/y position 16 | Hole diameter (mm)<br>M25<br>x/y position 20 | Hole diameter (mm)<br>M12<br>x/y position 15 |
|----------------------------------------------|----------------------------------------------|----------------------------------------------|
| Ø 20.5/21                                    | Ø 25.5/26                                    | Ø 12.2/12.4                                  |

Values refer to all codes in Table 1.



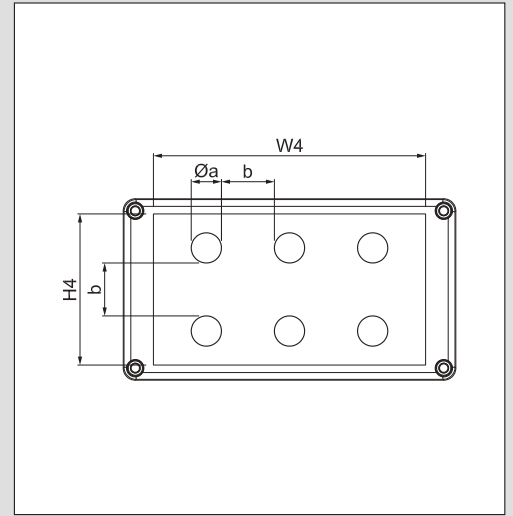
The drain and breather valve must always be assembled on the bottom side of the enclosure.

# ZENITH-P Series

**ATEX-IECEX**  
II 2 GD

## SQUARE LID DRILLING AREA

| Code     | Enclosure size<br>(H x W x D) | Maximum drilling area<br>G (H4 x W4) | Maximum number | Maximum SQUARE holes |                                                |
|----------|-------------------------------|--------------------------------------|----------------|----------------------|------------------------------------------------|
|          |                               |                                      |                | Maximum Size         | Minimum distance between two holes<br>b - (mm) |
| 644.0345 | 120x122x90                    | 102 x 80                             | 1              | 57x53mm              | 60                                             |
| 644.0350 | 120x220x90                    | 102 x 179                            | 2              | 57x53mm              | 60                                             |
| 644.0360 | 160x160x90                    | 140 x 110                            | 1              | 118x95mm             | 60                                             |
| 644.0370 | 160x260x90                    | 140 x 210                            | 1              | 118x95mm             | 60                                             |
| 644.0380 | 160x360x90                    | 140 x 310                            | 2              | 118x95mm             | 60                                             |
| 644.0390 | 160x560x90                    | 140 x 510                            | 3              | 118x95mm             | 70                                             |
| 644.0465 | 250x255x120                   | 230 x 205                            | 1              | 118x95mm             | 60                                             |
| 644.0485 | 250x400x120                   | 230 x 350                            | 2              | 118x95mm             | 75                                             |
| 644.0595 | 405x400x165                   | 385 x 350                            | 4              | 118x95mm             | 75                                             |



## CLEARANCE AND CREEPAGE

| Manufacturer<br>Actuator/Control<br>Components | Maximum<br>Mounting<br>Ø a - (mm) | Minimum distance<br>between two holes<br>b - (mm) |
|------------------------------------------------|-----------------------------------|---------------------------------------------------|
| BARTECH                                        | Ø30,5                             | 40                                                |
| TECHNOR                                        | Ø22,5                             | 35                                                |
| CORTEM                                         | Ø32,5                             | 37                                                |
| WAROM                                          | Ø30,8 (con chiave)                | 37                                                |
| CZ                                             | Ø30,6 (con chiave)                | 40                                                |

## ■ ACTUATORS / ATEX-IECEX



Below is a list of six items that describe the installation and utilization characteristics of the actuators.

- 1) All components, such as pushbuttons, switches and pilot lamps instruments, have separate ATEX-IECEX certificates.
- 2) Installation and maintenance will be carried out as prescribed by the supplier's documents for actuators with separate certification.
- 3) Only use ATEX/IECEX certified actuators with IP degrees proportional to the IP degree of the Zenith-P.
- 4) The position and the holes will be carried out according to the component certificates documentation (see empty enclosure certificates ATEX-IECEX SIRA 08ATEX3041U IECEx SIR 11.0057U).
- 5) Each individual actuator has to comply with the safety distances according to standard EN 60079-7.
- 6) The sum of the dissipated power of installed terminals and actuators must not exceed the maximum power dissipated by the Zenith-P.

## ■ DRAIN AND BREATHER VALVES



Use only drain valves with separate ATEX-IECEX certification and/or breather valves proportional to the IP degree of the ZENITH-P.

Particularly recommended for humid atmospheres, with wide temperature changes and for the solution of condensate problems. The valve must be fitted in the bottom part of the enclosure, so as to allow the condensate to be eliminated for content protection.

## ■ LIST OF DRAIN AND BREATHER VALVES - ATEX - IECEX

| Manufacturer                       | Type                    | ATEX certificate<br>IECEX certificate | Thread    |
|------------------------------------|-------------------------|---------------------------------------|-----------|
| Raxton Limited                     | CT                      | SIRA 08 ATEX 1288 U                   | M20x1,5mm |
|                                    |                         | IEC-Ex SIR 08.0127 U                  | M25x1,5mm |
| Raxton Limited                     | CV                      | SIRA 00 ATEX 3074 U                   | M20x1,5mm |
|                                    |                         |                                       | M25x1,5mm |
| Raxton Limited                     | CV                      | SIRA 10 ATEX 3279 U                   | M20x1,5mm |
|                                    |                         | IEC-Ex SIR 09.0096 U                  | M25x1,5mm |
| Redapt Engineering Company Limited | Breathing / Drainage    | SIRA 99 ATEX 3050 U                   | M20x1,5mm |
|                                    |                         | IEC-Ex SIR 08.0024 U                  | M25x1,5mm |
| Weidmuller                         | BDSM20                  | SIRA 04 ATEX 3019 U                   | M20x1,5mm |
| GORE                               | Metal - Vent /PMF100444 | IBExU 05 ATEX 1132 U                  | M12x1.5mm |

1 ATEX [  2 GD ] 2 3



**ATEX / IECEx - 2 GD**

| Ambient | Gas    |        |        | Dust    |         |         |
|---------|--------|--------|--------|---------|---------|---------|
| Zone    | 0 - Ga | 1 - Gb | 2 - Gc | 20 - Da | 21 - Db | 22 - Dc |

## ■ RANGE AND ACCESSORIES

**ENCLOSURE**



| H   | W   | JUNCTION BOXES |          | CONTROL STATIONS |          |          |
|-----|-----|----------------|----------|------------------|----------|----------|
|     |     | 55             | 75       | 90               | 120      | 165      |
| 75  | 80  | 644.0100       | 644.0200 |                  |          |          |
|     | 110 | 644.0110       | 644.0210 |                  |          |          |
|     | 160 | 644.0120       | 644.0220 |                  |          |          |
|     | 190 | 644.0130       | 644.0230 |                  |          |          |
|     | 230 | 644.0140       | 644.0240 |                  |          |          |
| 120 | 122 |                |          | 644.0345         |          |          |
|     | 220 |                |          | 644.0350         |          |          |
| 160 | 160 |                |          | 644.0360         |          |          |
|     | 260 |                |          | 644.0370         |          |          |
|     | 360 |                |          | 644.0380         |          |          |
|     | 560 |                |          | 644.0390         |          |          |
| 250 | 255 |                |          |                  | 644.0465 |          |
|     | 400 |                |          |                  | 644.0485 |          |
| 405 | 400 |                |          |                  |          | 644.0595 |

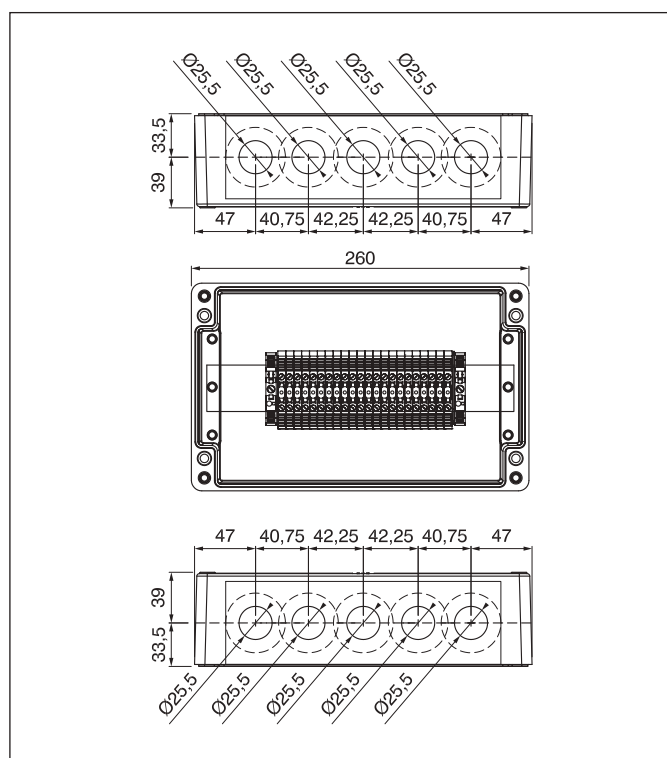
## EARTH CONTINUITY PLATE



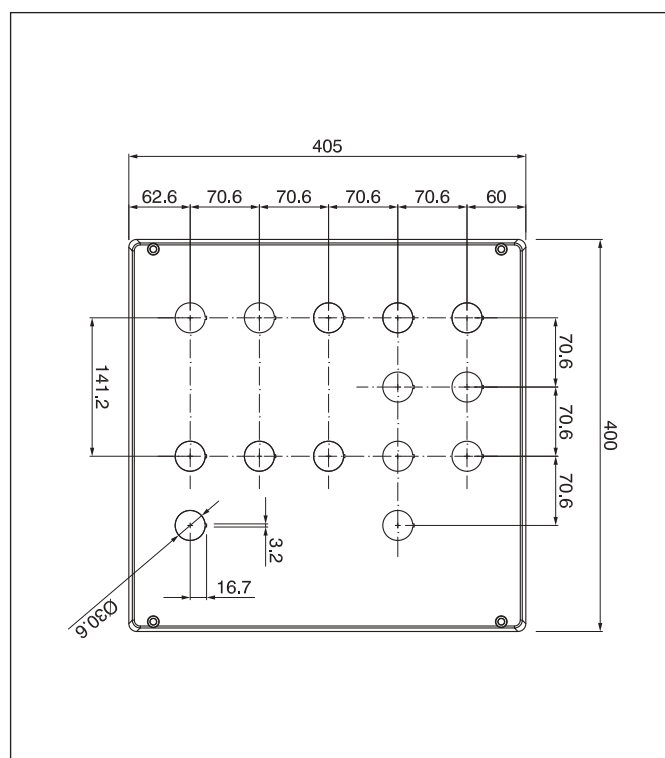
| 55        | 75        | 90            | 120       | 165       |
|-----------|-----------|---------------|-----------|-----------|
| 644.A0100 | 644.A0200 |               |           |           |
| 644.A0110 | 644.A0210 |               |           |           |
| 644.A0120 | 644.A0220 |               |           |           |
| 644.A0130 | 644.A0230 |               |           |           |
| 644.A0140 | 644.A0240 |               |           |           |
|           |           | 644.A0345 (•) |           |           |
|           |           | 644.A0350 (•) |           |           |
|           |           | 644.A0360 (•) |           |           |
|           |           | 644.A0370 (•) |           |           |
|           |           | 644.A0380 (•) |           |           |
|           |           | 644.A0390 (•) |           |           |
|           |           |               | 644.A0465 |           |
|           |           |               | 644.A0485 |           |
|           |           |               |           | 644.A0595 |

(●) Cable glands  $\geq$  M40 with earth continuity plate cannot be used on the short side.

## ■ JUNCTION BOX



## ■ CONTROL STATION



| INTERNAL<br>MOUNTING PLATE                                                           | EXTERNAL<br>MOUNTING BRACKETS                                                         | EXTERNAL MOUNTING<br>VERTICAL FEET                                                    | EARTH<br>STUD (*)                                                                      | EXTERNAL<br>HINGES (*)                                                                  |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
|  (B) |  (C) |  (D) |  (E) |  (F) |
| 55-75-90-120-165                                                                     | 55-75-90-120-165                                                                      | 55-75-90-120-165                                                                      | 55-75-90-120-165                                                                       | 55-75-90-120-165                                                                        |
| 644.B00                                                                              |                                                                                       |                                                                                       |                                                                                        |                                                                                         |
| 644.B10                                                                              |                                                                                       |                                                                                       |                                                                                        |                                                                                         |
| 644.B20                                                                              | 644.C075                                                                              | 644.D075                                                                              |                                                                                        |                                                                                         |
| 644.B30                                                                              |                                                                                       |                                                                                       |                                                                                        |                                                                                         |
| 644.B40                                                                              |                                                                                       |                                                                                       |                                                                                        |                                                                                         |
| 644.B45                                                                              |                                                                                       |                                                                                       |                                                                                        |                                                                                         |
| 644.B50                                                                              | 644.C120                                                                              | 644.D120                                                                              |                                                                                        |                                                                                         |
| 644.B60                                                                              |                                                                                       |                                                                                       | 644.E650                                                                               | 644.F001                                                                                |
| 644.B70                                                                              |                                                                                       | 644.D160                                                                              |                                                                                        |                                                                                         |
| 644.B80                                                                              |                                                                                       |                                                                                       |                                                                                        |                                                                                         |
| 644.B90                                                                              | 644.C160                                                                              |                                                                                       |                                                                                        |                                                                                         |
| 644.B65                                                                              |                                                                                       | 644.D250                                                                              |                                                                                        |                                                                                         |
| 644.B85                                                                              |                                                                                       |                                                                                       |                                                                                        |                                                                                         |
| 644.B95                                                                              |                                                                                       | 644.D405                                                                              |                                                                                        |                                                                                         |

(\*) Machining is required.

## ACCESSORIES

- A) Earth Continuity Plate (ECP) made in zinc-plated steel.
- B) Component assembly plate made of zinc-plated steel.
- C) External mounting brackets (4 sets) made of stainless steel AISI 316L.
- D) Vertical feet for external mounting (2 sets) made of stainless steel AISI 316L.
- E) Earth stud made of brass. Also available in stainless steel AISI 316L (\*).
- F) External hinges (2 sets) made of thermoplastic material (\*).

The enclosures can be machined and drilled upon request  
- cable gland holes from M12 to M63.

(\*) machining is required



# ZENITH-P Series

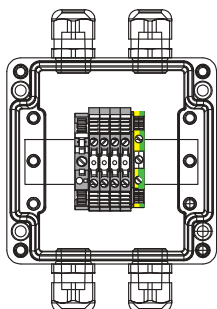
PRECONFIGURED VERSIONS



**ATEX / IECEx - 2 GD**

| Ambient | Gas    |        | Dust   |         |                 |
|---------|--------|--------|--------|---------|-----------------|
| Zone    | 0 - Ga | 1 - Gb | 2 - Gc | 20 - Da | 21 - Db 22 - Dc |

## 4xWDU + 1WPE 4,0mm<sup>2</sup> - 4xM20

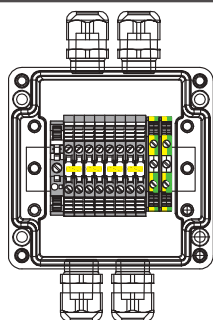


cod: 644.0345-J01

### TECHNICAL CHARACTERISTICS

|                               |                                           |
|-------------------------------|-------------------------------------------|
| Ex Protection type:           | Ex e IIC T6 Gb<br>Ex t IIIC T80°C Db IP66 |
| Operating temperature range:  | -30°C +40°C                               |
| Maximum current per terminal: | 28A                                       |
| Category of use:              | /                                         |
| Rated voltage:                | 690V                                      |
| Dimensions:                   | 122x120x90mm                              |

## 8xWDU 4,0mm<sup>2</sup> (bridged 2/2) + 2WPE - 4xM20

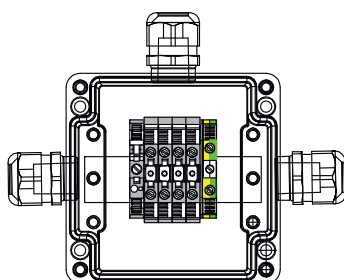


cod: 644.0345-J02

### TECHNICAL CHARACTERISTICS

|                               |                                           |
|-------------------------------|-------------------------------------------|
| Ex Protection type:           | Ex e IIC T6 Gb<br>Ex t IIIC T80°C Db IP66 |
| Operating temperature range:  | -30°C +40°C                               |
| Maximum current per terminal: | 26A                                       |
| Category of use:              | /                                         |
| Rated voltage:                | 690V                                      |
| Dimensions:                   | 122x120x90mm                              |

## 4xWDU + 1WPE 6,0mm<sup>2</sup> - 3xM20

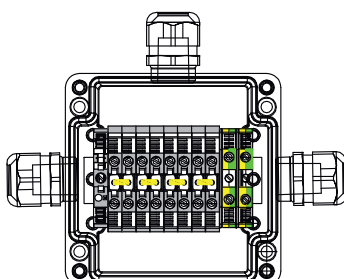


cod: 644.0345-J03

### TECHNICAL CHARACTERISTICS

|                               |                                           |
|-------------------------------|-------------------------------------------|
| Ex Protection type:           | Ex e IIC T6 Gb<br>Ex t IIIC T80°C Db IP66 |
| Operating temperature range:  | -30°C +40°C                               |
| Maximum current per terminal: | 36A                                       |
| Category of use:              | /                                         |
| Rated voltage:                | 550V                                      |
| Dimensions:                   | 122x120x90mm                              |

## 8xWDU 6,0mm<sup>2</sup> (bridged 2/2) + 2WPE - 3xM20



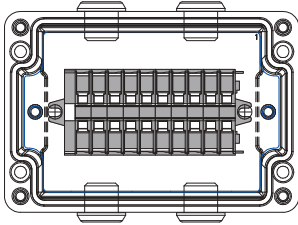
cod: 644.0345-J04

### TECHNICAL CHARACTERISTICS

|                               |                                           |
|-------------------------------|-------------------------------------------|
| Ex Protection type:           | Ex e IIC T6 Gb<br>Ex t IIIC T80°C Db IP66 |
| Operating temperature range:  | -30°C +40°C                               |
| Maximum current per terminal: | 30A                                       |
| Category of use:              | /                                         |
| Rated voltage:                | 550V                                      |
| Dimensions:                   | 122x120x90mm                              |

1  
ATEX [Ex] II 2 GD  
2  
3

### ■ 10x2,5mm<sup>2</sup> CAGE TERMINAL - 4xM20 (plugged)

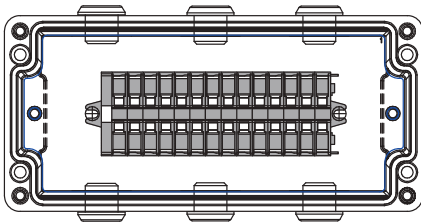


cod: 644.0210-J10

#### TECHNICAL CHARACTERISTICS

|                                      |                                           |
|--------------------------------------|-------------------------------------------|
| <b>Ex Protection type:</b>           | Ex e IIC T6 Gb<br>Ex t IIIC T80°C Db IP66 |
| <b>Operating temperature range:</b>  | -30°C +40°C                               |
| <b>Maximum current per terminal:</b> | 12A                                       |
| <b>Category of use:</b>              | /                                         |
| <b>Rated voltage:</b>                | 690V                                      |
| <b>Dimensions:</b>                   | 75x110x75mm                               |

### ■ 14x2,5mm<sup>2</sup> CAGE TERMINAL - 6xM20 (plugged)

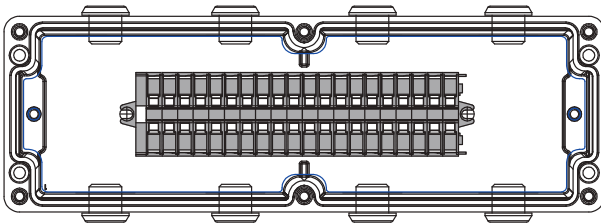


cod: 644.0220-J14

#### TECHNICAL CHARACTERISTICS

|                                      |                                           |
|--------------------------------------|-------------------------------------------|
| <b>Ex Protection type:</b>           | Ex e IIC T6 Gb<br>Ex t IIIC T80°C Db IP66 |
| <b>Operating temperature range:</b>  | -30°C +40°C                               |
| <b>Maximum current per terminal:</b> | 11A                                       |
| <b>Category of use:</b>              | /                                         |
| <b>Rated voltage:</b>                | 690V                                      |
| <b>Dimensions:</b>                   | 75x160x75mm                               |

### ■ 20x2,5mm<sup>2</sup> CAGE TERMINAL - 8xM20 (plugged)

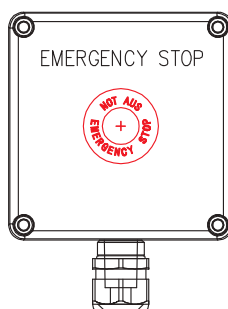
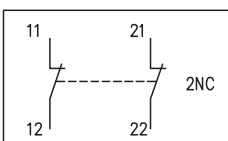


cod: 644.0240-J20

#### TECHNICAL CHARACTERISTICS

|                                      |                                           |
|--------------------------------------|-------------------------------------------|
| <b>Ex Protection type:</b>           | Ex e IIC T6 Gb<br>Ex t IIIC T80°C Db IP66 |
| <b>Operating temperature range:</b>  | -30°C +40°C                               |
| <b>Maximum current per terminal:</b> | 9A                                        |
| <b>Category of use:</b>              | /                                         |
| <b>Rated voltage:</b>                | 690V                                      |
| <b>Dimensions:</b>                   | 75x230x75mm                               |

### ■ EMERGENCY (pull to release) 2NC - 1xM20



cod: 644.0345-ES

#### TECHNICAL CHARACTERISTICS

|                                      |                                             |
|--------------------------------------|---------------------------------------------|
| <b>Ex Protection type:</b>           | Ex d e IIC T6 Gb<br>Ex t IIIC T80°C Db IP66 |
| <b>Operating temperature range:</b>  | -30°C +40°C                                 |
| <b>Maximum current per terminal:</b> | 13A                                         |
| <b>Category of use:</b>              | AC12                                        |
| <b>Rated voltage:</b>                | 250AC                                       |
| <b>Dimensions:</b>                   | 122x120x90mm                                |

# ZENITH-P Series

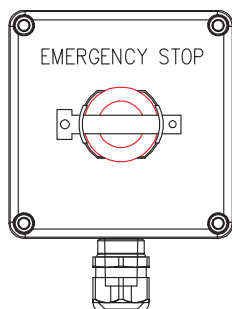
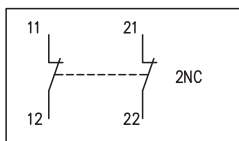
PRECONFIGURED VERSIONS



**ATEX / IECEx - 2 GD**

| Ambient | Gas    |               | Dust          |         |                               |
|---------|--------|---------------|---------------|---------|-------------------------------|
| Zone    | 0 - Ga | <b>1 - Gb</b> | <b>2 - Gc</b> | 20 - Da | <b>21 - Db</b> <b>22 - Dc</b> |

## EMERGENCY (pull to release) 2NC + SAFETY CATCH + PADLOCK - 1xM20

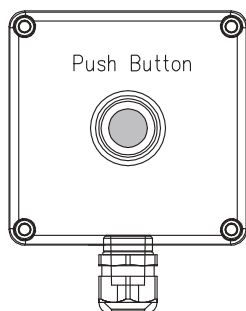
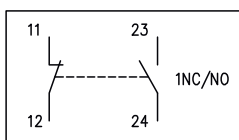


cod: 644.0345-ESL

### TECHNICAL CHARACTERISTICS

|                                      |                                             |
|--------------------------------------|---------------------------------------------|
| <b>Ex Protection type:</b>           | Ex d e IIC T6 Gb<br>Ex t IIIC T80°C Db IP66 |
| <b>Operating temperature range:</b>  | -30°C +40°C                                 |
| <b>Maximum current per terminal:</b> | 13A                                         |
| <b>Category of use:</b>              | AC12                                        |
| <b>Rated voltage:</b>                | 250AC                                       |
| <b>Dimensions:</b>                   | 122x120x90mm                                |

## PUSH BUTTON 1NO+1NC - 1xM20



### TECHNICAL CHARACTERISTICS

|                                      |                                             |
|--------------------------------------|---------------------------------------------|
| <b>Ex Protection type:</b>           | Ex d e IIC T6 Gb<br>Ex t IIIC T80°C Db IP66 |
| <b>Operating temperature range:</b>  | -30°C +40°C                                 |
| <b>Maximum current per terminal:</b> | 13A                                         |
| <b>Category of use:</b>              | AC12                                        |
| <b>Rated voltage:</b>                | 250AC                                       |
| <b>Dimensions:</b>                   | 122x120x90mm                                |

cod: 644.0345-PBG - push button color **GREEN**

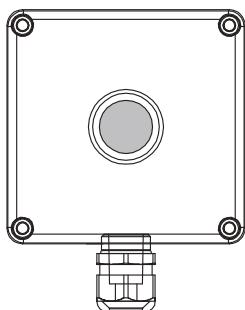
cod: 644.0345-PBR - push button color **RED**

cod: 644.0345-PBW - push button color **WHITE**

cod: 644.0345-PBY - push button color **YELLOW**

cod: 644.0345-PBK - push button color **BLACK**

## LED LIGHT 12-250VAC/VDC - 1xM20



cod: 644.0345-LDG - led color **GREEN**

cod: 644.0345-LDR - led color **RED**

cod: 644.0345-LDW - led color **WHITE**

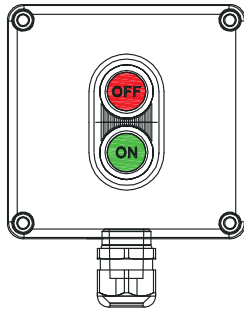
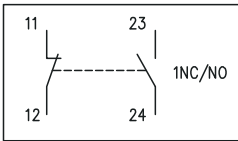
cod: 644.0345-LDY - led color **YELLOW**

cod: 644.0345-LDB - led color **BLUE**

### TECHNICAL CHARACTERISTICS

|                                      |                                             |
|--------------------------------------|---------------------------------------------|
| <b>Ex Protection type:</b>           | Ex d e IIC T6 Gb<br>Ex t IIIC T80°C Db IP66 |
| <b>Operating temperature range:</b>  | -30°C +40°C                                 |
| <b>Maximum current per terminal:</b> | /                                           |
| <b>Category of use:</b>              | AC12                                        |
| <b>Rated voltage:</b>                | 12-250AC/VDC                                |
| <b>Dimensions:</b>                   | 122x120x90mm                                |

### ■ ON/OFF DOUBLE PUSH BUTTON + 1NO + 1NC - 1xM20

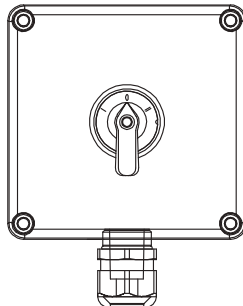
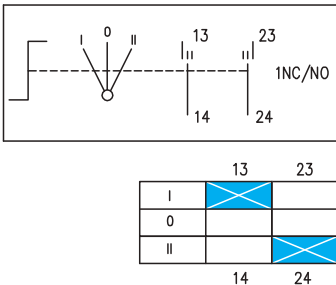


cod: 644.0345-OF

#### TECHNICAL CHARACTERISTICS

|                                      |                                             |
|--------------------------------------|---------------------------------------------|
| <b>Ex Protection type:</b>           | Ex d e IIC T6 Gb<br>Ex t IIIC T80°C Db IP66 |
| <b>Operating temperature range:</b>  | -30°C +40°C                                 |
| <b>Maximum current per terminal:</b> | 13A                                         |
| <b>Category of use:</b>              | AC12                                        |
| <b>Rated voltage:</b>                | 250AC                                       |
| <b>Dimensions:</b>                   | 122x120x90mm                                |

### ■ SELECTOR SWITCH "1-0-2" + 1NO + 1NC REVERTING 2NO IN "0" - 1xM20

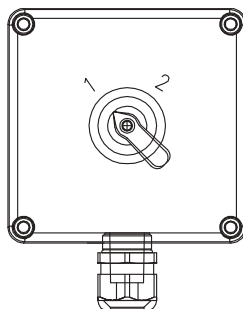
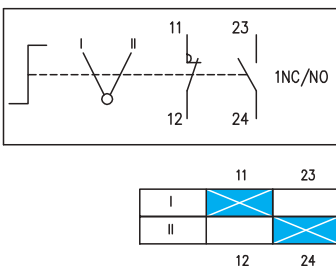


cod: 644.0345-SE3

#### TECHNICAL CHARACTERISTICS

|                                      |                                             |
|--------------------------------------|---------------------------------------------|
| <b>Ex Protection type:</b>           | Ex d e IIC T6 Gb<br>Ex t IIIC T80°C Db IP66 |
| <b>Operating temperature range:</b>  | -30°C +40°C                                 |
| <b>Maximum current per terminal:</b> | 13A                                         |
| <b>Category of use:</b>              | AC12                                        |
| <b>Rated voltage:</b>                | 250AC                                       |
| <b>Dimensions:</b>                   | 122x120x90mm                                |

### ■ SELECTOR SWITCH "I-II" 1NO + 1NC REVERTING - 1xM20

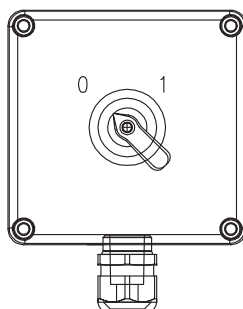
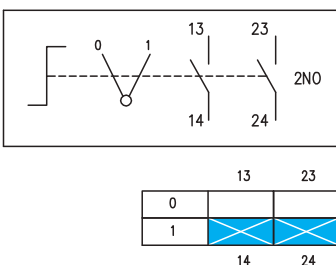


cod: 644.0345-SE2

#### TECHNICAL CHARACTERISTICS

|                                      |                                             |
|--------------------------------------|---------------------------------------------|
| <b>Ex Protection type:</b>           | Ex d e IIC T6 Gb<br>Ex t IIIC T80°C Db IP66 |
| <b>Operating temperature range:</b>  | -30°C +40°C                                 |
| <b>Maximum current per terminal:</b> | 13A                                         |
| <b>Category of use:</b>              | AC12                                        |
| <b>Rated voltage:</b>                | 250AC                                       |
| <b>Dimensions:</b>                   | 122x120x90mm                                |

### ■ SELECTOR SWITCH "0/1" 2NO - 1xM20



cod: 644.0345-SE1

#### TECHNICAL CHARACTERISTICS

|                                      |                                             |
|--------------------------------------|---------------------------------------------|
| <b>Ex Protection type:</b>           | Ex d e IIC T6 Gb<br>Ex t IIIC T80°C Db IP66 |
| <b>Operating temperature range:</b>  | -30°C +40°C                                 |
| <b>Maximum current per terminal:</b> | 13A                                         |
| <b>Category of use:</b>              | AC12                                        |
| <b>Rated voltage:</b>                | 250AC                                       |
| <b>Dimensions:</b>                   | 122x120x90mm                                |

# ZENITH-P Series

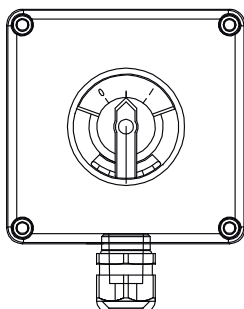
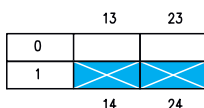
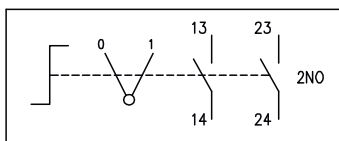
PRECONFIGURED VERSIONS



**ATEX / IECEx - 2 GD**

| Ambient | Gas    |               | Dust          |         |                               |
|---------|--------|---------------|---------------|---------|-------------------------------|
| Zone    | 0 - Ga | <b>1 - Gb</b> | <b>2 - Gc</b> | 20 - Da | <b>21 - Db</b> <b>22 - Dc</b> |

## SELECTOR SWITCH "0/1" 2NO LOCKABLE HANDLE - 1xM20

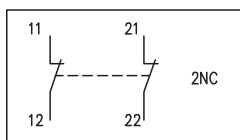


**cod: 644.0345-SE1L**

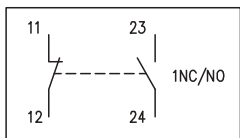
### TECHNICAL CHARACTERISTICS

|                                      |                                             |
|--------------------------------------|---------------------------------------------|
| <b>Ex Protection type:</b>           | Ex d e IIC T6 Gb<br>Ex t IIIC T80°C Db IP66 |
| <b>Operating temperature range:</b>  | -30°C +40°C                                 |
| <b>Maximum current per terminal:</b> | 13A                                         |
| <b>Category of use:</b>              | AC12                                        |
| <b>Rated voltage:</b>                | 250AC                                       |
| <b>Dimensions:</b>                   | 122x120x90mm                                |

## ON/OFF DOUBLE PUSH BUTTON 1NO + 1NC + EMERGENCY PUSH BUTTON 2NC - 1xM25



EMERGENCY



START/STOP

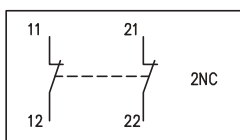


**cod: 644.0350-OFE**

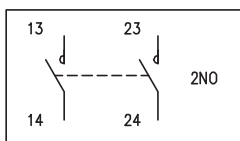
### TECHNICAL CHARACTERISTICS

|                                      |                                             |
|--------------------------------------|---------------------------------------------|
| <b>Ex Protection type:</b>           | Ex d e IIC T6 Gb<br>Ex t IIIC T80°C Db IP66 |
| <b>Operating temperature range:</b>  | -30°C +40°C                                 |
| <b>Maximum current per terminal:</b> | 9A                                          |
| <b>Category of use:</b>              | AC12                                        |
| <b>Rated voltage:</b>                | 250AC                                       |
| <b>Dimensions:</b>                   | 220x120x90mm                                |

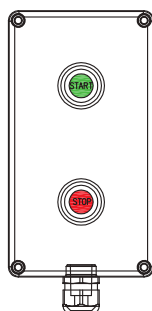
## 1xSTART PUSH BUTTON 2NO + 1xSTOP PUSH BUTTON 2NC - 1xM25



STOP



START

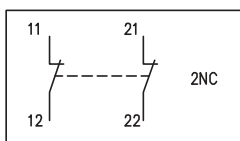


**cod: 644.0350-SS**

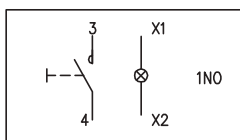
### TECHNICAL CHARACTERISTICS

|                                      |                                             |
|--------------------------------------|---------------------------------------------|
| <b>Ex Protection type:</b>           | Ex d e IIC T6 Gb<br>Ex t IIIC T80°C Db IP66 |
| <b>Operating temperature range:</b>  | -30°C +40°C                                 |
| <b>Maximum current per terminal:</b> | 9A                                          |
| <b>Category of use:</b>              | AC12                                        |
| <b>Rated voltage:</b>                | 250AC                                       |
| <b>Dimensions:</b>                   | 220x120x90mm                                |

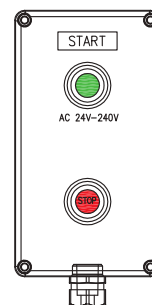
## 1xSTART LIGHTING PUSH BUTTON 1NO + 1xSTOP PUSH BUTTON 2NC - 1xM25



STOP



START

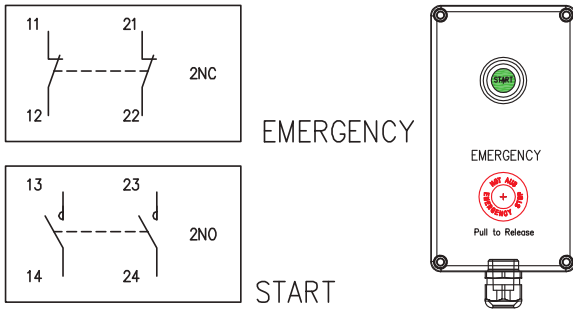


**cod: 644.0350-SGS**

### TECHNICAL CHARACTERISTICS

|                                      |                                             |
|--------------------------------------|---------------------------------------------|
| <b>Ex Protection type:</b>           | Ex d e IIC T6 Gb<br>Ex t IIIC T80°C Db IP66 |
| <b>Operating temperature range:</b>  | -30°C +40°C                                 |
| <b>Maximum current per terminal:</b> | 6A                                          |
| <b>Category of use:</b>              | AC15                                        |
| <b>Rated voltage:</b>                | 250AC                                       |
| <b>Dimensions:</b>                   | 220x120x90mm                                |

## 1xSTART PUSH BUTTON 2NO + 1xEMERGENCY PUSH BUTTON 2NC - 1xM25



cod: 644.0350-SE

### TECHNICAL CHARACTERISTICS

|                                      |                                             |
|--------------------------------------|---------------------------------------------|
| <b>Ex Protection type:</b>           | Ex d e IIC T6 Gb<br>Ex t IIIC T80°C Db IP66 |
| <b>Operating temperature range:</b>  | -30°C +40°C                                 |
| <b>Maximum current per terminal:</b> | 9A                                          |
| <b>Category of use:</b>              | AC12                                        |
| <b>Rated voltage:</b>                | 250AC                                       |
| <b>Dimensions:</b>                   | 220x120x90mm                                |

## APPLICATION EXAMPLES



# UNION-EX Series



ATEX [Ex II 2 GD] 1  
2  
3

## METAL CABLE GLANDS (BY RCN)



## VERSIONS

|  |                                                   |
|--|---------------------------------------------------|
|  | Cable glands RN version<br>(for unarmoured cable) |
|  | Cable glands RAD version<br>(for armoured cable)  |
|  | Screw plugs                                       |
|  | Locknuts                                          |
|  | Earthing tags                                     |
|  | Seals                                             |

## REFERENCE STANDARDS

|               |                                                                                                                                                                   |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ATEX<br>IECEx | <b>IEC/EN 60079-31</b><br>Electrical apparatus for potentially<br>explosive atmospheres.<br><i>Part 31: equipment dust ignition protection by enclosures "t".</i> |
| ATEX<br>IECEx | <b>IEC/EN 60079-0</b><br>Electrical apparatus for potentially<br>explosive atmospheres.<br><i>Part 0: general requirements.</i>                                   |
| ATEX<br>IECEx | <b>IEC/EN 60079-1</b><br>Electrical apparatus for potentially<br>explosive atmospheres.<br><i>Part 1: flameproof enclosures "d".</i>                              |
| ATEX<br>IECEx | <b>IEC/EN 60079-7</b><br>Electrical apparatus for potentially<br>explosive atmospheres.<br><i>Part 7: equipment protection by increased safety "e".</i>           |

## TECHNICAL CHARACTERISTICS

|                      |                                                                  |
|----------------------|------------------------------------------------------------------|
| ATEX Code:           | <b>Ex II 2GD / IM2</b>                                           |
| EX Protection type:  | <b>Ex d IIC<br/>Ex e II<br/>Ex d I<br/>Ex e I<br/>Ex tb IIIC</b> |
| Protection degree:   | <b>IP66/IP68</b>                                                 |
| Ambient temperature: | <b>-40°C +100°C (EDPM)<br/>-70°C +220°C (silicone)</b>           |
| Material:            | <b>Brass, nickel-plated brass,<br/>steel AISI316L</b>            |
| Seals:               | <b>Silicone, EDPM</b>                                            |
| Surface treatment:   | <b>Chrome-plated nickel</b>                                      |
| Thread:              | <b>Metric</b>                                                    |

## POLYAMIDE CABLE GLANDS (BY SIB)



## VERSIONS

|                                                                                     |                                                                      |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------|
|  | Long thread, short thread and with reducer-seal inserts cable glands |
|  | Enlarger                                                             |
|  | Reducer                                                              |
|  | Screw plugs                                                          |
|  | Locknuts                                                             |
|  | Seals                                                                |

## REFERENCE STANDARDS

|                       |                                                                                                                                                                |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ATEX<br/>IECEX</b> | <b>IEC/EN 60079-31</b><br>Electrical apparatus for potentially explosive atmospheres.<br><i>Part 31: equipment dust ignition protection by enclosures "t".</i> |
| <b>ATEX<br/>IECEX</b> | <b>IEC/EN 60079-0</b><br>Electrical apparatus for potentially explosive atmospheres.<br><i>Part 0: general requirements.</i>                                   |
| <b>ATEX<br/>IECEX</b> | <b>IEC/EN 60079-7</b><br>Electrical apparatus for potentially explosive atmospheres.<br><i>Part 7: equipment protection by increased safety "e".</i>           |

## TECHNICAL CHARACTERISTICS

|                      |                                                  |
|----------------------|--------------------------------------------------|
| ATEX Code:           | <b>Ex II 2GD</b>                                 |
| Ex Protection type:  | <b>Ex e II<br/>Ex tb IIIC</b>                    |
| Protection degree:   | <b>IP66/IP68</b>                                 |
| Ambient temperature: | <b>M12: -20°C +80°C<br/>M16-M63: -35°C +95°C</b> |
| Material:            | <b>Polyamide</b>                                 |
| Colour:              | <b>RAL 9005 (Black)<br/>RAL 5012 (Blue)</b>      |
| Seals:               | <b>Silicone, EDPM</b>                            |
| Thread:              | <b>Metric</b>                                    |



# UNION-EX Series



**ATEX / IECEx - 2 GD**

| Ambient | Gas    |        |        | Dust    |         |         |
|---------|--------|--------|--------|---------|---------|---------|
| Zone    | 0 - Ga | 1 - Gb | 2 - Gc | 20 - Da | 21 - Db | 22 - Dc |

## METAL CABLE GLANDS FOR UNARMoured CABLE RN VERSION (KIT)

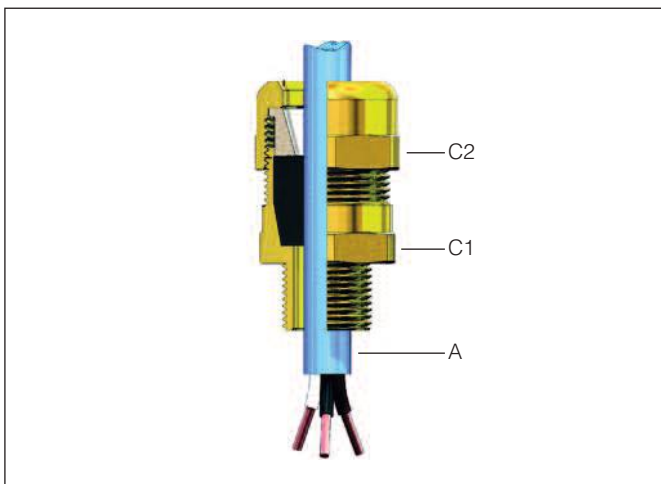
EPDM seal



| Size | Thread  | A Ø min-max (mm)    | C1  | C2  | □ | Brass         | Nickel-plated brass | Steel S6      |
|------|---------|---------------------|-----|-----|---|---------------|---------------------|---------------|
| 16   | M12x1.5 | 4÷7                 | 24  | 24  | 1 | 805.RN1612.EO | 805.RN1612.EN       | 805.RN1612.ES |
|      | M16x1.5 | 7÷10                | 24  | 24  | 1 | 805.RN1616.EO | 805.RN1616.EN       | 805.RN1616.ES |
|      | M20x1.5 |                     | 24  | 24  | 1 | 805.RN1620.EO | 805.RN1620.EN       | 805.RN1620.ES |
| 20   | M16x1.5 | 5,5÷8               | 30  | 32  | 1 | 805.RN2016.EO | 805.RN2016.EN       | 805.RN2016.ES |
|      | M20x1.5 | 8÷10,5              | 30  | 32  | 1 | 805.RN2020.EO | 805.RN2020.EN       | 805.RN2020.ES |
|      | M25x1.5 | 10,5÷13             | 30  | 32  | 1 | 805.RN2025.EO | 805.RN2025.EN       | 805.RN2025.ES |
| 25   | M20x1.5 | 8÷10,5 - 10,5÷13    | 35  | 36  | 1 | 805.RN2520.EO | 805.RN2520.EN       | 805.RN2520.ES |
|      | M25x1.5 | 13÷15,5 - 15,5÷18   | 35  | 36  | 1 | 805.RN2525.EO | 805.RN2525.EN       | 805.RN2525.ES |
| 32   | M25x1.5 | 13÷15,5 - 15÷18     | 42  | 45  | 1 | 805.RN3225.EO | 805.RN3225.EN       | 805.RN3225.ES |
|      | M32x1.5 | 18÷21 - 21÷24       | 42  | 45  | 1 | 805.RN3232.EO | 805.RN3232.EN       | 805.RN3232.ES |
| 40   | M40x1.5 | 21÷24 - 24÷27 27÷30 | 48  | 50  | 1 | 805.RN4040.EO | 805.RN4040.EN       | 805.RN4040.ES |
| 50   | M40x1.5 | 24÷27 - 27÷30       | 55  | 57  | 1 | 805.RN5040.EO | 805.RN5040.EN       | 805.RN5040.ES |
|      | M50x1.5 | 30÷33 - 33÷36       | 55  | 57  | 1 | 805.RN5050.EO | 805.RN5050.EN       | 805.RN5050.ES |
| 63   | M50x1.5 | 36÷39 - 39÷42       | 68  | 67  | 1 | 805.RN6350.EO | 805.RN6350.EN       | 805.RN6350.ES |
|      | M63x1.5 | 42÷45               | 68  | 67  | 1 | 805.RN6363.EO | 805.RN6363.EN       | 805.RN6363.ES |
| 75   | M63x1.5 | 45÷48 - 48÷51       | 80  | 80  | 1 | 805.RN7563.EO | 805.RN7563.EN       | 805.RN7563.ES |
|      | M75x1.5 | 51÷54               | 80  | 80  | 1 | 805.RN7575.EO | 805.RN7575.EN       | 805.RN7575.ES |
| 90   | M75x1.5 |                     | 100 | 100 | 1 | 805.RN9075.EO | 805.RN9075.EN       | 805.RN9075.ES |
|      | M90x1.5 | 54÷58 - 58÷62       | 100 | 100 | 1 | 805.RN9090.EO | 805.RN9090.EN       | 805.RN9090.ES |
| 91   | M75x1.5 | 60÷64 - 64÷68       | 100 | 100 | 1 | 805.RN9175.EO | 805.RN9175.EN       | 805.RN9175.ES |
|      | M90x1.5 |                     | 100 | 100 | 1 | 805.RN9190.EO | 805.RN9190.EN       | 805.RN9190.ES |

□ Package/Bulk Pack.

Standard size



Cable glands for non-armoured cable with seal outside the cable.

## SILICONE seal

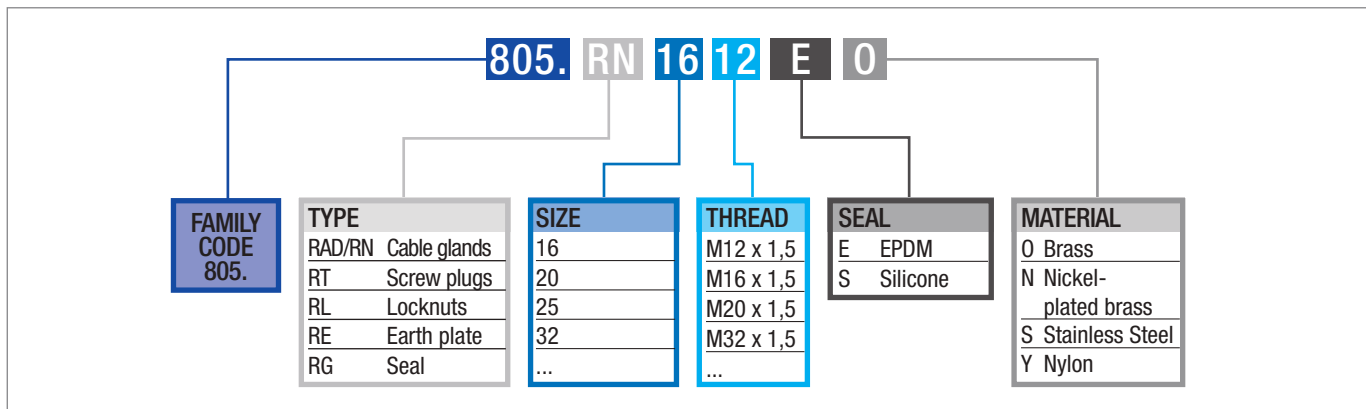


| Size | Thread  | A Ø min-max (mm)    | C1  | C2  | □ | Brass         | Nickel-plated brass | Steel S6      |
|------|---------|---------------------|-----|-----|---|---------------|---------------------|---------------|
| 16   | M12x1.5 | 4÷6 - 6÷8           | 24  | 24  | 1 | 805.RN1612.SO | 805.RN1612.SN       | 805.RN1612.SS |
|      | M16x1.5 |                     | 24  | 24  | 1 | 805.RN1616.SO | 805.RN1616.SN       | 805.RN1616.SS |
|      | M20x1.5 | 8÷10                | 24  | 24  | 1 | 805.RN1620.SO | 805.RN1620.SN       | 805.RN1620.SS |
| 20   | M16x1.5 | 5,5÷8 - 8÷10,5      | 30  | 32  | 1 | 805.RN2016.SO | 805.RN2016.SN       | 805.RN2016.SS |
|      | M20x1.5 |                     | 30  | 32  | 1 | 805.RN2020.SO | 805.RN2020.SN       | 805.RN2020.SS |
|      | M25x1.5 | 10,5÷13             | 30  | 32  | 1 | 805.RN2025.SO | 805.RN2025.SN       | 805.RN2025.SS |
| 25   | M20x1.5 | 8÷10,5 - 10,5÷13    | 35  | 36  | 1 | 805.RN2520.SO | 805.RN2520.SN       | 805.RN2520.SS |
|      | M25x1.5 | 13÷15,5 - 15,5÷18   | 35  | 36  | 1 | 805.RN2525.SO | 805.RN2525.SN       | 805.RN2525.SS |
| 32   | M25x1.5 | 13÷15,5 - 15÷18     | 42  | 45  | 1 | 805.RN3225.SO | 805.RN3225.SN       | 805.RN3225.SS |
|      | M32x1.5 | 18÷21 - 21÷24       | 42  | 45  | 1 | 805.RN3232.SO | 805.RN3232.SN       | 805.RN3232.SS |
| 40   | M40x1.5 | 21÷24 - 24÷27 27÷30 | 48  | 50  | 1 | 805.RN4040.SO | 805.RN4040.SN       | 805.RN4040.SS |
| 50   | M40x1.5 | 24÷27 - 27÷30       | 55  | 57  | 1 | 805.RN5040.SO | 805.RN5040.SN       | 805.RN5040.SS |
|      | M50x1.5 | 30÷33 - 33÷36       | 55  | 57  | 1 | 805.RN5050.SO | 805.RN5050.SN       | 805.RN5050.SS |
| 63   | M50x1.5 | 36÷39 - 39÷42       | 68  | 67  | 1 | 805.RN6350.SO | 805.RN6350.SN       | 805.RN6350.SS |
|      | M63x1.5 | 42÷45               | 68  | 67  | 1 | 805.RN6363.SO | 805.RN6363.SN       | 805.RN6363.SS |
| 75   | M63x1.5 | 45÷48 - 48÷51       | 80  | 80  | 1 | 805.RN7563.SO | 805.RN7563.SN       | 805.RN7563.SS |
|      | M75x1.5 | 51÷54               | 80  | 80  | 1 | 805.RN7575.SO | 805.RN7575.SN       | 805.RN7575.SS |
| 90   | M75x1.5 | 54÷58 - 58÷62       | 100 | 100 | 1 | 805.RN9075.SO | 805.RN9075.SN       | 805.RN9075.SS |
|      | M90x1.5 |                     | 100 | 100 | 1 | 805.RN9090.SO | 805.RN9090.SN       | 805.RN9090.SS |
| 91   | M75x1.5 | 60÷64 - 64÷68       | 100 | 100 | 1 | 805.RN9175.SO | 805.RN9175.SN       | 805.RN9175.SS |
|      | M90x1.5 |                     | 100 | 100 | 1 | 805.RN9190.SO | 805.RN9190.SN       | 805.RN9190.SS |

□ Package/Bulk Pack.

■ Standard size

## CODE STRUCTURE



# UNION-EX Series



**ATEX / IECEx - 2 GD**

| Ambient | Gas    |        |        | Dust    |         |         |
|---------|--------|--------|--------|---------|---------|---------|
| Zone    | 0 - Ga | 1 - Gb | 2 - Gc | 20 - Da | 21 - Db | 22 - Dc |

## METAL CABLE GLANDS FOR ARMOURED CABLE RAD VERSION (KIT)

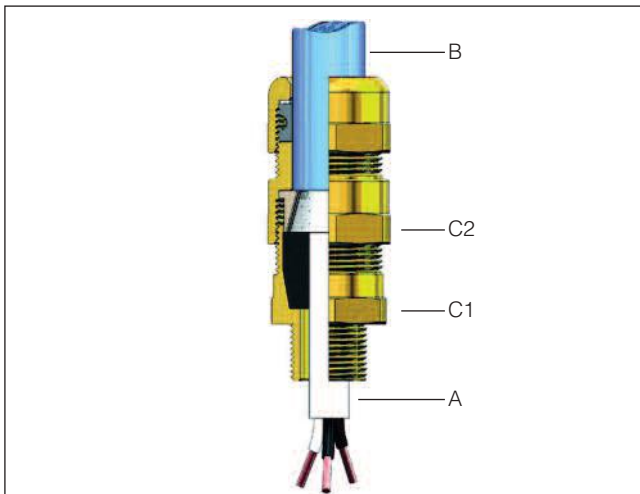
EPDM seal



| Size | Thread  | A Ø min-max<br>cable under<br>armour<br>(mm) | B Ø<br>min-max<br>external<br>cable | C1<br> | C2<br> |   | Brass          | Nickel-plated brass | Steel S6       |
|------|---------|----------------------------------------------|-------------------------------------|--------|--------|---|----------------|---------------------|----------------|
| 16   | M12x1.5 | 4÷7                                          | 5÷10                                | 24     | 24     | 1 | 805.RAD1612.EO | 805.RAD1612.EN      | 805.RAD1612.ES |
|      | M16x1.5 | 7÷10                                         | 10÷15                               | 24     | 24     | 1 | 805.RAD1616.EO | 805.RAD1616.EN      | 805.RAD1616.ES |
|      | M20x1.5 |                                              |                                     | 24     | 24     | 1 | 805.RAD1620.EO | 805.RAD1620.EN      | 805.RAD1620.ES |
| 20   | M16x1.5 | 5,5÷8                                        | 10÷15                               | 30     | 32     | 1 | 805.RAD2016.EO | 805.RAD2016.EN      | 805.RAD2016.ES |
|      | M20x1.5 | 8÷10,5                                       | 14÷19                               | 30     | 32     | 1 | 805.RAD2020.EO | 805.RAD2020.EN      | 805.RAD2020.ES |
|      | M25x1.5 | 10,5÷13                                      |                                     | 30     | 32     | 1 | 805.RAD2025.EO | 805.RAD2025.EN      | 805.RAD2025.ES |
| 25   | M20x1.5 | 8÷10,5 - 10,5÷13                             | 15÷20                               | 35     | 36     | 1 | 805.RAD2520.EO | 805.RAD2520.EN      | 805.RAD2520.ES |
|      | M25x1.5 | 13÷15,5 - 15,5÷18                            | 19÷24                               | 35     | 36     | 1 | 805.RAD2525.EO | 805.RAD2525.EN      | 805.RAD2525.ES |
| 32   | M25x1.5 | 13÷15,5 - 15÷18                              | 20÷26                               | 42     | 45     | 1 | 805.RAD3225.EO | 805.RAD3225.EN      | 805.RAD3225.ES |
|      | M32x1.5 | 18÷21 - 21÷24                                | 25÷31                               | 42     | 45     | 1 | 805.RAD3232.EO | 805.RAD3232.EN      | 805.RAD3232.ES |
| 40   | M40x1.5 | 21÷24 - 24÷27 27÷30                          | 26÷32 - 31÷37                       | 48     | 50     | 1 | 805.RAD4040.EO | 805.RAD4040.EN      | 805.RAD4040.ES |
| 50   | M40x1.5 | 24÷27 - 27÷30                                | 31÷37                               | 55     | 57     | 1 | 805.RAD5040.EO | 805.RAD5040.EN      | 805.RAD5040.ES |
|      | M50x1.5 | 30÷33 - 33÷36                                | 36÷43                               | 55     | 57     | 1 | 805.RAD5050.EO | 805.RAD5050.EN      | 805.RAD5050.ES |
| 63   | M50x1.5 | 36÷39 - 39÷42                                | 42÷48                               | 68     | 67     | 1 | 805.RAD6350.EO | 805.RAD6350.EN      | 805.RAD6350.ES |
|      | M63x1.5 | 42÷45                                        | 47÷53                               | 68     | 67     | 1 | 805.RAD6363.EO | 805.RAD6363.EN      | 805.RAD6363.ES |
| 75   | M63x1.5 | 45÷48 - 48÷51                                | 52÷58                               | 80     | 80     | 1 | 805.RAD7563.EO | 805.RAD7563.EN      | 805.RAD7563.ES |
|      | M75x1.5 | 51÷54                                        | 52÷64                               | 80     | 80     | 1 | 805.RAD7575.EO | 805.RAD7575.EN      | 805.RAD7575.ES |
| 90   | M75x1.5 |                                              |                                     | 100    | 100    | 1 | 805.RAD9075.EO | 805.RAD9075.EN      | 805.RAD9075.ES |
|      | M90x1.5 | 54÷58 - 58÷62                                | 64÷72                               | 100    | 100    | 1 | 805.RAD9090.EO | 805.RAD9090.EN      | 805.RAD9090.ES |
| 91   | M75x1.5 | 60÷64 - 64÷68                                | 70÷78                               | 100    | 100    | 1 | 805.RAD9175.EO | 805.RAD9175.EN      | 805.RAD9175.ES |
|      | M90x1.5 |                                              |                                     | 100    | 100    | 1 | 805.RAD9190.EO | 805.RAD9190.EN      | 805.RAD9190.ES |

Package/Bulk Pack.

Standard size



Cable glands for armoured cable, locking under the armour and outside. Earthing of the armour.

SILICONE seal



| Size | Thread  | A Ø min-max<br>cable under<br>armour<br>(mm) | B Ø min-max<br>external<br>cable | C1  | C2  | □ | Brass          | Nickel-plated brass | Steel S6       |
|------|---------|----------------------------------------------|----------------------------------|-----|-----|---|----------------|---------------------|----------------|
| 16   | M12x1.5 | 4÷6 - 6÷8                                    | 5÷10                             | 24  | 24  | 1 | 805.RAD1612.SO | 805.RAD1612.SN      | 805.RAD1612.SS |
|      | M16x1.5 |                                              |                                  | 24  | 24  | 1 | 805.RAD1616.SO | 805.RAD1616.SN      | 805.RAD1616.SS |
|      | M20x1.5 | 8÷10                                         | 10÷15                            | 24  | 24  | 1 | 805.RAD1620.SO | 805.RAD1620.SN      | 805.RAD1620.SS |
| 20   | M16x1.5 | 5,5÷8                                        | 10÷15                            | 30  | 32  | 1 | 805.RAD2016.SO | 805.RAD2016.SN      | 805.RAD2016.SS |
|      | M20x1.5 |                                              |                                  | 30  | 32  | 1 | 805.RAD2020.SO | 805.RAD2020.SN      | 805.RAD2020.SS |
|      | M25x1.5 | 10,5÷13                                      | 14÷19                            | 30  | 32  | 1 | 805.RAD2025.SO | 805.RAD2025.SN      | 805.RAD2025.SS |
| 25   | M20x1.5 | 8÷10,5 - 10,5÷13                             | 15÷20                            | 35  | 36  | 1 | 805.RAD2520.SO | 805.RAD2520.SN      | 805.RAD2520.SS |
|      | M25x1.5 | 13÷15,5 - 15,5÷18                            | 19÷24                            | 35  | 36  | 1 | 805.RAD2525.SO | 805.RAD2525.SN      | 805.RAD2525.SS |
| 32   | M25x1.5 | 13÷15,5 - 15÷18                              | 20÷26                            | 42  | 45  | 1 | 805.RAD3225.SO | 805.RAD3225.SN      | 805.RAD3225.SS |
|      | M32x1.5 | 18÷21 - 21÷24                                | 25÷31                            | 42  | 45  | 1 | 805.RAD3232.SO | 805.RAD3232.SN      | 805.RAD3232.SS |
| 40   | M40x1.5 | 21÷24 - 24÷27 27÷30                          | 26÷32 - 31÷37                    | 48  | 50  | 1 | 805.RAD4040.SO | 805.RAD4040.SN      | 805.RAD4040.SS |
| 50   | M40x1.5 | 24÷27 - 27÷30                                | 31÷37                            | 55  | 57  | 1 | 805.RAD5040.SO | 805.RAD5040.SN      | 805.RAD5040.SS |
|      | M50x1.5 | 30÷33 - 33÷36                                | 36÷43                            | 55  | 57  | 1 | 805.RAD5050.SO | 805.RAD5050.SN      | 805.RAD5050.SS |
| 63   | M50x1.5 | 36÷39 - 39÷42                                | 42÷48                            | 68  | 67  | 1 | 805.RAD6350.SO | 805.RAD6350.SN      | 805.RAD6350.SS |
|      | M63x1.5 | 42÷45                                        | 47÷53                            | 68  | 67  | 1 | 805.RAD6363.SO | 805.RAD6363.SN      | 805.RAD6363.SS |
| 75   | M63x1.5 | 45÷48 - 48÷51                                | 52÷58                            | 80  | 80  | 1 | 805.RAD7563.SO | 805.RAD7563.SN      | 805.RAD7563.SS |
|      | M75x1.5 | 51÷54                                        | 52÷64                            | 80  | 80  | 1 | 805.RAD7575.SO | 805.RAD7575.SN      | 805.RAD7575.SS |
| 90   | M75x1.5 | 54÷58 - 58÷62                                | 64÷72                            | 100 | 100 | 1 | 805.RAD9075.SO | 805.RAD9075.SN      | 805.RAD9075.SS |
|      | M90x1.5 |                                              |                                  | 100 | 100 | 1 | 805.RAD9090.SO | 805.RAD9090.SN      | 805.RAD9090.SS |
| 91   | M75x1.5 | 60÷64 - 64÷68                                | 70÷78                            | 100 | 100 | 1 | 805.RAD9175.SO | 805.RAD9175.SN      | 805.RAD9175.SS |
|      | M90x1.5 |                                              |                                  | 100 | 100 | 1 | 805.RAD9190.SO | 805.RAD9190.SN      | 805.RAD9190.SS |

□ Package/Bulk Pack.

■ Standard size

## EXAMPLE KIT



RAD/RN cable gland kit consisting of a set of rubber pads.

## EXAMPLE OF CABLE GLAND KIT LABEL

SCAME

CABLE GLAND IP66/68

RCN  
CABLE GLANDS AND ACCESSORIES

KIT.RAD20.N20.FP.ON

Cod. cliente: 805.RAD1612.EN

KIT pressacavo RAD size 20 M 1/2" NPT ottone nichelato

Lotto: 014929



Marcatura:

RCN RAD20 1/2 NPT CE 0080 INERS 06ATEX0014X IEC Ex INE10.0010X  
IM2 Exel-ExdII/II2GD Exel-ExdIIC-ExtD A21 IP66/68

# UNION-EX Series



## SCREW PLUGS

1  
ATEX [Ex II 2 GD]  
2  
3



| Thread  |   | Brass      | Nickel-plated brass | Steel S6   |
|---------|---|------------|---------------------|------------|
| M12x1.5 | 1 | 805.RT12.O | 805.RT12.N          | 805.RT12.S |
| M16x1.5 | 1 | 805.RT16.O | 805.RT16.N          | 805.RT16.S |
| M20x1.5 | 1 | 805.RT20.O | 805.RT20.N          | 805.RT20.S |
| M25x1.5 | 1 | 805.RT25.O | 805.RT25.N          | 805.RT25.S |
| M32x1.5 | 1 | 805.RT32.O | 805.RT32.N          | 805.RT32.S |
| M40x1.5 | 1 | 805.RT40.O | 805.RT40.N          | 805.RT40.S |
| M50x1.5 | 1 | 805.RT50.O | 805.RT50.N          | 805.RT50.S |
| M63x1.5 | 1 | 805.RT63.O | 805.RT63.N          | 805.RT63.S |
| M75x1.5 | 1 | 805.RT75.O | 805.RT75.N          | 805.RT75.S |
| M90x2   | 1 | 805.RT90.O | 805.RT90.N          | 805.RT90.S |

□ Package/Bulk Pack.  
- Without seal

## LOCKNUTS



| Thread  |    | Brass      | Nickel-plated brass | Steel S6   |
|---------|----|------------|---------------------|------------|
| M12x1.5 | 10 | 805.RL12.O | 805.RL12.N          | 805.RL12.S |
| M16x1.5 | 10 | 805.RL16.O | 805.RL16.N          | 805.RL16.S |
| M20x1.5 | 10 | 805.RL20.O | 805.RL20.N          | 805.RL20.S |
| M25x1.5 | 10 | 805.RL25.O | 805.RL25.N          | 805.RL25.S |
| M32x1.5 | 10 | 805.RL32.O | 805.RL32.N          | 805.RL32.S |
| M40x1.5 | 10 | 805.RL40.O | 805.RL40.N          | 805.RL40.S |
| M50x1.5 | 10 | 805.RL50.O | 805.RL50.N          | 805.RL50.S |
| M63x1.5 | 10 | 805.RL63.O | 805.RL63.N          | 805.RL63.S |
| M75x1.5 | 10 | 805.RL75.O | 805.RL75.N          | 805.RL75.S |
| M90x2   | 10 | 805.RL90.O | 805.RL90.N          | 805.RL90.S |

□ Package/Bulk Pack.

## EARTHING TAGS



| Type | Ⓜ  | Brass | Nickel-plated brass | Steel S6   |
|------|----|-------|---------------------|------------|
| M12  | 10 | -     | 805.RE12.N          | 805.RE12.S |
| M16  | 10 | -     | 805.RE16.N          | 805.RE16.S |
| M20  | 10 | -     | 805.RE20.N          | 805.RE20.S |
| M25  | 10 | -     | 805.RE25.N          | 805.RE25.S |
| M32  | 10 | -     | 805.RE32.N          | 805.RE32.S |
| M40  | 10 | -     | 805.RE40.N          | 805.RE40.S |
| M50  | 10 | -     | 805.RE50.N          | 805.RE50.S |
| M63  | 10 | -     | 805.RE63.N          | 805.RE63.S |
| M75  | 10 | -     | 805.RE75.N          | 805.RE75.S |
| M90  | 10 | -     | 805.RE90.N          | 805.RE90.S |

Ⓜ Package/Bulk Pack.

## SEALS



| Type | Ⓜ  | Nylon      | Silicone   |
|------|----|------------|------------|
| M12  | 10 | 805.RG12.Y | 805.RG12.S |
| M16  | 10 | 805.RG16.Y | 805.RG16.S |
| M20  | 10 | 805.RG20.Y | 805.RG20.S |
| M25  | 10 | 805.RG25.Y | 805.RG25.S |
| M32  | 10 | 805.RG32.Y | 805.RG32.S |
| M40  | 10 | 805.RG40.Y | 805.RG40.S |
| M50  | 10 | 805.RG50.Y | 805.RG50.S |
| M63  | 10 | 805.RG63.Y | 805.RG63.S |
| M75  | 10 | 805.RG75.Y | 805.RG75.S |
| M90  | 10 | 805.RG90.Y | 805.RG90.S |

Ⓜ Package/Bulk Pack.

# UNION-EX Series



**ATEX / IECEx - 2 GD**

| Ambient | Gas    |        |        | Dust    |         |         |
|---------|--------|--------|--------|---------|---------|---------|
| Zone    | 0 - Ga | 1 - Gb | 2 - Gc | 20 - Da | 21 - Db | 22 - Dc |

## POLYAMIDE CABLE GLANDS

1  
ATEX [Ex II 2 GD]  
2  
3



Short thread



Long thread

| Thread  | Ø cable<br>min-max | □  | Short thread |              | Long thread  |              |
|---------|--------------------|----|--------------|--------------|--------------|--------------|
|         |                    |    | Black        | Blue         | Black        | Blue         |
| M12x1.5 | 4.5 - 6.5          | 50 | 805.EX5412.K | 805.EX5412.B | 805.EX5512.K | 805.EX5512.B |
| M16x1.5 | 5.0 - 8.0          | 50 | 805.EX5416.K | 805.EX5416.B | 805.EX5516.K | 805.EX5516.B |
|         | 5.0 - 10.0         | 50 | 805.EX5417.K | 805.EX5417.B | 805.EX5517.K | 805.EX5517.B |
| M20x1.5 | 7.0 - 12.0         | 50 | 805.EX5420.K | 805.EX5420.B | 805.EX5520.K | 805.EX5520.B |
|         | 10.0 - 14.0        | 50 | 805.EX5421.K | 805.EX5421.B | 805.EX5521.K | 805.EX5521.B |
| M25x1.5 | 10.0 - 14.0        | 50 | 805.EX5425.K | 805.EX5425.B | 805.EX5525.K | 805.EX5525.B |
|         | 12.0 - 18.0        | 25 | 805.EX5426.K | 805.EX5426.B | 805.EX5526.K | 805.EX5526.B |
| M32x1.5 | 16.0 - 25.0        | 20 | 805.EX5432.K | 805.EX5432.B | 805.EX5532.K | 805.EX5532.B |
| M40x1.5 | 22.0 - 32.0        | 10 | 805.EX5440.K | 805.EX5440.B | 805.EX5540.K | 805.EX5540.B |
| M50x1.5 | 28.0 - 38.5        | 5  | 805.EX5450.K | 805.EX5450.B | 805.EX5550.K | 805.EX5550.B |
| M63x1.5 | 40.0 - 48.0        | 5  | 805.EX5463.K | 805.EX5463.B | 805.EX5563.K | 805.EX5563.B |

□ Package/Bulk Pack.  
- With seal



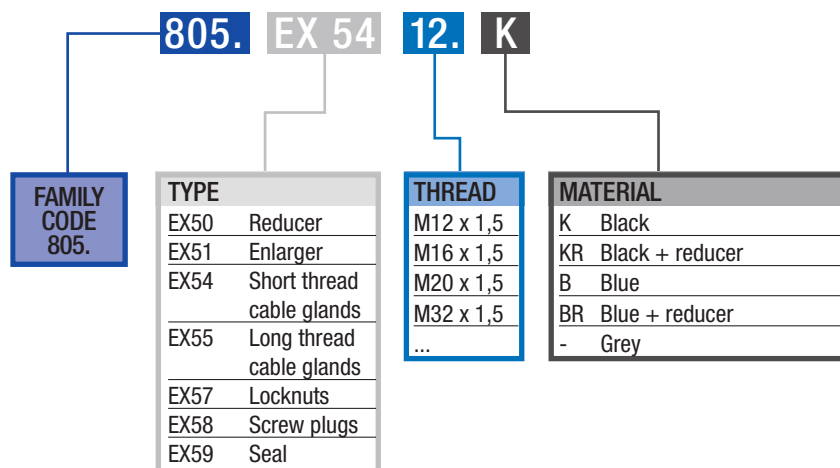
Short thread with reduced seal

Long thread with reduced seal

| Thread  | Ø cable min-max |    | Short thread with reduced seal |               | Long thread with reduced seal |               |
|---------|-----------------|----|--------------------------------|---------------|-------------------------------|---------------|
|         |                 |    | Black                          | Blue          | Black                         | Blue          |
| M12x1.5 | 3.0 - 5.0       | 50 | 805.EX5412.KR                  | 805.EX5412.BR | 805.EX5512.KR                 | 805.EX5512.BR |
| M16x1.5 | 4.0 - 6.0       | 50 | 805.EX5416.KR                  | 805.EX5416.BR | 805.EX5516.KR                 | 805.EX5516.BR |
|         | 4.0 - 7.0       | 50 | 805.EX5417.KR                  | 805.EX5417.BR | 805.EX5517.KR                 | 805.EX5517.BR |
| M20x1.5 | 5.0 - 9.0       | 50 | 805.EX5420.KR                  | 805.EX5420.BR | 805.EX5520.KR                 | 805.EX5520.BR |
|         | 8.0 - 12.0      | 50 | 805.EX5421.KR                  | 805.EX5421.BR | 805.EX5521.KR                 | 805.EX5521.BR |
| M25x1.5 | 8.0 - 12.0      | 50 | 805.EX5425.KR                  | 805.EX5425.BR | 805.EX5525.KR                 | 805.EX5525.BR |
|         | 10.0 - 16.0     | 25 | 805.EX5426.KR                  | 805.EX5426.BR | 805.EX5526.KR                 | 805.EX5526.BR |
| M32x1.5 | 14.0 - 21.0     | 20 | 805.EX5432.KR                  | 805.EX5432.BR | 805.EX5532.KR                 | 805.EX5532.BR |
| M40x1.5 | 16.0 - 26.0     | 10 | 805.EX5440.KR                  | 805.EX5440.BR | 805.EX5540.KR                 | 805.EX5540.BR |
| M50x1.5 | 20.0 - 31.0     | 5  | 805.EX5450.KR                  | 805.EX5450.BR | 805.EX5550.KR                 | 805.EX5550.BR |
| M63x1.5 | 30.0 - 39.0     | 5  | 805.EX5463.KR                  | 805.EX5463.BR | 805.EX5563.KR                 | 805.EX5563.BR |

□ Package/Bulk Pack.  
- With seal

## CODE STRUCTURE



# UNION-EX Series



## ENLARGER



| Thread<br>Male – Female | ⊞  | Grey       | Black        |
|-------------------------|----|------------|--------------|
| M12x1.5 - M16x1.5       | 50 | 805.EX5112 | 805.EX5112.K |
| M16x1.5 - M20x1.5       | 50 | 805.EX5116 | 805.EX5116.K |
| M20x1.5 - M25x1.5       | 50 | 805.EX5120 | 805.EX5120.K |
| M25x1.5 - M32x1.5       | 20 | 805.EX5125 | 805.EX5125.K |
| M32x1.5 - M40x1.5       | 20 | 805.EX5132 | 805.EX5132.K |
| M40x1.5 - M50x1.5       | 20 | 805.EX5140 | 805.EX5140.K |
| M50x1.5 - M63x1.5       | 10 | 805.EX5150 | 805.EX5150.K |

⊞ Package/Bulk Pack.  
- With neoprene seal

## REDUCER



| Thread<br>Male – Female | ⊞  | Grey       | Black        |
|-------------------------|----|------------|--------------|
| M16x1.5 - M12x1.5       | 50 | 805.EX5016 | 805.EX5016.K |
| M20x1.5 - M16x1.5       | 50 | 805.EX5020 | 805.EX5020.K |
| M25x1.5 - M20x1.5       | 50 | 805.EX5025 | 805.EX5025.K |
| M32x1.5 - M25x1.5       | 25 | 805.EX5032 | 805.EX5032.K |
| M40x1.5 - M32x1.5       | 10 | 805.EX5040 | 805.EX5040.K |
| M50x1.5 - M40x1.5       | 10 | 805.EX5050 | 805.EX5050.K |
| M63x1.5 - M50x1.5       | 10 | 805.EX5063 | 805.EX5063.K |

⊞ Package/Bulk Pack.  
- With neoprene seal

## LOCKNUTS



| Thread  | ⌘  | Grey       | Black        |
|---------|----|------------|--------------|
| M12x1.5 | 50 | 805.EX5712 | 805.EX5712.K |
| M16x1.5 | 50 | 805.EX5716 | 805.EX5716.K |
| M20x1.5 | 50 | 805.EX5720 | 805.EX5720.K |
| M25x1.5 | 50 | 805.EX5725 | 805.EX5725.K |
| M32x1.5 | 50 | 805.EX5732 | 805.EX5732.K |
| M40x1.5 | 20 | 805.EX5740 | 805.EX5740.K |
| M50x1.5 | 10 | 805.EX5750 | 805.EX5750.K |
| M63x1.5 | 5  | 805.EX5763 | 805.EX5763.K |

⌘ Package/Bulk Pack.

## SCREW PLUGS



| Thread  | ⌘  | Grey       | Black        |
|---------|----|------------|--------------|
| M12x1.5 | 50 | 805.EX5812 | 805.EX5812.K |
| M16x1.5 | 50 | 805.EX5816 | 805.EX5816.K |
| M20x1.5 | 50 | 805.EX5820 | 805.EX5820.K |
| M25x1.5 | 25 | 805.EX5825 | 805.EX5825.K |
| M32x1.5 | 15 | 805.EX5832 | 805.EX5832.K |
| M40x1.5 | 10 | 805.EX5840 | 805.EX5840.K |
| M50x1.5 | 10 | 805.EX5850 | 805.EX5850.K |
| M63x1.5 | 10 | 805.EX5863 | 805.EX5863.K |

⌘ Package/Bulk Pack.  
- With neoprene seal

# UNION-EX Series



## SEALS



| Type | ⊠  | Neoprene   | Silicone     |
|------|----|------------|--------------|
| M12  | 50 | 805.EX5912 | 805.EX5912.S |
| M16  | 50 | 805.EX5916 | 805.EX5916.S |
| M20  | 50 | 805.EX5920 | 805.EX5920.S |
| M25  | 20 | 805.EX5925 | 805.EX5925.S |
| M32  | 20 | 805.EX5932 | 805.EX5932.S |
| M40  | 20 | 805.EX5940 | 805.EX5940.S |
| M50  | 10 | 805.EX5950 | 805.EX5950.S |
| M63  | 5  | 805.EX5963 | 805.EX5963.S |

⊠ Package/Bulk Pack.

1 ATEX-IECE<sub>x</sub>  
[  II 2 GD ]

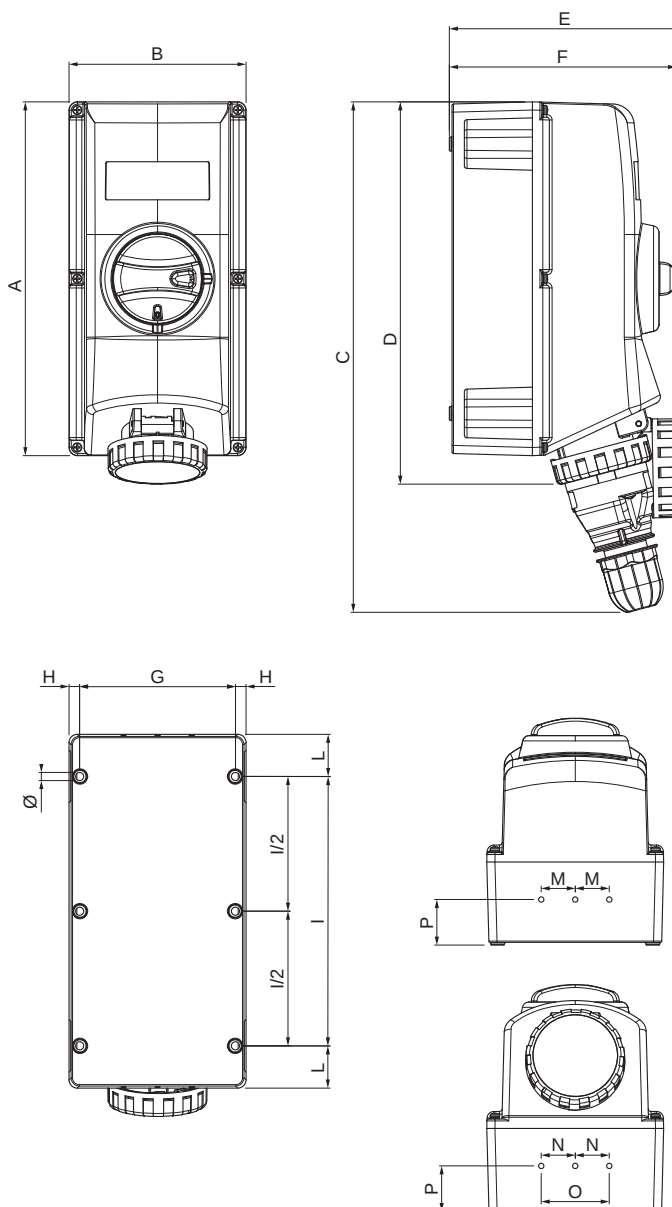
STANDARD DIMENSIONS

# ADVANCE-GRP[GD] Series



## DIMENSIONS

1  
ATEX [Ex] II 2 GD  
2  
3

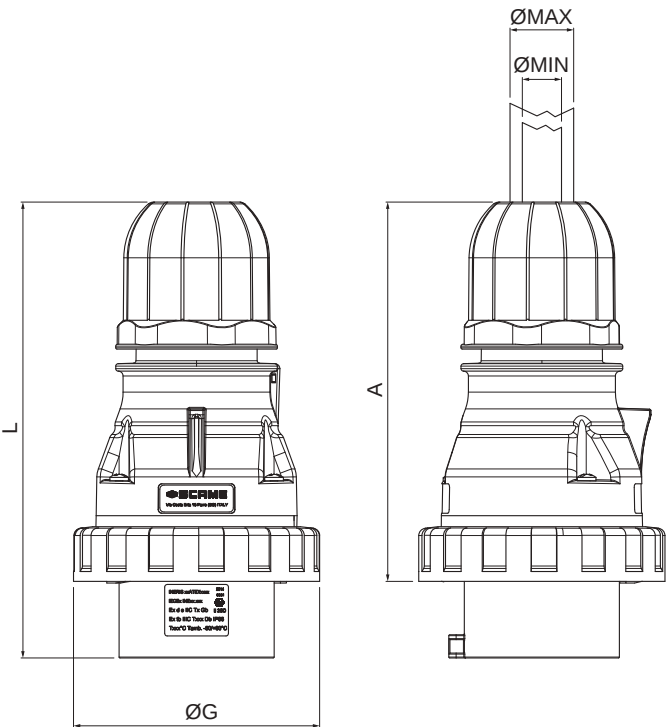


|      | TYPE   | A   | B   | C min | D   | E   | F      | G     | H    | Ø | I   | I/2 | L  | M    | N    | O   | P    |
|------|--------|-----|-----|-------|-----|-----|--------|-------|------|---|-----|-----|----|------|------|-----|------|
| 16A  | 2P+E   | 260 | 130 | 370   | 280 | 170 | 166,8  | 114,5 | 7,75 | 6 | 198 |     | 31 | 25   | 25   |     | 33,5 |
|      | 3P+E   | 260 | 130 | 375   | 282 | 175 | 166,8  | 114,5 | 7,75 | 6 | 198 |     | 31 | 25   | 25   |     | 33,5 |
|      | 3P+N+E | 260 | 130 | 393   | 282 | 182 | 166,8  | 114,5 | 7,75 | 6 | 198 |     | 31 | 25   | 25   |     | 33,5 |
| 32A  | 2P+E   | 260 | 130 | 395   | 285 | 189 | 166,8  | 114,5 | 7,75 | 6 | 198 |     | 31 | 25   | 25   |     | 33,5 |
|      | 3P+E   | 260 | 130 | 395   | 285 | 189 | 166,8  | 114,5 | 7,75 | 6 | 198 |     | 31 | 25   | 25   |     | 33,5 |
|      | 3P+N+E | 260 | 130 | 403   | 286 | 185 | 166,8  | 114,5 | 7,75 | 6 | 198 |     | 31 | 25   | 25   |     | 33,5 |
| 63A  | 3P+E   | 380 | 170 | 550   | 420 | 225 | 205,75 | 150   | 8,3  | 7 | 310 |     | 35 | 32,5 | 32,5 |     | 40   |
|      | 3P+N+E | 380 | 170 | 550   | 420 | 225 | 205,75 | 150   | 8,3  | 7 | 310 |     | 35 | 32,5 | 32,5 |     | 40   |
| 125A | 3P+E   | 575 | 280 | 800   | 626 | 253 | 250    | 257   | 11,5 | 9 | 468 |     | 54 | 50   |      | 130 | 49   |
|      | 3P+N+E | 575 | 280 | 800   | 626 | 253 | 250    | 257   | 11,5 | 9 | 468 | 234 | 54 | 50   |      | 130 | 49   |

(Dimensions in mm)



DIMENSIONS



| IP66 | TYPE   | A Min | ØG  | L Min | Ø Min | Ø Max |
|------|--------|-------|-----|-------|-------|-------|
| 16A  | 2P+E   | 116   | 73  | 140,5 | 6     | 15    |
|      | 3P+E   | 123   | 81  | 147,5 | 6     | 15    |
| 32A  | 3P+N+E | 140,5 | 88  | 165   | 9     | 20    |
|      | 2P+E   | 142,6 | 92  | 174   | 9     | 20    |
|      | 3P+E   | 142,6 | 92  | 174   | 9     | 20    |
| 63A  | 3P+N+E | 150   | 101 | 180,5 | 13    | 23    |
|      | 3P+E   | 166,5 | 112 | 217,5 | 17    | 33    |
|      | 3P+N+E | 166,5 | 112 | 217,5 | 17    | 33    |
| 125A | 3P+E   | 214,5 | 128 | 274   | 26    | 50    |
|      | 3P+N+E | 214,5 | 128 | 274   | 26    | 50    |

(Dimensions in mm)

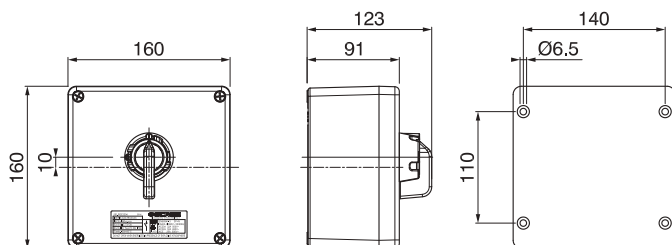
# ISOLATORS-EX[GD] Series



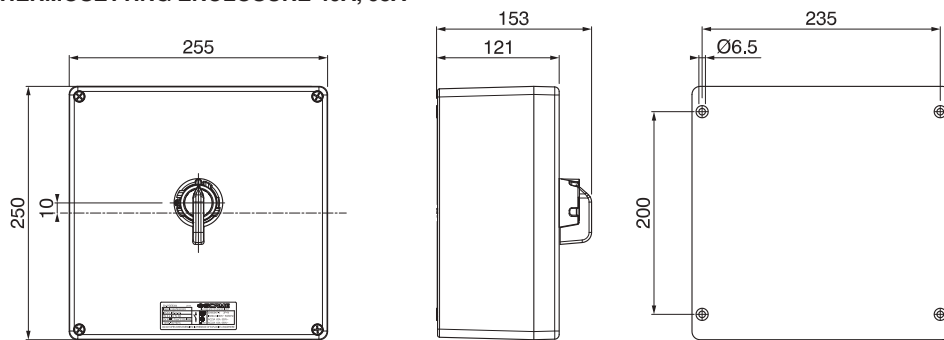
## DIMENSIONS

1  
ATEX [Ex II 2 GD]  
2  
3

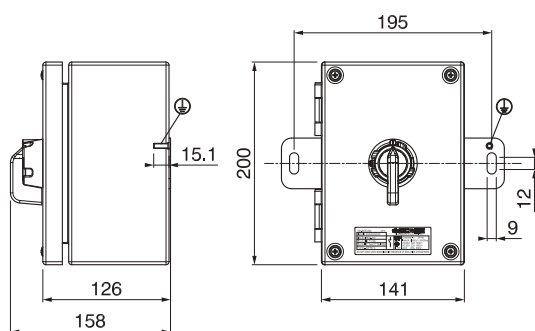
### THERMOSETTING ENCLOSURE 20A, 25A, 32A



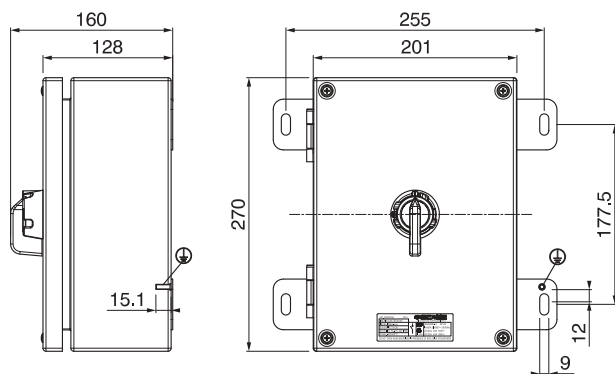
### THERMOSETTING ENCLOSURE 40A, 63A



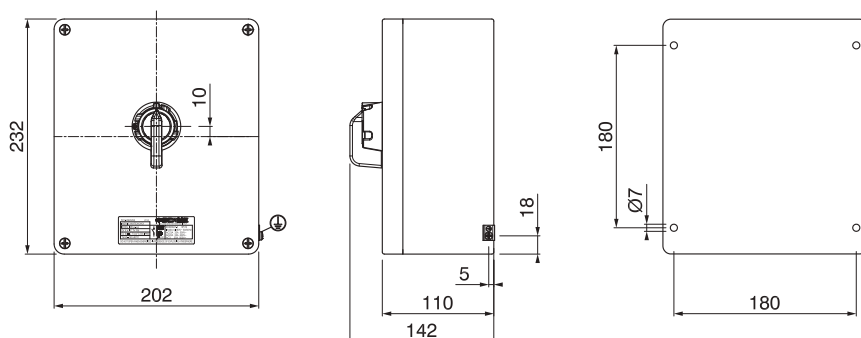
### STAINLESS STEEL ENCLOSURE 20A, 25A, 32A



### STAINLESS STEEL ENCLOSURE 40A, 63A

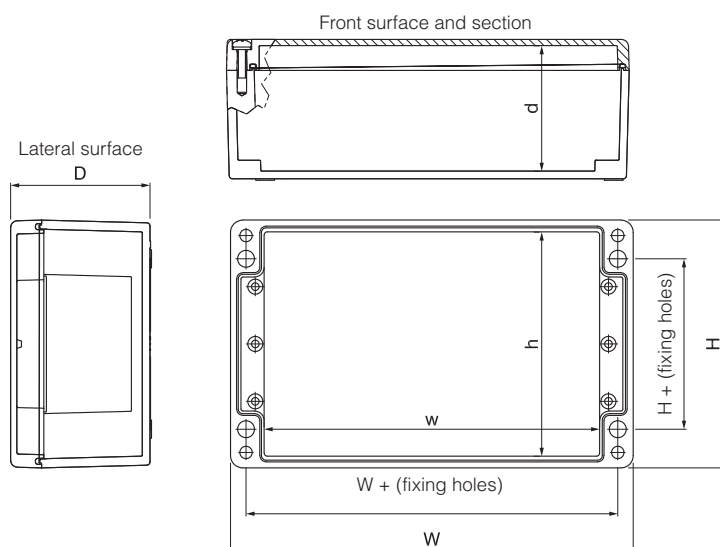


### ALUMINIUM ENCLOSURE 20A, 25A, 32A, 40A, 63A



(Dimensions in mm)

## DIMENSIONS



|                  | Code     | Size        | External |     |     | Internal |     |     | Fixings |     | Screws |
|------------------|----------|-------------|----------|-----|-----|----------|-----|-----|---------|-----|--------|
|                  |          |             | H        | W   | D   | h        | w   | d   | H+      | W+  |        |
| JUNCTION BOXES   | 644.0100 | 75x80x55    | 75       | 80  | 55  | 58       | 48  | 46  | 45      | 68  | M4     |
|                  | 644.0200 | 75x80x75    | 75       | 80  | 75  | 58       | 48  | 66  | 45      | 68  |        |
|                  | 644.0110 | 75x110x55   | 75       | 110 | 55  | 58       | 78  | 46  | 45      | 98  |        |
|                  | 644.0210 | 75x110x75   | 75       | 110 | 75  | 58       | 78  | 66  | 45      | 98  |        |
|                  | 644.0120 | 75x160x55   | 75       | 160 | 55  | 58       | 128 | 46  | 45      | 148 |        |
|                  | 644.0220 | 75x160x75   | 75       | 160 | 75  | 58       | 128 | 66  | 45      | 148 |        |
|                  | 644.0130 | 75x190x55   | 75       | 190 | 55  | 58       | 158 | 46  | 45      | 178 |        |
|                  | 644.0230 | 75x190x75   | 75       | 190 | 75  | 58       | 158 | 66  | 45      | 178 |        |
|                  | 644.0140 | 75x230x55   | 75       | 230 | 55  | 58       | 198 | 46  | 39      | 218 |        |
|                  | 644.0240 | 75x230x75   | 75       | 230 | 75  | 58       | 198 | 66  | 39      | 218 |        |
| CONTROL STATIONS | 644.0345 | 120x122x90  | 120      | 122 | 90  | 102      | 104 | 80  | 82      | 106 | M6     |
|                  | 644.0350 | 120x220x90  | 120      | 220 | 90  | 102      | 190 | 80  | 82      | 204 |        |
|                  | 644.0360 | 160x160x90  | 160      | 160 | 90  | 142      | 112 | 80  | 110     | 140 |        |
|                  | 644.0370 | 160x260x90  | 160      | 260 | 90  | 142      | 212 | 80  | 110     | 240 |        |
|                  | 644.0380 | 160x360x90  | 160      | 360 | 90  | 142      | 312 | 80  | 110     | 340 |        |
|                  | 644.0390 | 160x560x90  | 160      | 560 | 90  | 142      | 512 | 80  | 110     | 540 |        |
|                  | 644.0465 | 250x255x120 | 250      | 255 | 120 | 230      | 235 | 110 | 200     | 235 |        |
|                  | 644.0485 | 250x400x120 | 250      | 400 | 120 | 230      | 380 | 110 | 200     | 380 |        |
|                  | 644.0595 | 405x400x165 | 405      | 400 | 165 | 385      | 380 | 154 | 355     | 380 |        |

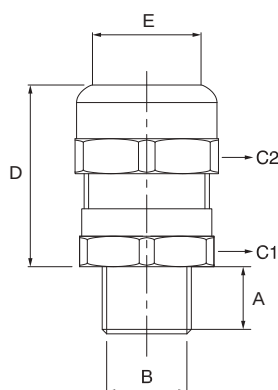
(Dimensions in mm)

# UNION-EX Series



## DIMENSIONS – METAL VERSIONS RAD

### CABLE GLANDS 805.RN...

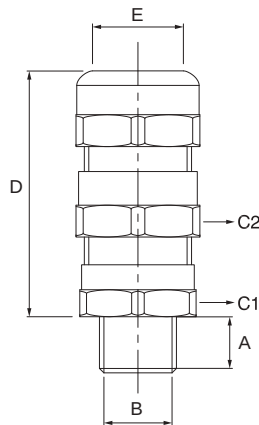


| Size       | E  | Ø A<br>(mm) | Ø B<br>(mm)   | C1  |     | C2  |     | D  | Weight<br>(gr) |
|------------|----|-------------|---------------|-----|-----|-----|-----|----|----------------|
|            |    |             |               |     |     |     |     |    |                |
| 16 (EP-SI) | 16 | 15          | 7 (M12)<br>11 | 24  | 26  | 24  | 26  | 38 | 94             |
| 20 (EP-SI) | 20 | 15          | 15            | 30  | 33  | 32  | 35  | 40 | 156            |
| 25 (EP-SI) | 25 | 15          | 19            | 35  | 38  | 36  | 39  | 40 | 185            |
| 32 (EP-SI) | 32 | 15          | 25            | 42  | 47  | 45  | 49  | 52 | 340            |
| 40 (EP-SI) | 38 | 15          | 35            | 48  | 53  | 50  | 55  | 52 | 421            |
| 50 (EP-SI) | 44 | 15          | 44            | 55  | 60  | 57  | 62  | 52 | 537            |
| 63 (EP-SI) | 54 | 15          | 57            | 68  | 74  | 67  | 72  | 52 | 749            |
| 75 (EP-SI) | 65 | 15          | 68            | 80  | 86  | 80  | 88  | 52 | 1085           |
| 90 (EP-SI) | 74 | 20          | 82            | 100 | 107 | 100 | 107 | 67 | 2125           |
| 91 (EP-SI) | 80 | 20          | 82            | 100 | 107 | 100 | 107 | 67 | 1759           |

(Dimensions in mm)

## DIMENSIONS – METAL VERSIONS RAD

### CABLE GLANDS 805.RAD...



| Size       | E  | Ø A<br>(mm) | Ø B<br>(mm)   | Armour range  |              | C1                                                                                    |                                                                                     | C2                                                                                    |                                                                                       | D   | Weight<br>(gr) |
|------------|----|-------------|---------------|---------------|--------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-----|----------------|
|            |    |             |               | Standard cone | Reduced cone |  |  |  |  |     |                |
| 16 (EP-SI) | 16 | 15          | 7 (M12)<br>11 | 0 ÷ 0,5       | 0,5 ÷ 0,75   | 24                                                                                    | 26                                                                                  | 24                                                                                    | 26                                                                                    | 58  | 126            |
| 20 (EP-SI) | 20 | 15          | 15            | 0 ÷ 0,5       | 0,5 ÷ 1,25   | 32                                                                                    | 33                                                                                  | 32                                                                                    | 35                                                                                    | 64  | 228            |
| 25 (EP-SI) | 25 | 15          | 19            | 0 ÷ 0,5       | 0,5 ÷ 1,25   | 36                                                                                    | 38                                                                                  | 36                                                                                    | 39                                                                                    | 64  | 264            |
| 32 (EP-SI) | 32 | 15          | 25            | 0 ÷ 1         | 1 ÷ 1,6      | 45                                                                                    | 47                                                                                  | 45                                                                                    | 49                                                                                    | 83  | 484            |
| 40 (EP-SI) | 38 | 15          | 35            | 0 ÷ 1         | 1 ÷ 1,6      | 50                                                                                    | 53                                                                                  | 50                                                                                    | 55                                                                                    | 83  | 576            |
| 50 (EP-SI) | 44 | 15          | 44            | 0 ÷ 1         | 1 ÷ 2        | 57                                                                                    | 60                                                                                  | 57                                                                                    | 62                                                                                    | 83  | 730            |
| 63 (EP-SI) | 54 | 15          | 57            | 0 ÷ 1         | 1 ÷ 2        | 67                                                                                    | 74                                                                                  | 67                                                                                    | 72                                                                                    | 83  | 961            |
| 75 (EP-SI) | 65 | 15          | 68            | 0 ÷ 1         | 1 ÷ 2        | 80                                                                                    | 86                                                                                  | 80                                                                                    | 88                                                                                    | 83  | 1392           |
| 90 (EP-SI) | 74 | 20          | 82            | 0 ÷ 2         | 2 ÷ 2,5      | 100                                                                                   | 107                                                                                 | 100                                                                                   | 107                                                                                   | 115 | 3026           |
| 91 (EP-SI) | 80 | 20          | 82            | 0 ÷ 2         | 2 ÷ 2,5      | 100                                                                                   | 107                                                                                 | 100                                                                                   | 107                                                                                   | 115 | 2434           |

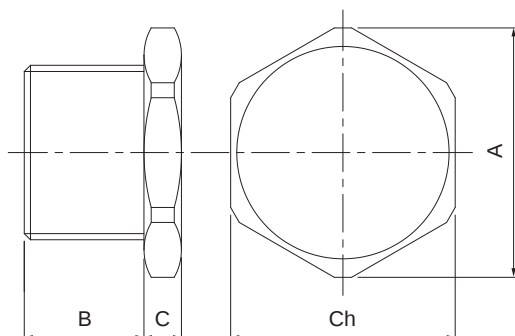
(Dimensions in mm)

# UNION-EX Series



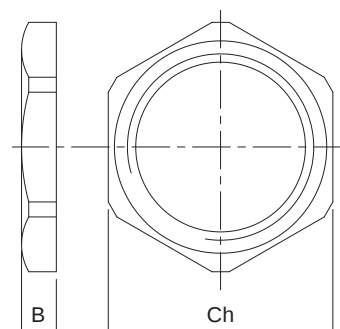
## DIMENSIONS – METAL VERSIONS RAD

### SCREW PLUGS 805.RT...



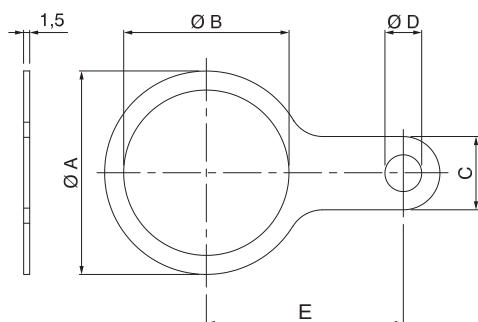
| Thread  | Ch  | A    | B  | C |
|---------|-----|------|----|---|
| M12x1.5 | 16  | 17,6 | 15 | 5 |
| M16x1.5 | 20  | 22   | 15 | 5 |
| M20x1.5 | 24  | 26,4 | 15 | 5 |
| M25x1.5 | 30  | 33   | 15 | 5 |
| M32x1.5 | 36  | 39,6 | 15 | 5 |
| M40x1.5 | 45  | 49,5 | 15 | 5 |
| M50x1.5 | 55  | 60   | 15 | 5 |
| M63x1.5 | 68  | 74   | 15 | 8 |
| M75x1.5 | 80  | 86   | 20 | 8 |
| M90x2   | 100 | 107  | 20 | 8 |

### LOCKNUTS 805.RL...



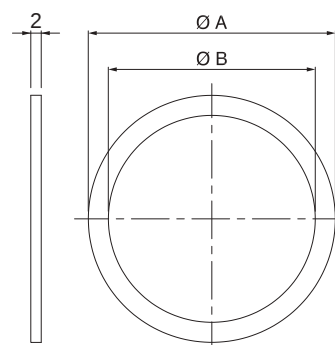
| Thread  | Ch  | B   |
|---------|-----|-----|
| M12x1.5 | 15  | 2,8 |
| M16x1.5 | 19  | 2,8 |
| M20x1.5 | 24  | 3   |
| M25x1.5 | 30  | 3,5 |
| M32x1.5 | 36  | 4   |
| M40x1.5 | 46  | 4,5 |
| M50x1.5 | 60  | 5   |
| M63x1.5 | 70  | 5,5 |
| M75x1.5 | 83  | 10  |
| M90x2   | 102 | 10  |

### EARTHING TAGS 805.RE...



| Type | Dimensions |    |    |     |     |
|------|------------|----|----|-----|-----|
|      | ØA         | ØB | C  | ØD  | E   |
| M12  | 30         | 14 | 12 | 6,5 | 30  |
| M16  | 30         | 18 | 12 | 6,5 | 30  |
| M20  | 30         | 22 | 12 | 6,5 | 30  |
| M25  | 36         | 28 | 15 | 6,5 | 35  |
| M32  | 52         | 34 | 18 | 9   | 50  |
| M40  | 52         | 42 | 18 | 9   | 50  |
| M50  | 62         | 52 | 22 | 11  | 60  |
| M63  | 75         | 65 | 22 | 11  | 70  |
| M75  | 88         | 77 | 22 | 11  | 80  |
| M90  | 105        | 92 | 30 | 14  | 100 |

### SEALS 805.RG...

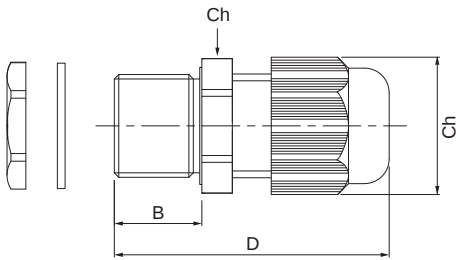


| Type | Dimensions |            |               |
|------|------------|------------|---------------|
|      | ØA         | ØB (Nylon) | ØB (Silicone) |
| M12  | 20         | 12,5       | 12            |
| M16  | 25         | 16,5       | 16            |
| M20  | 30         | 20,5       | 20            |
| M25  | 35         | 25,5       | 25            |
| M32  | 42         | 32,5       | 32            |
| M40  | 50         | 40,5       | 40            |
| M50  | 60         | 50,5       | 50            |
| M63  | 76,5       | 63,5       | 63            |
| M75  | 85         | 75,5       | 75            |
| M90  | 104        | 90,5       | 90            |

(Dimensions in mm)

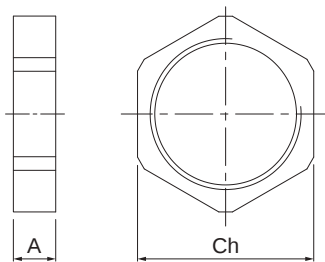
## DIMENSIONS – POLYAMIDE VERSIONS

### CABLE GLANDS 805.EX54/55...



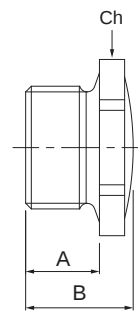
|              | Thread  | Cable inlets | Short |    |    | Long |    |    |
|--------------|---------|--------------|-------|----|----|------|----|----|
|              |         |              | B     | Ch | D  | B    | Ch | D  |
| Normal seal  | M12x1.5 | 4.5 - 6.5    | 8     | 15 | 32 | 15   | 15 | 39 |
|              | M16x1.5 | 5.0 - 8.0    | 10    | 19 | 37 | 15   | 19 | 42 |
|              |         | 5.0 - 10.0   | 10    | 22 | 39 | 15   | 22 | 44 |
|              | M20x1.5 | 7.0 - 12.0   | 10    | 24 | 40 | 15   | 24 | 45 |
|              |         | 10.0 - 14.0  | 10    | 27 | 43 | 15   | 27 | 48 |
|              | M25x1.5 | 10.0 - 14.0  | 10    | 27 | 45 | 15   | 27 | 50 |
|              |         | 12.0 - 18.0  | 10    | 33 | 49 | 15   | 33 | 53 |
|              | M32x1.5 | 16.0 - 25.0  | 10    | 42 | 52 | 15   | 42 | 57 |
|              | M40x1.5 | 22.0 - 32.0  | 10    | 53 | 62 | 16   | 53 | 68 |
|              | M50x1.5 | 28.0 - 38.5  | 12    | 60 | 67 | 16   | 60 | 71 |
| Reduced seal | M63x1.5 | 40.0 - 48.0  | 12    | 70 | 68 | 16   | 70 | 72 |
|              | M12x1.5 | 3.0 - 5.0    | 8     | 15 | 32 | 15   | 15 | 39 |
|              | M16x1.5 | 4.0 - 6.0    | 10    | 19 | 37 | 15   | 19 | 42 |
|              |         | 4.0 - 7.0    | 10    | 22 | 39 | 15   | 22 | 44 |
|              | M20x1.5 | 5.0 - 9.0    | 10    | 24 | 40 | 15   | 24 | 45 |
|              |         | 8.0 - 12.0   | 10    | 27 | 43 | 15   | 27 | 48 |
|              | M25x1.5 | 8.0 - 12.0   | 10    | 27 | 45 | 15   | 27 | 50 |
|              |         | 10.0 - 16.0  | 10    | 33 | 49 | 15   | 33 | 53 |
|              | M32x1.5 | 14.0 - 21.0  | 10    | 42 | 52 | 15   | 42 | 57 |
|              | M40x1.5 | 16.0 - 26.0  | 10    | 53 | 62 | 16   | 53 | 68 |
|              | M50x1.5 | 20.0 - 31.0  | 12    | 60 | 67 | 16   | 60 | 71 |
|              | M63x1.5 | 30.0 - 39.0  | 12    | 70 | 68 | 16   | 70 | 72 |

### LOCKNUTS 805.EX57...



| Thread  | Ch | A   |
|---------|----|-----|
| M12x1.5 | 17 | 5   |
| M16x1.5 | 22 | 5   |
| M20x1.5 | 24 | 5   |
| M25x1.5 | 30 | 6   |
| M32x1.5 | 38 | 7,5 |
| M40x1.5 | 50 | 8   |
| M50x1.5 | 60 | 9   |
| M63x1.5 | 75 | 10  |

### SCREW PLUGS 805.EX58...



| Thread  | Ch | A  | B    |
|---------|----|----|------|
| M12x1.5 | 16 | 8  | 11   |
| M16x1.5 | 20 | 8  | 12   |
| M20x1.5 | 26 | 9  | 13   |
| M25x1.5 | 32 | 10 | 15   |
| M32x1.5 | 40 | 11 | 16,5 |
| M40x1.5 | 48 | 12 | 18   |
| M50x1.5 | 55 | 13 | 21   |
| M63x1.5 | 70 | 15 | 24,5 |

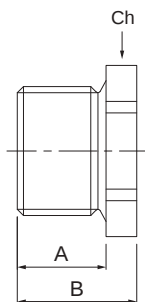
(Dimensions in mm)

# UNION-EX Series



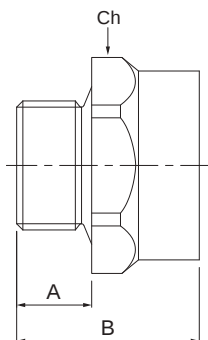
## DIMENSIONS – POLYAMIDE VERSIONS

### REDUCER 805.EX50...



| Male thread | Female thread | Ch | A  | B    |
|-------------|---------------|----|----|------|
| M16x1.5     | M12x1.5       | 20 | 8  | 11   |
| M20x1.5     | M16x1.5       | 24 | 9  | 12   |
| M25x1.5     | M20x1.5       | 30 | 10 | 13,5 |
| M32x1.5     | M25x1.5       | 36 | 11 | 15   |
| M40x1.5     | M32x1.5       | 44 | 12 | 16   |
| M50x1.5     | M40x1.5       | 55 | 13 | 18   |
| M63x1.5     | M50x1.5       | 70 | 15 | 21   |

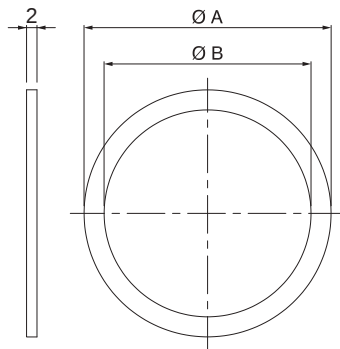
### ENLARGER 805.EX51...



| Male thread | Female thread | Ch | A  | B  |
|-------------|---------------|----|----|----|
| M12x1.5     | M16x1.5       | 20 | 8  | 19 |
| M16x1.5     | M20x1.5       | 24 | 8  | 20 |
| M20x1.5     | M25x1.5       | 30 | 9  | 22 |
| M25x1.5     | M32x1.5       | 36 | 10 | 24 |
| M32x1.5     | M40x1.5       | 44 | 11 | 26 |
| M40x1.5     | M50x1.5       | 55 | 12 | 28 |
| M50x1.5     | M63x1.5       | 70 | 13 | 32 |

(Dimensions in mm)

# SEALS 805.EX59...



| Type | ØA | ØB   |
|------|----|------|
| M12  | 15 | 10   |
| M16  | 20 | 13,9 |
| M20  | 24 | 18   |
| M25  | 30 | 23   |
| M32  | 40 | 30   |
| M40  | 48 | 38   |
| M50  | 58 | 48   |
| M63  | 75 | 61   |
| M75  | 90 | 72   |

(Dimensions in mm)



## 2 ATEX [ II 2 D]

Zone 21 (Db)

Zone 22 (Dc)

ST  
US  
DO



**2.1**  
ADVANCE-GRP[EX] Series .....PAGE 80



**2.2**  
OPTIMA-EX Series.....PAGE 88



**2.3**  
ISOLATORS-EX Series.....PAGE 92

**2.1**



**2.2**



**2.3**



# ADVANCE-GRP[EX] Series



## SWITCHED INTERLOCKED SOCKET OUTLETS

## REFERENCE STANDARDS

1  
2  
ATEX [Ex II 2 D]  
3



## VERSIONS WITH MECHANICAL INTERLOCK

|  |                                   |                |
|--|-----------------------------------|----------------|
|  | With switch-disconnector          | 16A-32A<br>63A |
|  | With switch-disconnector and fuse | 16A-32A<br>63A |

## PRODUCTS FOR USE IN A POTENTIALLY EXPLOSIVE ENVIRONMENT

Scame offers products suitable for installation into environments under potential risk of explosion identified as Zone 21/22 Db-Dc and that enter into the field of application for the ATEX Directive (European Directive 94/9/CE).



**SOCKET LABEL  
ADVANCE-GRP[EX] SERIES**

**SCAME**

Via Costa Erta 15 Parre BG ITALY

2014

|                          |  |       |                              |
|--------------------------|--|-------|------------------------------|
| 503.6387.F               |  |       | 3P+N+± 63A - 6h<br>346-415V~ |
| IMQ 11 ATEX 010          |  | 0051  |                              |
| Ex tb IIIC T90°C Db IP66 |  | II 2D |                              |
| T90°C Ta -25 +60°C       |  |       |                              |

DO NOT OPEN WHEN ENERGIZED ENCLOSURE AND WAIT AT LEAST 15 MINUTES AFTER HAVING DISCONNECTED POWER  
WARNING THE CABLE ENTRY POINT CAN BE EXCEED 85°C

ATEX

### EN 60079-0

Electrical apparatus for use in the presence of combustible dust.  
*Part 0: General requirements.*

ATEX

### EN 60079-31

Electrical apparatus for use in the presence of combustible dust.  
*Part 31: Protection by enclosures 'tD'.*

### EN 60309-1

Plugs, socket outlets and couplers for industrial purposes.  
*Part 1: general requirements.*

### EN 60309-2

Plugs, socket outlets and couplers for industrial purposes.  
*Part 2: dimensional interchangeability requirements for pin and contact-tube accessories of harmonised configurations.*

### EN 60309-4

Plugs, socket-outlets and couplers for industrial purposes.  
*Part 4: Switched socket-outlets and connectors with or without interlock.*

## ■ BEHAVIOUR WITH CHEMICAL AND ATMOSPHERIC AGENTS

| Saline solution | Acids              |           | Bases              |           | Solvents  |           |           |           | Mineral oil | UV rays   |
|-----------------|--------------------|-----------|--------------------|-----------|-----------|-----------|-----------|-----------|-------------|-----------|
|                 | Concentrated       | Diluted   | Concentrated       | Diluted   | Hexane    | Benzol    | cetone    | Icohol    |             |           |
| Resistant       | Limited Resistance | Resistant | Limited Resistance | Resistant | Resistant | Resistant | Resistant | Resistant | Resistant   | Resistant |

For specific substances please contact our technical service.

## ■ TECHNICAL CHARACTERISTICS

|                                             |                                                    |
|---------------------------------------------|----------------------------------------------------|
| Rated current:                              | <b>16A-32A-63A</b>                                 |
| Rated voltage:                              | <b>100÷690V~</b>                                   |
| Frequency:                                  | <b>50÷60Hz</b>                                     |
| Insulating voltage:                         | <b>500/690V~</b>                                   |
| Self-extinguishing GW test:                 | <b>960°C</b>                                       |
| Self-extinguishing UL94:                    | <b>V0</b>                                          |
| Switch-disconnectors:<br>16A-32A-63A        | <b>COMMAND Series<br/>Category AC22A</b>           |
| Fuse:<br>16A-32A<br>63A                     | <b>gG 10,3x38mm<br/>gG 22x58mm</b>                 |
| ATEX Code:                                  | <b>Ex II 2 D</b>                                   |
| Ex Protection type:                         | <b>Ex tb IIIC T90°C Db IP66<br/>Ta -25°C +60°C</b> |
| Maximum permissible<br>surface temperature: | <b>T90°C</b>                                       |
| Protection degree:                          | <b>IP66</b>                                        |
| Impact Resistance:                          | <b>7J</b>                                          |
| Colour:                                     | <b>grey RAL 7037</b>                               |

## ■ ATEX CERTIFICATE

Interlocked switch sockets: **IMQ 11 ATEX 010**  
16A-32A-63A

## ■ CABLE ENTRY

Maximum entry with cable glands

| Rated current<br>A) | Single socket      |                    |
|---------------------|--------------------|--------------------|
|                     | Upper              | Upper              |
| 16A-32A             | M32                | M32                |
| 63A                 | KIT 579.EX0201 (*) | KIT 579.EX0201 (*) |

(\*) Cable entry in the 63A version must be done through the relevant junction box equipped with a single cable entry type M50x1.5 (Junction box Kit art. 579.EX0201).

## ■ WIRING OPERATIONS

Wiring capacity of the terminals mm<sup>2</sup>)

| Rated<br>current A) | Socket outlets |     |
|---------------------|----------------|-----|
|                     | Min            | Max |
| 16A                 | 4              | 4   |
| 32A                 | 10             | 10  |
| 63A                 | 25             | 25  |

(\*) In case of flexible cable max 70 mm<sup>2</sup>.

# ADVANCE-GRP[EX] Series



## SPECIAL FEATURES

1

2

ATEX [EX] II 2 D]

3



### OUTSTANDING IMPACT RESISTANCE

The glass-fibre reinforced polyester used in **ADVANCE-GRP[EX]** and the high thickness of the casing walls guarantee an excellent mechanical resistance to impacts.

The **SMC** technology used to produce the casings makes **ADVANCE-GRP[EX]** an indestructible product.

The impact resistance of the casings is higher than 20J (IK10) according to EN50102, even under limit temperature conditions (-40°C +60°C).



### RESISTANCE TO CHEMICAL AGENTS

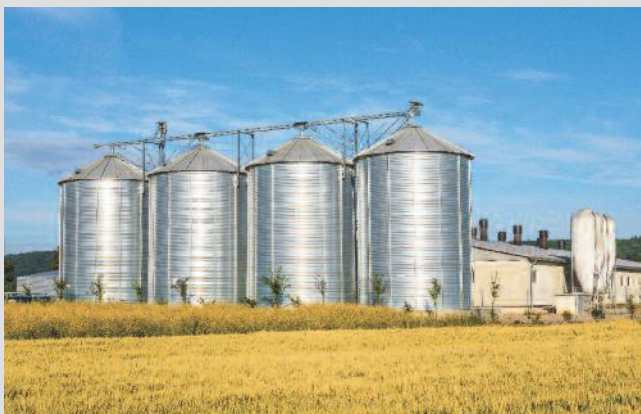
The **ADVANCE-GRP[EX]** interlocked sockets and casings, thanks to the glass-fibre reinforced polyester with which they are produced, have excellent resistance to aggressive chemical substances, saline solutions, diluted acids, hydrocarbons, mineral oils, alcoholic substances. They are ideal for use in highly corrosive atmospheres.



### RESISTANCE TO ATMOSPHERIC AGENTS

The structure and materials used also make **ADVANCE-GRP[EX]** a product suited for the most extreme environmental conditions. The double degree of protection IP66, guarantees an excellent seal against the entry of solid objects or liquids into the casings.

Outstanding resistance to UV radiation, exceptional reliability under environmental stress and use at both low and high ambient temperatures (-25°C +60°C).



### EX VERSIONS

The **ADVANCE-GRP[EX]** Series includes a series of 16A, 32A, 63A interlocked sockets for installation in environments with a potential risk of explosion identified as zone 21/22 Db-Dc (Dust) which fall under the area of application of the Atex Directive (European Directive 94/9/EC), compliant with the standards EN60079-31.

Type of protection :

II 2D - Ex tb IIIC T90°C Db IP66

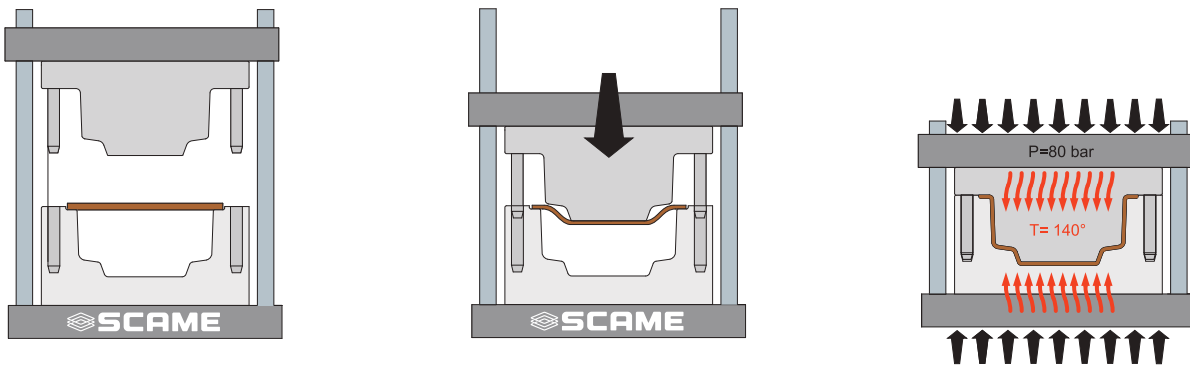
Ta -25°C +60°C.

## CHARACTERISTICS

The **ADVANCE-GRP[EX]** product line includes a series of 16A, 32A, 63A interlocked sockets (compliant with EN60309-4 standards) and the casings to contain them. It's the most complete range of interlocked sockets produced in GRP (*Glass Reinforced Polyester*) thermosetting material.

A unique feature which enhances the exceptional mechanical strength of **ADVANCE-GRP[EX]** products is the **SMC** (*Sheet Moulding Compound*) production process used for the casings.

**SMC** is a technology which uses exclusively non-woven sheets, pre-impregnated with polyester resin. This method consists in preparing the sheet material inside a mould which, equipped with a negative mould, presses the composite so as to allow compaction.



**SMC** is an advanced technology which enhances the quality of the raw material without reducing the high-strength characteristics during transformation; it's a high-performing technology in terms of the mechanical performance of the resultant product (glass fibre length, homogeneity of the material, integrity of the fibres).

On the contrary, the **BMC** (*Bulk Moulding Compound*) technology is a technology for moulding composite materials which uses a raw material available in "blocks" (short, charged fibres) which are subjected to high thermomechanical stress during the transformation process, consequently diminishing the mechanical properties of the details, thereby reducing the impact strength and flexural strength.

The glass-fibre reinforced polyester used in **ADVANCE-GRP[EX]** guarantees excellent mechanical strength and a long lifetime: this material is highly resistant to contamination, completely corrosion resistant and suited for applications requiring the use of components with low smoke emission and no halogens, **LSOH** (*Low Smoke Zero Halogen*) components. The outstanding properties of the material are also guaranteed over time, thanks to the high **RTI** value (*Relative Temperature Index*), measured to be 20,000h. Numerous verifications and tests have been carried out, even UV resistance tests, in order to guarantee the long duration of the material's initial performance.

The thickness of the walls is sufficient to offer an excellent alternative to aluminium, stainless steel or cast iron.

## OUTSTANDING HEAT AND FIRE RESISTANCE

The glass-fibre reinforced polyester used in **ADVANCE-GRP[EX]** guarantees excellent heat and fire resistance: it does not propagate flames, emit halogens or smoke.

This material has outstanding flame retardancy: Glow Wire 960°C according to EN 60695-2-1; V0 according to UL94. It's suited for applications requiring the use of components with low smoke emission and no halogens, **LSOH** (*Low Smoke Zero Halogen*).



# ADVANCE-GRP[EX] Series

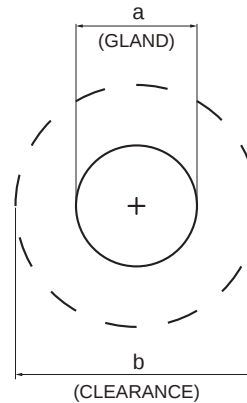
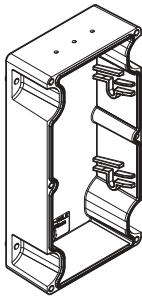


## ■ TECHNICAL FEATURES, CROSS SECTIONAL AREA AND TORQUE

1  
2  
ATEX [II 2 D]  
3

| RATED CURRENT                                                           |  |                                        | 16A                     | 32A | 63A |
|-------------------------------------------------------------------------|--|----------------------------------------|-------------------------|-----|-----|
| Switch-command and/or fuse protection                                   |  | Catalogue number                       | Terminals – Torque (Nm) |     |     |
| Switch type serie Command (SCAME)                                       |  | 503.16...<br>503.32...<br>503.63...    | 0,8                     | 0,8 | 3,6 |
| Switch-Command & fuse<br>16-32A : 10:3 38 gG<br>63A : CH 22 X 58 63A gG |  | 503.16...F<br>503.32...F<br>503.63...F | 0,8                     | 0,8 | 3,6 |
| Earth terminals                                                         |  | 503.16...<br>503.32...<br>503.63...    | 1,2                     | 1,2 | 3,5 |

### CABLE ENTRY



| 16A/32A<br>WxD<br>(mm <sup>2</sup> ) | 63A<br>WxD<br>(mm <sup>2</sup> ) |
|--------------------------------------|----------------------------------|
| 80x45                                | 110x55                           |

|         | Type<br>cable entry<br>M | Type<br>cable entry<br>PG | GLAND<br>a (mm) | CLEARANCE<br>b (mm) | Area A<br>n° |
|---------|--------------------------|---------------------------|-----------------|---------------------|--------------|
| 16A/32A | M32                      |                           | 33              | 50                  | 2            |
|         |                          | PG29                      | 37,5            | 50                  | 2            |

#### NOTE:

NOTE: Use only Ex e and/or Ex tb IIIC approved glands (as relevant). Certified cable glands can only be fitted with a suitable IP rating commensurate with IP rating of the enclosure. Refer to the instructions of cable glands manufacturer.

**Cable entry for 63A socket have to be done with the only one cable entry type M50x1,5 (kit type, art. 579.EX0201).**

## ■ CROSS SECTIONAL AREAS AND CABLE TEMPERATURE

FINELY-STRANDED 16A: 4mm<sup>2</sup> - 32A: 10mm<sup>2</sup> - 63A: 25mm<sup>2</sup>

SINGLE-WIRE 16A: 4mm<sup>2</sup> - 32A: 10mm<sup>2</sup> - 63A: 25mm<sup>2</sup>

| Rated current | Max. current |             |             | Optima-EX<br>ΔT cable |
|---------------|--------------|-------------|-------------|-----------------------|
|               | T. amb 40°C  | T. amb 50°C | T. amb 60°C |                       |
| 16A           | -            | -           | 16A         | -                     |
| 32A           | -            | -           | 25A         | -                     |
| 63A           | 55A          | 50A         | 45A         | 85°C                  |



# ADVANCE-GRP[EX] Series



**ATEX / IECEx - 2 GD**

| Ambient | Gas    |        |        | Dust    |                |                |
|---------|--------|--------|--------|---------|----------------|----------------|
| Zone    | 0 - Ga | 1 - Gb | 2 - Gc | 20 - Da | <b>21 - Db</b> | <b>22 - Dc</b> |

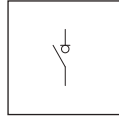
## MECHANICALLY INTERLOCKED SOCKET OUTLETS WITH I-Device IP66

1

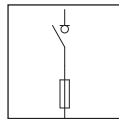
2

ATEX [EX II 2 D]

3



| Description         | Socket | Hz    | Volt     | Colour | h | 16A      | 32A      | 63A      |
|---------------------|--------|-------|----------|--------|---|----------|----------|----------|
|                     |        |       |          |        |   | □ 1      | □ 1      | □ 1      |
| Switch-disconnector | 2P+E   | 50/60 | 200-250V |        | 6 | 503.1683 | 503.3283 | 503.6383 |
|                     | 3P+E   | 50/60 | 380-415V |        | 6 | 503.1686 | 503.3286 | 503.6386 |
|                     | 3P+N+E | 50/60 | 346-415V |        | 6 | 503.1687 | 503.3287 | 503.6387 |



| Description                      | Socket | Hz    | Volt     | Colour | h | 16A        | 32A        | 63A        |
|----------------------------------|--------|-------|----------|--------|---|------------|------------|------------|
|                                  |        |       |          |        |   | □ 1        | □ 1        | □ 1        |
| Switch-disconnector and fuse (*) | 2P+E   | 50/60 | 200-250V |        | 6 | 503.1683-F | 503.3283-F | 503.6383-F |
|                                  | 3P+E   | 50/60 | 380-415V |        | 6 | 503.1686-F | 503.3286-F | 503.6386-F |
|                                  | 3P+N+E | 50/60 | 346-415V |        | 6 | 503.1687-F | 503.3287-F | 503.6387-F |

(\*) Fuses not included.

□ Package/Bulk Pack.

## I-Device

An electronic device controls (Intelligence Device) the status of the interlocked socket, monitoring the electrical functionality:  
- operation of the signalling and control card is guaranteed even when the load is not connected;

| INDICATOR LIGHT ON                                                    | INDICATOR LIGHT FLASHING                      | INDICATOR LIGHT OFF                             |
|-----------------------------------------------------------------------|-----------------------------------------------|-------------------------------------------------|
|                                                                       |                                               |                                                 |
| indicates that the fuses are not open and all the phases are present; | signals the interruption of one or more fuses | indicates that the socket outlet is not powered |
|                                                                       | signals the absence of a phase (*)            |                                                 |
| indicates that the socket outlet is power;                            |                                               |                                                 |

(\*) For single-phase products, in case the phase/neutral is missing the pilot lamp is turned off.

## ■ ACCESSORIES AND COMPLEMENTARY PRODUCTS



| Description                                                              | Contacts |      |          |
|--------------------------------------------------------------------------|----------|------|----------|
| Microswitch Kit for Advance GRP<br>16A-32A-63A for plug-inserted control | 1NO/1NC  | 1/12 | 579.0100 |

Max 1 kit for 16A-32A sockets; Max 2 kit for 63A sockets.



| Description                       |  |      |            |
|-----------------------------------|--|------|------------|
| Junction box Kit (63A) M50-EX (*) |  | 1/12 | 579.EX0201 |

(\*) Only for the 63A version. Cable gland M50 available upon request.

## ■ AUXILIARY CONTACTS



| Description | For switches |    |              |
|-------------|--------------|----|--------------|
| NC contact  | 16A-32A      | 10 | 590.PL004001 |
|             | 63A          | 10 | 590.PL004003 |
| NO contact  | 16A-32A      | 10 | 590.PL004002 |
|             | 63A          | 10 | 590.PL004004 |

NC= normally closed.  
NO= normally open.

□ Package/Bulk Pack.

## ■ SUPPORTS IN GALVANISED STEEL (FOR ZONE 22)



SCAME features an in-house design department (**CIT**) that can quickly carry out feasibility analyses at the customer's request, as well as suitable equipment and qualified personnel for the construction, mounting and assembly of ADVANCE-GRP[EX] batteries.

# OPTIMA-EX Series



## PLUGS



## VERSIONS



Plugs

16A-32A  
63A

## REFERENCE STANDARDS

ATEX

### EN 60079-0

Electrical apparatus for use in the presence of combustible dust.  
*Part 0: General requirements.*

ATEX

### EN 60079-31

Electrical apparatus for use in the presence of combustible dust.  
*Part 31: Protection by enclosures 'tD'.*

### EN 60309-1

Plugs, socket outlets and couplers for industrial purposes.  
*Part 1: general requirements.*

### EN 60309-2

Plugs, socket outlets and couplers for industrial purposes.  
*Part 2: dimensional interchangeability requirements for pin and contact-tube accessories of harmonised configurations.*

## PRODUCTS FOR USE IN A POTENTIALLY EXPLOSIVE ENVIRONMENT

Scame offers products suitable for installation into environments under potential risk of explosion identified as Zone 21/22 Db-Dc and that enter into the field of application for the ATEX Directive (European Directive 94/9/CE).



PLUG LABEL  
OPTIMA-EX SERIES

|                                                                |      |
|----------------------------------------------------------------|------|
| <b>SCAME</b> 2014                                              |      |
| Via Costa Ertà 15 Parre BG ITALY                               |      |
| 3P+N+ $\pm$ - 32A - 6h / 346-415V~                             |      |
| 218.EX3237                                                     | <br> |
| IMQ 11 ATEX 011                                                |      |
| Ex tb IIIC Db IP66                                             |      |
| T90°C Ta -25 + +60°C                                           |      |
| DO NOT OPEN WHEN ENERGIZED IN PRESENCE OF EXPLOSIVE ATMOSPHERE |      |

## ■ BEHAVIOUR WITH CHEMICAL AND ATMOSPHERIC AGENTS

| Saline solution | Acids              |           | Bases              |           | Solvents  |           |           |           | Mineral oil | UV rays   |
|-----------------|--------------------|-----------|--------------------|-----------|-----------|-----------|-----------|-----------|-------------|-----------|
|                 | Concentrated       | Diluted   | Concentrated       | Diluted   | Hexane    | Benzol    | cetone    | Icohol    |             |           |
| Resistant       | Limited Resistance | Resistant | Limited Resistance | Resistant | Resistant | Resistant | Resistant | Resistant | Resistant   | Resistant |

For specific substances please contact our technical service.

## ■ TECHNICAL CHARACTERISTICS

|                                          |                                                    |
|------------------------------------------|----------------------------------------------------|
| Rated current:                           | <b>16A-32A-63A</b>                                 |
| Rated voltage:                           | <b>100÷690V~</b>                                   |
| Frequency:                               | <b>50÷60Hz</b>                                     |
| Insulating voltage:                      | <b>500/690V~</b>                                   |
| Self-extinguishing GW test:              | <b>960°C</b>                                       |
| Self-extinguishing UL94:                 | <b>V0</b>                                          |
| ATEX Code:                               | <b>Ex II 2 D</b>                                   |
| Ex Protection type:                      | <b>Ex tb IIIC T90°C Db IP66<br/>Ta -25°C +60°C</b> |
| Maximum permissible surface temperature: | <b>T90°C</b>                                       |
| Protection degree:                       | <b>IP66</b>                                        |
| Impact Resistance:                       | <b>7J</b>                                          |
| Plugs material:                          | <b>Thermoplastic</b>                               |
| Plugs colour:                            | <b>Black RAL9011</b>                               |

## ■ ATEX CERTIFICATE

Plugs 16A-32A-63A: **IMQ 11 ATEX 011**

## ■ WIRING OPERATIONS

Wiring capacity of the terminals mm<sup>2</sup>)

| Rated current A) | Plugs |     |
|------------------|-------|-----|
|                  | Min   | Max |
| <b>16A</b>       | 2,5   | 2,5 |
| <b>32A</b>       | 6     | 6   |
| <b>63A</b>       | 16    | 16  |

(\*) In case of flexible cable max 70 mm<sup>2</sup>.

# OPTIMA-EX Series



## TECHNICAL FEATURES

1

2

ATEX [EX II 2 D]

3

| OPTIMA-EX Series                                    | Unit  |        | Value        |              |              |
|-----------------------------------------------------|-------|--------|--------------|--------------|--------------|
| Rated Current                                       |       |        | 16A          | 32A          | 63A          |
| Code                                                |       |        | 218.16...-EX | 218.32...-EX | 218.63...-EX |
| Suitable Size cables<br>Ground-Terminals            | (mm²) |        | 2.5          | 6            | 16           |
| Power Supply Terminals - Tightening-Torque          | (Nm)  |        | 0.8          | 0.8          | 2.2          |
| Cable size accepted by Cable-Clamp<br>(eg.H07RN-F)  | (mm)  | 2P+E   | 10.9-14      | 14.1-18      | 22-34        |
|                                                     |       | 3P+E   | 12.1-15.5    | 15.7-20      | 22-34        |
|                                                     |       | 3P+N+E | 13.3-17      | 17.5-22.5    | 22-34        |
| Cable Gland/Cable-Clamp<br>Tightening-Torque        | (Nm)  | 2P+E   | 5.6          | 5.6          | 13           |
|                                                     |       | 3P+E   | 5.6          | 5.6          | 13           |
|                                                     |       | 3P+N+E | 5.6          | 9            | 13           |
| Cable-Gland/Cable-Clamp (Screw) - Tightening-Torque | (Nm)  |        | -            | -            | 0.8          |
| Handle Screws – Tightening-Torque                   | (Nm)  |        | -            | -            | 0.9          |

| Rated Current | Max rated current |             |             | Cable size<br>ADVANCE-GRP[EX]     | ΔT cable entry | ΔT cable |
|---------------|-------------------|-------------|-------------|-----------------------------------|----------------|----------|
|               | T. amb 40°C       | T. amb 50°C | T. amb 60°C |                                   |                |          |
| 16A           | -                 | -           | 16A         | 4 mm <sup>2</sup> Stranded-cable  | 20,3 K         | -        |
| 32A           | -                 | -           | 25A         | 10 mm <sup>2</sup> Stranded-cable | 21,1 K         | -        |
| 63A           | 55A               | 50A         | 45A         | 25 mm <sup>2</sup> Stranded-cable | 20,4 K         | 85°C     |

| Ambient | Gas    |        |        | Dust    |         |         |
|---------|--------|--------|--------|---------|---------|---------|
| Zone    | 0 - Ga | 1 - Gb | 2 - Gc | 20 - Da | 21 - Db | 22 - Dc |

## PLUGS IP66



| Description | Poles  | Hz    | Volt     | Colour                                                                            | h | 16A        | 32A        | 63A        |
|-------------|--------|-------|----------|-----------------------------------------------------------------------------------|---|------------|------------|------------|
|             |        |       |          |                                                                                   |   | ⊞ 1        | ⊞ 1        | ⊞ 1        |
| Plug        | 2P+E   | 50/60 | 200-250V |  | 6 | 218.EX1633 | 218.EX3233 | 218.EX6333 |
|             | 3P+E   | 50/60 | 380-415V |  | 6 | 218.EX1636 | 218.EX3236 | 218.EX6336 |
|             | 3P+N+E | 50/60 | 346-415V |  | 6 | 218.EX1637 | 218.EX3237 | 218.EX6337 |

⊞ Package/Bulk Pack.

## TECHNICAL FEATURES



# ISOLATORS-EX Series



## SWITCHES DISCONNECTORS



## VERSIONS

|  |                                                           |
|--|-----------------------------------------------------------|
|  | Switch disconnectors<br>Aluminium – General use           |
|  | Switch disconnectors<br>Aluminium – Emergency control     |
|  | Switch disconnectors<br>Thermoplastic – General use       |
|  | Switch disconnectors<br>Thermoplastic – Emergency control |

## REFERENCE STANDARDS

|      |                                                                                                                                                            |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ATEX | <b>EN 60079-0</b><br>Electrical apparatus for potentially explosive atmospheres.<br><i>Part 0: general requirements.</i>                                   |
| ATEX | <b>EN 60079-31</b><br>Electrical apparatus for potentially explosive atmospheres.<br><i>Part 31: equipment dust ignition protection by enclosures "t".</i> |
|      | <b>EN 60947-1</b><br>Low-voltage switchgear and controlgear.<br><i>Part 1: general requirements.</i>                                                       |
|      | <b>EN 60947-3</b><br>Low-voltage switchgear and controlgear.<br><i>Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units.</i>   |

## TECHNICAL CHARACTERISTICS

|                                          |                                                                                        |
|------------------------------------------|----------------------------------------------------------------------------------------|
| ATEX Code:                               | II 2 D                                                                                 |
| Certificate:                             | TÜV IT 14 ATEX 006 (aluminium)<br>TÜV IT 14 ATEX 005 (thermoplastic)                   |
| Ex Protection type:                      |                                                                                        |
| Thermoplastic:                           | Ex tb IIIC T80°C Db IP66 (Ta -25°C +40°C)<br>Ex tb IIIC T90°C Db IP66 (Ta -25°C +60°C) |
| Aluminium:                               | Ex tb IIIC T80°C Db IP65 (Ta -25°C +40°C)<br>Ex tb IIIC T90°C Db IP65 (Ta -25°C +60°C) |
| Protection degree:                       | IP65 (aluminium)<br>IP66 (thermoplastic)                                               |
| Ambient temperature:                     | -25°C +40/60°C                                                                         |
| Maximum permissible surface temperature: | T90°C (aluminium, thermoplastic)                                                       |
| Glow wire test:                          | 650°C (thermoplastic)                                                                  |
| Material:                                | Aluminium/Thermoplastic                                                                |
| Colour:                                  | Satin-finished (aluminium)<br>Grey RAL 7016 (thermoplastic)                            |
| Polarity:                                | 2P - 3P - 4P                                                                           |
| Rated current:                           | 20A-32A-40A-63A (aluminium)<br>20A-32A-40A (thermoplastic)                             |

## ■ BEHAVIOUR WITH CHEMICAL AND ATMOSPHERIC AGENTS - ALUMINIUM

| Saline solution | Acids              |           | Bases        |           | Solvents      |               |               |                    | Mineral oil | UV rays   |
|-----------------|--------------------|-----------|--------------|-----------|---------------|---------------|---------------|--------------------|-------------|-----------|
|                 | Concentrated       | Diluted   | Concentrated | Diluted   | Hexane        | Benzol        | Acetone       | Alcohol            |             |           |
| Resistant       | Limited Resistance | Resistant | Resistant    | Resistant | Not Resistant | Not Resistant | Not Resistant | Limited Resistance | Resistant   | Resistant |

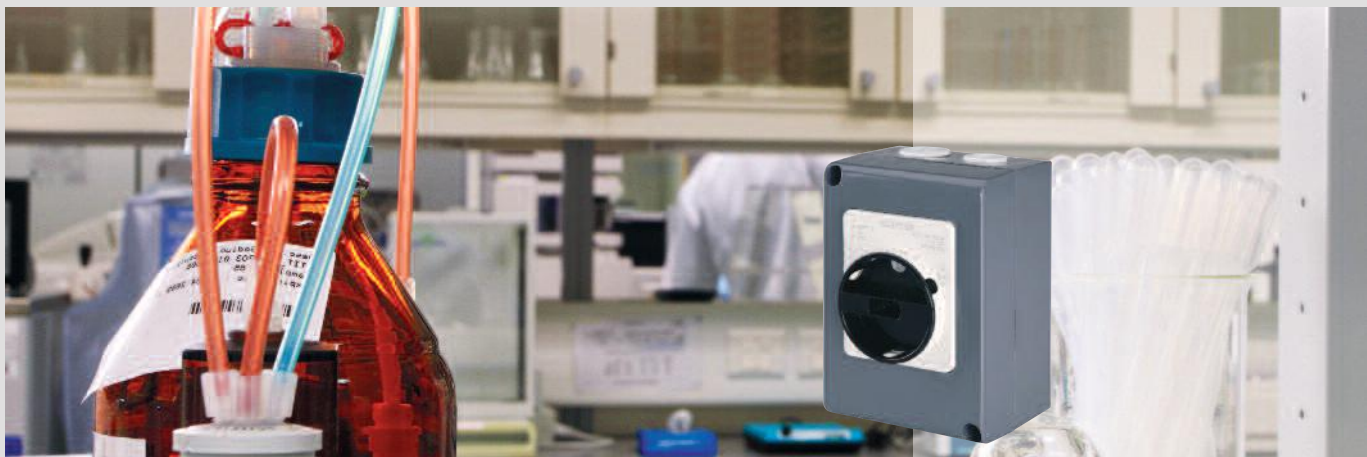
For specific substances please contact our technical service.

## ■ BEHAVIOUR WITH CHEMICAL AND ATMOSPHERIC AGENTS - THERMOPLASTIC

| Saline solution | Acids              |           | Bases              |                    | Solvents  |                    |                    |           | Mineral oil        | UV rays   |
|-----------------|--------------------|-----------|--------------------|--------------------|-----------|--------------------|--------------------|-----------|--------------------|-----------|
|                 | Concentrated       | Diluted   | Concentrated       | Diluted            | Hexane    | Benzol             | Acetone            | Alcohol   |                    |           |
| Resistant       | Limited Resistance | Resistant | Limited Resistance | Limited Resistance | Resistant | Limited Resistance | Limited Resistance | Resistant | Limited Resistance | Resistant |

For specific substances please contact our technical service.

## ■ APPLICATION EXAMPLES

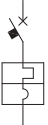


# ISOLATORS-EX Series



## Ex II 2D aluminium enclosure

### ELECTRICAL CHARACTERISTICS OF THE SWITCH DISCONNECTORS

| TECHNICAL DATA                             |                                                                                   |                                                   |       |      |                       |                       |                       |                       |
|--------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------|-------|------|-----------------------|-----------------------|-----------------------|-----------------------|
| Control device                             |                                                                                   |                                                   |       |      | ISOLATORS-EX Series   |                       |                       |                       |
|                                            |                                                                                   |                                                   |       |      | 590.XHGE/X<br>HEM200X | 590.XHGE/X<br>HEM320X | 590.XHGE/X<br>HEM400X | 590.XHGE/X<br>HEM630X |
| SCAME<br>switch<br>disconnector<br>Fam.590 |  | Rated current                                     |       |      | 20A                   | 32A                   | 40A                   | 63A                   |
|                                            |                                                                                   | Insulating voltage (UI)                           |       |      | 690V                  | 690V                  | 690V                  | 690V                  |
|                                            |                                                                                   | Duty rated<br>current based<br>on the<br>category | AC23A | 415V | 20A                   | 32A                   | 35A                   | 63A                   |
|                                            |                                                                                   |                                                   |       | 690V | 16A                   | 25A                   | 25A                   | 30A                   |
|                                            |                                                                                   |                                                   | AC3   | 400V | 16A                   | 28,5A                 | 28,5A                 | 40A                   |
|                                            |                                                                                   |                                                   |       | 690V | 12A                   | 20A                   | 20A                   | 25A                   |
|                                            |                                                                                   | Nominal frequency                                 |       |      | 50/60Hz               | 50/60Hz               | 50/60Hz               | 50/60Hz               |

### TECHNICAL DATA OF POWER / EARTH TERMINALS

| POWER TERMINALS - CONNECTABLE WIRES AND TIGHTENING TORQUES |                                                     |                           |
|------------------------------------------------------------|-----------------------------------------------------|---------------------------|
| Power terminal version                                     | Cable section to be used<br>(rigid or flexible) mm² | Tightening torque<br>(Nm) |
| 20A                                                        | 4                                                   | 0.8                       |
| 32A                                                        | 6                                                   | 0.8                       |
| 40A                                                        | 6                                                   | 0.8                       |
| 63A                                                        | 10                                                  | 3.6                       |
| Earth terminal                                             | Maximum section 10                                  | 2                         |

### CABLE GLANDS / CABLE ENTRIES

| Versions           | Number of cable<br>entries | Maximum cable inlet<br>temperature |
|--------------------|----------------------------|------------------------------------|
| 590.XHGE200X – 20A | 2xM25                      | -                                  |
| 590.XHEM200X – 20A |                            |                                    |
| 590.XHGE320X – 32A | 2xM25                      | 95° C                              |
| 590.XHEM320X – 32A |                            |                                    |
| 590.XHGE400X – 40A |                            |                                    |
| 590.XHEM400X – 40A |                            |                                    |
| 590.XHGE630X - 63A | 2xM32                      | 110° C                             |
| 590.XHEM630X - 63A |                            |                                    |

## Ex II 2D thermoplastic enclosure

### ELECTRICAL CHARACTERISTICS OF THE SWITCH DISCONNECTORS

| TECHNICAL DATA                             |                                                                                   |                                                   |       |      |                     |                  |                  |
|--------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------|-------|------|---------------------|------------------|------------------|
| Control device                             |                                                                                   |                                                   |       |      | ISOLATORS-EX Series |                  |                  |
|                                            |                                                                                   |                                                   |       |      | 590.XGE/XE M200X    | 590.XGE/XE M320X | 590.XGE/XE M400X |
| SCAME<br>switch<br>disconnector<br>Fam.590 |  | Rated current                                     |       |      | 20A                 | 32A              | 40A              |
|                                            |                                                                                   | Insulating voltage (UI)                           |       |      | 690V                | 690V             | 690V             |
|                                            |                                                                                   | Duty rated<br>current based<br>on the<br>category | AC23A | 415V | 20A                 | 32A              | 35A              |
|                                            |                                                                                   |                                                   |       | 690V | 16A                 | 25A              | 25A              |
|                                            |                                                                                   |                                                   | AC3   | 400V | 16A                 | 28,5A            | 28,5A            |
|                                            |                                                                                   |                                                   |       | 690V | 12A                 | 20A              | 20A              |
|                                            |                                                                                   | Nominal frequency                                 |       |      | 50/60Hz             | 50/60Hz          | 50/60Hz          |

### TECHNICAL DATA OF POWER / EARTH TERMINALS

| POWER TERMINALS - CONNECTABLE WIRES AND TIGHTENING TORQUES |                                                              |                        |
|------------------------------------------------------------|--------------------------------------------------------------|------------------------|
| Power terminal version                                     | Cable section to be used (rigid or flexible) mm <sup>2</sup> | Tightening torque (Nm) |
| 20A                                                        | 4                                                            | 0.8                    |
| 32A                                                        | 6                                                            | 0.8                    |
| 40A                                                        | 10                                                           | 0.8                    |
| Earth terminal                                             | Maximum section 10                                           | 2                      |

### CABLE GLANDS / CABLE ENTRIES

| Versions          | Number of cable entries | Maximum cable inlet temperature |
|-------------------|-------------------------|---------------------------------|
| 590.XGE200X - 20A | 2xM25 + 1xM20           | -                               |
| 590.XEM200X - 20A |                         |                                 |
| 590.XGE320X - 32A | 2xM32 + 1xM20           | 95° C                           |
| 590.XEM320X - 32A |                         |                                 |
| 590.XGE400X - 40A |                         |                                 |
| 590.XEM400X - 40A |                         |                                 |

The safety switch hereby in the following table will be equipped with cable glands and stopping plug suitable for use in areas at risk of explosion, suitable for the category 2D, zone 21 and 22.

### LOCKING TORQUES

| Threaded hole | Maximum tightening torque (Nm) |
|---------------|--------------------------------|
| M20           | 10                             |
| M25           | 12                             |
| M32           | 14                             |

# ISOLATORS-EX Series



**ATEX / IECEx - 2 GD**

| Ambient | Gas    |        |        | Dust    |                |                |
|---------|--------|--------|--------|---------|----------------|----------------|
| Zone    | 0 - Ga | 1 - Gb | 2 - Gc | 20 - Da | <b>21 - Db</b> | <b>22 - Dc</b> |

## ALUMINIUM SWITCHES DISCONNECTORS - IP65

1  
2  
ATEX [II 2 D]  
3

| Current | Poles | Cable inlets | Dimensions (mm) |      | <br>GENERAL USE         |              |
|---------|-------|--------------|-----------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
|         |       |              |                 |      | <br>EMERGENCY CONTROL   |              |
| 20A     | 2     | 2xM25        | 105x150x82      | 1/12 | 590.XHGE2002                                                                                                                                                                                                                                                                     | 590.XHEM2002 |
|         | 3     |              | 105x150x82      | 1/12 | 590.XHGE2003                                                                                                                                                                                                                                                                     | 590.XHEM2003 |
|         | 4     |              | 105x150x82      | 1/12 | 590.XHGE2004                                                                                                                                                                                                                                                                     | 590.XHEM2004 |
| 32A     | 2     | 2xM25        | 105x150x82      | 1/12 | 590.XHGE3202                                                                                                                                                                                                                                                                     | 590.XHEM3202 |
|         | 3     |              | 105x150x82      | 1/12 | 590.XHGE3203                                                                                                                                                                                                                                                                     | 590.XHEM3203 |
|         | 4     |              | 105x150x82      | 1/12 | 590.XHGE3204                                                                                                                                                                                                                                                                     | 590.XHEM3204 |
| 40A     | 2     | 2xM25        | 105x150x82      | 1/12 | 590.XHGE4002                                                                                                                                                                                                                                                                     | 590.XHEM4002 |
|         | 3     |              | 105x150x82      | 1/12 | 590.XHGE4003                                                                                                                                                                                                                                                                     | 590.XHEM4003 |
|         | 4     |              | 105x150x82      | 1/12 | 590.XHGE4004                                                                                                                                                                                                                                                                     | 590.XHEM4004 |
| 63A     | 2     | 2xM32        | 150x210x106     | 1/5  | 590.XHGE6302                                                                                                                                                                                                                                                                     | 590.XHEM6302 |
|         | 3     |              | 150x210x106     | 1/5  | 590.XHGE6303                                                                                                                                                                                                                                                                     | 590.XHEM6303 |
|         | 4     |              | 150x210x106     | 1/5  | 590.XHGE6304                                                                                                                                                                                                                                                                     | 590.XHEM6304 |

 Package/Bulk Pack.

## THERMOPLASTIC SWITCHES DISCONNECTORS - IP66

| Current | Poles | Cable inlets  | Dimensions (mm) |      | <br>GENERAL USE         |             |
|---------|-------|---------------|-----------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
|         |       |               |                 |      | <br>EMERGENCY CONTROL   |             |
| 20A     | 2     | 2xM25 + 1xM20 | 115x190x128     | 1/12 | 590.XGE2002                                                                                                                                                                                                                                                                            | 590.XEM2002 |
|         | 3     |               | 115x190x128     | 1/12 | 590.XGE2003                                                                                                                                                                                                                                                                            | 590.XEM2003 |
|         | 4     |               | 115x190x128     | 1/12 | 590.XGE2004                                                                                                                                                                                                                                                                            | 590.XEM2004 |
| 32A     | 2     | 2xM32 + 1xM20 | 115x190x128     | 1/12 | 590.XGE3202                                                                                                                                                                                                                                                                            | 590.XEM3202 |
|         | 3     |               | 115x190x128     | 1/12 | 590.XGE3203                                                                                                                                                                                                                                                                            | 590.XEM3203 |
|         | 4     |               | 115x190x128     | 1/12 | 590.XGE3204                                                                                                                                                                                                                                                                            | 590.XEM3204 |
| 40A     | 2     | 2xM32 + 1xM20 | 115x190x128     | 1/12 | 590.XGE4002                                                                                                                                                                                                                                                                            | 590.XEM4002 |
|         | 3     |               | 115x190x128     | 1/12 | 590.XGE4003                                                                                                                                                                                                                                                                            | 590.XEM4003 |
|         | 4     |               | 115x190x128     | 1/12 | 590.XGE4004                                                                                                                                                                                                                                                                            | 590.XEM4004 |

 Package/Bulk Pack.

 Padlockable handle in two positions (**ON/OFF**).  
**OFF** position = 3 padlocks  
**ON** position = 1 padlock

2 ATEX  
[  II 2 D ]

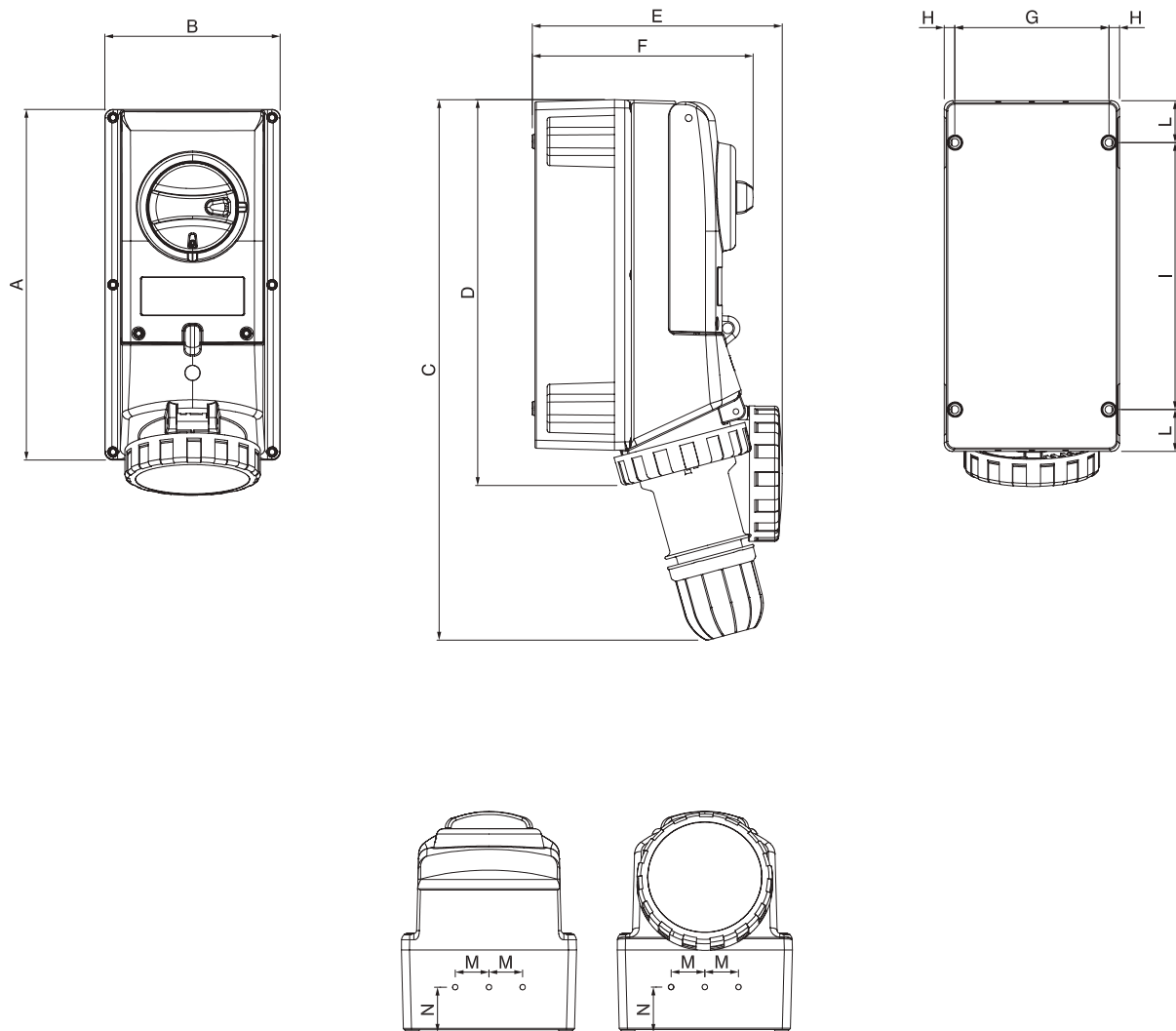
STANDARD DIMENSIONS

# ADVANCE-GRP[EX] Series



## DIMENSIONS

1  
2  
ATEX [EX] II 2 D]  
3

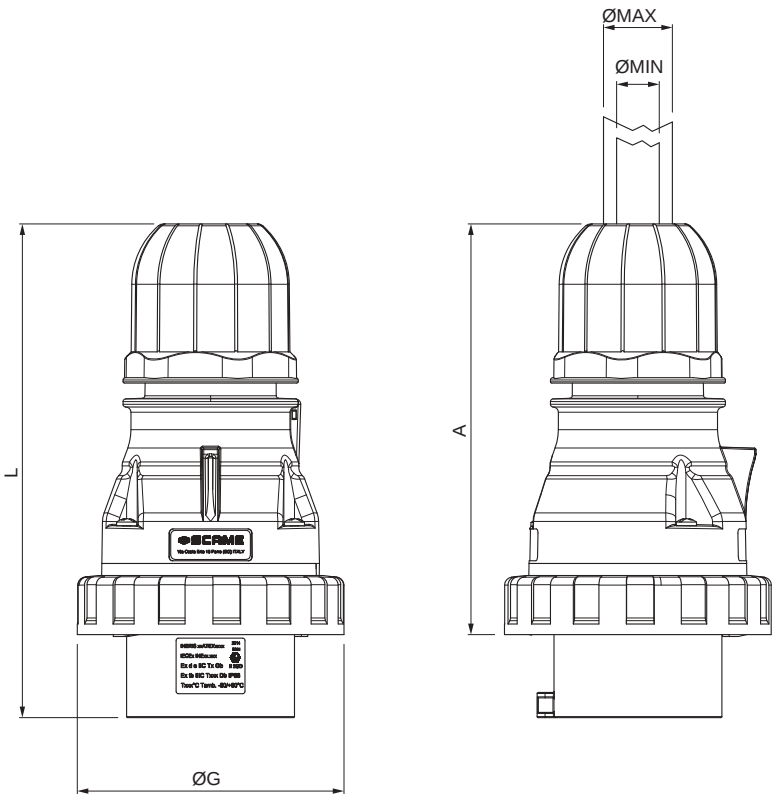


| VERSION |     | A   | B   | C   | D   | E   | F   | G     | H    | I   | L  | M    | N    |
|---------|-----|-----|-----|-----|-----|-----|-----|-------|------|-----|----|------|------|
| 2P+E    | 16A | 260 | 130 | 360 | 280 | 170 | 164 | 114,5 | 7,75 | 198 | 31 | 25   | 33,5 |
| 3P+E    | 16A | 260 | 130 | 365 | 282 | 175 | 164 | 114,5 | 7,75 | 198 | 31 | 25   | 33,5 |
| 3P+N+E  | 16A | 260 | 130 | 390 | 282 | 182 | 164 | 114,5 | 7,75 | 198 | 31 | 25   | 33,5 |
| 2/3P+E  | 32A | 260 | 130 | 390 | 285 | 189 | 164 | 114,5 | 7,75 | 198 | 31 | 25   | 33,5 |
| 3P+N+E  | 32A | 260 | 130 | 400 | 286 | 185 | 164 | 114,5 | 7,75 | 198 | 31 | 25   | 33,5 |
| 2P+E    | 63A | 380 | 170 | 550 | 420 | 225 | 203 | 150   | 8,3  | 310 | 35 | 32,5 | 40   |
| 3P+E    | 63A |     |     |     |     |     |     |       |      |     |    |      |      |
| 3P+N+E  | 63A |     |     |     |     |     |     |       |      |     |    |      |      |

(Dimensions in mm)



DIMENSIONS



| IP66 | TYPE   | A Min | øG  | L Min |
|------|--------|-------|-----|-------|
| 16A  | 2P+E   | 116   | 73  | 140,5 |
|      | 3P+E   | 123   | 81  | 147,5 |
|      | 3P+N+E | 140,5 | 88  | 165   |
| 32A  | 2P+E   | 142,6 | 92  | 174   |
|      | 3P+E   | 142,6 | 92  | 174   |
|      | 3P+N+E | 150   | 101 | 180,5 |
| 63A  |        | 166,5 | 112 | 217,5 |

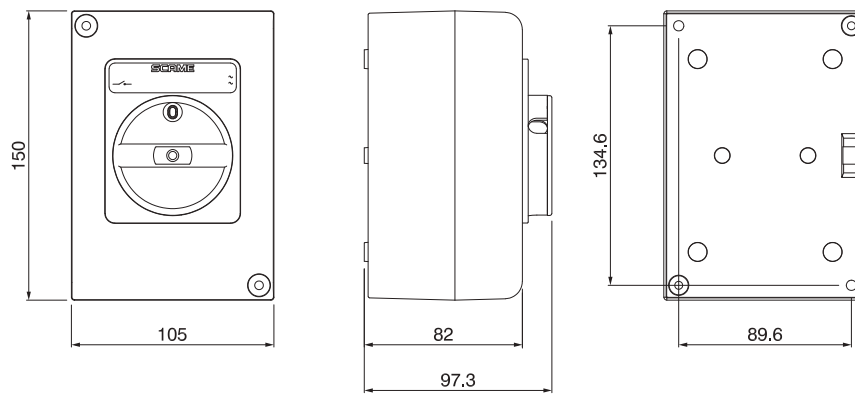
(Dimensions in mm)

# ISOLATORS-EX Series

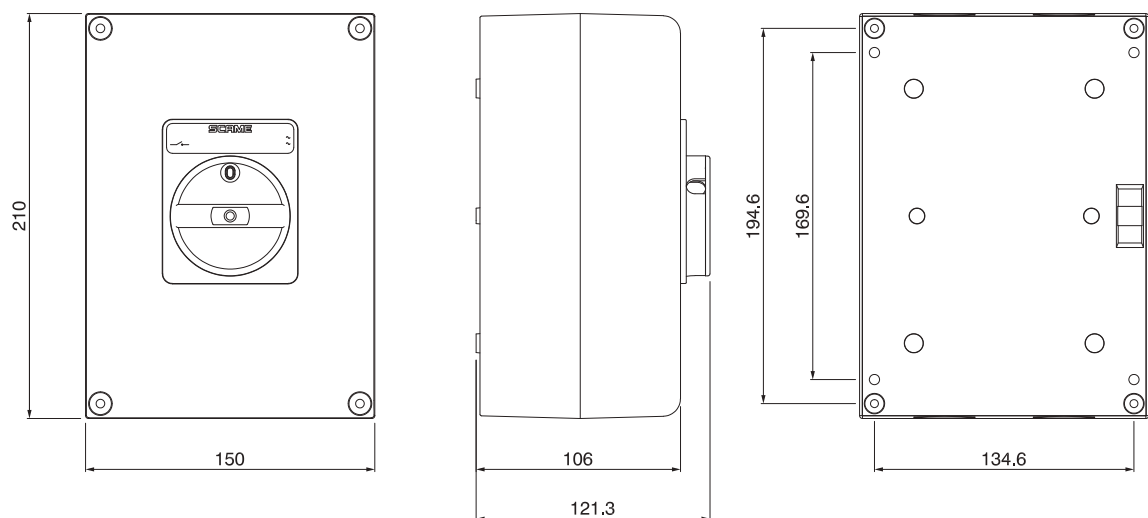


## DIMENSIONS

### ALUMINIUM ENCLOSURE 20A-32A-40A

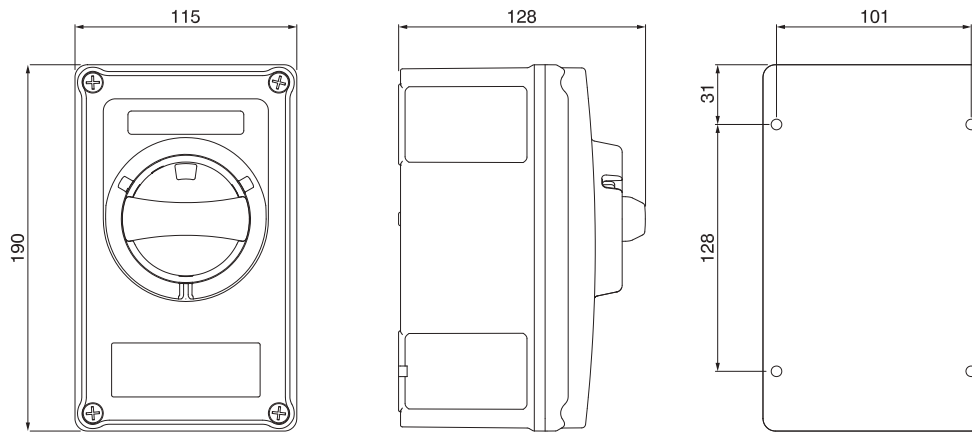


### ALUMINIUM ENCLOSURE 63A



(Dimensions in mm)

**THERMOPLASTIC ENCLOSURE 20A-32A-40A**



(Dimensions in mm)



3

ATEX

[ II 3 GD]

Zone 2 (Gc)

Zone 22 (Dc)

GAS&DUST



### 3.1

ALUBOX-EX Series..... PAG. 104

### 3.1



# ALUBOX-EX Series



1  
2  
3  
ATEX [Ex] II 3 GD

## JUNCTION BOXES



Suitable for outdoor use.

- Supplied with enclosure earthing kit.
- Use only non-sparking components and cable glands compliant with the ATEX directive.

## VERSIONS

|                                                                                     |                 |
|-------------------------------------------------------------------------------------|-----------------|
|  | Enclosure IP66  |
|  | Mounting plates |
|  | DIN rail kit    |

## BEHAVIOUR WITH CHEMICAL AND ATMOSPHERIC AGENTS

| Saline solution | Acids              |           | Bases              |           | Solvents           |                    |                    |           | Mineral oil | UV rays   |
|-----------------|--------------------|-----------|--------------------|-----------|--------------------|--------------------|--------------------|-----------|-------------|-----------|
|                 | Concentrated       | Diluted   | Concentrated       | Diluted   | Hexane             | Benzol             | Acetone            | Alcohol   |             |           |
| Resistant       | Limited Resistance | Resistant | Limited Resistance | Resistant | Limited Resistance | Limited Resistance | Limited Resistance | Resistant | Resistant   | Resistant |

For specific substances please contact our technical service.

## REFERENCE STANDARDS

|      |                                                                                                                                                                                                                 |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ATEX | <b>EN 60079-0</b><br>Electrical apparatus for use in the presence of combustible dust.<br><i>Part 0: General requirements.</i>                                                                                  |
| ATEX | <b>EN 60079-15</b><br>Electrical apparatus for use in the presence of combustible dust.<br><i>Part 15: Equipment protection by type of protection "n".</i>                                                      |
| ATEX | <b>EN 60079-31</b><br>Electrical apparatus for use in the presence of combustible dust.<br><i>Part 31: Protection by enclosures 'tD'.</i>                                                                       |
|      | <b>EN 60670-22</b><br>Boxes and enclosures for electrical accessories for household and similar fixed electrical installations.<br><i>Part 22: particular requirements for connecting boxes and enclosures.</i> |

## TECHNICAL CHARACTERISTICS

|                                                            |                                                                          |
|------------------------------------------------------------|--------------------------------------------------------------------------|
| ATEX Code:                                                 | <b>Ex II 3 GD</b>                                                        |
| Type of EX protection:                                     | <b>Ex nA IIC T6 Gc<br/>Ex tc IIIC T90°C Dc IP66<br/>Ta -20°C / +40°C</b> |
| Operating temperature according to the reference standard: | <b>-20°C +40°C</b>                                                       |
| Maximum permissible surface temperature:                   | <b>T90°C</b>                                                             |
| Protection degree:                                         | <b>IP66</b>                                                              |
| Impact resistance:                                         | <b>Low mechanical risk (4J)</b>                                          |
| Material:                                                  | <b>Aluminium alloy</b>                                                   |
| IK degree at 20°C:                                         | <b>IK08</b>                                                              |
| Cable inlets:                                              | <b>Blank sides</b>                                                       |
| DIN rail fixing:                                           | <b>Yes</b>                                                               |
| Colour:                                                    | <b>RAL 7037</b>                                                          |
| CE Certification type:                                     | <b>SCAME ATEX 01U</b>                                                    |

| Ambient | Gas    |        |               | Dust    |         |                |
|---------|--------|--------|---------------|---------|---------|----------------|
| Zone    | 0 - Ga | 1 - Gb | <b>2 - Gc</b> | 20 - Da | 21 - Db | <b>22 - Dc</b> |

## ENCLOSURES - IP66



| Dimensions (mm) | Screw for attaching cover | Earthing screws | Weight (Kg) |      |                 |
|-----------------|---------------------------|-----------------|-------------|------|-----------------|
| 100 x 100 x 59  | ☐ n° 2 M5x10mm            | n°1 M4x6        | 0,290       | 1/32 | <b>653.9000</b> |
| 140 x 115 x 60  | ☐ n° 4 M5x16mm            | n°1 M4x6        | 0,390       | 1/24 | <b>653.9001</b> |
| 166 x 142 x 64  | ☐ n° 4 M5x16mm            | n°1 M4x6        | 0,614       | 1/16 | <b>653.9002</b> |
| 192 x 168 x 80  | ☐ n° 4 M5x16mm            | n°1 M4x6        | 0,920       | 1/12 | <b>653.9003</b> |
| 253 x 217 x 93  | ☐ n° 4 M6x20mm            | n°1 M4x6        | 1,430       | 1/6  | <b>653.9004</b> |
| 314 x 264 x 122 | ☐ n° 4 M6x20mm            | n°1 M4x6        | 2,236       | 1/2  | <b>653.9005</b> |
| 410 x 315 x 153 | ☐ n° 4 M6x20mm            | n°1 M4x6        | 3,861       | 1    | <b>653.9007</b> |

- Enclosure and cover in die-cast aluminium.

- Externally varnished.

- With stainless steel screws for attaching cover and self-tapping

zinc-coated steel screws for earthing the enclosure and cover.

☐ = Counter-sunk head screw.

☐ = Flat head screw.

## MOUNTING PLATES

## DIN RAIL KIT

| For enclosures (mm) | Screw for attaching cover | Thickness (mm) | Weight (Kg) |      |   |                |
|---------------------|---------------------------|----------------|-------------|------|---|----------------|
| 100 x 100 x 59      |                           |                |             |      | 1 | <b>653.020</b> |
| 140 x 115 x 60      | n° 4 M4x6                 | 1,5            | 0,140       | 1/40 | 1 | <b>653.021</b> |
| 166 x 142 x 64      | n° 4 M4x6                 | 1,5            | 0,213       | 1/20 | 1 | <b>653.022</b> |
| 192 x 168 x 80      | n° 4 M4x6                 | 1,5            | 0,245       | 1/20 | 1 | <b>653.023</b> |
| 253 x 217 x 93      | n° 4 M4x6                 | 1,5            | 0,423       | 1/10 | 1 | <b>653.024</b> |
| 314 x 264 x 122     | n° 4 M4x6                 | 1,5            | 0,626       | 1/10 | 1 | <b>653.025</b> |
| 410 x 315 x 153     | n° 4 M4x6                 | 2              | 1,436       | 5    | 1 | <b>653.027</b> |

- Zinc-coated steel plate.

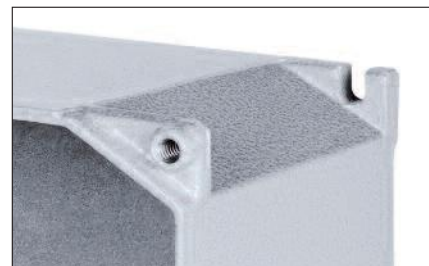
- With zinc-coated steel self-tapping screws for attaching the plate.



Enclosures and covers in aluminium alloy with blank walls and covered.



Holding seal in expanded EPDM, already mounted in place on the cover.



Fixing to wall by brackets incorporated in the enclosure base.

- Available as junction boxes.

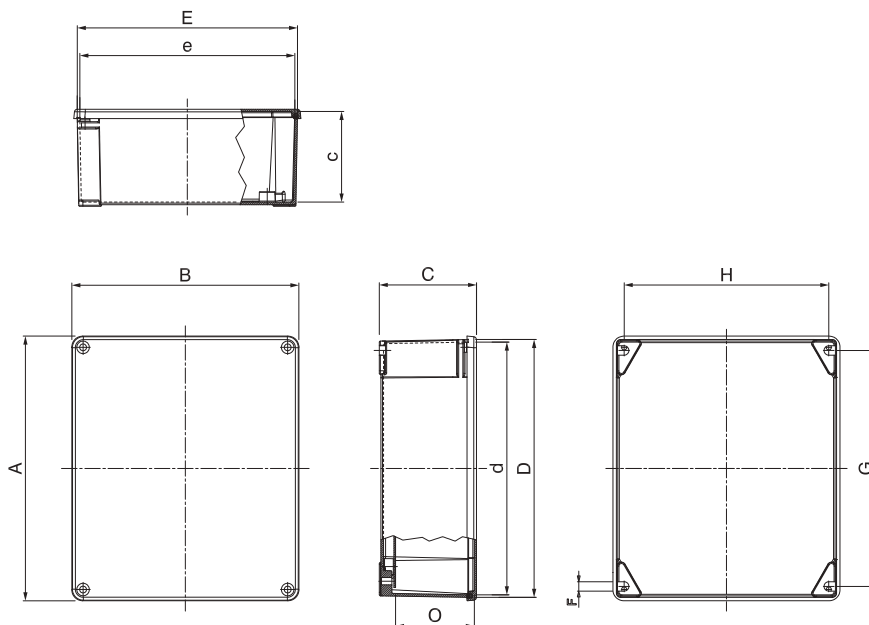
- Minimum order quantity: 50 pcs.

# ALUBOX-EX Series



## DIMENSIONS

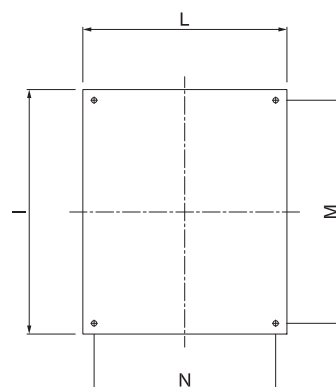
### ENCLOSURES



|          |    | External dimensions<br>(with cover) |         |         | External box<br>dimensions |         | Internal dimensions<br>(with cover) |         |         | Surface<br>mounting points |         |         | Useful<br>height |
|----------|----|-------------------------------------|---------|---------|----------------------------|---------|-------------------------------------|---------|---------|----------------------------|---------|---------|------------------|
|          |    | A<br>mm                             | B<br>mm | C<br>mm | D<br>mm                    | E<br>mm | c<br>mm                             | d<br>mm | e<br>mm | F<br>mm                    | G<br>mm | H<br>mm |                  |
|          |    |                                     |         |         |                            |         |                                     |         |         |                            |         |         |                  |
| 653.9000 | 32 | 100                                 | 100     | 59      | 94                         | 94      | 53                                  | 90      | 90      | 6                          | 88      | 80      | X                |
| 653.9001 | 24 | 140                                 | 115     | 60      | 134                        | 109     | 55                                  | 130     | 104     | 6                          | 120     | 100     | 45               |
| 653.9002 | 16 | 166                                 | 142     | 64      | 160                        | 136     | 58                                  | 156     | 132     | 7,5                        | 144     | 125     | 48               |
| 653.9003 | 12 | 192                                 | 168     | 80      | 185                        | 161     | 74                                  | 180     | 156     | 6                          | 168     | 149     | 64               |
| 653.9004 | 6  | 253                                 | 217     | 93      | 247                        | 211     | 85                                  | 242     | 206     | 9                          | 226     | 196     | 75               |
| 653.9005 | 2  | 314                                 | 264     | 122     | 305                        | 255     | 114                                 | 299     | 249     | 9                          | 275     | 236     | 103              |
| 653.9007 | 1  | 410                                 | 315     | 153     | 400                        | 305     | 144                                 | 393     | 298     | 9                          | 367     | 283     | 127              |

### MOUNTING PLATES

|         |   | Box reference<br>(mm) | I<br>mm | L<br>mm | M<br>mm | N<br>mm |
|---------|---|-----------------------|---------|---------|---------|---------|
| 653.011 | 1 | 140x115               | 122     | 97      | 107     | 66      |
| 653.012 | 1 | 166x142               | 147     | 123     | 121     | 98      |
| 653.013 | 1 | 192x168               | 165     | 124     | 153     | 112     |
| 653.014 | 1 | 253x217               | 206     | 172     | 188     | 153     |
| 653.015 | 1 | 314x264               | 254     | 210     | 238     | 198     |
| 653.017 | 1 | 410x315               | 349     | 260     | 333     | 248     |



(Dimensions in mm)



# AT EX CATALOGUE 2016-2018

index by  
product number

# Index by product number

| Catalogue number                 | Page | Catalogue number                   | Page | Catalogue number | Page |
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| <b>218. OPTIMA-EX Series</b>     |      | 219.32361                          | 29   | 504.125872       | 24   |
| 218.EX1633                       | 91   | 219.32362                          | 29   | 504.125874       | 24   |
| 218.EX1636                       | 91   | 219.32364                          | 29   | 504.125875       | 24   |
| 218.EX1637                       | 91   | 219.32365                          | 29   | 504.125876       | 24   |
| 218.EX3233                       | 91   | 219.32366                          | 29   | 504.125877       | 24   |
| 218.EX3236                       | 91   | 219.32367                          | 29   | 504.1670         | 24   |
| 218.EX3237                       | 91   | 219.3237                           | 29   | 504.1672         | 24   |
| 218.EX6333                       | 91   | 219.32372                          | 29   | 504.1674         | 24   |
| 218.EX6336                       | 91   | 219.32374                          | 29   | 504.1675         | 24   |
| 218.EX6337                       | 91   | 219.32375                          | 29   | 504.1678         | 24   |
|                                  |      | 219.32376                          | 29   | 504.1679         | 24   |
| <b>219. OPTIMA-EX[GD] Series</b> |      | 219.32377                          | 29   | 504.1683         | 24   |
| 219.12531                        | 29   | 219.3238                           | 29   | 504.16832        | 24   |
| 219.12532                        | 29   | 219.6331                           | 29   | 504.16834        | 24   |
| 219.12534                        | 29   | 219.6332                           | 29   | 504.16836        | 24   |
| 219.12535                        | 29   | 219.6334                           | 29   | 504.16838        | 24   |
| 219.12536                        | 29   | 219.6335                           | 29   | 504.1686         | 24   |
| 219.125361                       | 29   | 219.6336                           | 29   | 504.16861        | 24   |
| 219.125362                       | 29   | 219.63361                          | 29   | 504.16862        | 24   |
| 219.125364                       | 29   | 219.63362                          | 29   | 504.16864        | 24   |
| 219.125365                       | 29   | 219.63364                          | 29   | 504.16865        | 24   |
| 219.125366                       | 29   | 219.63365                          | 29   | 504.16866        | 24   |
| 219.125367                       | 29   | 219.63366                          | 29   | 504.16867        | 24   |
| 219.12537                        | 29   | 219.63367                          | 29   | 504.1687         | 24   |
| 219.125372                       | 29   | 219.6337                           | 29   | 504.16872        | 24   |
| 219.125374                       | 29   | 219.63372                          | 29   | 504.16874        | 24   |
| 219.125375                       | 29   | 219.63374                          | 29   | 504.16875        | 24   |
| 219.125376                       | 29   | 219.63375                          | 29   | 504.16876        | 24   |
| 219.125377                       | 29   | 219.63376                          | 29   | 504.16877        | 24   |
| 219.1630                         | 29   | 219.63377                          | 29   | 504.3270         | 24   |
| 219.1631                         | 29   |                                    |      | 504.3272         | 24   |
| 219.1632                         | 29   | <b>503. ADVANCE-GRP[EX] Series</b> |      | 504.3274         | 24   |
| 219.1633                         | 29   | 503.1683                           | 86   | 504.3275         | 24   |
| 219.16332                        | 29   | 503.1683-F                         | 86   | 504.3278         | 24   |
| 219.16334                        | 29   | 503.1686                           | 86   | 504.3279         | 24   |
| 219.16336                        | 29   | 503.1686-F                         | 86   | 504.3283         | 24   |
| 219.16338                        | 29   | 503.1687                           | 86   | 504.32832        | 24   |
| 219.1634                         | 29   | 503.1687-F                         | 86   | 504.32834        | 24   |
| 219.1635                         | 29   | 503.3283                           | 86   | 504.32836        | 24   |
| 219.1636                         | 29   | 503.3283-F                         | 86   | 504.32838        | 24   |
| 219.16361                        | 29   | 503.3286                           | 86   | 504.3286         | 24   |
| 219.16362                        | 29   | 503.3286-F                         | 86   | 504.32861        | 24   |
| 219.16364                        | 29   | 503.3287                           | 86   | 504.32862        | 24   |
| 219.16365                        | 29   | 503.3287-F                         | 86   | 504.32864        | 24   |
| 219.16366                        | 29   | 503.6383                           | 86   | 504.32865        | 24   |
| 219.16367                        | 29   | 503.6383-F                         | 86   | 504.32866        | 24   |
| 219.1637                         | 29   | 503.6386                           | 86   | 504.32867        | 24   |
| 219.16372                        | 29   | 503.6386-F                         | 86   | 504.3287         | 24   |
| 219.16374                        | 29   | 503.6387                           | 86   | 504.32872        | 24   |
| 219.16375                        | 29   | 503.6387-F                         | 86   | 504.32874        | 24   |
| 219.16376                        | 29   |                                    |      | 504.32875        | 24   |
| 219.16377                        | 29   | <b>504. ADVANCE-GRP[GD] Series</b> |      | 504.32876        | 24   |
| 219.1638                         | 29   | 504.12572                          | 24   | 504.32877        | 24   |
| 219.3230                         | 29   | 504.12574                          | 24   | 504.6372         | 24   |
| 219.3231                         | 29   | 504.12575                          | 24   | 504.6374         | 24   |
| 219.3232                         | 29   | 504.12579                          | 24   | 504.6375         | 24   |
| 219.3233                         | 29   | 504.12586                          | 24   | 504.6379         | 24   |
| 219.32332                        | 29   | 504.125861                         | 24   | 504.6386         | 24   |
| 219.32334                        | 29   | 504.125862                         | 24   | 504.63861        | 24   |
| 219.32336                        | 29   | 504.125864                         | 24   | 504.63862        | 24   |
| 219.32338                        | 29   | 504.125865                         | 24   | 504.63864        | 24   |
| 219.3234                         | 29   | 504.125866                         | 24   | 504.63865        | 24   |
| 219.3235                         | 29   | 504.125867                         | 24   | 504.63866        | 24   |
| 219.3236                         | 29   | 504.12587                          | 24   | 504.63867        | 24   |

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|----------------------------------------------------|------|-------------------------------------|------|-----------------------------|------|
| 504.6387                                           | 24   | 590.XHEM6304                        | 96   | 591.SEM6304                 | 34   |
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**SCAME PARRE S.p.A.**  
 VIA COSTA ERTA, 15  
**24020 PARRE (BG) ITALY**  
 TEL. +39 035 705000  
 FAX +39 035 703122

