

# ADVANCE-GRP[GD] Series



ATEX [Ex] II 2 GD

## SWITCHED INTERLOCKED SOCKET OUTLETS



## VERSIONS WITH MECHANICAL INTERLOCK

	With switch-disconnector	16A-32A 63A-125A
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## 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	 Via Costa Erta 15 Parre BG ITALY	
INERIS 15ATEX0017X			2P+⊕16A
IECEx INE15.0033X			6h 200-250V~
Ex de IIC T6 Gb			
Ex tb IIIC T80°C Db IP66			
Tamb. -35/+60°C			
WARNING: DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT			

## REFERENCE STANDARDS

- |               |   |
|---------------|---|
| ATEX<br>IECEx | <b>IEC/EN 60079-0</b><br>Electrical apparatus for use in the presence of combustible dust.<br><i>Part 0: General requirements.</i>  |
| ATEX<br>IECEx | <b>IEC/EN 60079-1</b><br>Explosive Atmospheres.<br><i>Part 1: equipment protection by flameproof enclosures "d"</i>   |
| ATEX<br>IECEx | <b>IEC/EN 60079-31</b><br>Electrical apparatus for use in the presence of combustible dust.<br><i>Part 31: Protection by enclosures 'tD'.</i>   |
| ATEX<br>IECEx | <b>IEC/EN 60079-7</b><br>Explosive Atmospheres.<br><i>Part 7: equipment protection by increased safety "e"</i>  |
|               | <b>IEC/EN 60309-1</b><br>Plugs, socket outlets and couplers for industrial purposes.<br><i>Part 1: general requirements.</i>  |
|               | <b>IEC/EN 60309-2</b><br>Plugs, socket outlets and couplers for industrial purposes.<br><i>Part 2: dimensional interchangeability requirements for pin and contact-tube accessories of harmonised configurations.</i> |
|               | <b>IEC/EN 60309-4</b><br>Plugs, socket-outlets and couplers for industrial purposes.<br><i>Part 4: Switched socket-outlets and connectors with or without interlock.</i>  |

## ■ BEHAVIOUR WITH CHEMICAL AND ATMOSPHERIC AGENTS

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

For specific substances please contact our technical service.

## ■ TECHNICAL CHARACTERISTICS

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

## ■ ATEX IECEX CERTIFICATE

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

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

## ■ WIRING OPERATIONS

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

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

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

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



# ADVANCE-GRP[GD] Series



## SPECIAL CHARACTERISTICS

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.

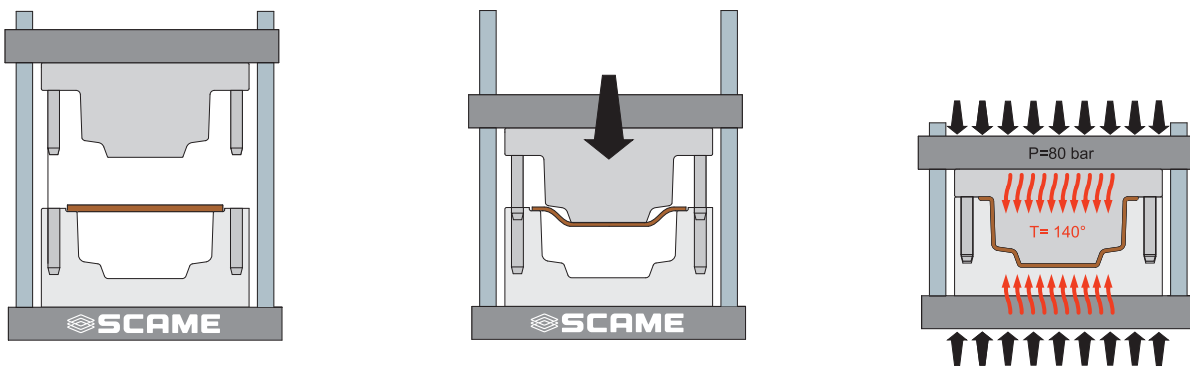
The plugs and sockets for Zone 1 unlike dust, require special design arrangements including the materials and the necessity of having a key insertion to prevent the connection of plugs of other builders, these and other, measures are required to prevent that any spark or arc, is formed through cutting 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 <sub>max</sub> - I <sub>max</sub>	Mode of protection (Nm)	ATEX Certificate	Ambient Temperature
<b>TECHNOR</b>				
ZBWE 6	400V – 4A	Ex d e IIC	INERIS 02 ATEX 9007U	-50°C / +75°C
ZBWE 16	600V – 4A	Ex d e IIC	INERIS 02 ATEX 9007U	-50°C / +75°C
<b>CORTEM (only for 63A size)</b>				
M-0530 M-0531	400V – 4A	Ex d e IIC	CESI 09 ATEX 016 U	- 40°C / +80°C

### IECEx Certification – Auxiliary Contact

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

Clearance

**CROSS SECTIONAL AREAS CONDUCTORS & TORQUE**

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

**EARTH TERMINALS**

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

**AUXILIARY CONTACTS**

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

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

**HOW TO INSTALL AUXILIARY CONTACT**

