PIN & SLEEVE DEVICES

Altech's line of industrial plugs and sockets are manufactured by ABL Sursum, a company well known in Europe for its quality electrical products. This major manufacturer combines the elements of good design, high quality, safety, ease of installation and competitive cost. The pin and sleeve devices are manufactured to EN 60309 Part 1 and 2: IEC 60309. Their rugged construction in polyamide 6 material provides good anti-tracking properties and high resistance to aggressive industrial use.

In accordance with the Standard's requirements, these devices are color coded to provide positive voltage and frequency matching and external key-ways ensure correct alignment of contact pins. The position of the ground pin relative to the socket's key-way are designated as a clock hour position.

The ground terminal also has a larger diameter than the contacts, making it impossible to install it in an IEC 60309 device with a different voltage rating.

The shrouded housing made of high impact nylon material protects the contacts from physical abuse and safeguards against touching live parts when partially engaged.

All terminals are clearly marked in both IEC 60309 and North American Standards.

Features include:

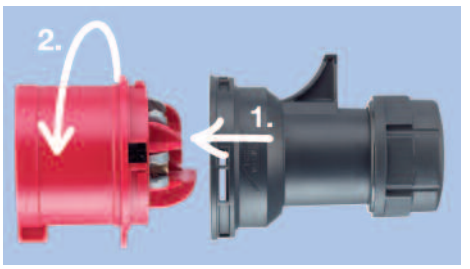
- High impact and abrasion resistance
- Resistant to oil, petrol, most acids and alkalines
- Operating Temperature range
  -13°F to 176°F (-25°C to 80°C)
- Excellent anti-tracking
- Grooved body improves hand grip
- Insulated cable clamp device
- Maximum wiring space
- Terminals clearly marked
- All screws are accessible from one side

turn2fix

FEATURE

20-30A

plugs, connectors, and angled inlets



Assembly is simple and quick with the help of the multi-ramp locking system. Parts are delivered in a half unlocked stage to make initial assembly straightforward.

1. Match triangle icons for both housings in open position.
2. Twist counter-clockwise until locked as per above figure.

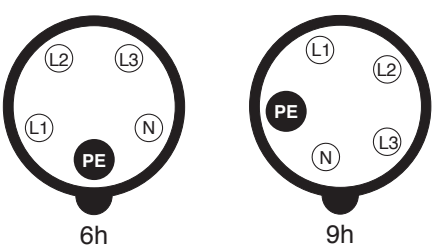
Voltage Configuration Chart



COLOR CODING AND GROUND PIN POSITIONS

Pin and Sleeve devices are color coded to provide positive voltage and frequency matching and external key-ways ensure correct alignment of contact pins. The position of the ground pin relative to the socket's key-way are designated as a clock hour position.

The ground terminal also has a larger diameter than the contacts, making it impossible to install in an IEC 60309 device with a different voltage rating.



Front view of receptacle/connector to contact barrier

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TECHNICAL DATA

Electrical

Insulation Voltage, Max. (Volts)	16/20 Amp. (A) = 690V (Plugs, Connectors, Receptacles) / 500V (inlets) 30/32 Amp. (A) = 690V (Plugs, Connectors, Receptacles) / 500V (inlets)	60/63 Amp. (A) = 750V 125/100 Amp. (A) = 750V
Dielectric Withstanding Voltage	16/20 Amp. (A) = 3,000V (Plugs, Connectors, Receptacles) / 2,500V (inlets) 30/32 Amp. (A) = 3,000V (Plugs, Connectors, Receptacles) / 2,500V (inlets)	60/63 Amp. (A) = 2,500 V 100/125 Amp. (A) = 2,500V
Current Interrupting	Certified for current interrupting at full rated current	
Endurance, Connect and disconnect cycles at full rated current and voltage	IEC: 16 Amp. (A) = 5000 at a power factor of 0.6 32 Amp. (A) = 1000 at a power factor of 0.6 UL: 20 Amp. (A) = 5000 at a power factor of 0.75-0.80 30 Amp. (A) = 1000 at a power factor of 0.75-0.80	63/60 Amp. (A) = 1,000 @ a p.f. of 0.6 100/125 Amp. (A) = 1,000 @ a p.f. of 0.7

Environmental

Temperature Range, Operating	-25°C to + 80°C (-13°F to + 176°F)
Temperature Resistance	Up to 1 hour +100°C (167°F)
Moisture Resistance	Splashproof IP 44; Watertight IP 67; Per IEC 60309-1, Clause 18
Flammability	per IEC 60309-1 / Clause 27 Flame Class Rating UL 94 or CSA C22.2 No. 0.17: V-2

Material

	20 - 30 Amp	**60 - 100 Amp**
Housing (Front and Back)	Polyamide 6	Polyamide 6
Cover	Polyamide 6	Polyamide 6
Cover Rivet	Splashproof IP44: Polyamide 6 Watertight IP67: Brass	Brass
Cover Spring	Spring Steel	Stainless Steel (A2)
Contact Carrier	Polyamide 6	Polyamide 6
Contacts	Brass or Nickel-plated Brass	Brass
Terminal Screws	Steel, Brass or Nickel Plated Brass	Steel, Nickel Plated, Bichromated
Cord Clamp / Bushing	Polypropylene and Thermoplastic Elastomer	Concentric Laminated Rubber
Gland Nut	Polyamide 6	Polyamide 6
Assembly Screws	Steel	Steel, Nickel Plated, Chromated
Internal Strain Relief	NA	Polyamide 6
Retaining Ring	NA	Steel, Electro Zinc Plated

Recommended Wire Size*

UL/CSA	**Amp Rating**	**Wire Size / UL (min.)**	**Wire Size / CSA (min.)**
	20	12 AWG	14 AWG
	30	10 AWG	12 AWG
	60	4 AWG	4 AWG
	100	2 AWG	2 AWG
IEC	**Amp Rating**	**Flexible Wire per IEC Plugs, Connectors, Receptacles, Inlets**	**Solid Wire per IEC Receptacles, Inlets**
	16	$1mm^2$ - $2.5mm^2$	$1mm^2$ - $4mm^2$
	32	$2.5mm^2$ - $6mm^2$	$2.5mm^2$ - $10mm^2$
	63	min. $10mm^2$	min. $10mm^2$
	125	min. $35mm^2$	min. $35mm^2$

Recommended Screw Torque for Terminal Set Screws

Amp Rating		**Terminal Screws [lb.in.]**	**Housing Screws [lb.in.]**
16A/20A	Receptacles, Inlets	8.85	9.74
32A/30A	Receptacles, Inlets	9.74	9.74
			Strain Relief [lb.in.]
16A/20A	Plugs, Connectors	8.85	35.4
32A/30A	Plugs, Connectors	9.74	44.3
63/60A		17.7	
125/100A		88.5	

* Please refer to National Electric Code, to determine wire size for different Amp Ratings.

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20-30A IP44
SPLASHPROOF

E141950, E141951

					PLUG	CONNECTOR
Ground Pin	Poles	Amps	Voltage	Color		
4h	2P/3W	20A	120V AC	Yellow	S31S10A	K31S10A
6h	2P/3W	20A	250V AC	Blue	S31S20A	K31S20A
7h	2P/3W	20A	480V AC	Red	S31S50A	K31S50A
5h	2P/3W	20A	277V AC	Grey	S31S70A	K31S70A
3h	3P/4W	20A	380/440V AC	Red	S41S00A	K41S00A
9h	3P/4W	20A	250V AC	Blue	S41S20A	K41S20A
6h	3P/4W	20A	400V AC	Red	S41S30A	K41S30A
7h	3P/4W	20A	480V AC	Red	S41S50A	K41S50A
12h	3P/4W	20A	120/250V AC	Orange	S41S60A	K41S60A
5h	3P/4W	20A	600V AC	Black	S41S70A	K41S70A
9h	4P/5W	20A	120/208V AC	Blue	S51S20A	K51S20A
6h	4P/5W	20A	400V AC	Red	S51S30A	K51S30A
7h	4P/5W	20A	277/480V AC	Red	S51S50A	K51S50A
5h	4P/5W	20A	347/600V AC	Black	S51S70A	K51S70A
4h	2P/3W	30A	120V AC	Yellow	S32S10A	K32S10A
6h	2P/3W	30A	250V AC	Blue	S32S20A	K32S20A
7h	2P/3W	30A	480V AC	Red	S32S50A	K32S50A
5h	2P/3W	30A	277V AC	Grey	S32S70A	K32S70A
3h	3P/4W	30A	380/440V AC	Red	S42S00A	K42S00A
9h	3P/4W	30A	250V AC	Blue	S42S20A	K42S20A
6h	3P/4W	30A	400V AC	Red	S42S30A	K42S30A
7h	3P/4W	30A	480V AC	Red	S42S50A	K42S50A
12h	3P/4W	30A	120/250V AC	Orange	S42S60A	K42S60A
5h	3P/4W	30A	600V AC	Black	S42S70A	K42S70A
9h	4P/5W	30A	120/208V AC	Blue	S52S20A	K52S20A
6h	4P/5W	30A	400V AC	Red	S52S30A	K52S30A
7h	4P/5W	30A	277/480V AC	Red	S52S50A	K52S50A
5h	4P/5W	30A	347/600V AC	Black	S52S70A	K52S70A

20-30A IP67
WATERTIGHT

E141950, E141951

					PLUG	CONNECTOR	RECEPTACLE			INLET
Ground Pin	Poles	Amps	Voltage	Color			Straight	Angled 15°	Box	Angled
4h	2P/3W	20A	120V AC	Yellow	S31S15A	K31S15A	F31S15A	F31S18A	D31S15A	A31S16A
6h	2P/3W	20A	250V AC	Blue	S31S25A	K31S25A	F31S25A	F31S28A	D31S25A	A31S26A
7h	2P/3W	20A	480V AC	Red	S31S55A	K31S55A	F31S55A	F31S58A	D31S55A	A31S56A
5h	2P/3W	20A	277V AC	Grey	S31S75A	K31S75A	F31S75A	F31S78A	D31S75A	A31S76A
3h	3P/4W	20A	380/440V AC	Red	S41S05A	K41S05A	F41S05A	F41S08A	D41S05A	A41S06A
9h	3P/4W	20A	250V AC	Blue	S41S25A	K41S25A	F41S25A	F41S28A	D41S25A	A41S26A
6h	3P/4W	20A	400V AC	Red	S41S35A	K41S35A	F41S35A	F41S38A	D41S35A	A41S36A
7h	3P/4W	20A	480V AC	Red	S41S55A	K41S55A	F41S55A	F41S58A	D41S55A	A41S56A
12h	3P/4W	20A	120/250V AC	Orange	S41S65A	K41S65A	F41S65A	F41S68A	D41S65A	A41S66A
5h	3P/4W	20A	600V AC	Black	S41S75A	K41S75A	F41S75A	F41S78A	D41S75A	A41S76A
9h	4P/5W	20A	120/208V AC	Blue	S51S25A	K51S25A	F51S25A	F51S28A	D51S25A	A51S26A
6h	4P/5W	20A	400V AC	Red	S51S35A	K51S35A	F51S35A	F51S38A	D51S35A	A51S36A
7h	4P/5W	20A	277/480V AC	Red	S51S55A	K51S55A	F51S55A	F51S58A	D51S55A	A51S56A
5h	4P/5W	20A	347/600V AC	Black	S51S75A	K51S75A	F51S75A	F51S78A	D51S75A	A51S76A
4h	2P/3W	30A	120V AC	Yellow	S32S15A	K32S15A	F32S15A	F32S18A	D32S15A	A32S16A
6h	2P/3W	30A	250V AC	Blue	S32S25A	K32S25A	F32S25A	F32S28A	D32S25A	A32S26A
7h	2P/3W	30A	480V AC	Red	S32S55A	K32S55A	F32S55A	F32S58A	D32S55A	A32S56A
5h	2P/3W	30A	277V AC	Grey	S32S75A	K32S75A	F32S75A	F32S78A	D32S75A	A32S76A
3h	3P/4W	30A	380/440V AC	Red	S42S05A	K42S05A	F42S05A	F42S08A	D42S05A	A42S06A
9h	3P/4W	30A	250V AC	Blue	S42S25A	K42S25A	F42S25A	F42S28A	D42S25A	A42S26A
6h	3P/4W	30A	400V AC	Red	S42S35A	K42S35A	F42S35A	F42S38A	D42S35A	A42S36A
7h	3P/4W	30A	480V AC	Red	S42S55A	K42S55A	F42S55A	F42S58A	D42S55A	A42S56A
12h	3P/4W	30A	120/250V AC	Orange	S42S65A	K42S65A	F42S65A	F42S68A	D42S65A	A42S66A
5h	3P/4W	30A	600V AC	Black	S42S75A	K42S75A	F42S75A	F42S78A	D42S75A	A42S76A
9h	4P/5W	30A	120/208V AC	Blue	S52S25A	K52S25A	F52S25A	F52S28A	D52S25A	A52S26A
6h	4P/5W	30A	400V AC	Red	S52S35A	K52S35A	F52S35A	F52S38A	D52S35A	A52S36A
7h	4P/5W	30A	277/480V AC	Red	S52S55A	K52S55A	F52S55A	F52S58A	D52S55A	A52S56A
5h	4P/5W	30A	347/600V AC	Black	S52S75A	K52S75A	F52S75A	F52S78A	D52S75A	A52S76A

FOR DRAWINGS PLEASE VISIT
www.altechcorp.com/HTML/Drawings/PinSleeve

For ÖVE Approvals please consult Altech.

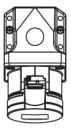
RECEPTACLE



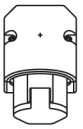
Straight



Angled 15°



Small Box



Large Box

Straight	Angled 15°	Small Box	Large Box
F31S10A	F31S13A	D31S11A	D31S10A
F31S20A	F31S23A	D31S21A	D31S20A
F31S50A	F31S53A	D31S51A	D31S50A
F31S70A	F31S73A	D31S71A	D31S70A
F41S00A	F41S03A	D41S01A	D41S00A
F41S20A	F41S23A	D41S21A	D41S20A
F41S30A	F41S33A	D41S31A	D41S30A
F41S50A	F41S53A	D41S51A	D41S50A
F41S60A	F41S63A	D41S61A	D41S60A
F41S70A	F41S73A	D41S71A	D41S70A
F51S20A	F51S23A	D51S21A	D51S20A
F51S30A	F51S33A	D51S31A	D51S30A
F51S50A	F51S53A	D51S51A	D51S50A
F51S70A	F51S73A	D51S71A	D51S70A
F32S10A	F32S13A	D32S11A	D32S10A
F32S20A	F32S23A	D32S21A	D32S20A
F32S50A	F32S53A	D32S51A	D32S50A
F32S70A	F32S73A	D32S71A	D32S70A
F42S00A	F42S03A	D42S01A	D42S00A
F42S20A	F42S23A	D42S21A	D42S20A
F42S30A	F42S33A	D42S31A	D42S30A
F42S50A	F42S53A	D42S51A	D42S50A
F42S60A	F42S63A	D42S61A	D42S60A
F42S70A	F42S73A	D42S71A	D42S70A
F52S20A	F52S23A	D52S21A	D52S20A
F52S30A	F52S33A	D52S31A	D52S30A
F52S50A	F52S53A	D52S51A	D52S50A
F52S70A	F52S73A	D52S71A	D52S70A

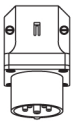
INLET



Straight



Angled



Box

Straight	Angled	Box
A31S12A	A31S11A	G31S10A
A31S22A	A31S21A	G31S20A
A31S52A	A31S51A	G31S50A
A31S72A	A31S71A	G31S70A
A41S02A	A41S01A	G41S00A
A41S22A	A41S21A	G41S20A
A41S32A	A41S31A	G41S30A
A41S52A	A41S51A	G41S50A
A41S62A	A41S61A	G41S60A
A41S72A	A41S71A	G41S70A
A51S22A	A51S21A	G51S20A
A51S32A	A51S31A	G51S30A
A51S52A	A51S51A	G51S50A
A51S72A	A51S71A	G51S70A
A32S12A	A32S11A	G32S10A
A32S22A	A32S21A	G32S20A
A32S52A	A32S51A	G32S50A
A32S72A	A32S71A	G32S70A
A42S02A	A42S01A	G42S00A
A42S22A	A42S21A	G42S20A
A42S32A	A42S31A	G42S30A
A42S52A	A42S51A	G42S50A
A42S62A	A42S61A	G42S60A
A42S72A	A42S71A	G42S70A
A52S22A	A52S21A	G52S20A
A52S32A	A52S31A	G52S30A
A52S52A	A52S51A	G52S50A
A52S72A	A52S71A	G52S70A

