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PIN AND SLEEVE DEVICES



VERSIONS



Plugs and connectors



Appliance inlets



Receptacle



Accessories Back Box and closure caps



Liquid tight adapter

REFERENCE STANDARDS

IEC 60309-1

Plugs, socket-outlets and couplers for industrial purposes.
Part 1: general requirements.

IEC 60309-2

Plugs, socket-outlets and couplers for industrial purposes.
Part 2: dimensional interchangeability requirements for pin and contact-tube accessories.

UL 1682

Plugs, receptacles and cable connectors of the pin and sleeve type.

UL 1686

Standard for pin and sleeve configuration.

QUALITY MARKS

UL LISTED:
E238171, E238172



UL CLASSIFIED:
E238170



■ 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	Not Resistant	Not Resistant	Not Resistant	Limited Resistance	Resistant	Resistant

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■ WIRING AND INSTALLATION

Cross-section of connectable conductors (awg/mm²)

Rated current		Plugs, connectors and appliance inlets				Receptacle			
Series I	Series II	Min awg	mm ²	Max awg	mm ²	Min awg	mm ²	Max awg	mm ²
16A	20A	16	1	12	2.5	16	1.5	12	4
32A	30A	14	2.5	10	6	14	2.5	8	10
63A	60A	10	6	6	16	10	6	4	25
125A	100A	6	16	2	50	4	25	0	70

Cord grip range

(Plugs and connectors)

Rated current		Outside Ø mm			
Series I	Series II	Min awg	mm ²	Max awg	mm ²
16A	20A	.570	14	.710	18
32A	30A	.675	17	.910	23
63A	60A	.937	24	1.375	35
125A	100A	1.265	32	1.790	45

■ TECHNICAL CHARACTERISTICS FOR BACK BOX

Protection degree (IEC 60529):	IP66/IP67
Operating ambient temperature:	-25°C +40°C
Max. operating ambient temperature:	+70°C
Self-extinguishing (IEC 60695-2-1):	GW test 850°C
Self-extinguishing (UL94):	5VA (3mm)
Material:	PC siloxane
IK degree at 20°C (EN 50102):	IK10 (20J)

■ TECHNICAL CHARACTERISTICS FOR PIN & SLEEVE

Rated current:	16A - 32A - 63A - 125A (SERIES I) 20A - 30A - 60A - 100A (SERIES II)
Rated voltage:	100÷690V~
Frequency:	D.C. - 50÷500Hz
Insulating voltage:	500/690V~
Protection degree (IEC 60529):	IP44 - IP67
Operating ambient temperature according to the reference standard:	-25°C + 40°C
Max. operating ambient temperature:	+70°C
Self-extinguishing (IEC 60695-2-1):	GW test 650°C / 850°C
Self-extinguishing (UL94):	V1 (3mm)
Material:	VALOX®
IK degree at 20°C (EN 50102):	IK10 (20J)

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■ PERFORMANCE - ELECTRICAL (SERIES I)

Dielectric Voltage withstand:	3000 Volts for 1 minute per IEC 60309-1, Clause 19
Maximum Working Voltage:	690VAC/250 VDC (minimum creepage and clearances per IEC)
Current Interrupting/ Load Breaking:	Tested to 125% rated current at 110% rated voltage per IEC309-1 clause 20
Temperature Rise:	Maximum 50°C rise at rated current per IEC309-1 Clause 22, Table 8
Endurance with Load:	16 Amp: 5000 cycles; Load only
Per IEC 60309-1 Clause 21:	32 Amp: 1000 cycles - Alternating load 63 Amp: 1000 cycles - Alternating load 125 Amp: 250 cycles - Alternating load

■ PERFORMANCE - ELECTRICAL (SERIES II)

Dielectric Voltage Withstand:	3000 Volts for 1 minute (fixed devices) 2200 Volts for 1 minute (portable devices)
Maximum Working Voltage:	600VAC/250 VDC (minimum creepage and clearances per UL 840)
Current Interrupting/ Load Breaking:	Tested to 150% of full rated current for circuit interrupting
Temperature Rise:	Maximum 30°C rise at full rated current after 50 cycles overload at 150% rated load at 0.75-pf
Horsepower Ratings:	Per Nec 430-151b reference for non-interrupting ratings
Endurance with Load:	20 Amp: 5000 cycles; Load only
Per IEC 60309-1 Clause 21:	30 Amp: 1000 cycles - Alternating load 60 Amp: 1000 cycles - Alternating load 100 Amp: 250 cycles - Alternating load

■ MATERIALS FOR PIN & SLEEVE (SERIES I & II)

Housing:	Valox®
Contact Carriers:	Valox®
Cable Gland Nut:	Valox®
Cable Bushing:	Solid neoprene, onion ring type
O-Ring, Seals & Gaskets:	Solid neoprene
Pins & Sleeves:	Nickel plated brass
Sleeve Force Ring:	Zinc plated steel
Terminal Screws:	Nickel plated steel
Flap/Screw Cover Springs:	Stainless steel
SNAP-ON Spring:	Stainless steel
Mounting Flanges:	Valox®

■ PERFORMANCE - MECHANICAL (SERIES I)

Cold (-25°C) Impact Resistance:	Per IEC 60309-1 Clause 24; (-25°C) with 75cm drop
Cable O.D. Accommodation:	Round portable service cords from 14.5mm O.D. through 50mm O.D.
Terminal Identification:	In accordance with IEC 60309-1 standards; as L1-L2-L3-N-G
Cable Pull-Out Force:	In accordance with IEC 60309-1, Clause 23

■ PERFORMANCE - MECHANICAL (SERIES II)

Cold (-25°C) Impact Resistance:	Per UL 1682 Section 34 and IEC 60309-1 Clause 24
Cable O.D. Accommodation:	Round portable service cord from 0.57" O.D. through 1.79" O.D.
Terminal Identification:	In accordance with UL 1682 standards and IEC 60390-1: as L1-L2-L3-N-G
Cable Pull-Out Force:	Per UL 1682 Section 33 and IEC 60309-1 Clause 23

■ PERFORMANCE - ENVIRONMENTAL (SERIES I & II)

Corrosion Resistance:	All metallic components stainless steel or nickel plated brass Sleeve pressure rings of zinc plated steel
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■ MATERIALS FOR BACK BOX (SERIES I & II)

Housing:	PC siloxane
Gasket:	Solid neoprene
Screws:	Stainless steel
Grounding plate:	zinc-coated steel

Standard Interface / World Ready

Full International Compliances

EN 60309

UL Classification to IEC 60309-1 and IEC 60309-2.

cULus Listing: UL 1682/1686 and CSA C22.2

No. 182.1.

CE conforms to EC Low Voltage Directive.

North American and Global Voltage

Polarization "clock positions" available in all standard ratings.

Solid, Safe Voltage Selections

One-Piece contact carriers with Full-Color IEC

standard voltage-phasing Coding ensures

correct product application every time.

Industrial Pin & Sleeve for North American Configurations (Series II)

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COLOUR CODE CLOCK POSITION

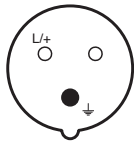
The operating voltage is identified by conventional colours as shown in the table:

RATED VOLTAGE	COLOUR
110-130V	Yellow
208-250V	Blue
380-480V	Red
500-690V	Black
277V	Grey
125/250V	Orange

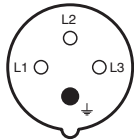
CLOCK FACE POSITION

North American ratings viewing connector and receptacle from the front, clock hour position (h) is established by the position of the earth contact respect the major keyway which is always situated at 6h clock position.

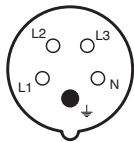
CONNECTOR AND RECEPTACLE (FRONT VIEW)



(*) 2P+E
2P3W

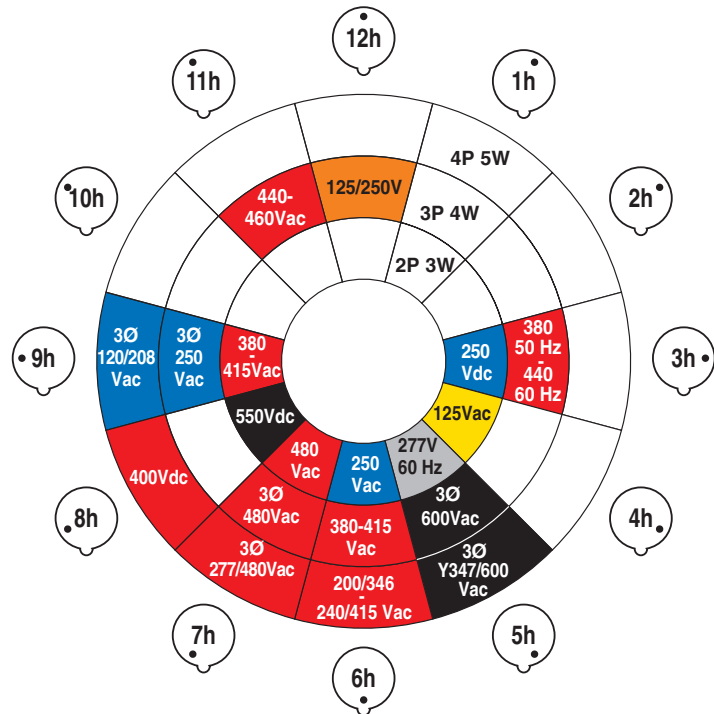


(*) 3P+E
3P4W



(*) 3P+N+E
4P5W

(*) Major keyway



CATALOGUE NUMBERING SYSTEM

