



ATEX GENERAL CATALOGUE

 **SCAME**
electrical solutions

2016-2018



A T E X
CATALOGUE
2016-2018
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.





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Parre (Bergamo)

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Argentina

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Bulgaria

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SEND AN E-MAIL TO THE ADDRESS 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.



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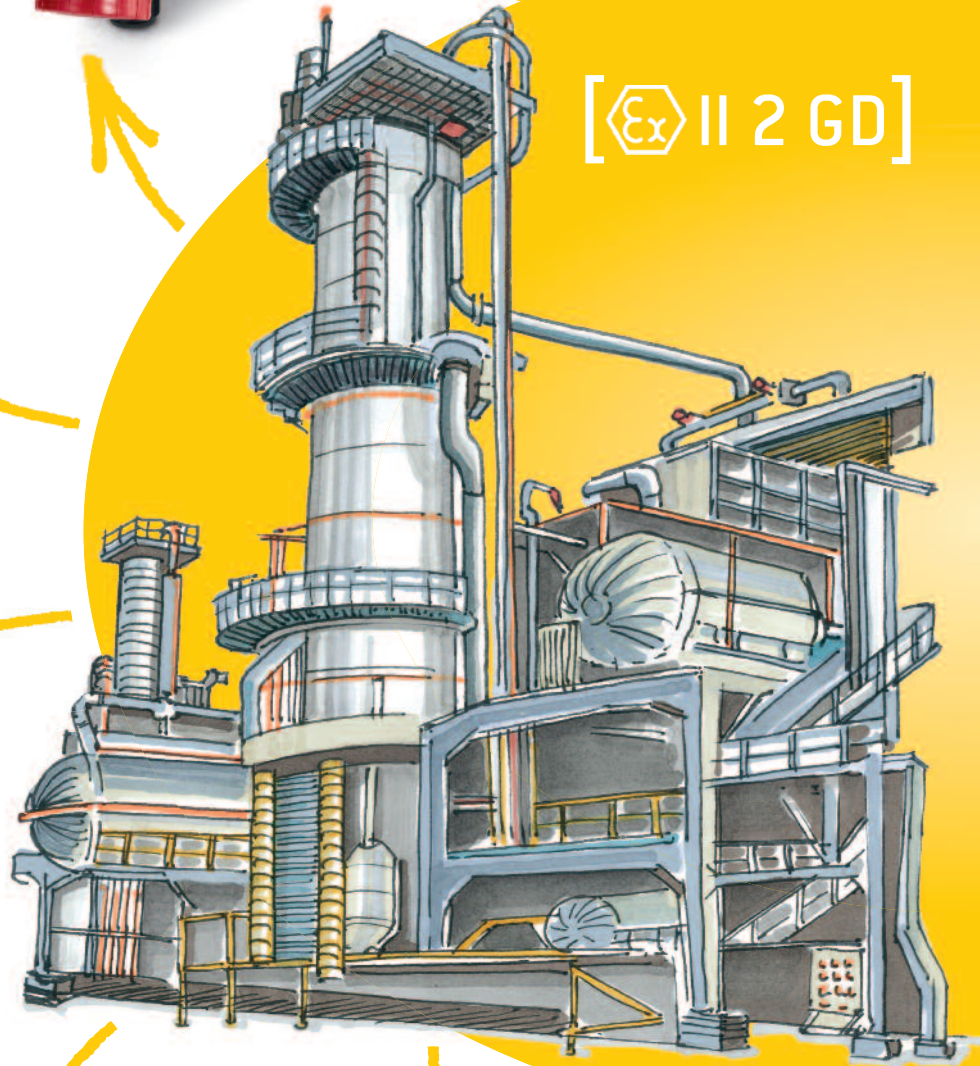
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Guide to the ATEX directives

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 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/UE) 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

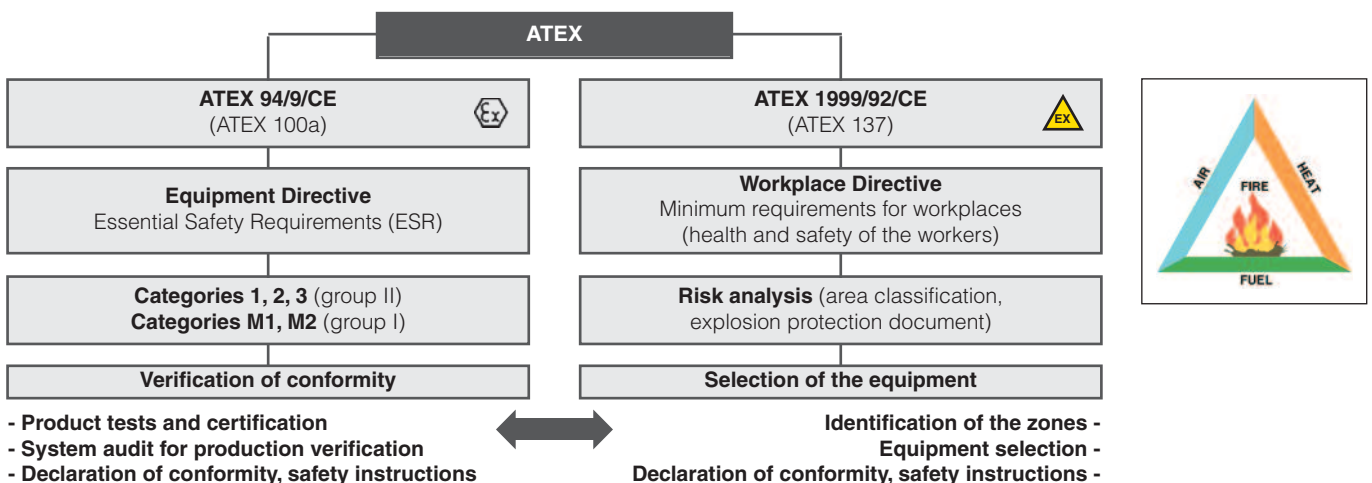
On 29th March 2014, the new ATEX directive 2014/34/EU was published. This new directive repeals, effective as from 20th April 2016, the Directive ATEX 94/9/EC.

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

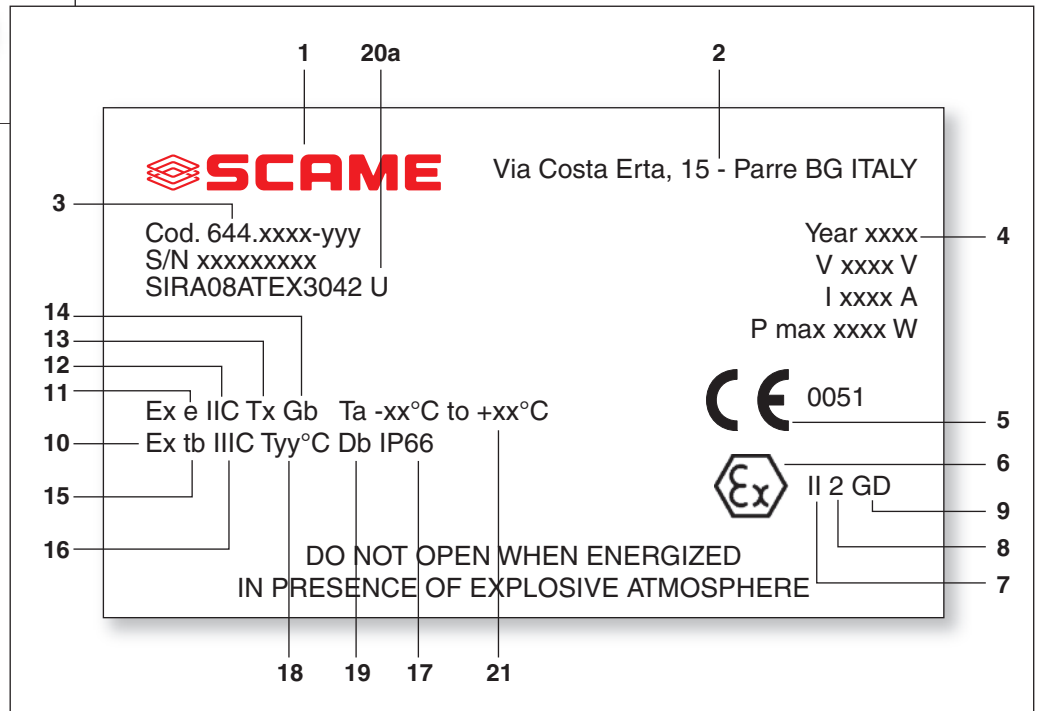


The products must be equipped with the appropriate identification plate which must have, in addition to the CE marking, the specific marking of explosive protection (**Epsilon-x**, in the hexagon) followed by the **group** (I or II) and **category**; for **group II**, the letter **G** is added for equipment 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 II: electrical equipment for surface installations
8	2	Product category	1 for category 1 2 for category 2 3 for category 3
9	GD	Type of explosive atmosphere	G: gas D: dust 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: - "d": explosion-proof enclosure - "e": increased safety - "ia" or "ib" or "ic": intrinsic safety, level of protection "ia" or "ib" or "ic" - "ma", "mb" or "mc": encapsulation, level of protection "ma" or "mb" - "nA": type of protection "nA" - "nC": type of protection "nC" - "nR": type of protection "nR" - "o": oil immersion - "px" or "py" or "pz": pressurized apparatus, level of protection "px" or "py" or "pz" - "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): T1 = 450°C T2 = 300°C T3 = 200°C T4 = 130°C T5 = 100°C T6 = 85°C
14	Gb	EPL Gas	Gas equipment protection level (EPL): Ga: very high (suited for zone 0) Gb: high (suited for zone 1) Gc: increased (suited for zone 2)

DUST (SPECIFIC INFORMATION)

15	tb	Type of production applied	Types of protection for dust: - "ta", "tb" or "tc": protection by enclosure - "ia", "ib" or "ic": intrinsic safety protection - "ma", "mb" or "mc": protection with encapsulation - "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 IIIB: non-conductive dust IIIC: conductive dust
17	IP66	Degree of protection (IP)	IP6X: apparatus suitable for Zone 22 with the presence of conductive dust 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): Da: very high (suited for zone 20) Db: high (suited for zone 21) 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
IEC 60079-0	EN 60079-0	General requirements
IEC 60079-1	EN 60079-1	Construction and testing of flameproof enclosures "d" for electrical equipment
IEC 60079-2	EN 60079-2	Electrical equipment, type of protection "p"
IEC 60079-5	EN 60079-5	Powder filling "q"
IEC 60079-6	EN 60079-6	Oil immersion "o"
IEC 60079-7	EN 60079-7	Increased safety "e"
IEC 60079-11	EN 60079-11	Intrinsic safety "i"
IEC 60079-15	EN 60079-15	Electrical equipment with type of protection "n"
IEC 60079-18	EN 60079-18	Encapsulation "m"

ELECTRICAL EQUIPMENT FOR DUST

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

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

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ATEX-IECEX

[ II 2 GD]






Zone 1 (Gb)

Zone 2 (Gc)

Zone 21 (Db)

Zone 22 (Dc)

GAS&DUST

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ADVANCE-GRP[GD] Series



SWITCHED INTERLOCKED SOCKET OUTLETS



VERSIONS WITH MECHANICAL INTERLOCK



With switch-disconnector

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).



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

504.1683 2015

SCAME
Via Costa Erta 15 Parre BG ITALY

INERIS 15ATEX0017X

IECEx INE15.0033X

Ex de IIC T6 Gb

Ex tb IIIC T80°C Db IP66

Tamb. -35/+60°C



2P+⊕16A

6h 200-250V~

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.

WARNING: DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT

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

■ 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).
16A	1xM25 (*)	12/18
32A	1xM32 (*)	16/25
63A	1xM40 (*)	22/32
125A	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	AC3	-	25A	-	-	50A	-	125A
	AC22A	-	-	32A	-	-	63A	125A
	AC23A	-	32A	-	-	-	63A	125A



ADVANCE-GRP[GD] Series



SPECIAL CHARACTERISTICS

ATEX [Ex] II 2 GD



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.

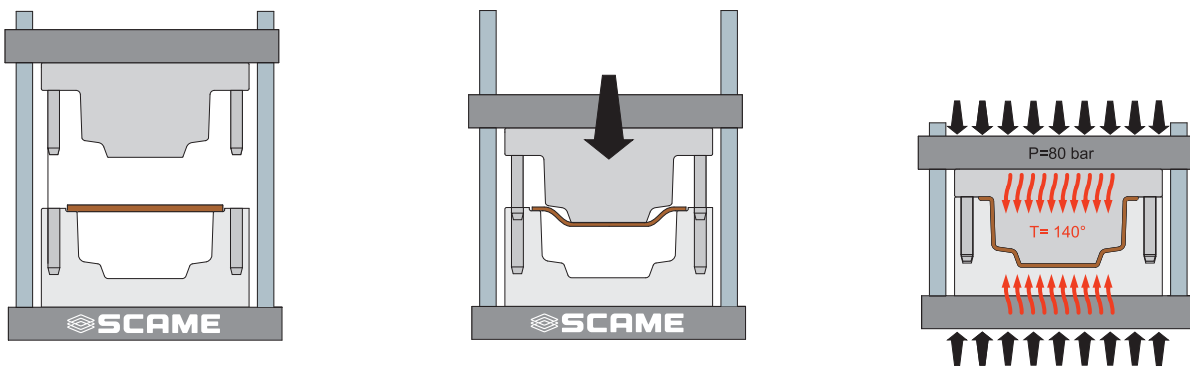
The plugs and sockets for Zone 1 unlike dust, require special design arrangements including the materials and the necessity of having a key insertion to prevent the connection of plugs of other builders, these and other, measures are required to prevent that any spark or arc, is formed through cutting 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 _{max} - I _{max}	Mode of protection (Nm)	ATEX Certificate	Ambient Temperature
TECHNOR				
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
CORTEM (only for 63A size)				
M-0530 M-0531	400V – 4A	Ex d e IIC	CESI 09 ATEX 016 U	- 40°C / +80°C

IECEx Certification – Auxiliary Contact

Type	V _{max} - I _{max}	Mode of protection (Nm)	ATEX Certificate	Ambient Temperature
TECHNOR				
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
CORTEM (only for 63A size)				
M-0530 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	Dimensions	Socket Size	Cable gland size	Clearance		Max. drill holes
				A	B1 B2	
	80x45mm	16/32A	20mm 25mm 32mm	21mm 26mm 33mm	39mm 46mm 56mm	2 2 1
	110x55mm	63A	25mm 32mm 40mm	26mm 33mm 41mm	46mm 56mm 70mm	2 2 1
	196x72mm	125A top side (A)	25mm 32mm 40mm 50mm	26mm 33mm 41mm 51mm	46mm 56mm 70mm 78mm	5 3 2 2
	72x72mm	125A bottom side (B1) (B2)	25mm 32mm 40mm 50mm	26mm 33mm 41mm 51mm	46mm 56mm 70mm 78mm	1 1 1 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 ² finely-stranded	0.8
	16 mm ² single-wire	0.8
63A	25 mm ² finely-stranded	2.5
	35 mm ² single-wire	2.5
125A	50/70mm ² finely-stranded	3.5

EARTH TERMINALS

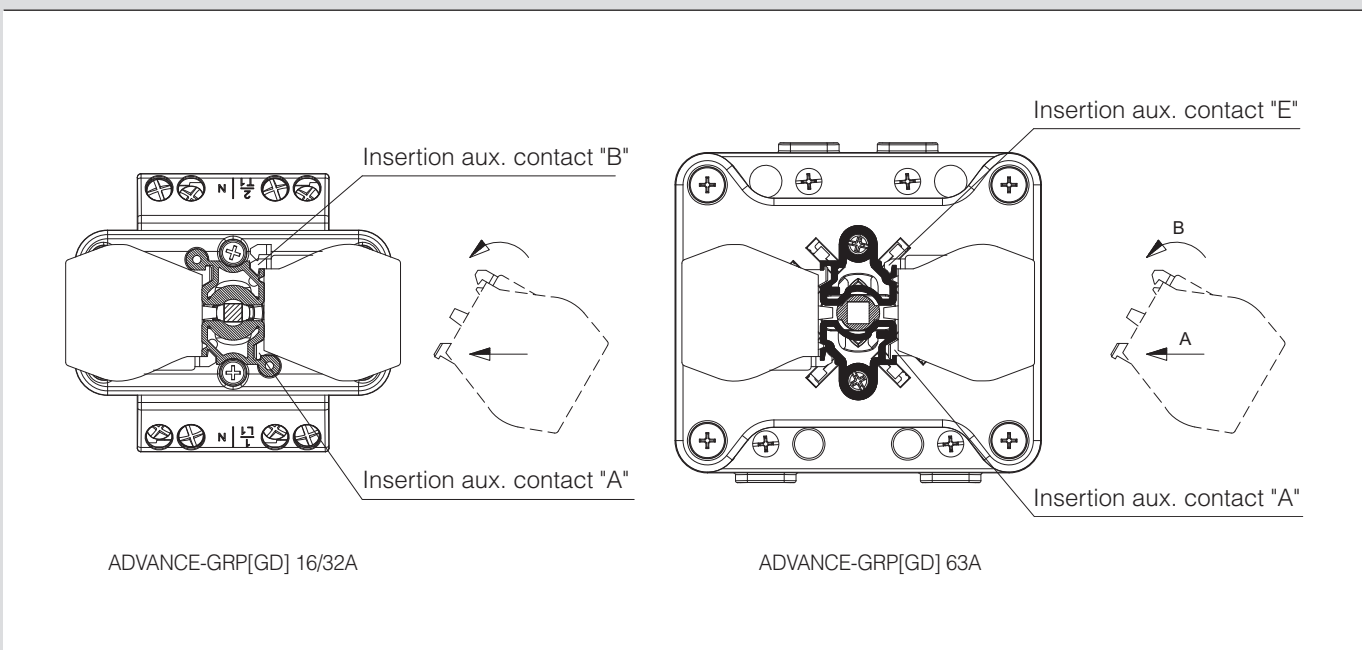
EARTH TERMINALS CONTACTS - TORQUE		
Type	Cross Sectional Areas Conductors	Tightening Torque - (Nm)
16/32A	10/16mm ²	1.2
63A	Weidmuller Ex e terminal type WPE35 35mm ²	3.5
125A	50/70mm ²	3.5

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

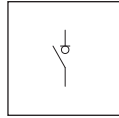


ATEX / IECEx - 2 GD

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

SWITCHED INTERLOCKED SOCKET OUTLETS IP66

ATEX [Ex] II 2 GD



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

□ Package/Bulk Pack.

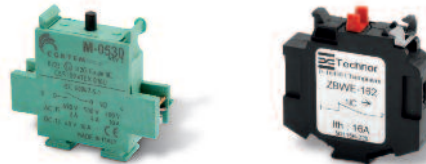
(*) You can request the customised configuration of the cable input for the entire series of the ADVANCE-GRP[GD] socket.
See table pg. 22.

ACCESSORIES

EARTH STUD



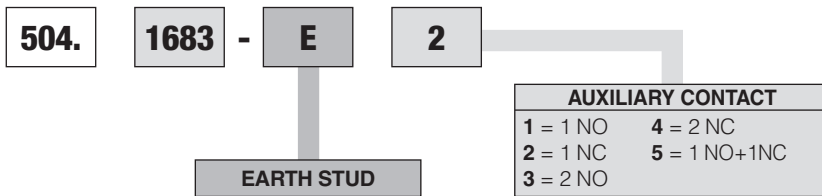
AUXILIARY CONTACT



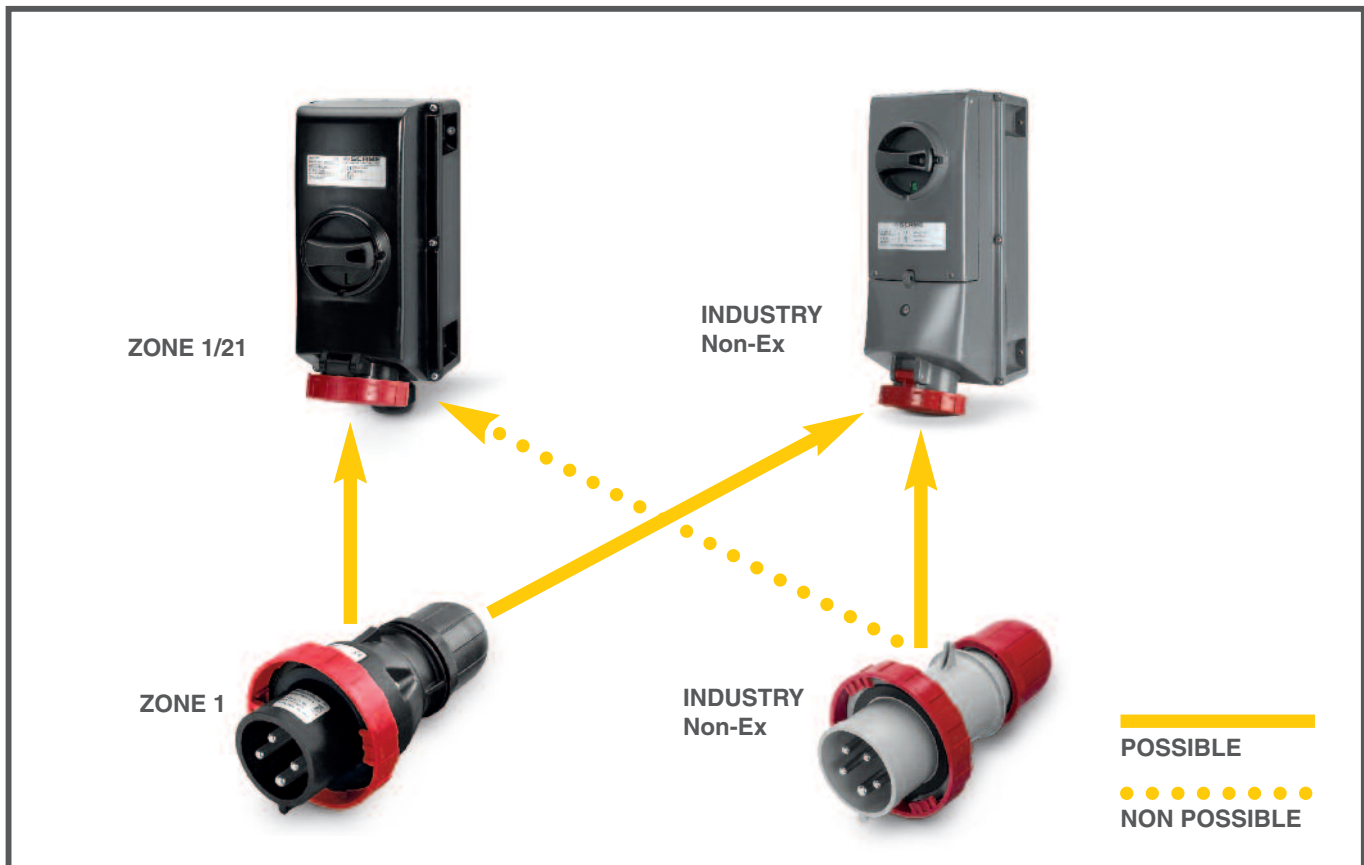
Description

Earth stud. 644.E650

CONFIGURATION SOCKET OPTIONAL ACCESSORIES



COMBINATIONS OF "POSSIBLE/NON POSSIBLE" PLUG/SOCKET CONNECTIONS



[Ex II 2 GD]



[Ex II 2 D]



[Ex II 3 GD]

[Ex II 3 GD]

OPTIMA-EX[GD] Series



ATEX [Ex] II 2 GD

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

■ ATEX IECEX CERTIFICATE

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

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

■ 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	
16A	16A	16A	16A	80°C (*)
32A	32A	32A	32A	85°C (*)
63A	63A	63A	63A	90°C (*)
125A	100A	112A	125A	-

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



OPTIMA-EX[GD] Series



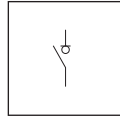
TECHNICAL FEATURES

1
ATEX [Ex II 2 GD]
2
3

OPTIMA-EX[GD] SERIES	Unit		Value			
Rated Current			16A	32A	63A	125A
Code			219.16...	219.32...	219.63...	219.125...
Suitable Size cables Ground-Terminals	(mm ²)		2,5	6	10	25
Power Supply Terminals - Tightening-Torque	(Nm)		1	1,5	2	4
Cable size accepted by Cable-Clamp (eg.H07RN-F) Do not use armoured cable	(mm)	2P+E	14	16	21	30
		3P+E				
		3P+N+E				
Cable Gland/Cable-Clamp 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 63A	125A		cable gland □ 10/40	cable gland □ 10/40	cable gland □ 6/24	cable gland □ 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	32A-30A 3P+N+E	10/100
	16A-20A 3P+E	10/100	63A-60A 2P+E, 3P+E and 3P+N+E	10/100
	3P+N+E	10/100	125A-100A 2P+E, 3P+E and 3P+N+E	10/100
	32A-30A 2P+E and 3P+E	10/100		

ISOLATORS-EX[GD] Series

Ex ATEX-IECEx
II 2 GD

SWITCHES DISCONNECTORS



ATEX [Ex] II 2 GD

VERSIONS

	Switch disconnectors Thermosetting - General use
	Switch disconnectors Thermosetting - Emergency control
	Switch disconnectors Aluminium - General use
	Switch disconnectors Aluminium - Emergency control
	Switch disconnectors Stainless steel - General use
	Switch disconnectors Stainless steel - Emergency control

REFERENCE STANDARDS

ATEX IECEx	IEC/EN 60079-0 Electrical apparatus for potentially explosive atmospheres. <i>Part 0: general requirements.</i>
ATEX IECEx	IEC/EN 60079-7 Electrical apparatus for potentially explosive atmospheres. <i>Part 7: equipment protection by increased safety "e".</i>
ATEX IECEx	IEC/EN 60079-31 Electrical apparatus for potentially explosive atmospheres. <i>Part 31: equipment dust ignition protection by enclosures "t".</i>
ATEX IECEx	IEC/EN 60079-1 Electrical apparatus for potentially explosive atmospheres. <i>Part 1: flameproof enclosures "d".</i>
	EN 60947-1 Low-voltage switchgear and controlgear. <i>Part 1: general requirements.</i>
	EN 60947-3 Low-voltage switchgear and controlgear. <i>Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units.</i>
TECHNICAL CHARACTERISTICS	
ATEX Code:	Ex II 2GD
Certificate:	INERIS 14 ATEX 0030X IECEx INE 14.0040X
Ex Protection type:	EX d e IIC T4/T5 Gb Ex tb IIC T80°C Db IP66
Protection degree:	IP66
Ambient temperature:	-20°C/-50°C +40°C/+60°C (see table ambient temperature)
Maximum permissible surface temperature:	T80°C (dust)
Ambient temperature:	T4/T5 (gas)
Material:	Thermosetting (GRP) Stainless steel AISI 316L Aluminium
Colour:	RAL 9006 (aluminium) Satin (stainless steel) RAL 9005 (thermosetting)
Polarity:	2P - 3/4P
Rated current:	20A-25A-32A-40A-63A
Use Category:	AC22A - AC23A AC3 (up to 32A)

■ AMBIENT TEMPERATURE

	ISOLATORS-EX[GD] Series					
	591.xxx20xx-xxx 591.xxx25xx-xxx 591.xxx32xx-xxx	591.xxx40xx-xxx 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.



[Ex II 2 GD]



[Ex II 2 D]



[Ex II 3 GD]

ISOLATORS-EX[GD] Series



ATEX [Ex II 2 GD]

ELECTRICAL FEATURES

ISOLATORS-EX[GD] Series		Rated Current				
		591.xGE200X 591.xEM200X	591.xGE250X 591.xEM250X	591.xGE320X 591.xEM320X	591.xGE400X 591.xEM400X	591.xGE630X 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 In	Cross Sectional Areas Conductors mm ²	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 WPE 10	10 finely-stranded	2.4
	16 single-wire	2.4
Earth-stud - 63A WPE 35	35 finely-stranded	5
	35 single-wire	5

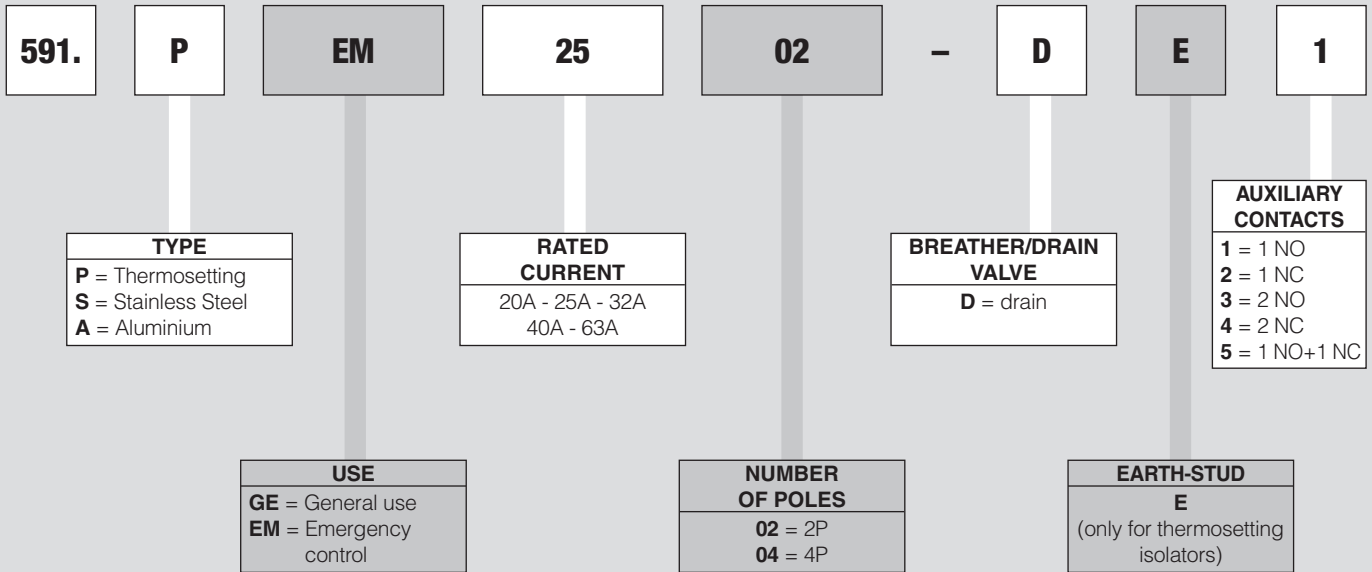
CABLE ENTRIES

Rated Current	Poles	Cable Entries (mm)	Auxiliary Entries (mm)	Breather/Drain Valve (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



■ APPLICATION EXAMPLES



[Ex II 2 GD]



[Ex II 2 D]



[Ex II 3 GD]

ISOLATORS-EX[GD] Series

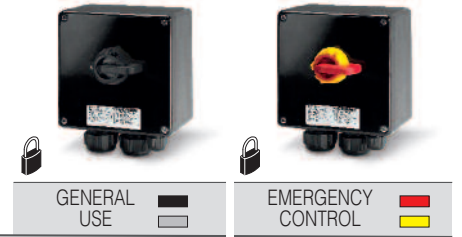


ATEX / IECEx - 2 GD

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

THERMOSETTING SWITCHES DISCONNECTORS - IP66

ATEX [Ex] II 2 GD



Current	Poles	Cable inlets	Dimensions (mm)	□	GENERAL USE	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)	□	GENERAL USE	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
40A	2	2xM32	202x232x142	1	591.AGE4002	591.AEM4002
	3/4		2xM40	202x232x142	1	591.AGE4004
63A	2	2xM40	202x232x142	1	591.AGE6302	591.AEM6302
	3/4		2xM50	202x232x142	1	591.AGE6304


□ 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

<p>EARTH-STUD</p> 	<p>BREATHER/DRAIN VALVE</p> 	<p>AUXILIARY CONTACTS</p> 
---	--	--

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



ZENITH-P Series

ATEX-IECEX
II 2 GD

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

TECHNICAL CHARACTERISTICS

ATEX Code:	Ex II 2GD
Ex Protection type: Empty enclosures	Ex e IIC Gb Ex ia IIC Ga Ex t IIIC Db IP6x
Junction boxes	Ex e IIC Tx Gb Ex ia IIC Tx Gb Ex e ia IIC Tx Gb
Control stations	Ex t IIIC Txx°C Db IP6x Ex d e IIC Tx Gb Ex d e mb IIC Tx Gb Ex e mb IIC Tx Gb Ex t IIIC Txx°C Db IP6x
Certificates: - Empty enclosure	Sira 08ATEX3041U IECEX SIR 11.0057U
- Junction boxes	Sira 08ATEX3042 IECEX SIR 11.0058
- Control station	Sira 11ATEX3008 IECEX SIR 11.0059
Degree of protection:	IP66 IP65 (644.0595)
Operating temperature range:	-60°C to +60°C/+75°C
Temperature class and Ambient: - Standard	Ambient 40°C / T6 Class
- Optional	Ambient 60°C / T6 Class Ambient 40°C / T5 Class Ambient 60°C / T5 Class Ambient 75°C / T4 Class
Impact resistance:	7 J
Material:	• Glass Reinforced Polyester (SMC) 4 mm thick • Loaded with carbon black for antistatic protection
Surface resistance:	Antistatic properties: < 10⁹ Ω
Finish:	Natural Black RAL 9005

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

SCAME Via Costa Erta 15 PARRE BG ITALY

Cod. 644.xxxx-yyy Year 2011

S/N xxxxxxxx V xxx V

SIRA 11ATEX3008 I xxxx A

IECEX SIR 11.0059 P max xxxx W

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

CE 0051

Ex II 2 GD

DO NOT OPEN WHEN ENERGIZED
IN PRESENCE OF EXPLOSIVE ATMOSPHERE

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

APPLICATION EXAMPLES



[Ex II 2 GD]
[Ex II 2 D]
[Ex II 3 GD]

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	Year 2011
S/N xxxxxxxx	V xxx V
SIRA 08ATEX3042	I xxxx A
IECEX SIR 11.0058	P max xxxx W
Ex e IIC Tx Gb	CE 0051
Ex ia IIC Tx Ga	Ex II 2 GD
Ex e ia IIC Tx Gb	
Ex t IIIC Txx°C IP6x Db	
Ta -xx°C to +xx°C	

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).

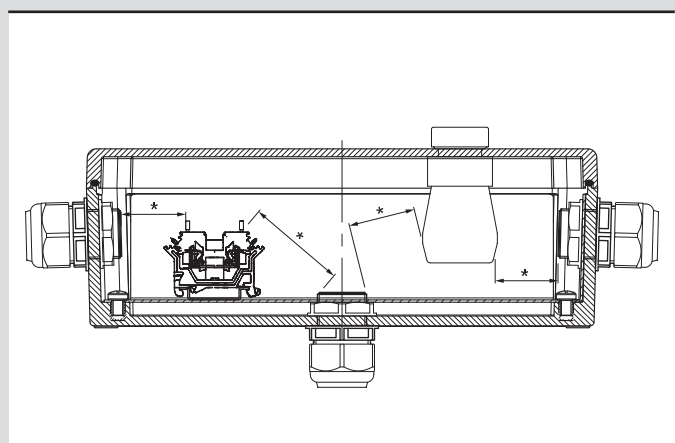
CUSTOMIZED SOLUTIONS



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



ATEX [Ex II 2 GD]

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 ²	2.5mm ²	4mm ²	6mm ²	10mm ²	16mm ²	35mm ²	70/90mm ²	120/150mm ²
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 mm² to 120 mm².

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 2.5mm² to 95/120mm²





Terminal blocks EX e
Terminals from 2.5mm² to 95/120mm²

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

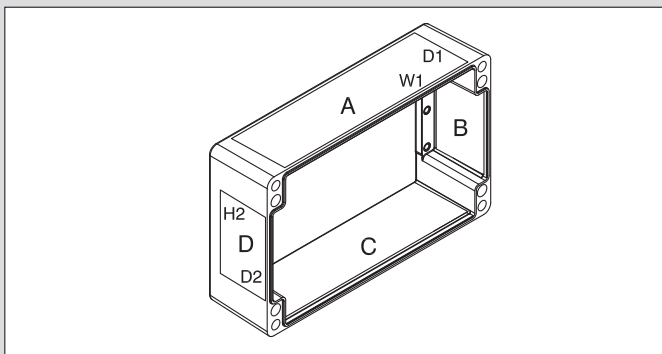


STANDARD ENTRY ARRANGEMENTS

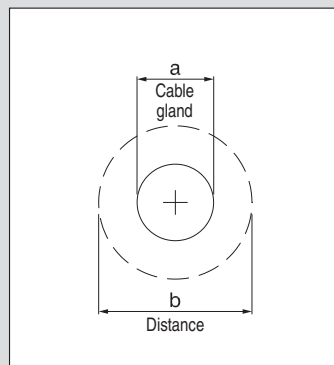
ATEX [Ex] II 2 GD

	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



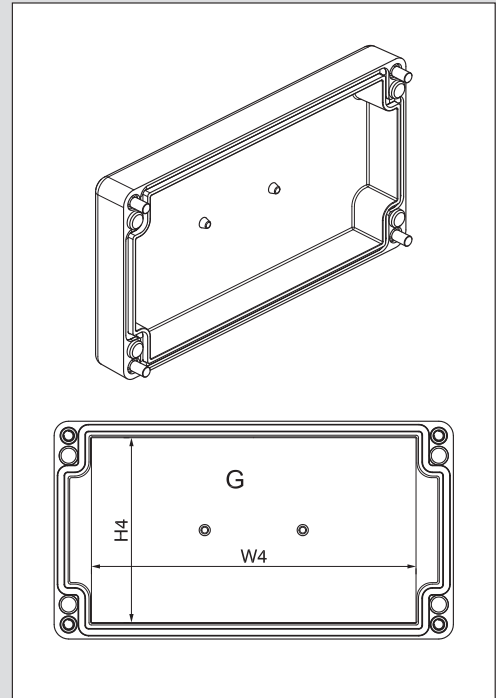
Cable gland dim. A (mm)	B (mm)
12	25
16	32
20	39
25	46
32	58
40	68
50	81
63	96



	Code	Enclosure size	Top/Bottom sides A/C W1xD1	Left/Right sides 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

LID DRILLING ENVELOPE

Code	Enclosure size (H x W x D)	Maximum drilling area 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

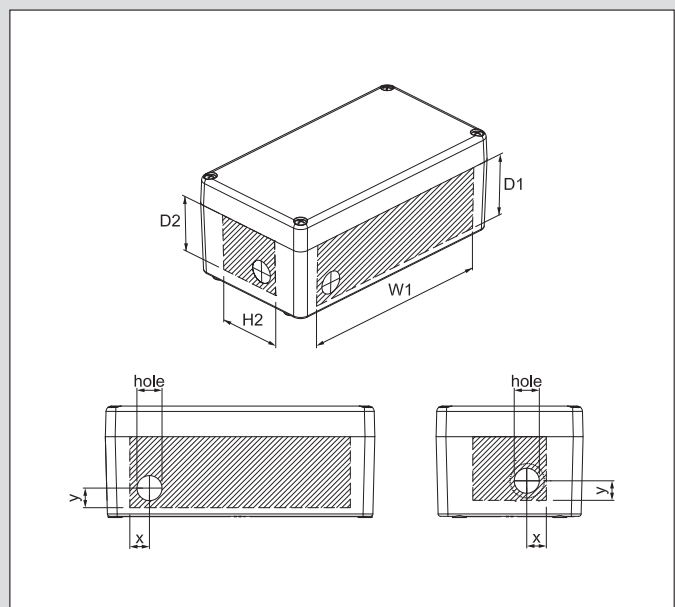
	Code	Enclosure size	Top/Bottom sides	
			A/C W1xD1	Left /Right B/D H2xD2
JUNCTION BOXES	644.0100	75x80x55	48x34	28x28
	644.0200	75x80x75	48x54	27x48
	644.0110	75x110x55	80x34	28x28
	644.0210	75x110x75	80x54	27x48
	644.0120	75x160x55	130x34	28x28
	644.0220	75x160x75	130x54	27x48
	644.0130	75x190x55	160x34	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) M20 x/y position 16	Hole diameter (mm) M25 x/y position 20	Hole diameter (mm) M12 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.

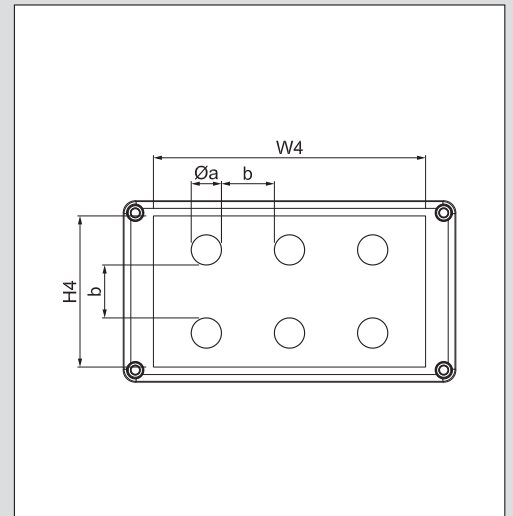
ZENITH-P Series

Ex ATEX-IECEx
II 2 GD

SQUARE LID DRILLING AREA

1
ATEX [Ex II 2 GD]
2
3

Code	Enclosure size (H x W x D)	Maximum drilling area G (H4 x W4)	Maximum SQUARE holes		
			Maximum number	Maximum Size	Minimum distance between two holes 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 Actuator/Control Components	Maximum Mounting Ø a - (mm)	Minimum distance between two holes 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 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



ZENITH-P Series



ATEX / IECEx - 2 GD

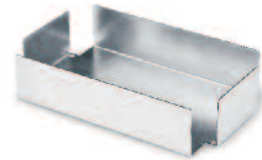
Ambient	Gas			Dust		
Zone	0 - Ga	1 - Gb	2 - Gc	20 - Da	21 - Db	22 - Dc

RANGE AND ACCESSORIES

ENCLOSURE



EARTH CONTINUITY PLATE

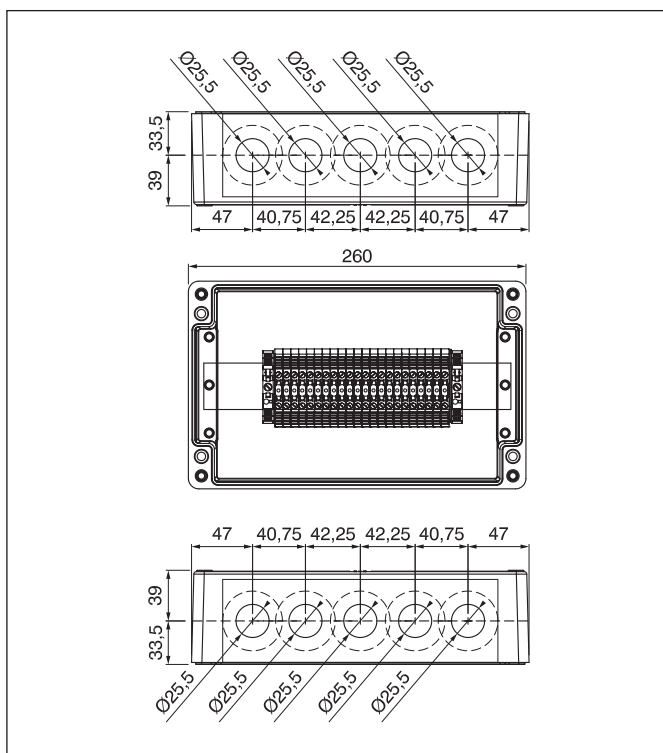


(A)

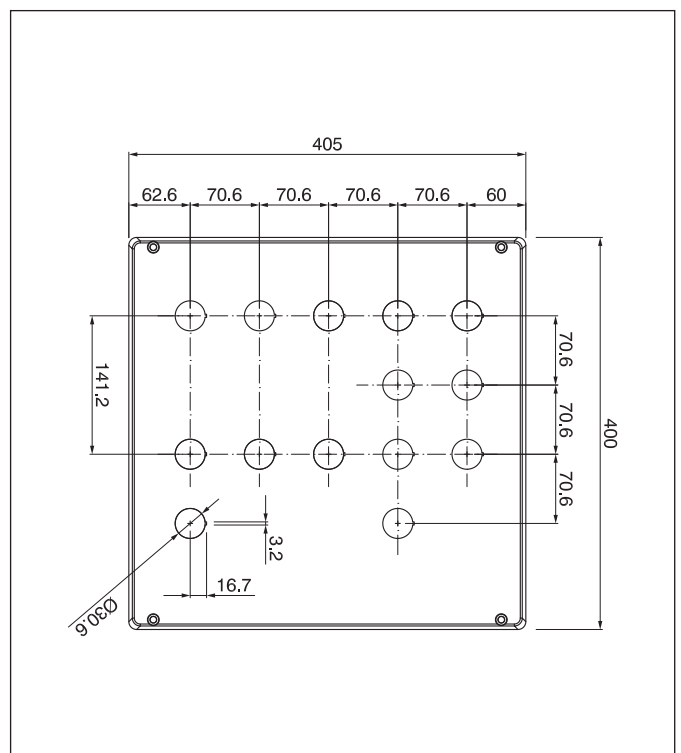
H	W	JUNCTION BOXES		CONTROL STATIONS			EARTH CONTINUITY PLATE				
		55	75	90	120	165	55	75	90	120	165
80		644.0100	644.0200				644.A0100	644.A0200			
		644.0110	644.0210				644.A0110	644.A0210			
75	160	644.0120	644.0220				644.A0120	644.A0220			
	190	644.0130	644.0230				644.A0130	644.A0230			
	230	644.0140	644.0240				644.A0140	644.A0240			
120	122			644.0345					644.A0345 (•)		
	220			644.0350					644.A0350 (•)		
	160			644.0360					644.A0360 (•)		
160	260			644.0370					644.A0370 (•)		
	360			644.0380					644.A0380 (•)		
	560			644.0390					644.A0390 (•)		
250	255				644.0465					644.A0465	
	400				644.0485					644.A0485	
405	400					644.0595					644.A0595

(•) Cable glands ≥ M40 with earth continuity plate cannot be used on the short side.

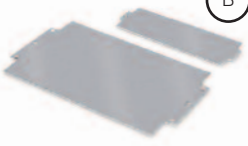

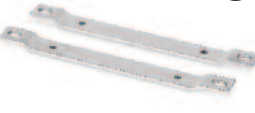


JUNCTION BOX



CONTROL STATION



ATEX [Ex] II 2 GD

INTERNAL MOUNTING PLATE	EXTERNAL MOUNTING BRACKETS	EXTERNAL MOUNTING VERTICAL FEET	EARTH STUD (*)	EXTERNAL 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.B80		644.D160		
644.B90	644.C160			
644.B65				
644.B85		644.D250		
644.B95		644.D405		

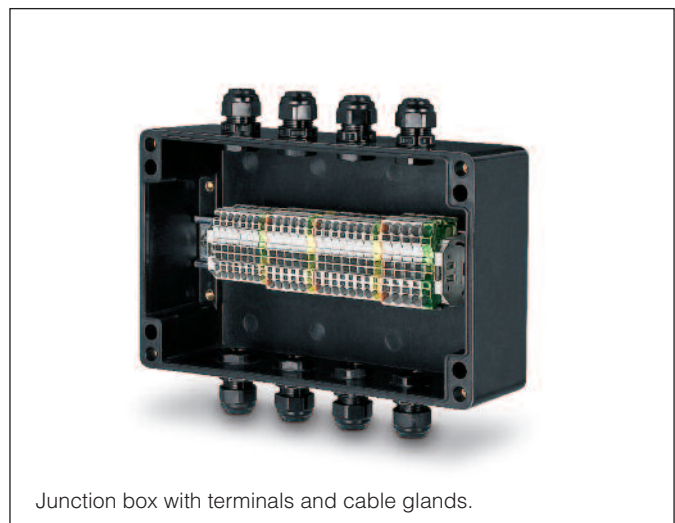
(*) Machining is required.

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



[Ex II 2 GD]



[Ex II 2 D]



[Ex II 3 GD]

ZENITH-P Series

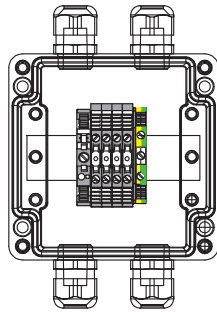
PRECONFIGURED VERSIONS



ATEX / IECEx - 2 GD

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

4xWDU + 1WPE 4,0mm² - 4xM20

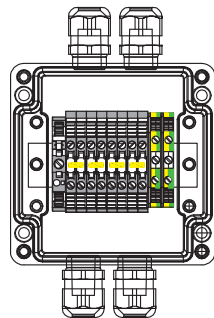


cod: 644.0345-J01

TECHNICAL CHARACTERISTICS

Ex Protection type:	Ex e IIC T6 Gb 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 4,0mm² (bridged 2/2) + 2WPE - 4xM20

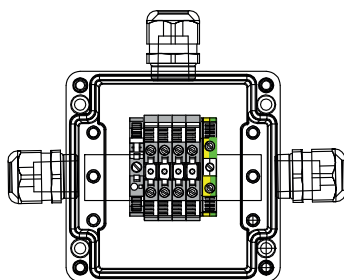


cod: 644.0345-J02

TECHNICAL CHARACTERISTICS

Ex Protection type:	Ex e IIC T6 Gb 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 6,0mm² - 3xM20

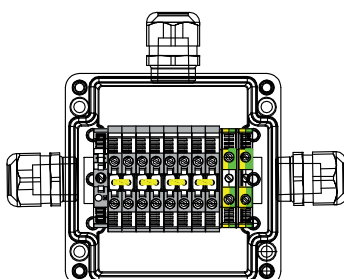


cod: 644.0345-J03

TECHNICAL CHARACTERISTICS

Ex Protection type:	Ex e IIC T6 Gb 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 6,0mm² (bridged 2/2) + 2WPE - 3xM20

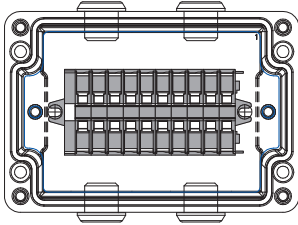


cod: 644.0345-J04

TECHNICAL CHARACTERISTICS

Ex Protection type:	Ex e IIC T6 Gb 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

■ 10x2,5mm² CAGE TERMINAL - 4xM20 (plugged)

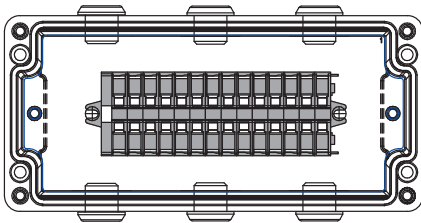


cod: 644.0210-J10

TECHNICAL CHARACTERISTICS

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

■ 14x2,5mm² CAGE TERMINAL - 6xM20 (plugged)

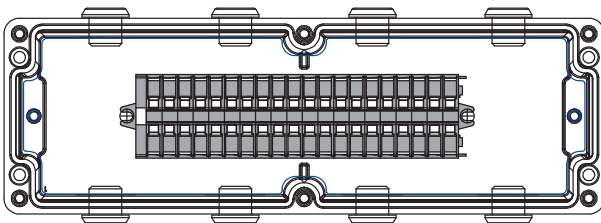


cod: 644.0220-J14

TECHNICAL CHARACTERISTICS

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

■ 20x2,5mm² CAGE TERMINAL - 8xM20 (plugged)

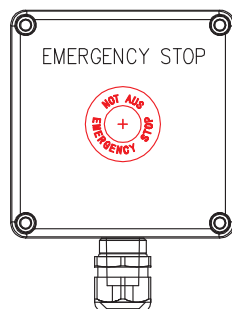
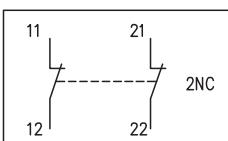


cod: 644.0240-J20

TECHNICAL CHARACTERISTICS

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

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



cod: 644.0345-ES

TECHNICAL CHARACTERISTICS

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



[Ex II 2 GD]



[Ex II 2 D]



[Ex II 3 GD]

ZENITH-P Series

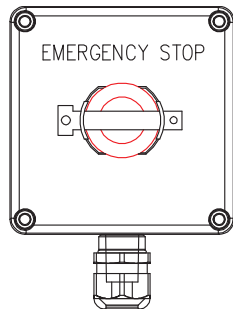
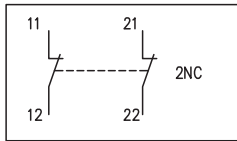
PRECONFIGURED VERSIONS



ATEX / IECEx - 2 GD

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

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

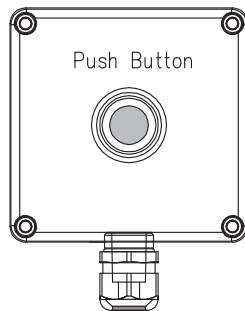
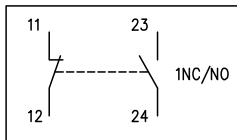


cod: 644.0345-ESL

TECHNICAL CHARACTERISTICS

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

PUSH BUTTON 1NO+1NC - 1xM20

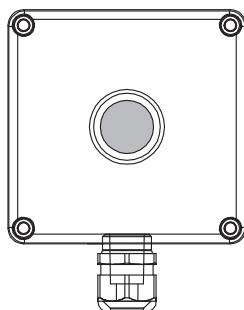


- cod: 644.0345-PBG - push button color GREEN
- cod: 644.0345-PBR - push button color RED
- cod: 644.0345-PBW - push button color WHITE
- cod: 644.0345-PBY - push button color YELLOW
- cod: 644.0345-PBK - push button color BLACK

TECHNICAL CHARACTERISTICS

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

LED LIGHT 12-250VAC/VDC - 1xM20

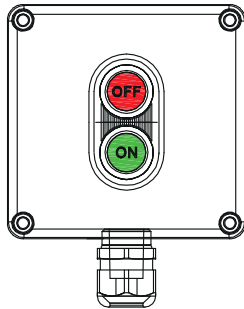
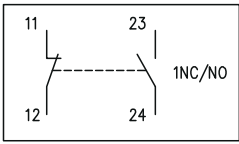


- cod: 644.0345-LDG - led color GREEN
- cod: 644.0345-LDR - led color RED
- cod: 644.0345-LDW - led color WHITE
- cod: 644.0345-LDY - led color YELLOW
- cod: 644.0345-LDB - led color BLUE

TECHNICAL CHARACTERISTICS

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

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

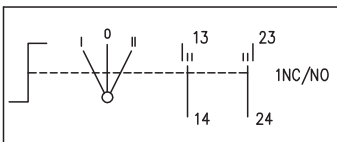


TECHNICAL CHARACTERISTICS

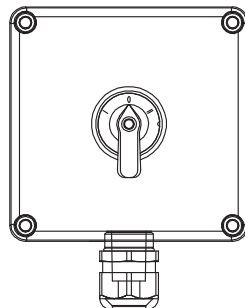
Ex Protection type:	Ex d e IIC T6 Gb Ex t IIIC T80°C Db IP66
Operating temperature range:	-30°C +40°C
Maximum current per terminal:	13A
Category of use:	AC12
Rated voltage:	250AC
Dimensions:	122x120x90mm

cod: 644.0345-OF

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



	13	23
I	X	
0		
II		X
	14	24

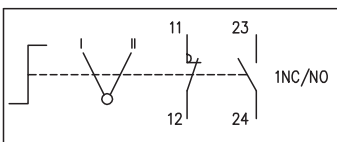


TECHNICAL CHARACTERISTICS

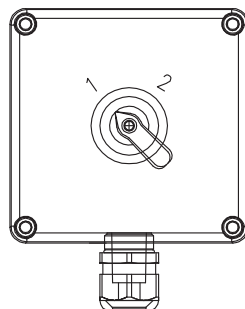
Ex Protection type:	Ex d e IIC T6 Gb Ex t IIIC T80°C Db IP66
Operating temperature range:	-30°C +40°C
Maximum current per terminal:	13A
Category of use:	AC12
Rated voltage:	250AC
Dimensions:	122x120x90mm

cod: 644.0345-SE3

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



	11	23
I	X	
II		X
	12	24

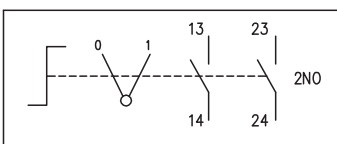


TECHNICAL CHARACTERISTICS

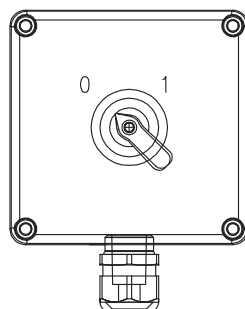
Ex Protection type:	Ex d e IIC T6 Gb Ex t IIIC T80°C Db IP66
Operating temperature range:	-30°C +40°C
Maximum current per terminal:	13A
Category of use:	AC12
Rated voltage:	250AC
Dimensions:	122x120x90mm

cod: 644.0345-SE2

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



	13	23
0	X	
1		X
	14	24



TECHNICAL CHARACTERISTICS

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

cod: 644.0345-SE1



ZENITH-P Series

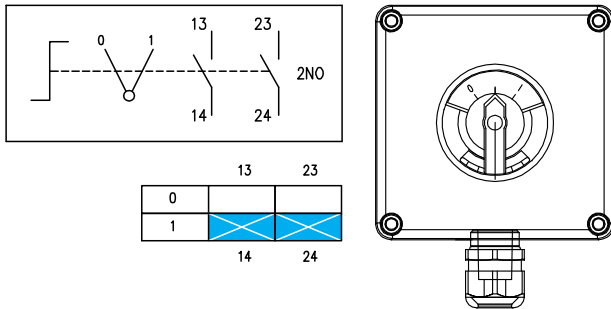
PRECONFIGURED VERSIONS



ATEX / IECEx - 2 GD

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

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

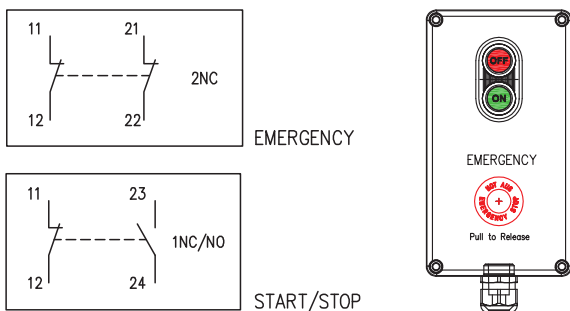


cod: 644.0345-SE1L

TECHNICAL CHARACTERISTICS

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

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

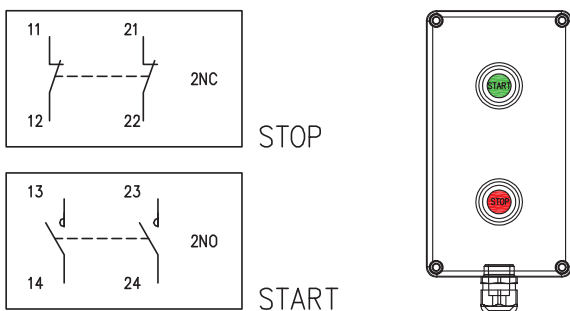


cod: 644.0350-OFE

TECHNICAL CHARACTERISTICS

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

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

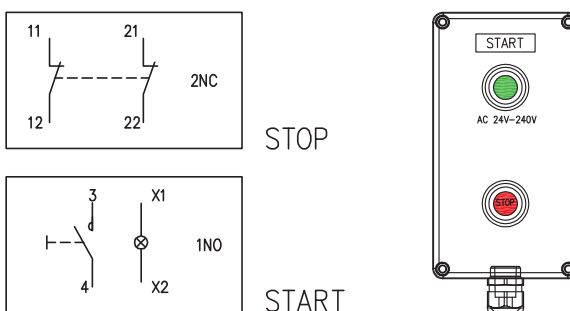


cod: 644.0350-SS

TECHNICAL CHARACTERISTICS

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

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

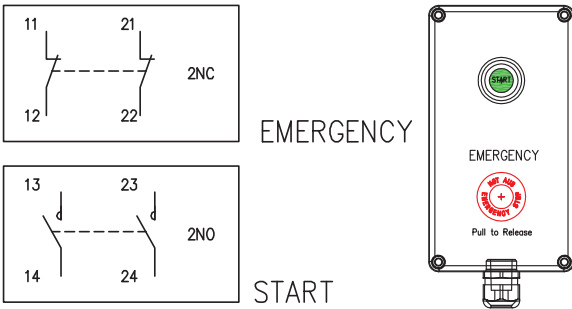


cod: 644.0350-SGS

TECHNICAL CHARACTERISTICS

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

■ **1xSTART PUSH BUTTON 2NO + 1xEMERGENCY PUSH BUTTON 2NC - 1xM25**



cod: 644.0350-SE

TECHNICAL CHARACTERISTICS

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

■ **APPLICATION EXAMPLES**



UNION-EX Series



ATEX [Ex II 2 GD]

METAL CABLE GLANDS (BY RCN)



VERSIONS

	Cable glands RN version (for unarmoured cable)
	Cable glands RAD version (for armoured cable)
	Screw plugs
	Locknuts
	Earthing tags
	Seals

REFERENCE STANDARDS

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

TECHNICAL CHARACTERISTICS

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

■ 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

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

■ TECHNICAL CHARACTERISTICS

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



[Ex II 2 GD]



[Ex II 2 D]



[Ex II 3 GD]

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)

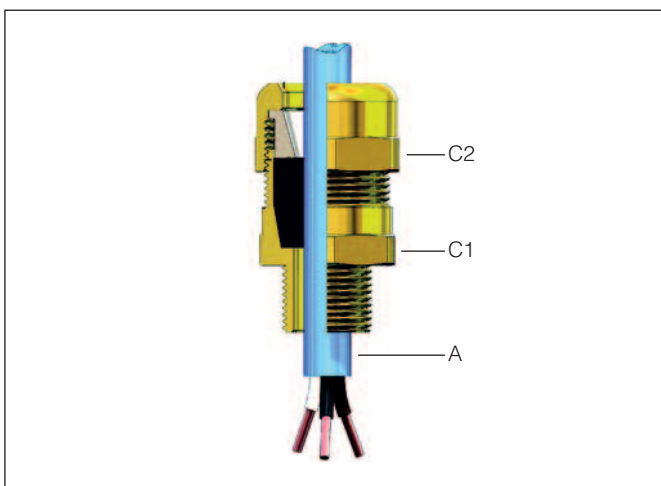
EPDM seal



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.

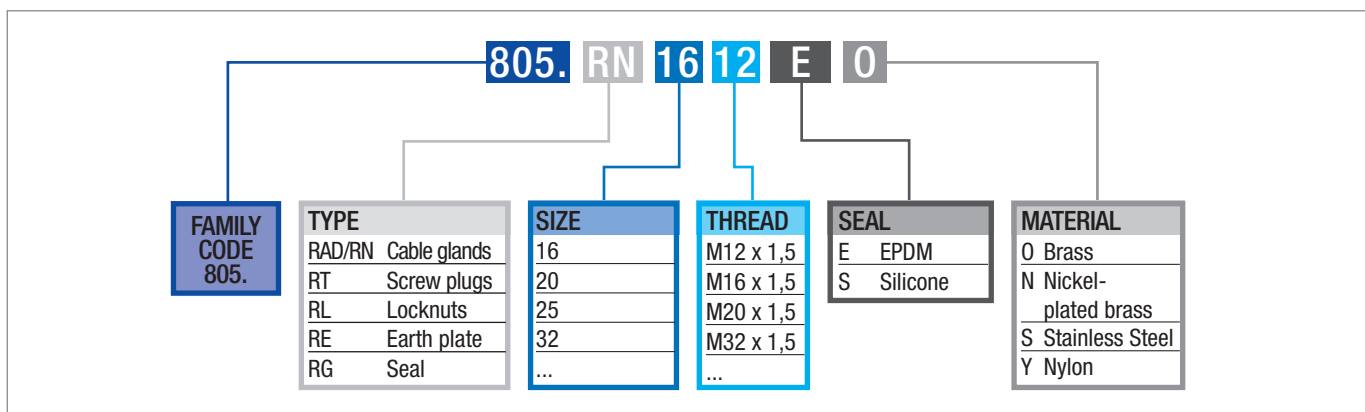
SILICONE seal



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

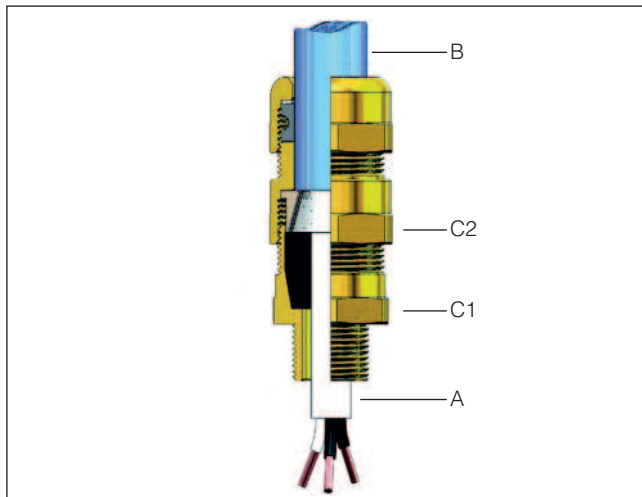
ATEX [Ex II 2 GD]



Size	Thread	A Ø min-max cable under armour (mm)	B Ø min-max external cable	C1	C2	□			
							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 cable under armour (mm)	B Ø min-max external cable	C1	C2	□	Brass	Nickel-plated brass	Steel S6
							805.RAD1612.SO	805.RAD1612.SN	805.RAD1612.SS
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	8÷10,5		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			100	100	1	805.RAD9075.SO	805.RAD9075.SN	805.RAD9075.SS
	M90x1.5	54÷58 - 58÷62	64÷72	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-Exdl/II2GD Exel-ExdlIC-ExtD A21 IP66/68



UNION-EX Series



SCREW PLUGS

ATEX [Ex II 2 GD]



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

ATEX [Ex II 2 GD]



Short thread



Long thread

Thread	Ø cable 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

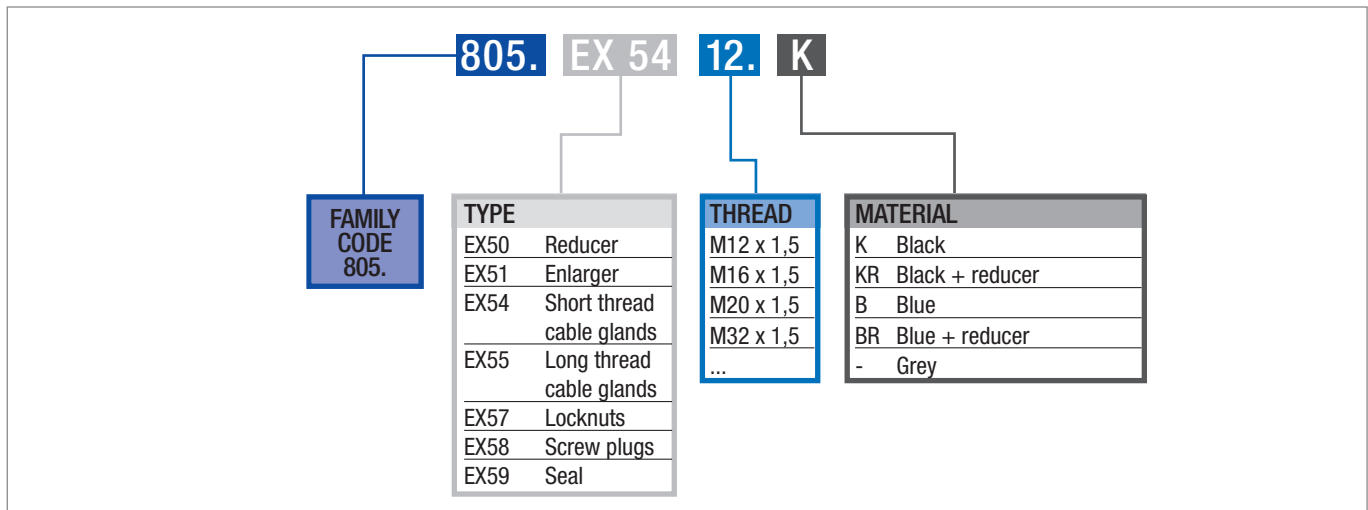
□ Package/Bulk Pack.
- With seal



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 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 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

1
 ATEX [Ex II 2 GD]
 2
 3

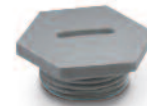
LOCKNUTS



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.

ATEX [Ex II 2 GD]

1

ATEX-IECE_x
[ II 2 GD]

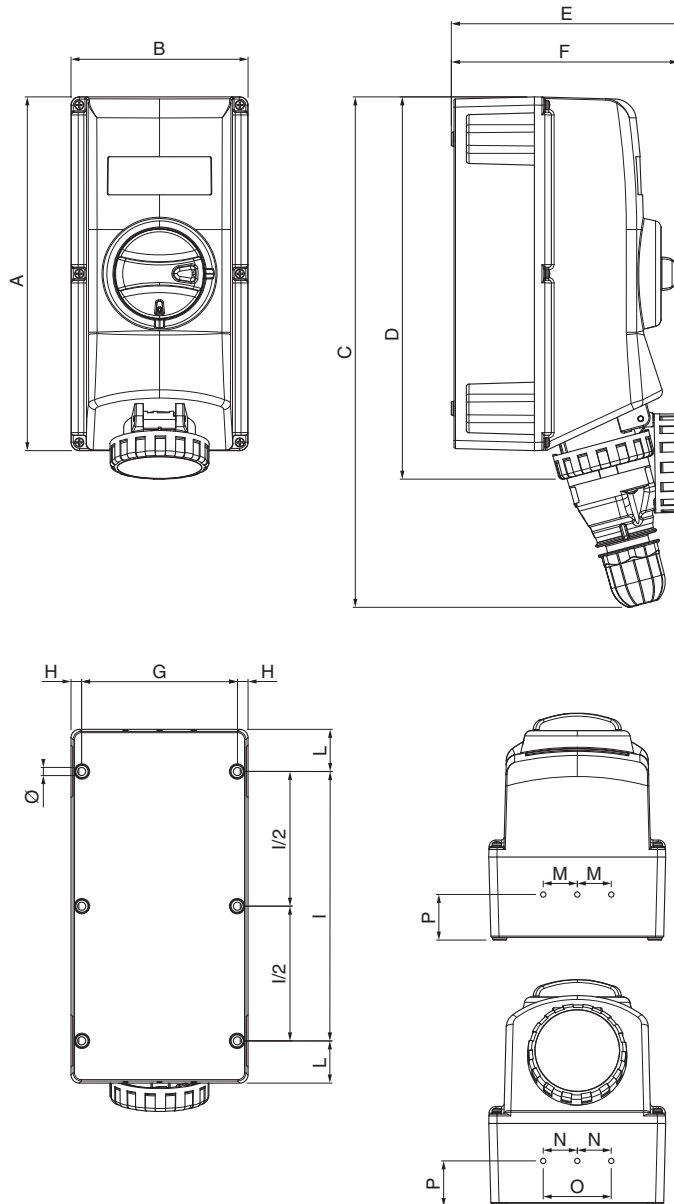
DIMENSIONS

ADVANCE-GRP[GD] Series



DIMENSIONS

ATEX [Ex] II 2 GD

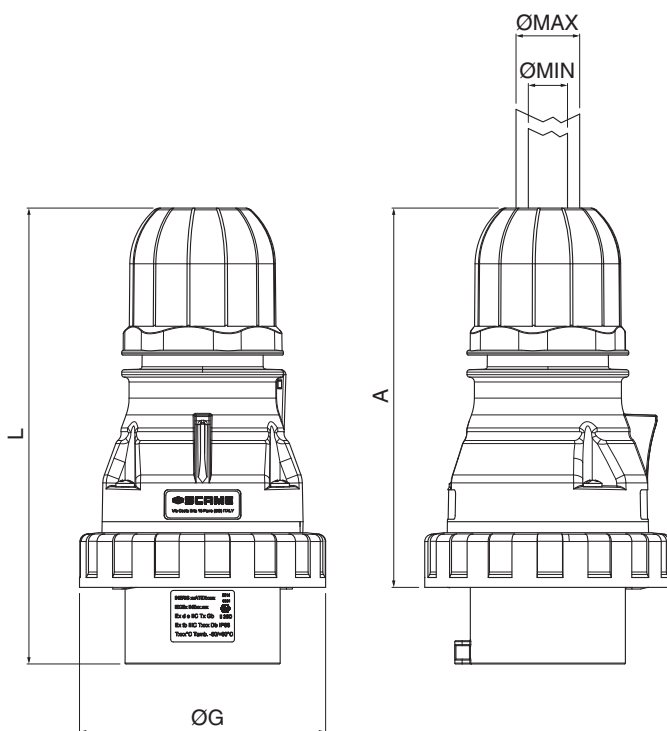


	TYPE	A	B	C min	D	E	F	G	H	Ø	I	I/2	L	M	N	O	P
16A	2P+E	260	130	370	280	170	166,8	114,5	7,75	6	198		31	25	25		33,5
	3P+E	260	130	375	282	175	166,8	114,5	7,75	6	198		31	25	25		33,5
	3P+N+E	260	130	393	282	182	166,8	114,5	7,75	6	198		31	25	25		33,5
32A	2P+E	260	130	395	285	189	166,8	114,5	7,75	6	198		31	25	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+N+E	140,5	88	165	9	20
32A	2P+E	142,6	92	174	9	20
	3P+N+E	150	101	180,5	13	23
63A	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)



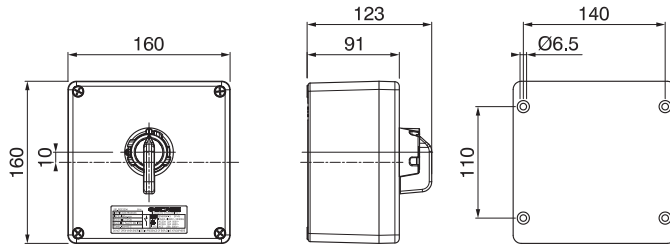
ISOLATORS-EX[GD] Series



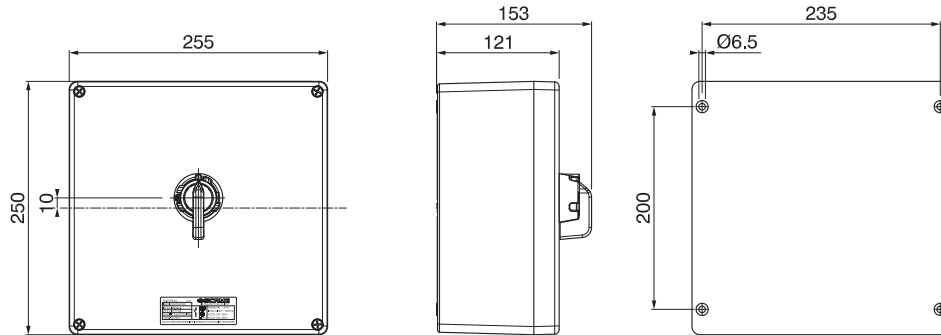
DIMENSIONS

ATEX [Ex] II 2 GD

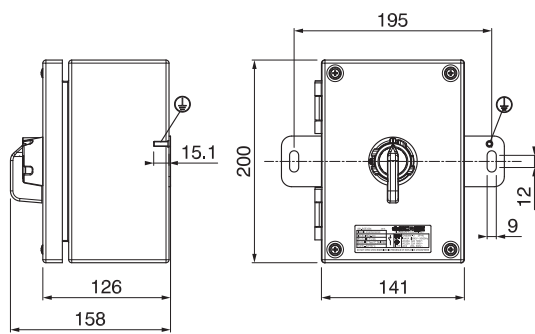
THERMOSETTING ENCLOSURE 20A, 25A, 32A



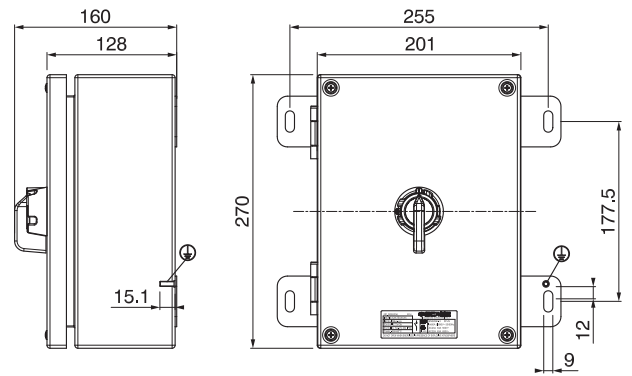
THERMOSETTING ENCLOSURE 40A, 63A



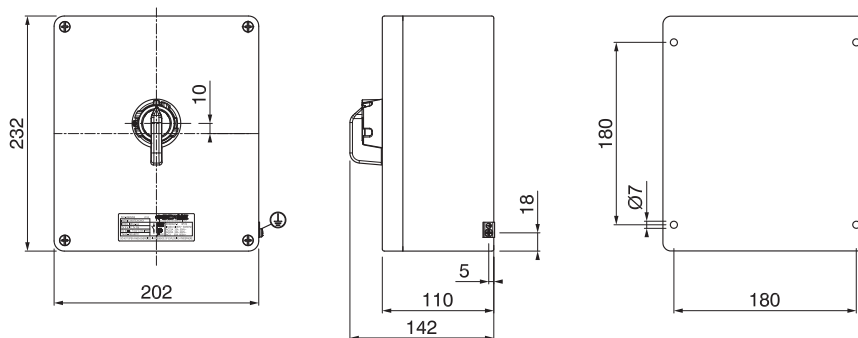
STAINLESS STEEL ENCLOSURE 20A, 25A, 32A



STAINLESS STEEL ENCLOSURE 40A, 63A

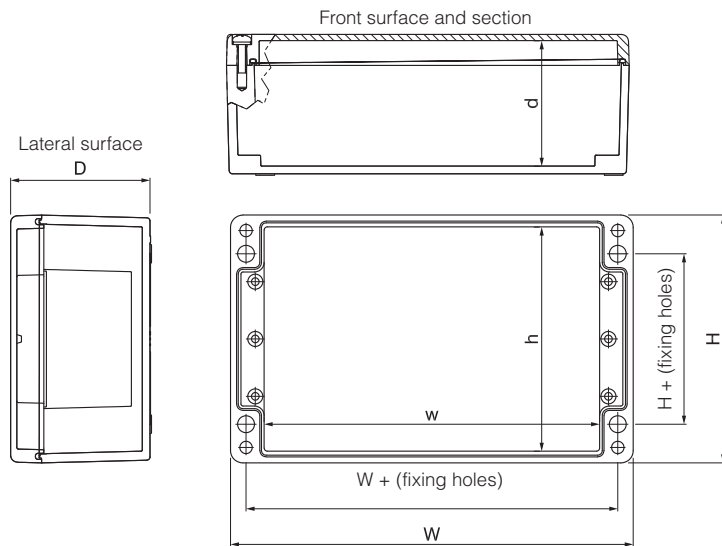


ALUMINIUM ENCLOSURE 20A, 25A, 32A, 40A, 63A



(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		

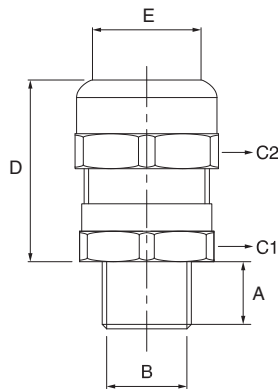
(Dimensions in mm)

UNION-EX Series



DIMENSIONS – METAL VERSIONS RAD

CABLE GLANDS 805.RN...



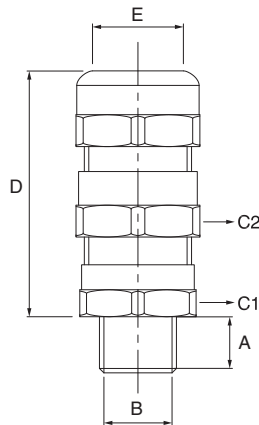
Size	E	Ø A (mm)	Ø B (mm)	C1		C2		D	Weight (gr)
16 (EP-SI)	16	15	7 (M12) 11	24	26	24	26	38	94
20 (EP-SI)	20	15	15	30	33	32	35	40	156
25 (EP-SI)	25	15	19	35	38	36	39	40	185
32 (EP-SI)	32	15	25	42	47	45	49	52	340
40 (EP-SI)	38	15	35	48	53	50	55	52	421
50 (EP-SI)	44	15	44	55	60	57	62	52	537
63 (EP-SI)	54	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)

1
ATEX [Ex II 2 GD]
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■ DIMENSIONS – METAL VERSIONS RAD

**CABLE GLANDS
805.RAD...**



Size	E	Ø A (mm)	Ø B (mm)	Armour range		C1		C2		D	Weight (gr)
				Standard cone	Reduced cone						
16 (EP-SI)	16	15	7 (M12) 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)



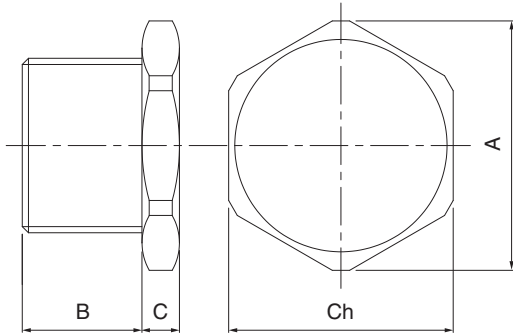
UNION-EX Series



ATEX [Ex II 2 GD]

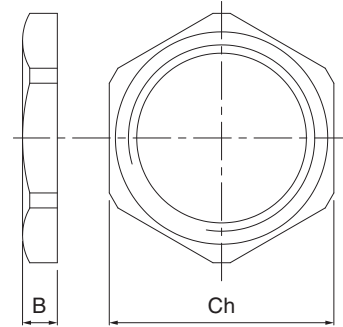
DIMENSIONS – METAL VERSIONS RAD

SCREW PLUGS 805.RT...



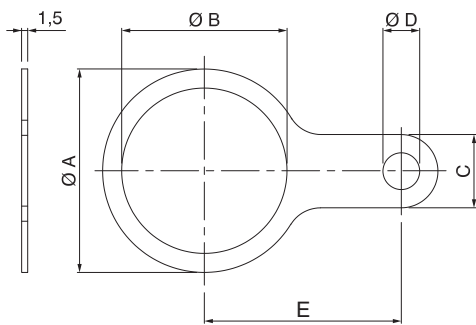
Thread	Ch	A	B	C
M12x1.5	16	17,6	15	5
M16x1.5	20	22	15	5
M20x1.5	24	26,4	15	5
M25x1.5	30	33	15	5
M32x1.5	36	39,6	15	5
M40x1.5	45	49,5	15	5
M50x1.5	55	60	15	5
M63x1.5	68	74	15	8
M75x1.5	80	86	20	8
M90x2	100	107	20	8

LOCKNUTS 805.RL...



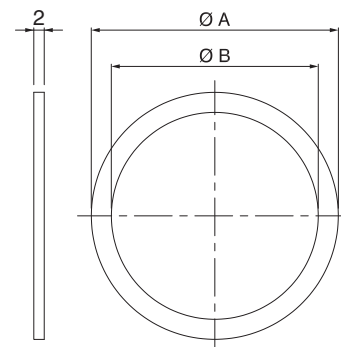
Thread	Ch	B
M12x1.5	15	2,8
M16x1.5	19	2,8
M20x1.5	24	3
M25x1.5	30	3,5
M32x1.5	36	4
M40x1.5	46	4,5
M50x1.5	60	5
M63x1.5	70	5,5
M75x1.5	83	10
M90x2	102	10

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...

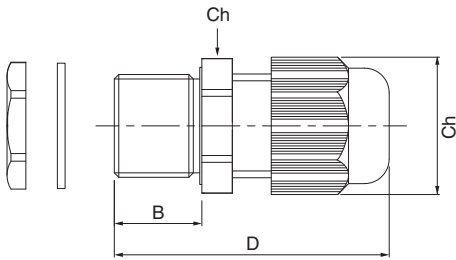


Type	Dimensions		
	ØA	ØB (Nylon)	ØB (Silicone)
M12	20	12,5	12
M16	25	16,5	16
M20	30	20,5	20
M25	35	25,5	25
M32	42	32,5	32
M40	50	40,5	40
M50	60	50,5	50
M63	76,5	63,5	63
M75	85	75,5	75
M90	104	90,5	90

(Dimensions in mm)

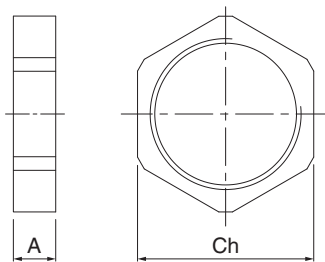
DIMENSIONS – POLYAMIDE VERSIONS

CABLE GLANDS 805.EX54/55...



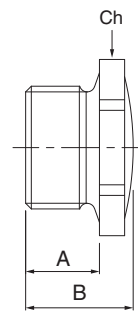
	Thread	Cable inlets	Short			Long		
			B	Ch	D	B	Ch	D
Normal seal	M12x1.5	4.5 - 6.5	8	15	32	15	15	39
	M16x1.5	5.0 - 8.0	10	19	37	15	19	42
		5.0 - 10.0	10	22	39	15	22	44
	M20x1.5	7.0 - 12.0	10	24	40	15	24	45
		10.0 - 14.0	10	27	43	15	27	48
	M25x1.5	10.0 - 14.0	10	27	45	15	27	50
		12.0 - 18.0	10	33	49	15	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
M63x1.5	40.0 - 48.0	12	70	68	16	70	72	
Reduced seal	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)



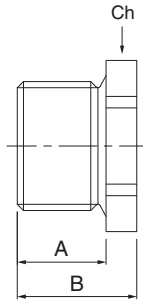
UNION-EX Series



DIMENSIONS – POLYAMIDE VERSIONS

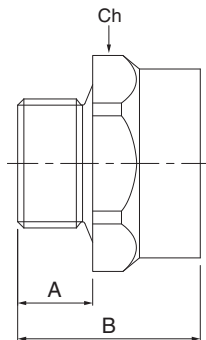
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 ATEX [Ex II 2 GD]

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

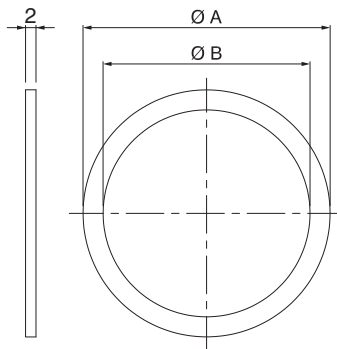
ENLARGER 805.EX51...



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)

DUST



2.1

ADVANCE-GRP[EX] SeriesPAGE 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



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2
ATEX [Ex II 2 D]
3

SWITCHED INTERLOCKED SOCKET OUTLETS



VERSIONS WITH MECHANICAL INTERLOCK

	With switch-disconnector	16A-32A 63A
	With switch-disconnector and fuse	16A-32A 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**

Via Costa Erta 15 Parre BG ITALY 2014

503.6387.F	 	 <small>0051</small>		3P+N+± 63A - 6h 346-415V~
IMQ 11 ATEX 010				
Ex tb IIIC T90°C Db IP66				
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

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.

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

■ ATEX CERTIFICATE

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

■ CABLE ENTRY

Maximum entry with cable glands

Rated current (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 (mm²)

Rated current (A)	Socket outlets	
	Min	Max
16A	4	4
32A	10	10
63A	25	25

(*) In case of flexible cable max 70 mm².

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.

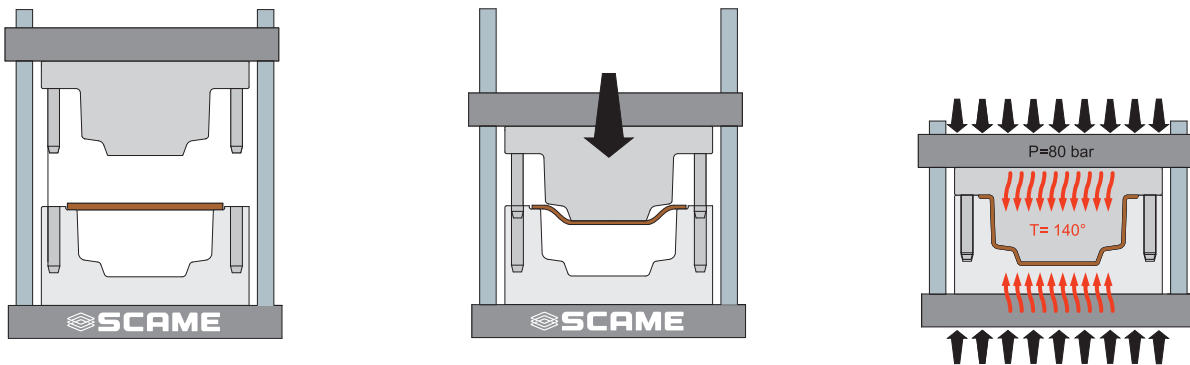
Type of protection (Ex) :
II 2D - Ex tb IIIC T90°C Db IP66
Ta -25°C +60°C.

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

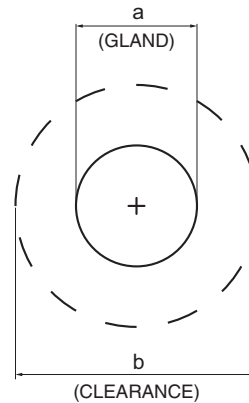
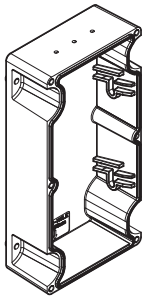


TECHNICAL FEATURES, CROSS SECTIONAL AREA AND TORQUE

1
2
ATEX [Ex 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... 503.32... 503.63...	0,8	0,8	3,6
Switch-Command & fuse 16-32A : 10:3 38 gG 63A : CH 22 X 58 63A gG		503.16...F 503.32...F 503.63...F	0,8	0,8	3,6
Earth terminals		503.16... 503.32... 503.63...	1,2	1,2	3,5

CABLE ENTRY



16A/32A WxD (mm ²)	63A WxD (mm ²)	Type cable entry M	Type cable entry PG	GLAND a (mm)	CLEARANCE b (mm)	Area A n°
80x45	110x55	M32	PG29	33	50	2
				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: 4mm² - 32A: 10mm² - 63A: 25mm²

SINGLE-WIRE 16A: 4mm² - 32A: 10mm² - 63A: 25mm²

Rated current	Max. current			Optima-EX 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

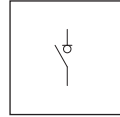


ATEX / IECEx - 2 GD

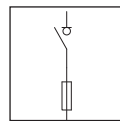
Ambient	Gas			Dust		
Zone	0 - Ga	1 - Gb	2 - Gc	20 - Da	21 - Db	22 - Dc

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
Switch-disconnector	2P+E	50/60	200-250V	■	6	☐ 1	☐ 1	☐ 1
	3P+E	50/60	380-415V	■	6	503.1683	503.3283	503.6383
	3P+N+E	50/60	346-415V	■	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
Switch-disconnector and fuse (*)	2P+E	50/60	200-250V	■	6	☐ 1	☐ 1	☐ 1
	3P+E	50/60	380-415V	■	6	503.1683-F	503.3283-F	503.6383-F
	3P+N+E	50/60	346-415V	■	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;		

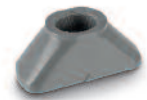
(*) For single-phase products, in case the phase/neutral is missing the pilot lamp is turned off.

■ ACCESSORIES AND COMPLEMENTARY PRODUCTS



Description	Contacts		
Microswitch Kit for Advance GRP 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

1
2
ATEX [Ex II 2 D]
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VERSIONS



Plugs

16A-32A
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).



PLUG LABEL
OPTIMA-EX SERIES

SCAME 2014	
Via Costa Ertà 15 Parre BG ITALY	
3P+N+ \pm - 32A - 6h / 346-415V~	
218.EX3237	
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	

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.

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

■ ATEX CERTIFICATE

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

■ WIRING OPERATIONS

Wiring capacity of the terminals (mm²)

Rated current (A)	Plugs	
	Min	Max
16A	2,5	2,5
32A	6	6
63A	16	16

(*) In case of flexible cable max 70 mm².

OPTIMA-EX Series



TECHNICAL FEATURES

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ATEX [Ex II 2 D]
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OPTIMA-EX Series	Unit	Value			
Rated Current		16A	32A	63A	
Code		218.16...-EX	218.32...-EX	218.63...-EX	
Suitable Size cables Ground-Terminals	(mm ²)	2.5	6	16	
Power Supply Terminals - Tightening-Torque	(Nm)	0.8	0.8	2.2	
Cable size accepted by Cable-Clamp (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 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 ADVANCE-GRP[EX]	ΔT cable entry	ΔT cable
	T. amb 40°C	T. amb 50°C	T. amb 60°C			
16A	-	-	16A	4 mm ² Stranded-cable	20,3 K	-
32A	-	-	25A	10 mm ² Stranded-cable	21,1 K	-
63A	55A	50A	45A	25 mm ² 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



1
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ATEX [Ex II 2 D]
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SWITCHES DISCONNECTORS



VERSIONS

	Switch disconnectors Aluminium – General use
	Switch disconnectors Aluminium – Emergency control
	Switch disconnectors Thermoplastic – General use
	Switch disconnectors Thermoplastic – Emergency control

REFERENCE STANDARDS

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

TECHNICAL CHARACTERISTICS

ATEX Code:	Ex II 2 D
Certificate:	TÜV IT 14 ATEX 006 (aluminium) TÜV IT 14 ATEX 005 (thermoplastic)
Ex Protection type:	
Thermoplastic:	Ex tb IIIC T80°C Db IP66 (Ta -25°C +40°C) 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) Ex tb IIIC T90°C Db IP65 (Ta -25°C +60°C)
Protection degree:	IP65 (aluminium) 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) Grey RAL 7016 (thermoplastic)
Polarity:	2P - 3P - 4P
Rated current:	20A-32A-40A-63A (aluminium) 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

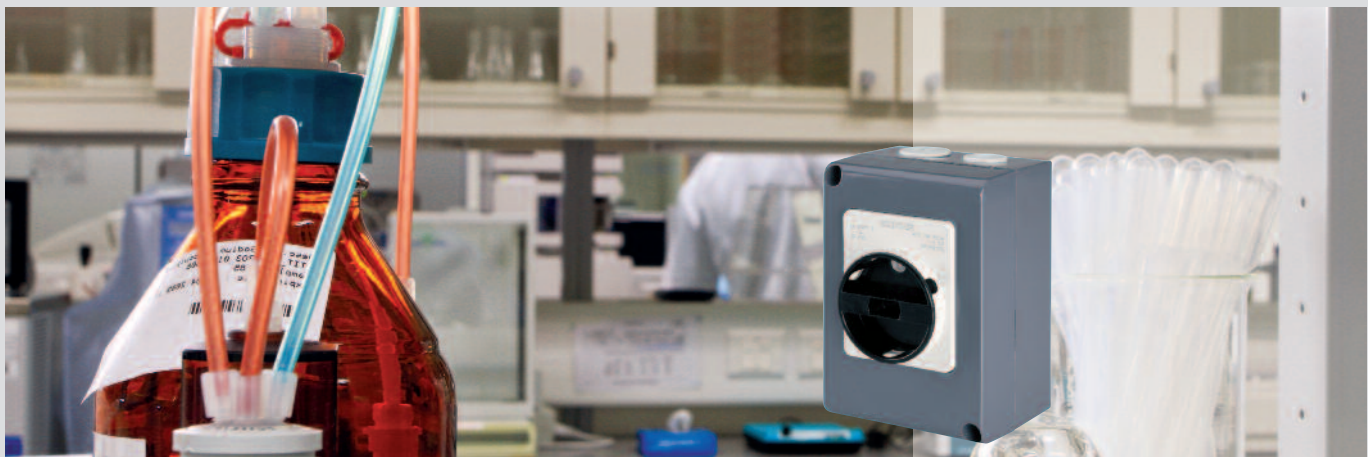
For specific substances please contact our technical service.

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



[3x II 2 GD]

[3x II 2 D]

[3x II 3 GD]

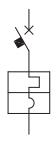
ISOLATORS-EX Series



Ex II 2D aluminium enclosure

ELECTRICAL CHARACTERISTICS OF THE SWITCH DISCONNECTORS

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ATEX [Ex II 2 D]
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TECHNICAL DATA							
Control device			ISOLATORS-EX Series				
			590.XHGE/X HEM200X	590.XHGE/X HEM320X	590.XHGE/X HEM400X	590.XHGE/X HEM630X	
SCAME switch disconnecter Fam.590 	Rated current		20A	32A	40A	63A	
	Insulating voltage (UI)		690V	690V	690V	690V	
	Duty rated current based on the 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 (rigid or flexible) mm ²	Tightening torque (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 entries	Maximum cable inlet 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 switch disconnecter Fam.590 	Rated current			20A	32A	40A
	Insulating voltage (UI)			690V	690V	690V
	Duty rated current based on the 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 ²	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

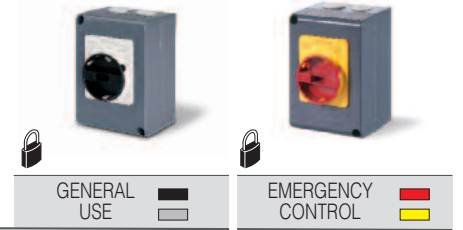


ATEX / IECEx - 2 GD

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

ALUMINIUM SWITCHES DISCONNECTORS - IP65

1
2
ATEX [Ex II 2 D]
3



Current	Poles	Cable inlets	Dimensions (mm)	□	GENERAL USE		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)	□	GENERAL USE		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]

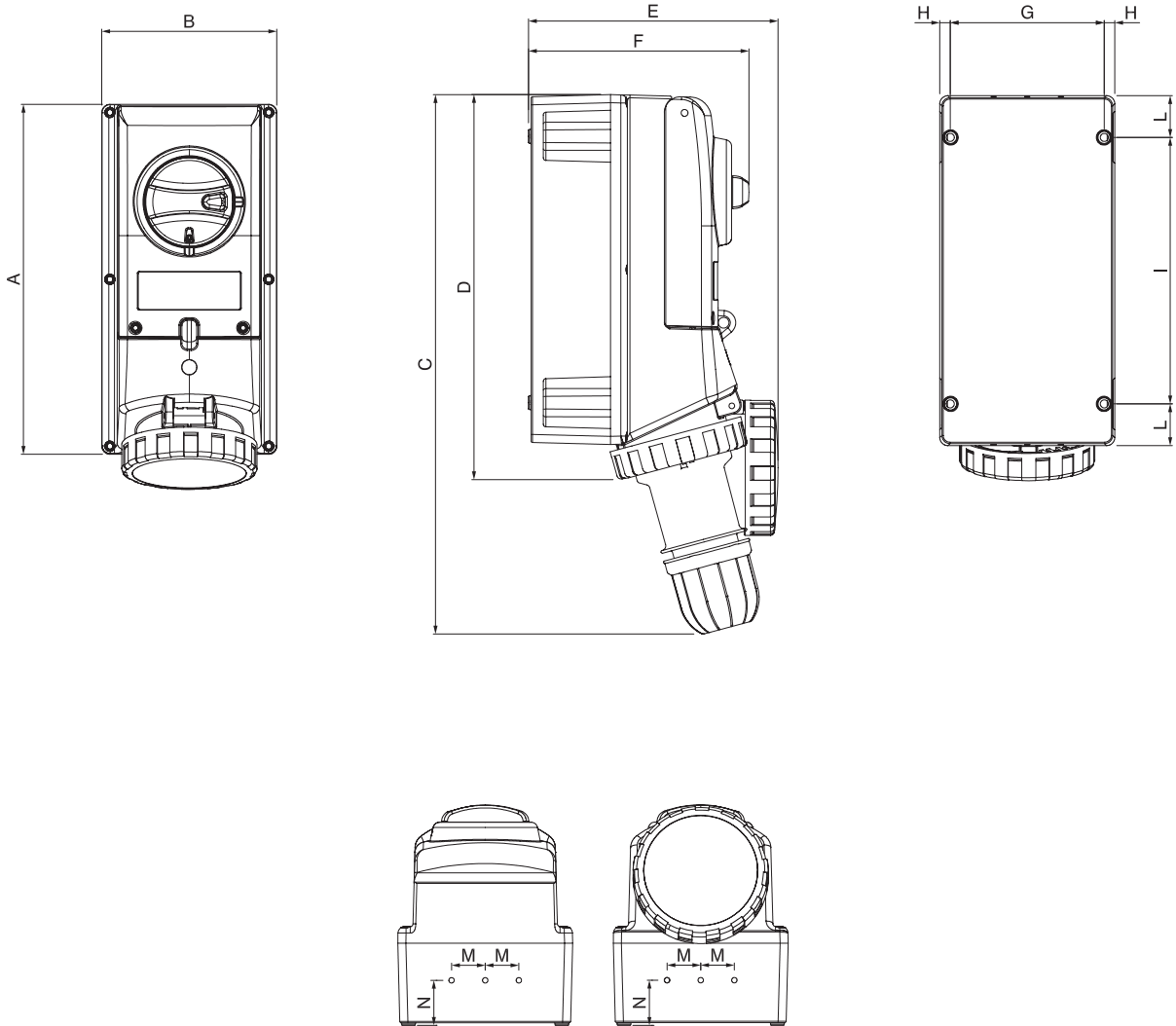
DIMENSIONS

ADVANCE-GRP[EX] Series



DIMENSIONS

1
2
3 ATEX [EX II 2 D]

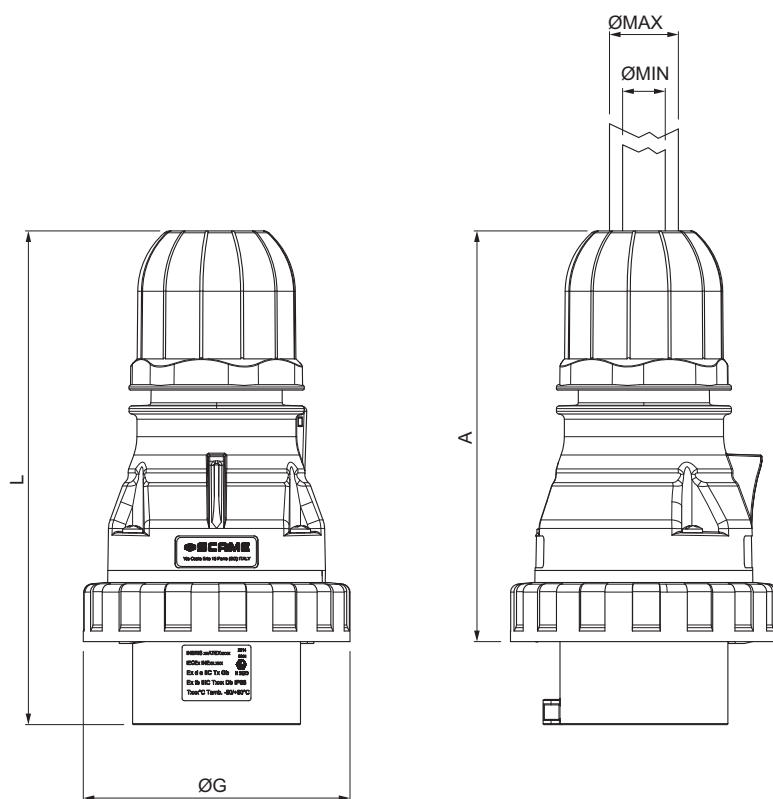


VERSION		A	B	C	D	E	F	G	H	I	L	M	N
2P+E	16A	260	130	360	280	170	164	114,5	7,75	198	31	25	33,5
3P+E	16A	260	130	365	282	175	164	114,5	7,75	198	31	25	33,5
3P+N+E	16A	260	130	390	282	182	164	114,5	7,75	198	31	25	33,5
2/3P+E	32A	260	130	390	285	189	164	114,5	7,75	198	31	25	33,5
3P+N+E	32A	260	130	400	286	185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



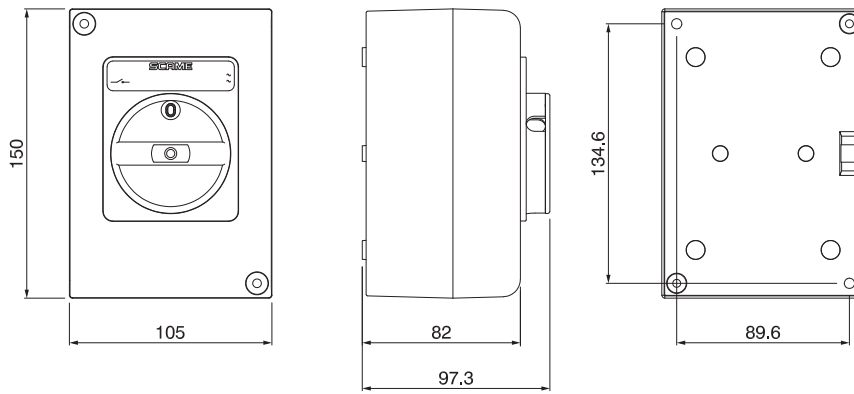
ISOLATORS-EX Series



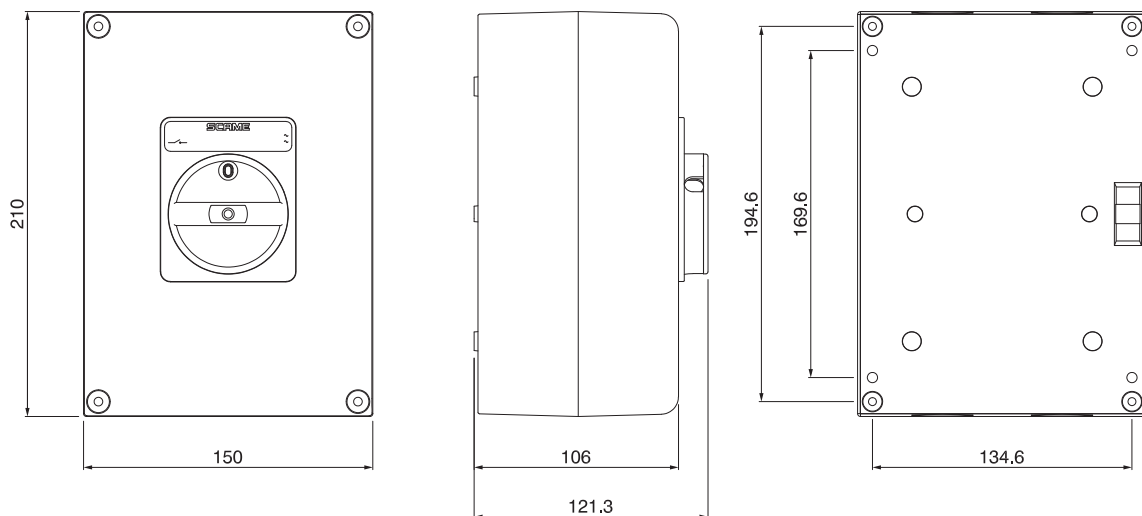
DIMENSIONS

1
2
ATEX [Ex II 2 D]
3

ALUMINIUM ENCLOSURE 20A-32A-40A

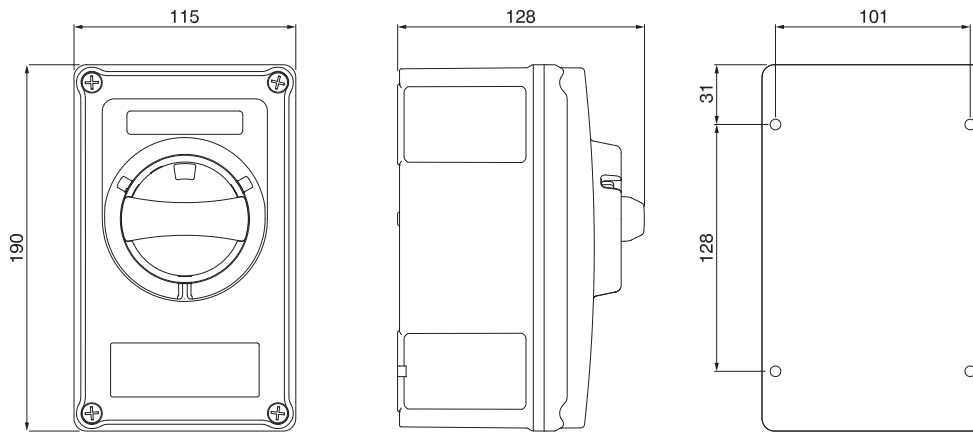


ALUMINIUM ENCLOSURE 63A



(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]


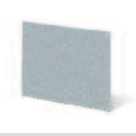

JUNCTION BOXES



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

TECHNICAL CHARACTERISTICS

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

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

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	653.9000
140 x 115 x 60	☐ n° 4 M5x16mm	n°1 M4x6	0,390	1/24	653.9001
166 x 142 x 64	☐ n° 4 M5x16mm	n°1 M4x6	0,614	1/16	653.9002
192 x 168 x 80	☐ n° 4 M5x16mm	n°1 M4x6	0,920	1/12	653.9003
253 x 217 x 93	☐ n° 4 M6x20mm	n°1 M4x6	1,430	1/6	653.9004
314 x 264 x 122	☐ n° 4 M6x20mm	n°1 M4x6	2,236	1/2	653.9005
410 x 315 x 153	☐ n° 4 M6x20mm	n°1 M4x6	3,861	1	653.9007

- 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

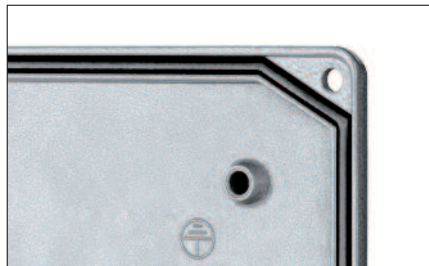
DIN RAIL KIT

For enclosures (mm)	Screw for attaching cover	Thickness (mm)	Weight (Kg)				
100 x 100 x 59						1	653.020
140 x 115 x 60	n° 4 M4x6	1,5	0,140	1/40	653.011	1	653.021
166 x 142 x 64	n° 4 M4x6	1,5	0,213	1/20	653.012	1	653.022
192 x 168 x 80	n° 4 M4x6	1,5	0,245	1/20	653.013	1	653.023
253 x 217 x 93	n° 4 M4x6	1,5	0,423	1/10	653.014	1	653.024
314 x 264 x 122	n° 4 M4x6	1,5	0,626	1/10	653.015	1	653.025
410 x 315 x 153	n° 4 M4x6	2	1,436	5	653.017	1	653.027

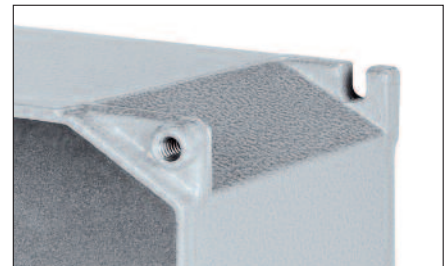
- Zinc-coated steel plate.
- With zinc-coated steel self-tapping screws for attaching the plate.



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.



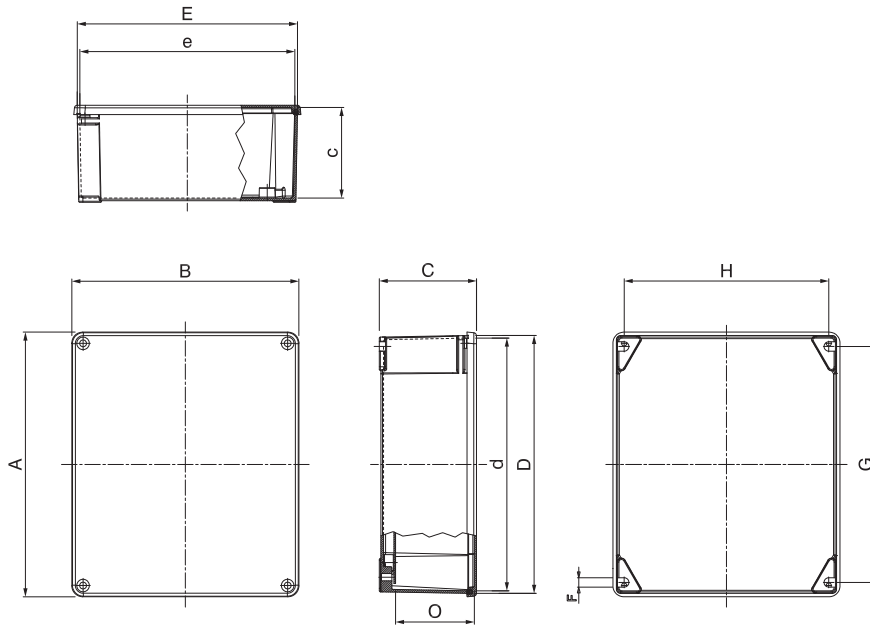
ALUBOX-EX Series



1
2
3
ATEX [Ex II 3 GD]

DIMENSIONS

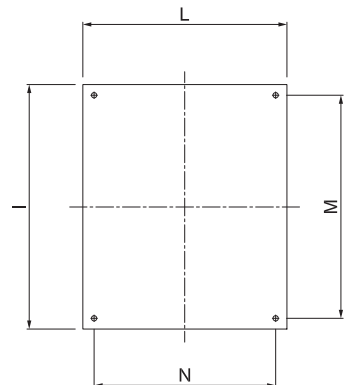
ENCLOSURES



□	External dimensions (with cover)	External box dimensions		Internal dimensions (with cover)			Surface mounting points			Useful height			
		A	B	C	D	E	c	d	e		F	G	H
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	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 (mm)	I	L	M	N
		mm	mm	mm	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)



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219.125365	29	219.63365	29	504.16866	24
219.125366	29	219.63366	29	504.16867	24
219.125367	29	219.63367	29	504.1687	24
219.12537	29	219.6337	29	504.16872	24
219.125372	29	219.63372	29	504.16874	24
219.125374	29	219.63374	29	504.16875	24
219.125375	29	219.63375	29	504.16876	24
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219.1635	29	503.3283-F	86	504.32838	24
219.1636	29	503.3286	86	504.3286	24
219.16361	29	503.3286-F	86	504.32861	24
219.16362	29	503.3287	86	504.32862	24
219.16364	29	503.3287-F	86	504.32864	24
219.16365	29	503.6383	86	504.32865	24
219.16366	29	503.6383-F	86	504.32866	24
219.16367	29	503.6386	86	504.32867	24
219.1637	29	503.6386-F	86	504.3287	24
219.16372	29	503.6387	86	504.32872	24
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219.3231	29	504.12579	24	504.6375	24
219.3232	29	504.12586	24	504.6379	24
219.3233	29	504.125861	24	504.6386	24
219.32332	29	504.125862	24	504.63861	24
219.32334	29	504.125864	24	504.63862	24
219.32336	29	504.125865	24	504.63864	24
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