

SWITCHED INTERLOCKED SOCKET OUTLETS



REFERENCE STANDARDS

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.

VERSIONS WITH MECHANICAL INTERLOCK

	With switch-disconnector
	With switch-disconnector and fuse

TECHNICAL CHARACTERISTICS

Rated current:	16A-32A-63A
Rated voltage:	100÷690V~
Frequency:	50÷60Hz
Insulating voltage:	500/690V~
Protection degree:	IP66/IP67
Operating temperature according to the reference standard:	-25°C +40°C
Minimum operating temperature:	-40°C
Max. operating temperature:	+60°C
Self-extinguishing GW test:	960°C
Self-extinguishing UL94:	V0
Material:	Thermosetting
IK degree at 20°C:	IK10 (20J)
Switch-disconnectors 16A-32A-63A:	COMMAND Series
Fuse:	
16A-32A	gG 10,3x38mm
63A	gG 22x58mm
Colour:	Grey RAL7037

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.

CABLE ENTRY

Maximum entry with cable glands

Rated current (A)	Single socket		Socket with switchboard		
	Upper	Lower	Upper	Lower	Side
16A / 32A	M32	M32	M32	M32	M32
63A	M40	M40	M40	M40	M32

WIRING OPERATIONS

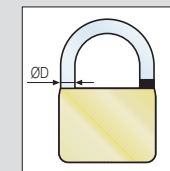
Wiring capacity of the terminals (mm²)

Rated current (A)	Socket outlets		Plugs	
	Min	Max	Min	Max
16A	1,5	4	1	2,5
32A	2,5	10	2,5	6
63A	6	25	6	16

PADLOCK TO BE USED

Choice of padlock for socket knob, fuse door and switchboard door

Rated current (A)	Padlock arc diameter (mm)
16A-32A	5
63A	6,3
125A	6,3





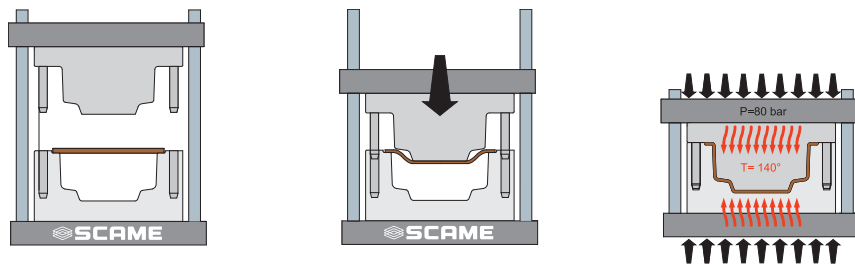
SPECIAL CHARACTERISTICS

CHARACTERISTICS ADVANCE GRP

The **ADVANCE GRP** 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** 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** 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** 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*).



OUTSTANDING IMPACT RESISTANCE



The glass-fibre reinforced polyester used in **ADVANCE GRP** 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** 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**, 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** a product suited for the most extreme environmental conditions. The double degree of protection IP66 and IP67 (IP66 for 125A), 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).



EX VERSIONS



The **ADVANCE GRP** product line also includes a series of 16A, 32A, 63A and 125A interlocked sockets for installation in environments with a potential risk of explosion identified as zone 22 (dust) which fall under the area of application of the Atex Directive (European Directive 94/9/EC), compliant with the standards EN61241-0 and EN61241-1.

Type of protection: Ex II 3D - Ex tD A22 IP66 T90°C
Ta -25°C +60°C.

APPLICATION EXAMPLES



TECHNICAL DATA SWITCH DISCONNECTORS (EN 60947-3)

		with fuse		without fuse			with and without fuse 125A			
		16A	32A	16A	32A	63A				
Rated insulation voltage Ui	Vac	690	690	690	690	690	750			
	Vdc	600	600	600	600	-	750			
Rated impulse withstand voltage Uimp		kV	4	4	4	4	8			
Thermal current Ith		A	25	32	30	40	63			
Thermal current Ithe		A	25	32	30	40	63			
Nominal current rating Ie	AC21A	Resistive loads, including moderate overloads	400V	A	-	-	-	-	200	
			500V	A	-	-	-	-	-	-
			690V	A	25	32	30	32	63	160
	AC22A	Mixed resistive and inductive loads, including moderate overloads	400V	A	-	-	-	-	-	200
			500V	A	-	-	-	-	-	-
			690V	A	30	32	20	32	63	160
	AC23A	Switching off motor loads or other highly inductive loads (3 phase/3 pole)	400V	A	-	-	20	32	63	135
			500V	A	-	-	-	-	40	125
			690V	A	16	25	16	25	30	80
	AC3	Squirrel-cage motor: starting, switching off motor during running (3 phase/3 pole)	400V	A	-	28,5	-	28,5	40	-
			690V	A	12	20	12	20	25	-
	DC21A	Resistive loads, including Moderate overloads	300V	A	25	32	20	32	-	160(*)
250V			A	20	32	25	32	-	160(*)	
DC22A	Mixed resistive and inductive loads, including moderate overloads	600V	A	-	-	10(*)	10(*)	-	-	
Rated short-time withstand current Icw (1s)		A	400	400	400	400	1500	4000		
Short-circuit protection	Conditional short-circuit current		kAeff	10	10	10	10	10	24	
	Associate fuse size for conditional short-circuit current - Type gG		A	16	32	16	32	63		
	Rated short-circuit making capacity Icm		A	1500	1500	1500	1500	2850	24000	
Rated current UL	General applications - Single-phase and Three-phase		600V	A	20	30	32	40	63	125
	AC motor, all-pole interruption - Single-phase	120V	Hp	1,5	2	1,5	2	3	7,5	
		240V	Hp	3	5	3	5	7,5	20	
	AC motor, B, C, D, all-pole interruption - Three-phase	240V	Hp	7,5	10	7,5	10	10	40	
		480V	Hp	10	15	10	15	20	75	
600V	Hp	15	20	15	20	25	100			
Permissible wire range	Flexible wire	mm ²	1,5-10	1,5-10	1,5-10	1,5-10	10-35	10-70		
		AWG	16-8	16-8	16-8	16-8	10-2	8-1/10		
	Rigid wire	mm ²	1,5-16	1,5-16	1,5-16	1,5-16	10-35	10-70		
		AWG	16-8	16-8	16-8	16-8	10-2	8-1/10		

(*) 2+2 poles in series ■ IMQ approved ■ UL approved

TECHNICAL CHARACTERISTICS 16A-32A-63A VERSIONS

