



# OPTIMA-EX[GD] SERIES



**SCAME**  
feeling connected



## OPTIMA-EX[GD] Series

OPTIMA-EX[GD] is a range of switched interlocked connectors from 16 to 32A for applications in Zone 1/2 (Gas) and 21/22 (Dust).

The enclosure, made of dissipative thermoplastic reinforced with glass fiber, is resistant to impact even at low temperatures and its design eases the wiring operations as well as use.

The mobile interlocked socket outlets of OPTIMA-EX[GD] Series are equipped with a non-sparking Ex switch.

technical sheet p. 6

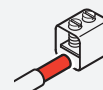
## Technical information

### Main characteristics



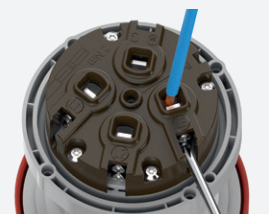
- 01** IP66 cover ring nut
- 02** Enclosure in dissipative thermoplastic reinforced with glass fiber
- 03** Lowered body with non-slip finish to facilitate grip
- 04** Non-sparking switch with mechanical interlock
- 05** Lockable handle and plate with indicators of voltage presence
- 06** Protected enclosure locking points
- 07** Ergonomic cable gland in thermoplastic material reinforced with glass fiber

### Terminals



#### **mantle terminals**

Optimal connections for high currents



CONNECTORS EX[GD]



IP: IP66

Poles	h	Hz	Volt	Colour	16A	32A
2P+E	4	50 60	100-130	Yellow	319.1640	319.3240
	6	50 60	200-250	Blue	319.1643	319.3243
	7	50 60	480-500	Black	319.16436 <sup>1)</sup>	319.32436 <sup>1)</sup>
	9	50 60	380-415	Red	319.1648 <sup>1)</sup>	319.3248 <sup>1)</sup>
3P+E	3	50 60	380 50Hz / 440 60Hz	Red	319.16464 <sup>1)</sup>	319.32464 <sup>1)</sup>
	4	50 60	100-130	Yellow	319.1641 <sup>1)</sup>	319.3241 <sup>1)</sup>
	5	50 60	600-690	Black	319.16467	319.32467
	6	50 60	380-415	Red	319.1646	319.3246
	7	50 60	480-500	Black	319.16466	319.32466
	9	50 60	200-250	Blue	319.1644	319.3244
3P+N+E	11	60	440-460	Red	319.16465 <sup>1)</sup>	319.32465 <sup>1)</sup>
	3	50 60	380 50Hz / 440 60Hz	Red	319.16474 <sup>1)</sup>	319.32474 <sup>1)</sup>
	4	50 60	100-130	Yellow	319.1642 <sup>1)</sup>	319.3242 <sup>1)</sup>
	5	50 60	600-690	Black	319.16477	319.32477
	6	50 60	346-415	Red	319.1647	319.3247
	7	50 60	480-500	Black	319.16476	319.32476
	9	50 60	208-250	Blue	319.1645	319.3245
	11	60	440-460	Red	319.16475 <sup>1)</sup>	319.32475 <sup>1)</sup>

<sup>1)</sup>Special versions available on request.

SAFETY KEY

The switched interlocked connectors of OPTIMA-EX[GD] Series are equipped with an insertion key (in compliance with the IEC EN 60079-0 standard) which allows mating with only the mobile plugs of the same series.





## OPTIMA-EX[GD] Series

OPTIMA-EX[GD] is a range of industrial plugs from 16 to 125A for applications in Zone 1/2 (Gas) and 21/22 (Dust).

The enclosure, made of dissipative thermoplastic reinforced with glass fiber is resistant to impact even at low temperatures.

The efficiency of the contacts over time is guaranteed by the use of nickel-plated brass pins, resistant to oxidation and aging.

 technical sheet p. 9

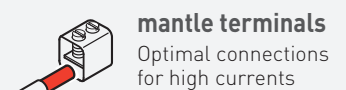
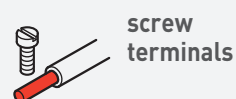
## Technical information

### Main characteristics



- 01** Unlosable co-moulded silicone gasket
- 02** Ultra smooth anti-corrosion nickel-plated brass pins
- 03** Stainless steel coupling screws
- 04** 2 different types of terminals: screw (16A-32A) or mantle (63A-125A)
- 05** Body in reinforced dissipative thermoplastic material with glass fiber with very high mechanical resistance (7J), to heat and fire, to atmospheric agents and UV rays
- 06** Tulip external cable clamp with cable gland function

### Terminals



PLUGS EX[GD]



IP: IP66

Poles	h	Hz	Volt	Colour	16A		32A		
2P+E	2	>300-500	>50	Red	219.16332	1	219.32332	1	
	4	50 60	100-130	Yellow	219.16330	1	219.32330	1	
	6	50 60	200-250	Blue	219.16333	1	219.32333	1	
	7	50 60	480-500	Red	219.16336	1	219.32336	1	
	9	50 60	380-415	Red	219.16338	1	219.32338	1	
3P+E	2	>300-500	>50	Red	219.16362	1	219.32362	1	
	3	50 60	380 50Hz / 440 60Hz	Red	219.16364	1	219.32364	1	
	4	50 60	100-130	Yellow	219.16331	1	219.32331	1	
	5	50 60	600-690	Red	219.16367	1	219.32367	1	
	6	50 60	380-415	Red	219.16336	1	219.32336	1	
	7	50 60	480-500	Red	219.16366	1	219.32366	1	
	9	50 60	200-250	Blue	219.16334	1	219.32334	1	
	10	100-300	>50	Red	219.16361	1	219.32361	1	
	11	60	440-460	Red	219.16365	1	219.32365	1	
	3P+N+E	2	>300-500	>50	Red	219.16372	1	219.32372	1
		3	50 60	380 50Hz / 440 60Hz	Red	219.16374	1	219.32374	1
4		50 60	100-130	Yellow	219.16332	1	219.32332	1	
5		50 60	600-690	Red	219.16377	1	219.32377	1	
6		50 60	346-415	Red	219.16337	1	219.32337	1	
7		50 60	480-500	Red	219.16376	1	219.32376	1	
9		50 60	208-250	Blue	219.16335	1	219.32335	1	
11		60	440-460	Red	219.16375	1	219.32375	1	



IP: IP66

Poles	h	Hz	Volt	Colour	63A		125A		
3P+E	2	>300-500	>50	Red	219.63362	1	219.125362	1	
	3	50 60	380 50Hz / 440 60Hz	Red	219.63364	1	219.125364	1	
	4	50 60	100-130	Yellow	219.63331	1	219.125331	1	
	5	50 60	600-690	Red	219.63367	1	219.125367	1	
	6	50 60	380-415	Red	219.63336	1	219.125336	1	
	7	50 60	480-500	Red	219.63366	1	219.125366	1	
	9	50 60	200-250	Blue	219.63334	1	219.125334	1	
	10	100-300	>50	Red	219.63361	1	219.125361	1	
	11	60	440-460	Red	219.63365	1	219.125365	1	
	3P+N+E	2	>300-500	>50	Red	219.63372	1	219.125372	1
		3	50 60	380 50Hz / 440 60Hz	Red	219.63374	1	219.125374	1
4		50 60	100-130	Yellow	219.63332	1	219.125332	1	
5		50 60	600-690	Red	219.63377	1	219.125377	1	
6		50 60	346-415	Red	219.63337	1	219.125337	1	
7		50 60	480-500	Red	219.63376	1	219.125376	1	
9		50 60	208-250	Blue	219.63335	1	219.125335	1	
11		60	440-460	Red	219.63375	1	219.125375	1	

125A plugs with black ring nut.

COVERS



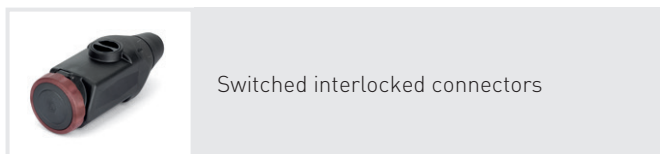
Description	IP	Current	Poles	Code	
PLUG CAP	IP66/IP67/IP69	16A 20A	2P+E	570.90163	10/100
	IP66/IP67/IP69	16A 20A	3P+E	570.90164	10/100
	IP66/IP67/IP69	16A 20A	3P+N+E	570.90165	10/100
	IP66/IP67/IP69	30A 32A	3P+N+E	570.90325	10/100
	IP66/IP67/IP69	30A 32A	2/3P+E	570.90324	10/100
	IP66/IP67/IP69	60A 63A	ALL	570.9063	10
	IP66/IP67/IP69	100A 125A	ALL	570.9125	10

# OPTIMA-EX[GD] SERIES

## SWITCHED INTERLOCKED CONNECTORS



## VERSIONS



## REFERENCE STANDARDS

IEC EN 60309-1  
IEC EN 60309-2  
IEC EN 60309-4

IEC EN 60947-1  
IEC EN 60947-3

## ATEX-IECEX STANDARDS

IEC EN 60079-0  
IEC EN 60079-1

IEC EN 60079-7  
IEC EN 60079-31

## MARKINGS AND DIRECTIVES



## TECHNICAL CHARACTERISTICS

Rated current:	16A-32A
Rated voltage:	690V
Frequency:	50÷60Hz
Protection degree:	IP66
Installation temperature:	-50°C +60°C
Enclosure material:	Dissipative thermoplastic reinforced with glass fiber
Colour:	Black RAL 9011
Impact resistance (IK degree):	7J
Cable entries:	11mm÷17mm (16A) 14mm÷22mm (32A)
Max diameter of the padlock arch:	4,7mm

## Ex CHARACTERISTICS

ATEX category:	Ex II 2GD
Ex protection type:	Ex db eb IIC T3/T4 Gb Ex tb IIIC T85°C Db
Certificates:	IMQ 23 ATEX 045 X IECEX IMQ 23.0006 X EMA 24 UKEX xxxx X (Available soon)

## 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

Resistance values to chemical agents have to be considered indicative. For further information and specific substances, contact the technical service.

## ■ CABLE ENTRIES

Rated current			16A	32A
Cable size diameter accepted (Example H07RN-F) Do Not Use Armored Cable	(mm)	2P+E	11-14	14-19
		3P+E	12-14.5	14-19
		3P+N+E	14-17	17.5-22
Cable Gland / Cable Clamp Tightening-Torque	(Nm)	2P+E	5,6	9
		3P+E	5,6	9
		3P+N+E	5,6	9

## ■ TERMINAL CONTACT Ex eb

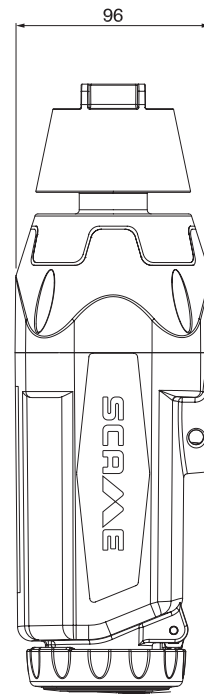
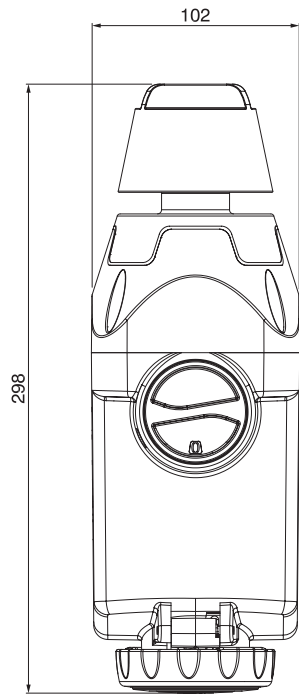
Rated current (A)	Switch terminals contacts - Torque		Cable gland tightening torque - (Nm)
	Min	Max	
16	2.5 mm <sup>2</sup>	10 mm <sup>2</sup>	0.8
32	6 mm <sup>2</sup>	10 mm <sup>2</sup>	0.8

## ■ ELECTRICAL CHARACTERISTICS

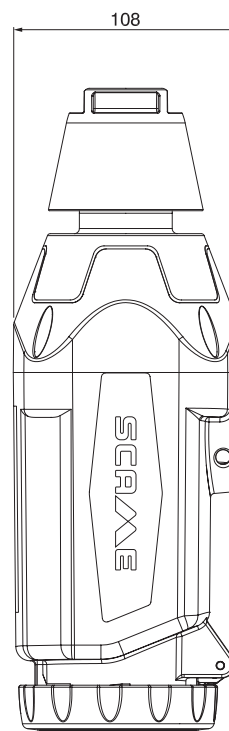
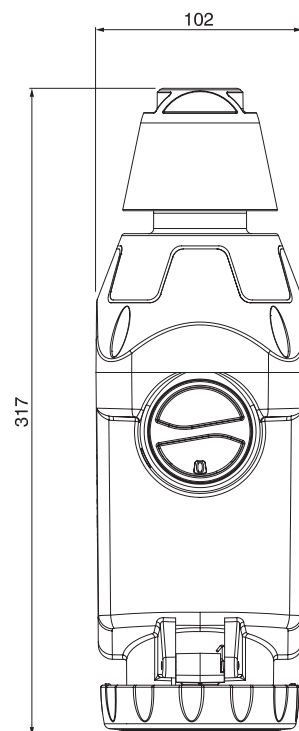
Rated current In				16A	32A
Rated operational current Ie	AC22A	Mixed resistive and inductive loads, including moderate overloads	400V A	-	-
			500V A	-	-
			690V A	16	32
	AC23A	Switching of motor loads or other highly inductive loads (3 phase/3 pole)	400V A	-	-
			500V A	16	32
			690V A	-	-
	AC3	Squirrel-cage motor: starting, switching off motor during running (3 phase / 3 pole)	400V A	-	-
			500V A	16	25
			690V A	-	-
Associate fuse size for conditional short circuit current - gG type			kA	10	10

The manufacturer's EMC assessment establishes that the equipment in question is inherently benign in terms of electromagnetic compatibility (both issue and immunity), therefore, pursuant to Article 2(2d) of Directive 2014/30/EU, the EMC Directive does not apply.

16A 2P+E



16A-32A 3P+E / 3P+N+E

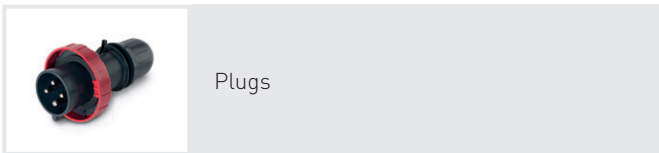




■ PLUGS



■ VERSIONS



■ Ex CHARACTERISTICS

ATEX category:	Ex II 2GD
Ex protection type:	Ex eb IIC T3, T4, T5, T6 Gb Ex tb IIIC T80°C Db
Certificates:	INERIS 15ATEX0017X IECEX INE 15.0033X CML21UKEX11259X

■ REFERENCE STANDARDS

IEC EN 60309-1
IEC EN 60309-2

■ ATEX-IECEX STANDARDS

IEC EN 60079-0
IEC EN 60079-7
IEC EN 60079-31

■ MARKINGS AND DIRECTIVES



■ TECHNICAL CHARACTERISTICS

Rated current:	16A-32A-63A-125A
Rated voltage:	>100÷690V
Frequency:	50÷60Hz
Installation temperature:	2P+E 500V 3P+E / 3P+N+E 690V
Protection degree:	IP66
Temperatura di installazione:	-50°C +60°C
Enclosure material:	Dissipative thermoplastic reinforced with glass fiber
Colour:	Black RAL 9011
Impact resistance (IK degree):	7J
Construction characteristics/ type of closure:	Separate body and handle / Screws with threaded inserts (4)
Terminals:	Screw 16A-32A Mantle 63A-125A
Nickel-plated pins:	16A-32A-63A-125A
Mobile versions cable entry device:	IP66 cable gland/ external cable clamp

■ 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

Resistance values to chemical agents have to be considered indicative. For further information and specific substances, contact the technical service.



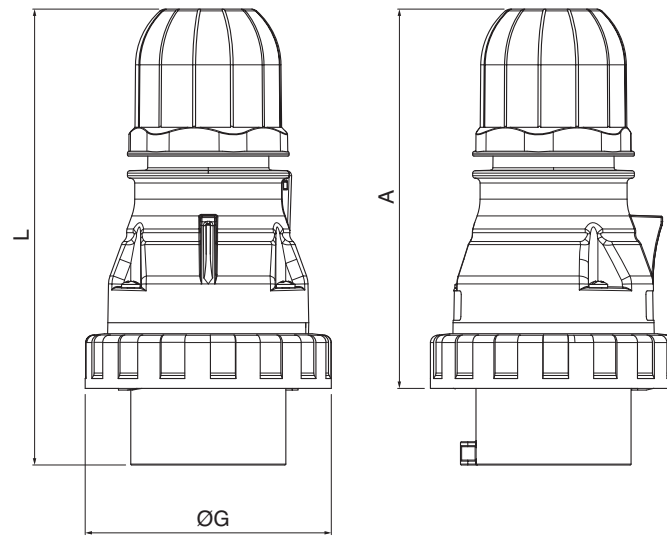
# OPTIMA-EX[GD] SERIES

## ■ CABLE ENTRIES

Rated current		16A	32A	63A	125A	
Cable section L1 – L2 – L3 – N Ground cable section	(mm <sup>2</sup> )	4	6	16	50	
Power Supply Terminals - Tightening-Torque	(Nm)	1	1.5	2	4	
Cable size diameter accepted (Example H07RN-F) Do Not Use Armored Cable	(mm)	2P+E	13 - 14.5	16 - 19.5	21 - 32	31-49
		3P+E	13 - 14.5	16 - 19.5	21 - 32	31-49
		3P+N+E	15 - 19.5	17 - 22.5	21 - 32	31-49
Cable Gland / Cable Clamp Tightening-Torque	(Nm)	2P+E	5,6	10	10	25
		3P+E	5,6	10	10	25
		3P+N+E	5,6	10	10	25
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	1,5	

## ■ TECHNICAL CHARACTERISTICS

Rated current (A)	Maximum Current		
	Ta 40°C	Ta 50°C	Ta 60°C
16	16A	16A	16A
32	32A	32A	32A
63	63A	63A	63A
125	125A	-	-



		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	3P+E	166,5	112	217,5
	3P+N+E	166,5	112	217,5
125A	3P+E	214,5	128	274
	3P+N+E	214,5	128	274

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8 001636 4 17202



SCAME PARRE S.p.A.  
Via Costa Erta, 15 - 24020 Parre (BG) Italy  
Tel. +39 035 705000



[www.scame.com](http://www.scame.com)  
[export@scame.com](mailto:export@scame.com)

