

Altech Corp.®

Serving the Automation & Control Industry since 1984



Quality
Endorsed
Company



UL Pin & Sleeve Devices

Altech Corp.®

Since 1984, Altech Corporation has grown to become a leading supplier of automation and industrial control components. Headquartered in Flemington, NJ, Altech has an experienced staff of engineering, manufacturing and sales personnel to provide the highest quality products with superior service. This is the Altech Commitment!

With experienced Product Engineers and Customer Service personnel, Altech provides solutions to your most pressing application challenges. All with one thought in mind - *to ensure that we solve your problem the first time!*



Quality Commitment

Altech's control components meet diverse national and international standards such as UL, NEC, CSA, IEC, VDE and more. Altech provides superior customer service and delivery through Total Quality Management and Continuous Process Improvement. Altech is ISO 9001 approved. We perform these services with honesty and integrity and are committed to achieve these goals.



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Altech's line of industrial plugs and sockets combine 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.

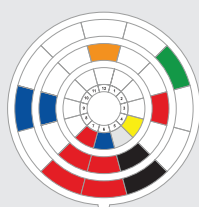
The shrouded housing made of high impact nylon material protects the contacts from physical abuse and safeguards against touching live parts when partially engaged.

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

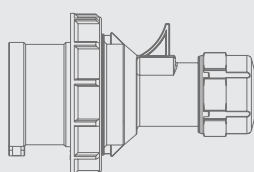
Features include:

- 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
- Insulated cable clamp device
- Maximum wiring space
- Terminals clearly marked
- All screws are accessible from one side

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Quick Ordering

Amps	Poles	Ground	Voltage	TYWIST
2P3W (3P)	4h	120Vac	S31S10A	
	5h	277Vac	S31S10A	
	6h	250Vac	S31S20A	
	7h	480Vac	S31S20A	
20A	3h	380-440Vac	S41S00A	
	5h	600Vac	S41S00A	
	6h	380Vac	S41S00A	
	7h	480Vac	S41S00A	
	8h	250Vac	S41S00A	
	12h	320-340Vac	S41S00A	
	12h	320-340Vac	S41S00A	
	5h	347/600Vac	S61S10A	

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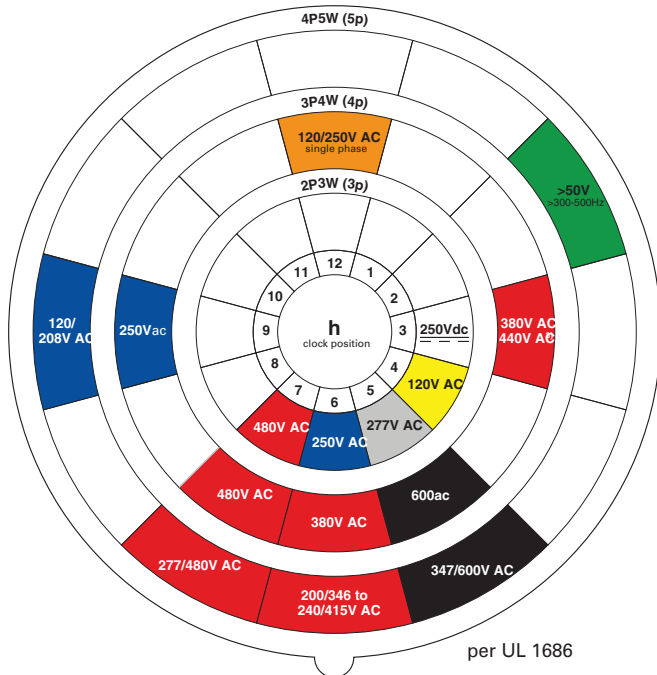
GENERAL INFORMATION

The Pin and Sleeves are manufactured to EN60309 part 1 and part 2; IEC60309.

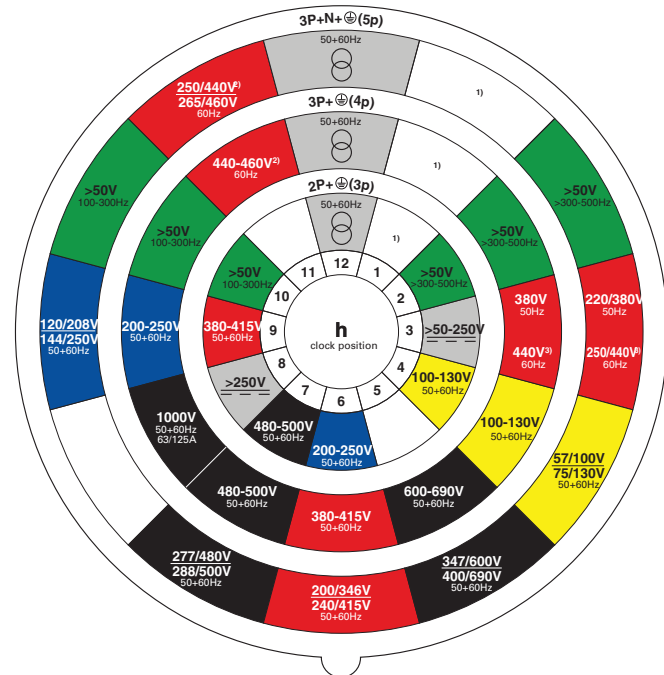
Clock positions (for appliances >50V)

Position of the earthing contact - viewed from frontside of socket or connector:

North American Rating - Series II



International Rating - Series I



¹⁾ Clock position not standardized - free for use for special applications

²⁾ Mainly for ship installations

³⁾ Only for refrigerated containers



Earthing contact is visibly wider.

6h
400V 4P5W = 6h

Example: Position of the earthing contact - viewed from frontside of socket or connector.

Color codes IEC 60309

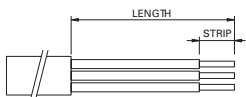
For ease of identification of the various voltages and frequencies all CEE plugs and sockets are color coded.

Rated operating voltage:	20-25V	40-50V	100-130V	200-250V	380-480V	500-1000V	>60-500Hz	no colour code
Color: ^{1) 2)}	violet	white	yellow	blue	red	black	green	grey

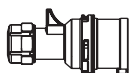
1) For frequencies over 60 Hz up to and including 500 Hz, the colour green may be used, if necessary, in combination with the colour for the rated operating voltage.

2) In countries where accessories of series II current ratings are used, the colour orange is reserved for 125/250 V a.c. and the colour grey is reserved for 277 V a.c. accessories.

TECHNICAL DATA

ELECTRICAL					
Insulation Voltage, Max (Volts)	16/20 Amp. (A) = 690V (Plugs, Connectors, Receptacles) / 500V (Inlets) 32/30 Amp. (A) = 690V(Plugs, Connectors, Receptacles) / 500V (Inlets)				
Dielectric Withstanding Voltage	16/20 Amp. (A) = 3000V (Plugs, Connectors, Receptacles) / 2500V (Inlets) 32/30 Amp. (A) = 3000V(Plugs, Connectors, Receptacles) / 2500V (Inlets)				
Current Interrupting	IEC: Certified for current interrupting at 110% of the rated operating voltage and 125% of the rated current at a power factor of 0.6 (16Amp. (A) and 32Amp. (A)). UL: Certified for current interrupting at 100% of the rated operating voltage and 150% of the rated current at a power factor of 0.75-0.80 (20Amp. (A) and 30Amp. (A)).				
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				
MECHANICAL					
Impact Resistance	Per IEC 60309-1 / Clause 24; UL 1682 and CSA C22.2 182.1 / Clause 5.13				
Terminal Identification	Per IEC 60309-1 / Sub-clause 7.5; UL 1682 and CSA C22.2 182.1				
ENVIRONMENTAL					
Temperature Range, Operating	-25°C to +80°C (-13°F to +176°F)				
Moisture Resistance	Splashproof IP44; Watertight IP67; Per IEC 60309-1 / Clause 18				
Flammability	Per IEC 60309-1 / Clause 27: Contact Carrying Parts: 850°C Non Contact Carrying Parts: 650°C Flame Class Rating UL 94 or CSA C22.2 No.0.17: V-2				
MATERIAL					
Housing (Front and Back)	Polyamide 6				
Cover	Polyamide 6				
Cover Rivet	Splashproof IP44: Polyamide 6 Watertight IP67: Brass				
Cover Spring	Spring Steel				
Contact Carrier	Polyamide 6				
Contacts	Brass or Nickel-plated Brass				
Terminal Screws	Steel, Brass or Nickel-plated Brass				
Cord Clamp / Bushing	Polypropylene and Thermoplastic Elastomer				
Gland Nut	Polyamide 6				
Assembly Screws	Steel				
RECOMMENDED SIZE FOR CONNECTABLE CONDUCTORS (>50V)					
Amp Rating		Flexible Wire for Plugs, Connectors, Receptacles, Inlets		Solid Wire for Receptacles, Inlets	
Series I	Series II	Series I	Series II	Series I	Series II
16A	20A	1-2.5mm ²	AWG 16-12	1.5-4mm ²	AWG 16-12
32A	30A	2.5-6mm ²	AWG 14-10	2.5-10mm ²	AWG 14-8
CORDAGE PREPARATION					
CONDUCTOR	LENGTH	STRIP			
16A / 20A	50mm / 1.97"	10-12mm / 0.39-0.47"			
32A / 30A	50mm / 1.97"	12-14mm / 0.47-0.55"			
RECOMMENDED TORQUE TABLE					
Amp Rating	Terminal Screws for Plugs, Connectors, Receptacles, Inlets		Strain Relief for Plugs, Connectors		Housing Screws for Receptacles, Inlets
16A / 20A	100Ncm / 8.85 lbf in		400Ncm / 35.4 lbf in		110Ncm / 9.74 lbf in
32A / 30A	110Ncm / 9.74 lbf in		500Ncm / 44.3 lbf in		110Ncm / 9.74 lbf in

IP44 PLUGS 20/30A



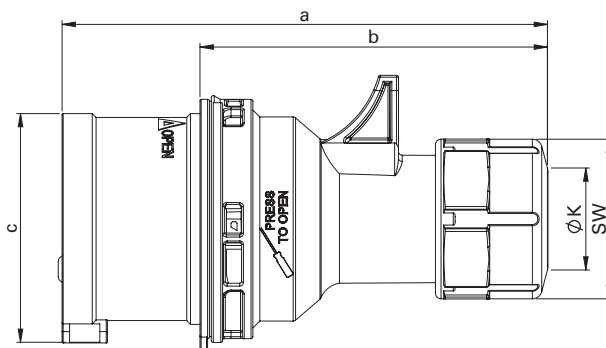
- with screw terminals
- housing material: PA6
- contacts: brass

S52S30A

wire configuration	clock position	Symbol	Voltage (colors)	20A part number	30A part number
2P3W (3p)	4h		120V AC	S31S10A	S32S10A
	5h		277V AC	S31S70A	S32S70A
	6h		250V AC	S31S20A	S32S20A
	7h		480V AC	S31S50A	S32S50A
3P4W (4p)	3h		380,440V AC	S41S00A	S42S00A
	5h		600V AC	S41S70A	S42S70A
	6h		380V AC	S41S30A	S42S30A
	7h		480V AC	S41S50A	S42S50A
	9h		250V AC	S41S20A	S42S20A
	12h		120/250V AC single phase	S41S60A	S42S60A
4P5W (5p)	5h		347/600V AC	S51S70A	S52S70A
	6h		200/346 to 240/415V AC	S51S30A	S52S30A
	7h		277/480V AC	S51S50A	S52S50A
	9h		120/208V AC	S51S20A	S52S20A

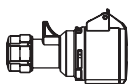
Orange, Green & Grey are all Black with color coded labels.

Dimensions (mm / in.) & Weight (g / lb.)



Poles	20A			30A		
	2P3W (3p)	3P4W (4p)	4P5W (5p)	2P3W (3p)	3P4W (4p)	4P5W (5p)
a [mm / inch]	118 / 4.65	124 / 4.88	131 / 5.16	146 / 5.75	146 / 5.75	152 / 5.98
b [mm / inch]	82 / 3.23	88 / 3.46	95 / 3.74	100 / 3.94	100 / 3.94	106 / 4.17
c [mm / inch]	47 / 1.85	53 / 2.09	61 / 2.4	63 / 2.48	63 / 2.48	70 / 2.76
K_cable Ø [mm / inch]	6-15 / 0.24-0.59	6-15 / 0.24-0.59	8-16 / 0.31-0.63	11.5-20 / 0.45-0.79	11.5-20 / 0.45-0.79	11.5-22 / 0.45-0.87
SW [mm / inch]	38 / 1.5	38 / 1.5	42 / 1.65	50 / 1.97	50 / 1.97	50 / 1.97
Weight [g / lb]	107 / 0.24	134 / 0.3	157 / 0.35	182 / 0.4	209 / 0.46	235 / 0.52

IP44 CONNECTOR 20/30A



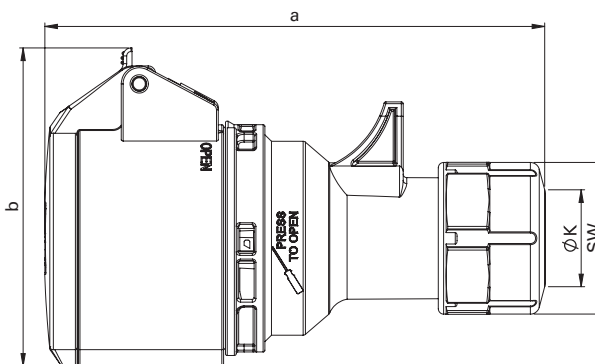
- with screw terminals
- housing material: PA6
- contacts: brass

K32S20A

wire configuration	clock position	Symbol	Voltage (colors)	20A part number	30A part number
2P3W (3p)	4h		120V AC	K31S10A	K32S10A
	5h		277V AC	K31S70A	K32S70A
	6h		250V AC	K31S20A	K32S20A
	7h		480V AC	K31S50A	K32S50A
3P4W (4p)	3h		380,440V AC	K41S00A	K42S00A
	5h		600V AC	K41S70A	K42S70A
	6h		380V AC	K41S30A	K42S30A
	7h		480V AC	K41S50A	K42S50A
	9h		250V AC	K41S20A	K42S20A
	12h		120/250V AC single phase	K41S60A	K42S60A
4P5W (5p)	5h		347/600V AC	K51S70A	K52S70A
	6h		200/346 to 240/415V AC	K51S30A	K52S30A
	7h		277/480V AC	K51S50A	K52S50A
	9h		120/208V AC	K51S20A	K52S20A

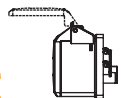
Orange, Green & Grey are all Black with color coded labels.

Dimensions (mm / in.) & Weight (g / lb.)



	20A			30A		
Poles	2P3W (3p)	3P4W (4p)	4P5W (5p)	2P3W (3p)	3P4W (4p)	4P5W (5p)
a [mm / inch]	129 / 5.08	135 / 5.31	142 / 5.59	159 / 6.26	159 / 6.26	165 / 6.5
b [mm / inch]	76 / 2.99	80 / 3.15	89 / 3.5	92 / 3.62	92 / 3.62	98 / 3.86
K_{cable} Ø [mm / inch]	6-15 / 0.24-0.59	6-15 / 0.24-0.59	8-16 / 0.31-0.63	11.5-20 / 0.45-0.79	11.5-20 / 0.45-0.79	11.5-22 / 0.45-0.87
SW [mm / inch]	38 / 1.5	38 / 1.5	42 / 1.65	50 / 1.97	50 / 1.97	50 / 1.97
Weight [g / lb]	140 / 0.31	162 / 0.36	184 / 0.41	226 / 0.5	244 / 0.54	280 / 0.62

IP44 RECEPTACLES FLANGE STRAIGHT 20/30A



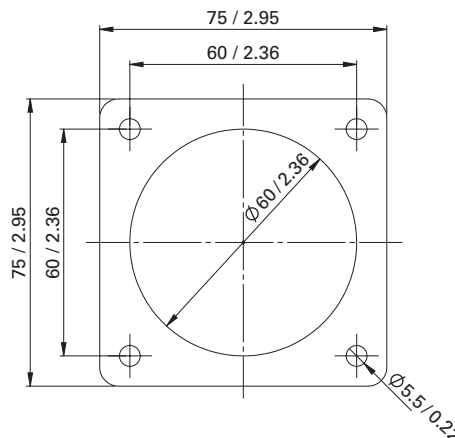
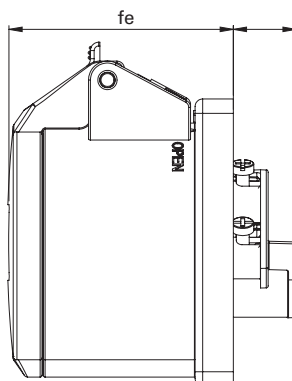
- with screw terminals
- housing material: PA6
- contacts: brass

A52S22A

wire configuration	clock position	Symbol	Voltage (colors)	20A part number	30A part number
2P3W (3p)	4h		120V AC	F31S10A	F32S10A
	5h		277V AC	F31S70A	F32S70A
	6h		250V AC	F31S20A	F32S20A
	7h		480V AC	F31S50A	F32S50A
3P4W (4p)	3h		380,440V AC	F41S00A	F42S00A
	5h		600V AC	F41S70A	F42S70A
	6h		380V AC	F41S30A	F42S30A
	7h		480V AC	F41S50A	F42S50A
	9h		250V AC	F41S20A	F42S20A
	12h		120/250V AC single phase	F41S60A	F42S60A
4P5W (5p)	5h		347/600V AC	F51S70A	F52S70A
	6h		200/346 to 240/415V AC	F51S30A	F52S30A
	7h		277/480V AC	F51S50A	F52S50A
	9h		120/208V AC	F51S20A	F52S20A

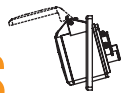
Orange, Green & Grey are all Black with color coded labels.

Dimensions (mm / in.) & Weight (g / lb.)



	20A			30A		
Poles	2P3W (3p)	3P4W (4p)	4P5W (5p)	2P3W (3p)	3P4W (4p)	4P5W (5p)
e [mm / inch]	18 / 0.71	17 / 0.67	18 / 0.71	21 / 0.83	21 / 0.83	21 / 0.83
f [mm / inch]	60 / 2.36	60 / 2.36	60 / 2.36	69 / 2.72	69 / 2.72	69 / 2.72
Weight [g / lb]	130 / 0.29	144 / 0.32	159 / 0.35	179 / 0.39	197 / 0.43	226 / 0.5

IP44 RECEPTACLES FLANGE ANGLED 20/30A



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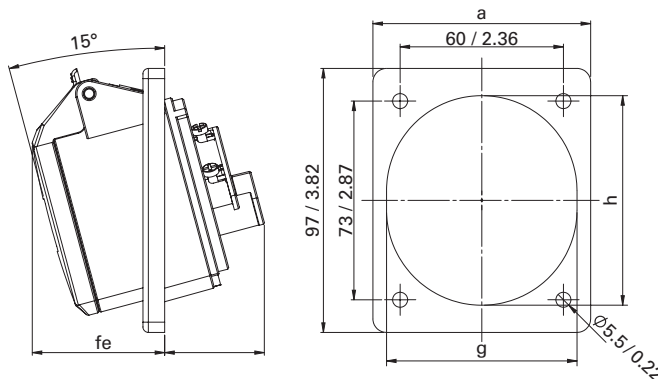
- with screw terminals
- housing material: PA6
- contacts: brass

F31S13A

wire configuration	clock position	Symbol	Voltage (colors)	20A part number	30A part number
2P3W (3p)	4h		120V AC	F31S13A	F32S13A
	5h		277V AC	F31S73A	F32S73A
	6h		250V AC	F31S23A	F32S23A
	7h		480V AC	F31S53A	F32S53A
3P4W (4p)	3h		380,440V AC	F41S03A	F42S03A
	5h		600V AC	F41S73A	F42S73A
	6h		380V AC	F41S33A	F42S33A
	7h		480V AC	F41S53A	F42S53A
	9h		250V AC	F41S23A	F42S23A
	12h		120/250V AC single phase	F41S63A	F42S63A
4P5W (5p)	5h		347/600V AC	F51S73A	F52S73A
	6h		200/346 to 240/415V AC	F51S33A	F52S33A
	7h		277/480V AC	F51S53A	F52S53A
	9h		120/208V AC	F51S23A	F52S23A

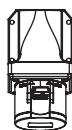
Orange, Green & Grey are all Black with color coded labels.

Dimensions (mm / in.) & Weight (g / lb.)



Poles	20A			30A		
	2P3W (3p)	3P4W (4p)	4P5W (5p)	2P3W (3p)	3P4W (4p)	4P5W (5p)
a [mm / inch]	80 / 3.15	80 / 3.15	80 / 3.15	80 / 3.15	80 / 3.15	87 / 3.43
e [mm / inch]	30 / 1.18	33 / 1.3	36 / 1.42	40 / 1.57	40 / 1.57	42 / 1.65
f [mm / inch]	49 / 1.93	49 / 1.93	49 / 1.93	62 / 2.44	62 / 2.44	65 / 2.56
g [mm / inch]	70 / 2.76	70 / 2.76	70 / 2.76	71 / 2.8	71 / 2.8	78 / 3.07
h [mm / inch]	77 / 3.03	77 / 3.03	77 / 3.03	78 / 3.07	78 / 3.07	87 / 3.43
Weight [g / lb]	144 / 0.32	158 / 0.35	175 / 0.39	196 / 0.43	214 / 0.47	246 / 0.54

IP44 RECEPTACLES WALL MOUNT 20/30A



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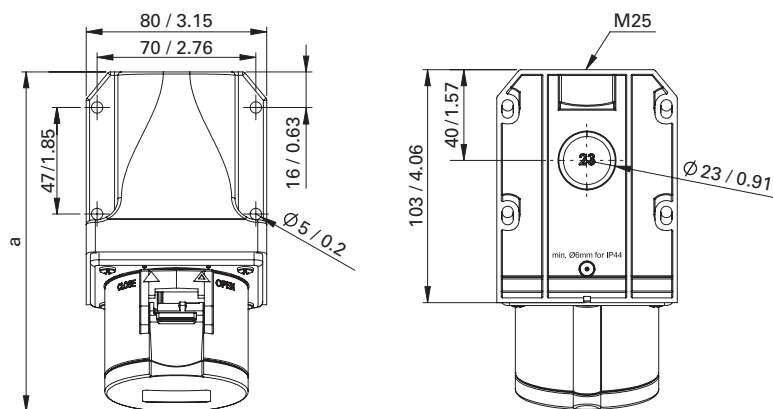
- with screw terminals
- housing material: PA6
- contacts: brass

D42S21A

wire configuration	clock position	Symbol	Voltage (colors)	20A part number	30A part number
2P3W (3p)	4h		120V AC	D31S11A	D32S11A
	5h		277V AC	D31S71A	D32S71A
	6h		250V AC	D31S21A	D32S21A
	7h		480V AC	D31S51A	D32S51A
3P4W (4p)	3h		380,440V AC	D41S01A	D42S01A
	5h		600V AC	D41S71A	D42S01A
	6h		380V AC	D41S31A	D42S31A
	7h		480V AC	D41S51A	D42S51A
	9h		250V AC	D41S21A	D42S21A
	12h		120/250V AC single phase	D41S61A	D42S61A
4P5W (5p)	5h		347/600V AC	D51S71A	D52S71A
	6h		200/346 to 240/415V AC	D51S31A	D52S31A
	7h		277/480V AC	D51S51A	D52S51A
	9h		120/208V AC	D51S21A	D52S21A

Orange, Green & Grey are all Black with color coded labels.

Dimensions (mm / in.) & Weight (g / lb.)



angle = 15°

	20A			30A		
Poles	2P3W (3p)	3P4W (4p)	4P5W (5p)	2P3W (3p)	3P4W (4p)	4P5W (5p)
a [mm / inch]	148 / 5.83	149 / 5.87	150 / 5.91	160 / 6.3	160 / 6.3	161 / 6.34
Height [mm / inch]	103 / 4.06	105 / 4.13	108 / 4.25	113 / 4.45	113 / 4.45	115 / 4.53
Weight [g / lb]	218 / 0.48	232 / 0.51	247 / 0.54	267 / 0.59	285 / 0.63	314 / 0.69

IP44 INLETS FLANGE STRAIGHT 20/30A



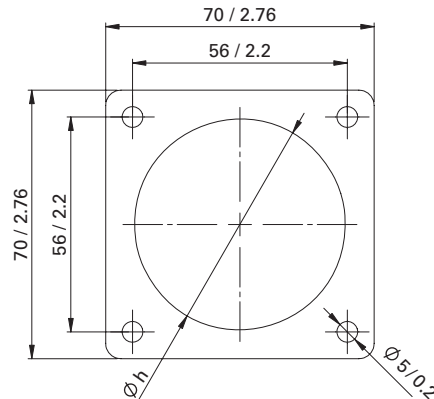
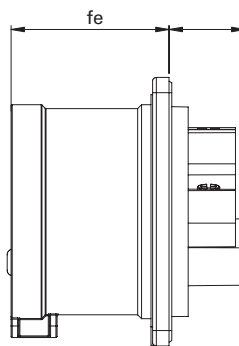
- with screw terminals
- housing material: PA6
- contacts: brass

A32S22A

wire configuration	clock position	Symbol	Voltage (colors)	20A part number	30A part number
2P3W (3p)	4h		120V AC	A31S12A	A32S12A
	5h		277V AC	A31S72A	A32S72A
	6h		250V AC	A31S22A	A32S22A
	7h		480V AC	A31S52A	A32S52A
3P4W (4p)	3h		380,440V AC	A41S02A	A42S02A
	5h		600V AC	A41S72A	A42S72A
	6h		380V AC	A41S32A	A42S32A
	7h		480V AC	A41S52A	A42S52A
	9h		250V AC	A41S22A	A42S22A
	12h		120/250V AC single phase	A41S62A	A42S62A
4P5W (5p)	5h		347/600V AC	A51S72A	A52S72A
	6h		200/346 to 240/415V AC	A51S32A	A52S32A
	7h		277/480V AC	A51S52A	A52S52A
	9h		120/208V AC	A51S22A	A52S22A

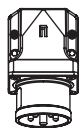
Orange, Green & Grey are all Black with color coded labels.

Dimensions & Weight (mm / in.) (g / lb.)



	20A			30A		
Poles	2P3W (3p)	3P4W (4p)	4P5W (5p)	2P3W (3p)	3P4W (4p)	4P5W (5p)
e [mm / inch]	25 / 0.98	25 / 0.98	26 / 1.02	30 / 1.18	30 / 1.18	30 / 1.18
f [mm / inch]	41 / 1.61	41 / 1.61	42 / 1.65	50 / 1.97	50 / 1.97	50 / 1.97
Ø h [mm / inch]	43 / 1.69	43 / 1.69	55 / 2.17	55 / 2.17	55 / 2.17	55 / 2.17
Weight [g / lb]	89 / 0.2	104 / 0.23	119 / 0.26	139 / 0.31	158 / 0.35	177 / 0.39

IP44 INLETS WALL MOUNT 20/30A



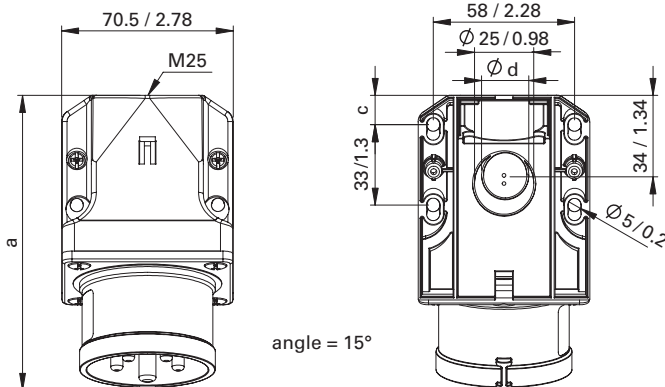
- with screw terminals
- housing material: PA6
- contacts: brass

G41S30A

wire configuration	clock position	Symbol	Voltage (colors)	20A part number	30A part number
2P3W (3p)	4h		120V AC	G31S10A	G32S10A
	5h		277V AC	G31S70A	G32S70A
	6h		250V AC	G31S20A	G32S20A
	7h		480V AC	G31S50A	G32S50A
3P4W (4p)	3h		380,440V AC	G41S00A	G42S00A
	5h		600V AC	G41S70A	G42S70A
	6h		380V AC	G41S30A	G42S30A
	7h		480V AC	G41S50A	G42S50A
	9h		250V AC	G41S20A	G42S20A
	12h		120/250V AC single phase	G41S60A	G42S60A
4P5W (5p)	5h		347/600V AC	G51S70A	G52S70A
	6h		200/346 to 240/415V AC	G51S30A	G52S30A
	7h		277/480V AC	G51S50A	G52S50A
	9h		120/208V AC	G51S20A	G52S20A

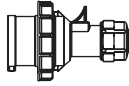
Orange, Green & Grey are all Black with color coded labels.

Dimensions (mm / in.) & Weight (g / lb.)



Poles	20A			30A		
	2P3W (3p)	3P4W (4p)	4P5W (5p)	2P3W (3p)	3P4W (4p)	4P5W (5p)
a [mm / inch]	121 / 4.76	121 / 4.76	123 / 4.84	131 / 5.16	131 / 5.16	132 / 5.2
c [mm / inch]	13 / 0.51					
Ø d [mm / inch]	20 / 0.79					
Height [mm / inch]	76 / 2.99	76 / 2.99	79 / 3.11	83 / 3.27	83 / 3.27	86 / 3.39
Weight [g / lb]	173 / 0.38	188 / 0.41	203 / 0.45	223 / 0.49	242 / 0.53	261 / 0.58

**IP67
PLUGS
20/30A**



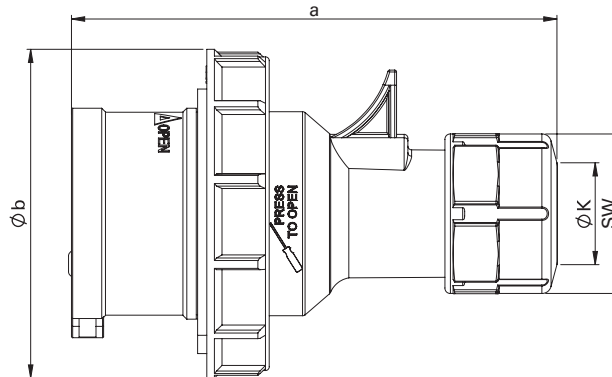
- with screw terminals
- housing material: PA6
- contacts: brass

S52S55A

wire configuration	clock position	Symbol	Voltage (colors)	20A part number	30A part number
2P3W (3p)	4h		120V AC	S31S15A	S32S15A
	5h		277V AC	S31S75A	S32S75A
	6h		250V AC	S31S25A	S32S25A
	7h		480V AC	S31S55A	S32S55A
3P4W (4p)	3h		380,440V AC	S41S05A	S42S05A
	5h		600V AC	S41S75A	S42S75A
	6h		380V AC	S41S35A	S42S35A
	7h		480V AC	S41S55A	S42S55A
	9h		250V AC	S41S25A	S42S25A
	12h		120/250V AC single phase	S41S65A	S42S65A
4P5W (5p)	5h		347/600V AC	S51S75A	S52S75A
	6h		200/346 to 240/415V AC	S51S35A	S52S35A
	7h		277/480V AC	S51S55A	S52S55A
	9h		120/208V AC	S51S25A	S52S25A

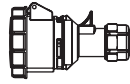
Orange, Green & Grey are all Black with color coded labels.

Dimensions & Weight (mm / in.)
(g / lb.)



	20A			30A		
Poles	2P3W (3p)	3P4W (4p)	4P5W (5p)	2P3W (3p)	3P4W (4p)	4P5W (5p)
a [mm / inch]	118 / 4.65	124 / 4.88	131 / 5.16	146 / 5.75	146 / 5.75	152 / 5.98
Ø b [mm / inch]	71 / 2.8	79 / 3.11	87 / 3.43	93 / 3.66	93 / 3.66	100 / 3.94
K_cable Ø [mm / inch]	6-15 / 0.24-0.59	6-15 / 0.24-0.59	8-16 / 0.31-0.63	11.5-20 / 0.45-0.79	11.5-20 / 0.45-0.79	11.5-22 / 0.45-0.87
SW [mm / inch]	38 / 1.5	38 / 1.5	42 / 1.65	50 / 1.97	50 / 1.97	50 / 1.97
Weight [g / lb]	132 / 0.29	156 / 0.34	184 / 0.41	224 / 0.49	243 / 0.54	281 / 0.62

IP67 CONNECTORS 20/30A



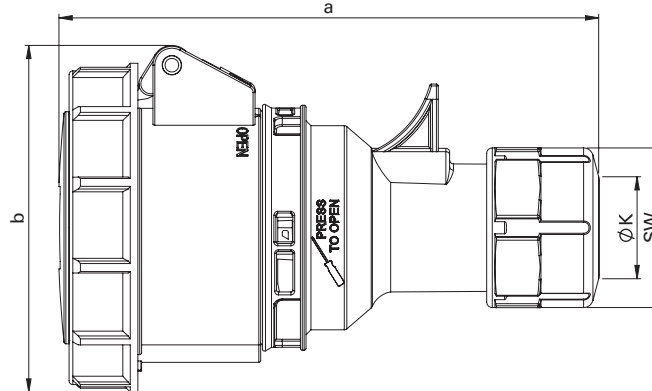
- with screw terminals
- housing material: PA6
- contacts: brass

K52S55A

wire configuration	clock position	Symbol	Voltage (colors)	20A part number	30A part number
2P3W (3p)	4h		120V AC	K31S15A	K32S15A
	5h		277V AC	K31S75A	K32S75A
	6h		250V AC	K31S25A	K32S25A
	7h		480V AC	K31S55A	K32S55A
3P4W (4p)	3h		380,440V AC	K41S05A	K42S05A
	5h		600V AC	K41S75A	K42S75A
	6h		380V AC	K41S35A	K42S35A
	7h		480V AC	K41S55A	K42S55A
	9h		250V AC	K41S25A	K42S25A
	12h		120/250V AC single phase	K41S65A	K42S65A
4P5W (5p)	5h		347/600V AC	K51S75A	K52S75A
	6h		200/346 to 240/415V AC	K51S35A	K52S35A
	7h		277/480V AC	K51S55A	K52S55A
	9h		120/208V AC	K51S25A	K52S25A

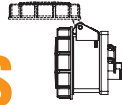
Orange, Green & Grey are all Black with color coded labels.

Dimensions (mm / in.) & Weight (g / lb.)



	20A			30A		
Poles	2P3W (3p)	3P4W (4p)	4P5W (5p)	2P3W (3p)	3P4W (4p)	4P5W (5p)
a [mm / inch]	133 / 5.24	139 / 5.47	145 / 5.71	162 / 6.38	162 / 6.38	168 / 6.61
b [mm / inch]	78 / 3.07	84 / 3.31	92 / 3.62	96 / 3.78	96 / 3.78	102 / 4.02
K_cable Ø [mm / inch]	6-15 / 0.24-0.59	6-15 / 0.24-0.59	8-16 / 0.31-0.63	11.5-20 / 0.45-0.79	11.5-20 / 0.45-0.79	11.5-22 / 0.45-0.87
SW [mm / inch]	38 / 1.5	38 / 1.5	42 / 1.65	50 / 1.97	50 / 1.97	50 / 1.97
Weight [g / lb]	163 / 0.36	188 / 0.41	212 / 0.47	268 / 0.59	285 / 0.63	332 / 0.73

IP67 RECEPTACLES FLANGE STRAIGHT 20/30A

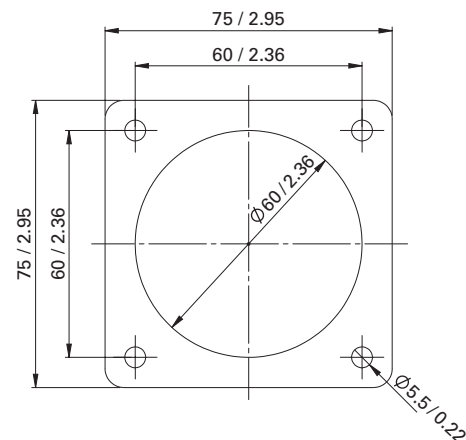
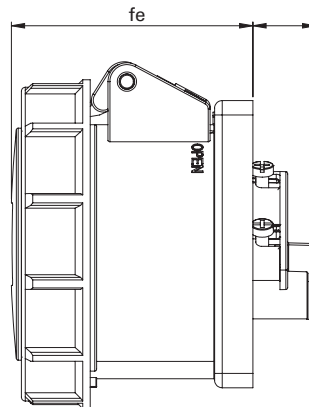


F52S55A

wire configuration	clock position	Symbol	Voltage (colors)	20A part number	30A part number
2P3W (3p)	4h		120V AC	F31S15A	F32S15A
	5h		277V AC	F31S75A	F32S75A
	6h		250V AC	F31S25A	F32S25A
	7h		480V AC	F31S55A	F32S55A
3P4W (4p)	3h		380,440V AC	F41S05A	F42S05A
	5h		600V AC	F41S75A	F42S75A
	6h		380V AC	F41S35A	F42S35A
	7h		480V AC	F41S55A	F42S55A
	9h		250V AC	F41S25A	F42S25A
	12h		120/250V AC single phase	F41S65A	F42S65A
4P5W (5p)	5h		347/600V AC	F51S75A	F52S75A
	6h		200/346 to 240/415V AC	F51S35A	F52S35A
	7h		277/480V AC	F51S55A	F52S55A
	9h		120/208V AC	F51S25A	F52S25A

Orange, Green & Grey are all Black with color coded labels.

Dimensions (mm / in.) & Weight (g / lb.)



Poles	20A			30A		
	2P3W (3p)	3P4W (4p)	4P5W (5p)	2P3W (3p)	3P4W (4p)	4P5W (5p)
e [mm / inch]	18 / 0.71	17 / 0.67	18 / 0.71	21 / 0.83	21 / 0.83	21 / 0.83
f [mm / inch]	63 / 2.48	63 / 2.48	63 / 2.48	73 / 2.87	73 / 2.87	73 / 2.87
Weight [g / lb]	145 / 0.32	167 / 0.37	184 / 0.41	218 / 0.48	235 / 0.52	264 / 0.58

IP67 RECEPTACLES FLANGE ANGLED 20/30A

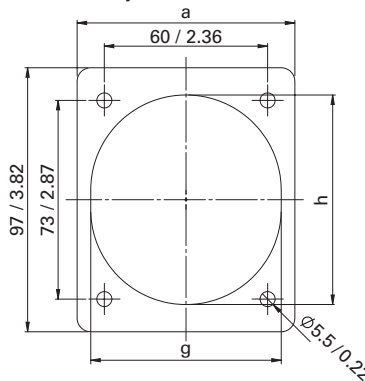
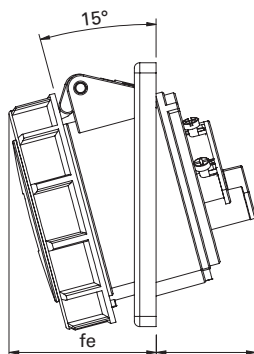


F42S78A

wire configuration	clock position	Symbol	Voltage (colors)	20A part number	30A part number
2P3W (3p)	4h		120V AC	F31S18A	F32S18A
	5h		277V AC	F31S78A	F32S78A
	6h		250V AC	F31S28A	F32S28A
	7h		480V AC	F31S58A	F31S58A
3P4W (4p)	3h		380,440V AC	F41S08A	F42S08A
	5h		600V AC	F41S78A	F42S78A
	6h		380V AC	F41S38A	F42S38A
	7h		480V AC	F41S58A	F42S58A
	9h		250V AC	F41S28A	F42S28A
	12h		120/250V AC single phase	F41S68A	F42S68A
4P5W (5p)	5h		347/600V AC	F51S78A	F42S78A
	6h		200/346 to 240/415V AC	F51S38A	F42S38A
	7h		277/480V AC	F51S58A	F42S58A
	9h		120/208V AC	F51S28A	F42S28A

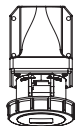
Orange, Green & Grey are all Black with color coded labels.

Dimensions (mm / in.) & Weight (g / lb.)



Poles	20A			30A		
	2P3W (3p)	3P4W (4p)	4P5W (5p)	2P3W (3p)	3P4W (4p)	4P5W (5p)
a [mm / inch]	80 / 3.15	80 / 3.15	80 / 3.15	80 / 3.15	80 / 3.15	87 / 3.43
e [mm / inch]	30 / 1.18	33 / 1.3	36 / 1.42	40 / 1.57	40 / 1.57	42 / 1.65
f [mm / inch]	54 / 2.13	54 / 2.13	54 / 2.13	65 / 2.56	65 / 2.56	65 / 2.56
g [mm / inch]	70 / 2.76	70 / 2.76	70 / 2.76	71 / 2.8	71 / 2.8	78 / 3.07
h [mm / inch]	77 / 3.03	77 / 3.03	77 / 3.03	78 / 3.07	78 / 3.07	87 / 3.43
Weight [g / lb]	159 / 0.35	181 / 0.4	200 / 0.44	235 / 0.52	252 / 0.56	283 / 0.62

IP67 RECEPTACLES WALL MOUNT 20/30A

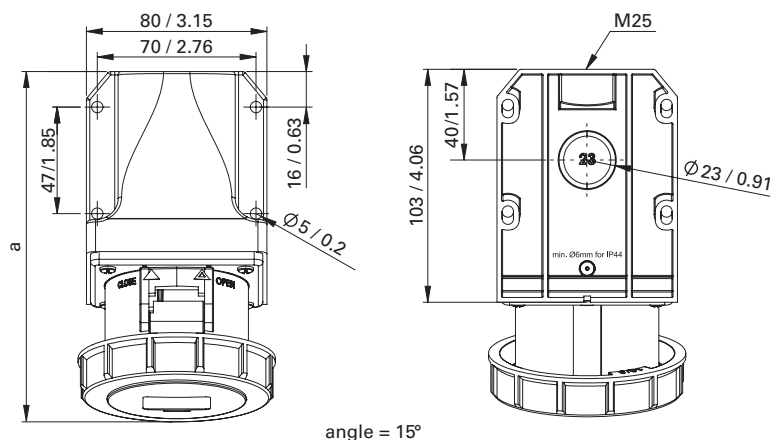


D42S35A

wire configuration	clock position	Symbol	Voltage (colors)	20A part number	30A part number
2P3W (3p)	4h		120V AC	D31S15A	D32S15A
	5h		277V AC	D31S75A	D32S75A
	6h		250V AC	D31S25A	D32S25A
	7h		480V AC	D31S55A	D32S55A
3P4W (4p)	3h		380,440V AC	D41S05A	D42S05A
	5h		600V AC	D41S75A	D42S75A
	6h		380V AC	D41S35A	D42S35A
	7h		480V AC	D41S55A	D42S55A
	9h		250V AC	D41S25A	D42S25A
	12h		120/250V AC single phase	D41S65A	D42S65A
4P5W (5p)	5h		347/600V AC	D51S75A	D52S75A
	6h		200/346 to 240/415V AC	D51S35A	D52S35A
	7h		277/480V AC	D51S55A	D52S55A
	9h		120/208V AC	D51S25A	D52S25A

Orange, Green & Grey are all Black with color coded labels.

Dimensions (mm / in.) & Weight (g / lb.)



	20A			30A		
Poles	2P3W (3p)	3P4W (4p)	4P5W (5p)	2P3W (3p)	3P4W (4p)	4P5W (5p)
a [mm / inch]	147 / 5.79	149 / 5.87	150 / 5.91	161 / 6.34	161 / 6.34	162 / 6.38
Height [mm / inch]	96 / 3.78	99 / 3.9	102 / 4.02	108 / 4.25	108 / 4.25	110 / 4.33
Weight [g / lb]	244 / 0.54	265 / 0.58	282 / 0.62	316 / 0.7	333 / 0.73	362 / 0.8

IP44

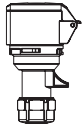
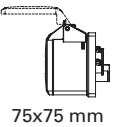
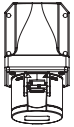
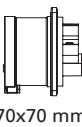
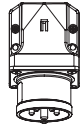
OVERVIEW

QUICK ORDERING SYSTEM

20/30A



- with screw terminals
- housing material: PA6
- contacts: brass

				PLUGS	CONNECTORS	RECEPTACLES		INLETS		
										
Amps	Poles	Ground Pin	Voltage (colors)	TWIST	TWIST	flange straight	flange angled	wall mount	flange straight	wall mount
20A	2P3W (3p)	4h	120V AC	S31S10A	K31S10A	F31S10A	F31S13A	D31S11A	A31S12A	G31S10A
		5h	277V AC	S31S70A	K31S70A	F31S70A	F31S73A	D31S71A	A31S72A	G31S70A
		6h	250V AC	S31S20A	K31S20A	F31S20A	F31S23A	D31S21A	A31S22A	G31S20A
		7h	480V AC	S31S50A	K31S50A	F31S50A	F31S53A	D31S51A	A31S52A	G31S50A
	3P4W (4p)	3h	380,440V AC	S41S00A	K41S00A	F41S00A	F41S03A	D41S01A	A41S02A	G41S00A
		5h	600V AC	S41S70A	K41S70A	F41S70A	F41S73A	D41S71A	A41S72A	G41S70A
		6h	380V AC	S41S30A	K41S30A	F41S30A	F41S33A	D41S31A	A41S32A	G41S30A
		7h	480V AC	S41S50A	K41S50A	F41S50A	F41S53A	D41S51A	A41S52A	G41S50A
		9h	250V AC	S41S20A	K41S20A	F41S20A	F41S23A	D41S21A	A41S22A	G41S20A
		12h	120/250V AC single phase	S41S60A	K41S60A	F41S60A	F41S63A	D41S61A	A41S62A	G41S60A
	4P5W (5p)	5h	347/600V AC	S51S70A	K51S70A	F51S70A	F51S73A	D51S71A	A51S72A	G51S70A
		6h	200/346 to 240/415V AC	S51S30A	K51S30A	F51S30A	F51S33A	D51S31A	A51S32A	G51S30A
		7h	277/480V AC	S51S50A	K51S50A	F51S50A	F51S53A	D51S51A	A51S52A	G51S50A
		9h	120/208V AC	S51S20A	K51S20A	F51S20A	F51S23A	D51S21A	A51S22A	G51S20A
30A	2P3W (3p)	4h	120V AC	S32S10A	K32S10A	F32S10A	F32S13A	D32S11A	A32S12A	G32S10A
		5h	277V AC	S32S70A	K32S70A	F32S70A	F32S73A	D32S71A	A32S72A	G32S70A
		6h	250V AC	S32S20A	K32S20A	F32S20A	F32S23A	D32S21A	A32S22A	G32S20A
		7h	480V AC	S32S50A	K32S50A	F32S50A	F32S53A	D32S51A	A32S52A	G32S50A
	3P4W (4p)	3h	380,440V AC	S42S00A	K42S00A	F42S00A	F42S03A	D42S01A	A42S02A	G42S00A
		5h	600V AC	S42S70A	K42S70A	F42S70A	F42S73A	D42S71A	A42S72A	G42S70A
		6h	380V AC	S42S30A	K42S30A	F42S30A	F42S33A	D42S31A	A42S32A	G42S30A
		7h	480V AC	S42S50A	K42S50A	F42S50A	F42S53A	D42S51A	A42S52A	G42S70A
		9h	250V AC	S42S20A	K42S20A	F42S20A	F42S23A	D42S21A	A42S22A	G42S20A
		12h	120/250V AC single phase	S42S60A	K42S60A	F42S60A	F42S63A	D42S61A	A42S62A	G42S60A
	4P5W (5p)	5h	347/600V AC	S52S70A	K52S70A	F52S70A	F52S73A	D52S71A	A52S72A	G52S70A
		6h	200/346 to 240/415V AC	S52S30A	K52S30A	F52S30A	F52S33A	D52S31A	A52S32A	G52S30A
		7h	277/480V AC	S52S50A	K52S50A	F52S50A	F52S53A	D52S51A	A52S52A	G52S50A
		9h	120/208V AC	S52S20A	K52S20A	F52S20A	F52S23A	D52S21A	A52S22A	G52S20A

IP67

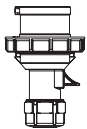
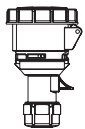
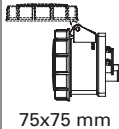
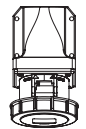
OVERVIEW

QUICK ORDERING SYSTEM

20/30A



- with screw terminals
- housing material: PA6
- contacts: brass

Amps	Poles	Ground Pin	Voltage (colors)	PLUGS	CONNECTORS	RECEPTACLES		
								
20A	2P3W (3p)	4h	120V AC	S31S15A	K31S15A	F31S15A	F31S18A	D31S15A
		5h	277V AC	S31S75A	K31S75A	F31S75A	F31S78A	D31S75A
		6h	250V AC	S31S25A	K31S25A	F31S25A	F31S28A	D31S25A
		7h	480V AC	S31S55A	K31S55A	F31S55A	F31S58A	D31S55A
	3P4W (4p)	3h	380,440V AC	S41S05A	K41S05A	F41S05A	F41S08A	D41S05A
		5h	600V AC	S41S75A	K41S75A	F41S75A	F41S78A	D41S75A
		6h	380V AC	S41S35A	K41S35A	F41S35A	F41S38A	D41S35A
		7h	480V AC	S41S55A	K41S55A	F41S55A	F41S58A	D41S55A
		9h	250V AC	S41S25A	K41S25A	F41S25A	F41S28A	D41S25A
		12h	120/250V AC single phase	S41S65A	K41S65A	F41S65A	F41S68A	D41S65A
	4P5W (5p)	5h	347/600V AC	S51S75A	K51S75A	F51S75A	F51S78A	D51S75A
		6h	200/346 to 240/415V AC	S51S35A	K51S35A	F51S35A	F51S38A	D51S35A
		7h	277/480V AC	S51S55A	K51S55A	F51S55A	F51S58A	D51S55A
		9h	120/208V AC	S51S25A	K51S25A	F51S25A	F51S28A	D51S25A
30A	2P3W (3p)	4h	120V AC	S32S15A	K32S15A	F32S15A	F32S18A	D32S15A
		5h	277V AC	S32S75A	K32S75A	F32S75A	F32S78A	D32S75A
		6h	250V AC	S32S25A	K32S25A	F32S25A	F32S28A	D32S25A
		7h	480V AC	S32S55A	K32S55A	F32S55A	F32S58A	D32S55A
	3P4W (4p)	3h	380,440V AC	S42S05A	K42S05A	F42S05A	F42S08A	D42S05A
		5h	600V AC	S42S75A	K42S75A	F42S75A	F42S78A	D42S75A
		6h	380V AC	S42S35A	K42S35A	F42S35A	F42S38A	D42S35A
		7h	480V AC	S42S55A	K42S55A	F42S55A	F42S58A	D42S55A
		9h	250V AC	S42S25A	K42S25A	F42S25A	F42S28A	D42S25A
		12h	120/250V AC single phase	S42S65A	K42S65A	F42S65A	F42S68A	D42S65A
	4P5W (5p)	5h	347/600V AC	S52S75A	K52S75A	F52S75A	F52S78A	D52S75A
		6h	200/346 to 240/415V AC	S52S35A	K52S35A	F52S35A	F52S38A	D52S35A
		7h	277/480V AC	S52S55A	K52S55A	F52S55A	F52S58A	D52S55A
		9h	120/208V AC	S52S25A	K52S25A	F52S25A	F52S28A	D52S25A

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Standard Terms and Conditions of Sale

TITLE - Title to the products of ALTECH shall remain with ALTECH until payment is made in full by Customer. Such reservation of title is for the purpose of securing the purchase price and shall not relieve Customer of the duty to inspect the products upon receipt, to notify ALTECH of any deficiencies or defects, and to exercise due care in the use, installation, operation, and maintenance of the products when on the premise of the Customer or under the control of the Customer. Notwithstanding any reservation of title by ALTECH, risk of loss shall pass to customer at any time of shipment.

SHIPMENT AND DELIVERY - All orders for destination in the mainland United States (less Hawaii, Alaska and non-continental United States possessions) will be shipped F.O.B. Flemington, N.J. All destination, shipping and other charges shall be paid by the Customer in accordance with ALTECH's then current shipping and billing practices.

Delivery dates given in the acceptance of any order are approximate. ALTECH shall not be liable for delays in delivery or in performance due to causes beyond its reasonable control including acts of God, acts of Customer, acts of civil or military authority, fires, strikes or other labor disturbances, war, riot or delays in transportation. In the event of such delay, the date of delivery or performance shall be extended for a period equal to the time lost by reason of the delay.

PRICE - PRICES in any ALTECH publication are subject to change without prior notification. Catalog prices are based on prices published in the current price list. All written quotations are valid for thirty (30) days from the date of quotation. Customer shall pay all sales, use, excise or similar taxes whenever ALTECH must itself pay and/or collect such tax from Customer arising out of the sale.

PAYMENT - Customer agrees to make payment within thirty (30) days of date of the invoice from ALTECH. Customer agrees to pay a late payment charge of one and one-half percent (1.5% per month, or the maximum late payment charge permitted by applicable law, whichever is less, on any unpaid amount for each calendar month (or fraction thereof) that such payment is in default. Orders amounting to less than \$100.00 will be billed at \$100.00 plus freight. Full carton purchases are required. In the event of referral to an attorney for collection, reasonable attorney's fees for collection of the overdue amount shall be paid by Customer. In the event payment is not received within 30 days from the date of invoice, any discount shall be cancelled and the full list price will be due.

LIMITED WARRANTY - ALTECH warrants to Customer that the equipment purchases shall be free from defects in material and workmanship under normal use and service for a period of one year from shipment.

Written notice as an explanation of the circumstances of any claim that the equipment has proved defective in material or workmanship shall be given promptly by the Customer to ALTECH.

ALTECH will not be liable for any misuse, improper operations, improper installation, improper maintenance, alteration, modification, accident or unusual degradation of the equipment or parts due to an unsuitable installation environment.

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LIMITATION OF LIABILITY - IN NO EVENT, SHALL ALTECH BE LIABLE FOR LOSS OF PROFITS, INDIRECT, SPECIAL, CONSEQUENTIAL OR OTHER SIMILAR DAMAGES ARISING OUT OF ANY BREACH OF THIS AGREEMENT OR OBLIGATIONS UNDER THE AGREEMENT.

ALTECH SHALL NOT BE LIABLE FOR ANY DAMAGES CAUSED BY DELAY IN SHIPMENT, INSTALLATION OR FURNISHING OF EQUIPMENT OR SERVICES UNDER THIS AGREEMENT.

No action arising out of any claimed breach of this Agreement may be brought by either

party more than two (2) years after the cause of action has accrued.

PATENT INDEMNITY - ALTECH shall defend or settle any suit or proceeding brought against Customer based on a claim that any equipment made to ALTECH design and furnished hereunder constitutes an infringement of any existing United States patent, provided (ALTECH) is notified promptly in writing and is given complete authorization and information required for the defense, and ALTECH shall pay all damages and costs awarded against Customer, but shall not be responsible for any costs, expense or compromise incurred or made by Customer without ALTECH's prior written consent. If any equipment is in ALTECH's opinion likely to or does become the subject of a claim for patent infringement, ALTECH may at its option and expense procure for Customer the right to continue using the device, modify it to become non-infringing, but in the event ALTECH is not reasonably able to modify, substitute, or otherwise procure for Customer the right to continue using it, ALTECH will remove such equipment and refund to Customer the amount paid in excess of a reasonable rental for past use.

ALTECH shall not be liable for any infringement or claim based upon use of the equipment in combination with other equipment not supplied by ALTECH or with modifications made by Customer.

The foregoing states the entire liability of ALTECH to Customer arising from patent infringement.

SELLER'S REMEDIES - Should Customer fail to make any payment within ten (10) days of its due date, or fail to perform any other of the Customer's obligation hereunder upon thirty (30) days written notice, or should Customer be or become insolvent or be a party to any bankruptcy receivership proceeding prior to full payment of all amounts payable hereunder, ALTECH may: (a) with or without demand or notice to customer declare the entire amount unpaid immediately due and payable; (b) enter upon the premises where the equipment may be found and remove it (Customer shall assemble the equipment and make it available to ALTECH at a place reasonably convenient to both parties and shall permit and assist ALTECH in effecting the retaking and removal of the equipment); and (c) sell any or all the equipment as permitted under applicable law, applying the proceeds of the sale to payment of the expenses of retaking, repairing and selling the equipment, reasonable attorney fees and to the satisfaction of all indebtedness then due and unpaid under this Agreement. Any surplus shall be paid to Customer and any deficiency shall be paid to ALTECH by Customer.

The remedies provided herein shall be cumulative and in addition to all other remedies provided by law or equity or under the Uniform Commercial Code.

GOVERNING LAW - This agreement will be governed by the Laws of the State of New Jersey.

GENERAL - This Agreement shall only become effective and binding when either (a) it has been accepted and executed by an authorized representative of ALTECH, or (b) the equipment has been shipped to Customer, with or without acceptance in writing hereon. Notice of acceptance is hereby waived by Customer. Customer hereby acknowledges receipt of a true and complete copy hereof.

No addition to or modification of any of the Terms and Conditions of Sale as they appear herein shall be binding upon ALTECH unless signed in writing by duly authorized representative of ALTECH in Flemington, N.J.

Typographical and clerical errors in quotations, orders and acknowledgments are subject to correction.

This Agreement is not assignable without the prior written consent of ALTECH. Any attempt to assign any of the rights, duties or obligations of this Agreement without such consent is void.

If any provision or provisions of this Agreement shall be held to be invalid, illegal or unenforceable, the validity, legality and enforceability, of the remaining provisions shall not in any way be affected or impaired thereby.

ALTECH is not responsible for failure to fulfill its obligation under this Agreement due to causes beyond its control, or except as agreed herein.

THE CUSTOMER ACKNOWLEDGES THAT HE HAS READ THE AGREEMENT, UNDERSTANDS IT, AND AGREES TO BE BOUND BY ITS TERMS AND CONDITIONS. FURTHERMORE, THE CUSTOMER AGREES THAT IT IS THE COMPLETE AND EXCLUSIVE STATEMENT OF THE AGREEMENT BETWEEN THE PARTIES, WHICH SUPERSEDES ALL PROPOSALS OR PRIOR AGREEMENTS, ORAL OR WRITTEN, EXPRESSED OR IMPLIED, AND ALL OTHER COMMUNICATIONS BETWEEN THE PARTIES RELATING TO THE SUBJECT MATTER OF THIS AGREEMENT.

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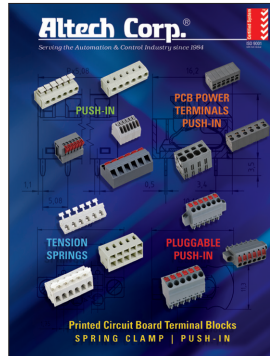
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Switches



Safety
Rope Pull
Switches

STANDARD SWITCHES



Limit
Switches



Foot
Switches



Cylindrical &
Capacitive



Flat Pack
& Ring



Metal
Detection

SENSORS

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