ADVANCE-GRP[EX] System

[ATEX II 3D GRP]

DISTRIBUTION ASSEMBLIES SWITCHED INTERLOCKED SOCKET OUTLETS



The switched interlocked socket outlets in the ADVANCE-GRP[EX] Series are suitable for the composition of distribution assemblies for installation in environments with classification Ex zone 22/Dc (due to the presence of the combustible dust in group IIIC) in the self-certification scheme.
These can be equipped with auxiliary contacts, to be purchased separately, without losing the certification.
The use of a GRP material (Glass-fibre Reinforced Polyester) combined with the substantial thickness of the enclosure walls guarantees excellent mechanical resistance and a long life. This material is highly resistant to contamination and corrosion and is suitable for applications requiring the use of components with a low smoke emission and no halogens (LSOH Low Smoke Zero Halogen).
The interlocked sockets in the ADVANCE-GRP[EX] Series can be used with plugs in the OPTIMA-EX Series.

REFERENCE STANDARDS

ATEX	**EN 60079-0** Electrical apparatus for potentially explosive atmospheres. *Part 0: General requirements.*
ATEX	**EN 60079-31** Electrical apparatus for potentially explosive atmospheres. *Part 31: Protection by enclosures "t".*
LVD	**EN 60309-1** Plugs, socket outlets and couplers for industrial purposes. *Part 1: general requirements.*
LVD	**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.*
LVD	**EN 60309-4** Plugs, socket-outlets and couplers for industrial purposes. *Part 4: Switched socket-outlets and connectors with or without interlock.*

TECHNICAL CHARACTERISTICS

Rated current:	**16A-25A-32A-40A-45A-55A-60A-70A**
Rated voltage:	**100÷690V~**
Frequency:	**50÷60Hz**
Insulating voltage:	**500/690V~**
Self-extinguishing GW test:	**960°C**
Fuse: 16A-32A 63A	 **gG 10,3x38mm** **gG 22x58mm**
Protection degree:	**IP66**
Impact Resistance:	**7J**
Colour:	**Grey RAL 7037**

Ex CHARACTERISTICS

ATEX Category:	**II 3D**
Ex Protection type:	**Ex tc IIIC Dc** **-25°C ≤Ta ≤+60°C**
Surface temperature class DUST:	**T90°C**

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.

ELECTRICAL PARAMETERS - AUXILIARY CONTACT

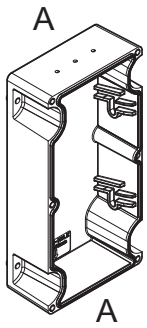
ELECTRICAL PARAMETERS AUXILIARY CONTACT SERIES 590.PL00400X		
Auxiliary contacts	**Maximun Current**	**Note**
1NC or 1NO	Max 2A	With 1 Auxiliary contacts the maximum current is 2A
1NC or 1NO	Max 2A	
2NC or 2NO	Max 1A	With 2 Auxiliary contacts the maximum current is 1A each
2NC or 2NO	Max 1A	

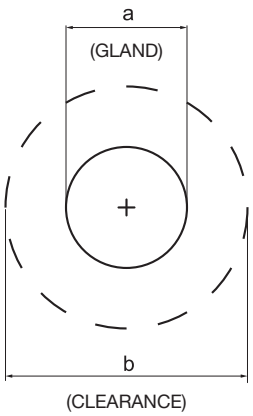
See auxiliary contact table page. 115

TECHNICAL FEATURES, CROSS SECTIONAL AREA AND TORQUE

Rated current			16A	32A	63A
Switch-command and/or fuse protection		Catalogue number	Terminals – Torque (Nm)		
Switch type serie Command (SCAME)		402.EX16…. 402.EX32…. 402.EX63….	0,8	0,8	3,6
Switch-Command & fuse 16-32A : 10:3 38 gG 63A : CH 22 X 58 63A gG		402.EX16…F 402.EX32…F 402.EX63…F	0,8	0,8	3,6
Earth terminals		402.EX16…. 402.EX32…. 402.EX63….	1,2	1,2	3,5

CABLE ENTRY





16A/32A WxD (mm²)	63A WxD (mm²)
80x45	110x55

	Type cable entry M	GLAND a (mm)	CLEARANCE b (mm)	Area A n°
16A	M25	33	50	2
32A	M32	37,5	50	2

NOTE:

For Ex cable glands installations refer to the instructions by 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

DISTRIBUTION ASSEMBLIES SWITCHED INTERLOCKED SOCKET OUTLETS - IP66



N° Socket outlets	16A			32A			63A		Rated current	Rated voltage	Terminal (mmq)	Cable entries (*)	
	2P+E	3P+E	3P+N+E	2P+E	3P+E	3P+N+E	3P+E	2P+E					
1	1								16A	230V	3x6	M32	**579.EX10-126**
			1						16A	400V	5x6	M32	**579.EX10-127**
						1			32A	400V	5x10	M32	**579.EX10-129**
2			2						25A	400V	5x10	M32	**579.EX20-103**
	1		1						25A	400V	5x6	M32	**579.EX20-104**
	1					1			32A	400V	5x16	M32	**579.EX20-105**
	1	1							25A	400V	5x6	M32	**579.EX20-113**
	2								25A	230V	3x6	M32	**579.EX20-125**
		2							25A	400V	4x6	M32	**579.EX20-128**
	1				1				32A	400V	5x16	M32	**579.EX20-151**
		1	1						25A	400V	5x10	M32	**579.EX20-155**
					2				40A	400V	4x35	M40	**579.EX20-161**
3	1		2						25A	400V	5x16	M32	**579.EX30-109**
	2		1						25A	400V	5x10	M32	**579.EX30-115**
	1		1			1			32A	400V	5x16	M32	**579.EX30-116**
	1	1			1				32A	400V	5x16	M32	**579.EX30-122**
	3								25A	230V	3x10	M32	**579.EX30-130**
	2	1							25A	400V	5x10	M32	**579.EX30-132**
	1	2							25A	400V	5x10	M32	**579.EX30-152**
	1	1				1			32A	400V	5x16	M32	**579.EX30-153**
	1				1	1			55A	400V	5x35	M32	**579.EX30-156**
	1				2				55A	400V	5x35	M32	**579.EX30-163**
	1				1		1		70A	400V	5x35	M50	**579.EX30-173**
	2				1				32A	400V	5x16	M32	**579.EX30-175**
	1		1					1	60A	400V	5x16	M32	**579.EX30-176**
4	1		3						40A	400V	5x16	M32	**579.EX40-106**
	3		1						40A	400V	5x16	M32	**579.EX40-107**
	2		2						40A	400V	5x16	M32	**579.EX40-108**
	1	3							40A	400V	5x16	M32	**579.EX40-123**
	2		1			1			45A	400V	5x16	M32	**579.EX40-131**
	2				2				45A	400V	5x16	M32	**579.EX40-132**
	1		1			1		1	70A	400V	5x35	M50	**579.EX40-133**
		3	1						40A	400V	5x16	M32	**579.EX40-154**
	2					2			45A	400V	5x16	M32	**579.EX40-162**

(*) To drill

ADVANCE-GRP[EX] 125A Series

[Ex ATEX II 3D GRP]

SWITCHED INTERLOCKED SOCKET OUTLETS

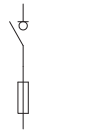
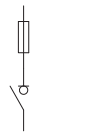
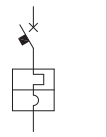
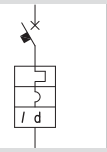


The switched interlocked socket outlets in the ADVANCE-GRP Series are suitable for installation in environments with classification Ex zone 22/Dc (due to the presence of the combustible dust in group IIIC) in the self-certification scheme.
It is possible to install auxiliary contacts, to be purchased separately, without losing the certification
The use of a GRP material (Glass-fibre Reinforced Polyester) combined with the substantial thickness of the enclosure walls guarantees excellent mechanical resistance and a long life. This material is highly resistant to contamination and corrosion and is suitable for applications requiring the use of components with a low smoke emission and no halogens (LSOH Low Smoke Zero Halogen).
They can be used with plugs in the OPTIMA-EX Series.

REFERENCE STANDARDS

ATEX	**EN 60079-0** Electrical apparatus for potentially explosive atmospheres. *Part 0: General requirements.*
ATEX	**EN 60079-31** Electrical apparatus for potentially explosive atmospheres. *Part 31: Protection by enclosures "t".*
LVD	**EN 60309-1** Plugs, socket outlets and couplers for industrial purposes. *Part 1: general requirements.*
LVD	**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.*
LVD	**EN 60309-4** Plugs, socket-outlets and couplers for industrial purposes. *Part 4: Switched socket-outlets and connectors with or without interlock.*

VERSIONS

	With switch-disconnector
	With switch-disconnector and fuse
	With fuse and switch-disconnector
	With molded case circuit breaker with thermal magnetic trip unit
	With molded case circuit breaker with thermal magnetic and residual current release trip units
	With contactor

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.

TECHNICAL CHARACTERISTICS

Rated current:	**125A**
Rated voltage:	**100÷690V~**
Frequency:	**50÷60Hz**
Insulating voltage:	**500/690V~**
Self-extinguishing GW test:	**960°C**
Self-extinguishing UL94:	**V0**
Fuse:	**NH00**
Protection degree:	**IP66**
Impact Resistance:	**7J**
Colour:	**grey RAL 7037**

Ex CHARACTERISTICS

ATEX Category:	**II 3D**
Ex Protection type:	**Ex tc IIIC Dc** **-25°C ≤Ta ≤+60°C**
Surface temperature class DUST:	**T90°C**

CABLE ENTRY

Maximum entry with cable glands

Rated current (A)	Single socket	
	Upper	Lower
125A	M63	M63

WIRING OPERATIONS

Wiring capacity of the terminals (mm²)

Rated current (A)	Socket outlets	
	Min	Max
125A	50	95 (*)

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

SWITCHED INTERLOCKED SOCKET OUTLET 125A - IP66



Poles	Hz	Volt	Colour	h	
3P+E	50/60	346-415		6	**503.12587**

Add at the end of the code:
- F: with switch-disconnector and fuse
- FS: with fuse and switch-disconnector
- M: with molded case circuit breaker with thermal magnetic trip unit
- RM: with molded case circuit breaker with thermal magnetic and residual current release trip units
- T: with contactor

OPTIMA-EX 125A Series

[ATEX II 3D GRP]

PLUGS



Plugs in the OPTIMA-EX Series are suitable for use in environments with classification Ex zone 22/Dc (due to the presence of the combustible dust in group IIIC) in the self-certification scheme.
They are compatible with the interlocked sockets in the ADVANCE-GRP Series, but can be connected, when in a “safe zone”, to any socket compliant with the industrial standard IEC/EN 60309 having the same polarity.

VERSIONS



Plugs

REFERENCE STANDARDS

ATEX	**EN 60079-0** Electrical apparatus for potentially explosive atmospheres. *Part 0: General requirements.*
ATEX	**EN 60079-31** Electrical apparatus for potentially explosive atmospheres. *Part 31: Protection by enclosures “t”.*
LVD	**EN 60309-1** Plugs, socket outlets and couplers for industrial purposes. *Part 1: general requirements.*
LVD	**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.*

TECHNICAL CHARACTERISTICS

Rated current:	**125A**
Rated voltage:	**100÷690V~**
Frequency:	**50÷60Hz**
Insulating voltage:	**500/690V~**
Self-extinguishing GW test:	**960°C**
Protection degree:	**IP66**
Impact Resistance:	**7J**
Plugs material:	**Thermoplastic**
Plugs colour:	**Black RAL 9011**

Ex CHARACTERISTICS

ATEX Category:	**II 3D**
Ex Protection type:	**Ex tc IIIC Dc** **-25°C ≤Ta ≤+60°C**
Surface temperature class DUST:	**T90°C**

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.

TECHNICAL FEATURES

Rated Current	Unit		Value 125A
Code			218.EX125...
Cable section L1 – L2 – L3 – N Ground cable section	(mm^2)		50
Power Supply Terminals Tightening-Torque	(Nm)		4
Cable size accepted by Cable-Clamp (eg.H07RN-F) Do not use armoured cable	(mm)	2P+E	30
		3P+E	
		3P+N+E	
Cable Gland/Cable-Clamp Tightening-Torque	(Nm)	2P+E	25
		3P+E	
		3P+N+E	
Cable-Gland/Cable-Clamp (Screw) - Tightening-Torque	(Nm)		0.8
Handle Screws – Tightening-Torque	(Nm)		1,5

PLUGS 125A - IP66



Poles	Hz	Volt	Colour	h	
2P+E	50/60	200-250		6	**218.EX12533**
3P+E	50/60	380-415		6	**218.EX12536**
3P+E	50/60	440-460		11	**218.EX125365**
3P+N+E	50/60	346-415		6	**218.EX12537**

ADVANCE-GRP[EX] 24V Series

[ATEX II 3D GRP]

SWITCHED INTERLOCKED SOCKET OUTLETS



The sockets with electrical interlock in the ADVANCE-GRP Series for very low voltage are suitable for installation in environments with classification Ex zone 22/Dc (due to the presence of the combustible dust in group IIIC) in the self-certification scheme.
The use of a GRP material (Glass-fibre Reinforced Polyester) combined with the substantial thickness of the enclosure walls guarantees excellent mechanical resistance and a long life.
This material is highly resistant to contamination and corrosion and is suitable for applications requiring the use of components with a low smoke emission and no halogens (LSOH Low Smoke Zero Halogen).
They can be used with plugs in the OPTIMA-EX 24V Series.

VERSIONS



Switched interlocked socket outlets with consumer unit

REFERENCE STANDARDS

ATEX	**EN 60079-0** Electrical apparatus for potentially explosive atmospheres. *Part 0: General requirements.*
ATEX	**EN 60079-31** Electrical apparatus for potentially explosive atmospheres. *Part 31: Protection by enclosures "t".*
LVD	**EN 60309-1** Plugs, socket outlets and couplers for industrial purposes. *Part 1: general requirements.*
LVD	**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.*
LVD	**EN 60309-4** Plugs, socket-outlets and couplers for industrial purposes. *Part 4: Switched socket-outlets and connectors with or without interlock.*

TECHNICAL CHARACTERISTICS

Rated current:	**16A**
Rated voltage:	**24V~**
Frequency:	**50÷60Hz**
Self-extinguishing GW test:	**960°C**
Fuse:	**16A gG 10,3x38mm**
Protection degree:	**IP66**
Impact Resistance:	**4J**
Colour:	**Grey RAL 7037**

Ex CHARACTERISTICS

ATEX Category:	**II 3D**
Ex Protection type:	**Ex tc IIIC Dc** **-25°C ≤Ta ≤+60°C**
Surface temperature class DUST:	**T90°C**

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 ENTRY

Maximum entry with cable glands

Rated current (A)	Single socket	
	Upper	Lower
16A	M32	M32

WIRING OPERATIONS

Wiring capacity of the terminals (mm^2)

Rated current (A)	Socket outlets
	Min
16A	2,5 mm^2

EXTRA LOW VOLTAGE SOCKET OUTLETS <50V - IP66



Poles	Colour	Rated voltage		
2P		20-25V	1	**503.2416-F**

OPTIMA-EX 24V Series

[ATEX II 3D]

PLUGS



Plugs in the OPTIMA-EX Series for very low voltage are suitable for use in environments with classification Ex zone 22/Dc (due to the presence of the combustible dust in group IIIC) in the self-certification scheme. They are compatible with the interlocked sockets in the ADVANCE-GRP 24V Series.

REFERENCE STANDARDS

ATEX	**EN 60079-0** Electrical apparatus for potentially explosive atmospheres. *Part 0: General requirements.*
ATEX	**EN 60079-31** Electrical apparatus for potentially explosive atmospheres. *Part 31: Protection by enclosures "t".*
LVD	**EN 60309-1** Plugs, socket outlets and couplers for industrial purposes. *Part 1: general requirements.*
LVD	**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.*

VERSIONS



Plugs

TECHNICAL CHARACTERISTICS

Rated current:	**16A**
Rated voltage:	**24V~**
Frequency:	**50÷60Hz**
Self-extinguishing GW test:	**960°C**
Protection degree:	**IP66**
Impact Resistance:	**4J**
Plugs material:	**Thermoplastic**
Colour:	**Black RAL 9011**

Ex CHARACTERISTICS

ATEX Category:	**II 3D**
Ex Protection type:	**Ex tc IIIC Db** **-25°C ≤Ta ≤+60°C**
Surface temperature class DUST:	**T90°C**

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.

TECHNICAL FEATURES

Plugs OPTIMA-EX Series	**Unit**		**Value**
Rated current In			**16A**
Rated voltage	V		20-25
Code			235.EX1600
Size cables naked flexible copper suitable for power and ground terminals	(mm^2)		4-10
Power supply terminals - Tightening torque	(Nm)		1,2
Cable clamp screw - Tightening torque	(Nm)		0,8
Cable size accepted by Cable-Clamp	(mm)	2P	8-15
Cable gland / Cable clamp - Tightening torque	(Nm)	2P	4
Handle screws - Tightening torque	(Nm)		0,8

EXTRA LOW VOLTAGE PLUGS <50V - IP66



Poles	**Hz**	**Volt**	**Colour**	
2P	20/25	0-50		**235.EX1600**