Powertite™ Series Pin and Sleeve Plugs, Connectors and Receptacles

NEC/CEC:
Listed for Ordinary (Unclassified) Locations
NEMA 3, 3R, 4, 4X

Applications

- Designed to supply power to portable or fixed electrical equipment such as motor generator units, welders, pumps, compressors, cellular relay stations, and similar apparatus.
- Ideal for use on shipping docks, ports, and other "ship to shore" applications.
- Suitable for use in locations where a weatherproof enclosure is required.
- Rough usage construction.

Features

- Available in 30, 60, 100, 150, 200, and 400 Amp units.
- Available in two grounding styles: Style 1 (shell only) and Style 2 (shell and extra pole).
- Neoprene bushing compressed by cable collar prevents entrance of water. Bushing is highly resistant to hydrocarbon deterioration and is self-extinguishing.
- Locking screw and slot prevents plug cable collar from "backing off."
- Contacts exert constant pressure along entire contact surface and provide electrical continuity.
- Suitable for use from -40 °C to 107 °C (-40 °F to 225 °F).
- Insulating blocks provide greatest dielectric and mechanical strength and lowest arc tracking.
- Positive polarization: only plugs and receptacles of same style, number of poles and ampere rating can be used together.
- Circuit breaking: in 30, 60, 100, 150 and 200 Amp units, any arcing created as line and load terminals disengage is safely confined deep within terminal cavities. Plugs may be withdrawn in an emergency under full rated loads without separate disconnect switches (400 Amp plug is for disconnecting use only; not for current rupturing).
- 30, 60, 100, and 150 Amp Powertite™ plugs also suitable for classified locations when used with Appleton EBR, EBRH, JBR, MD2SR, or DBR explosionproof interlocking receptacles.
- Controlled length contacts ensure that ground makes first and breaks last for added safety.

Standard Materials

- Plug, receptacle, connector and mounting box housings: copperfree (4/10 of 1% max.) aluminum
- Insulating blocks: glass filled polyester

Standard Finishes

- Aluminum plug, receptacle, connector and mounting box housings: epoxy powder coat
- Insulating blocks and contacts: natural finish

Options

- See Illustrated Options

NEC/CEC Certifications and Compliances

- UL Standard: UL 1682, UL 1686 ①, UL 50E
- UL Listed: E145916, E145917
- CSA Standard: C22.2 No. 182.1
- CSA Certified: 065179
- NEMA 4X (30, 60, 100, 150, and 200 Amp)
- NEMA Configuration: FB11

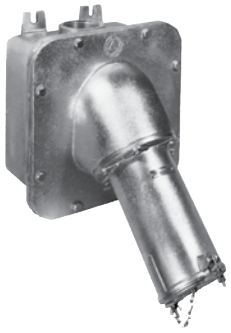
Related Products

- For classified location plugs and receptacles, *see Plugs and Receptacles: Hazardous Location.*

30 and 60 Amp

100 and 150 Amp

200 Amp



400 Amp

① UL 1686 does not apply to 150, 200 or 500 Amp units.
Classified by UL and Certified by CSA for use in specific combinations with Crouse-Hinds Arktite. Arktite is a registered trademark of Cooper Crouse-Hinds.

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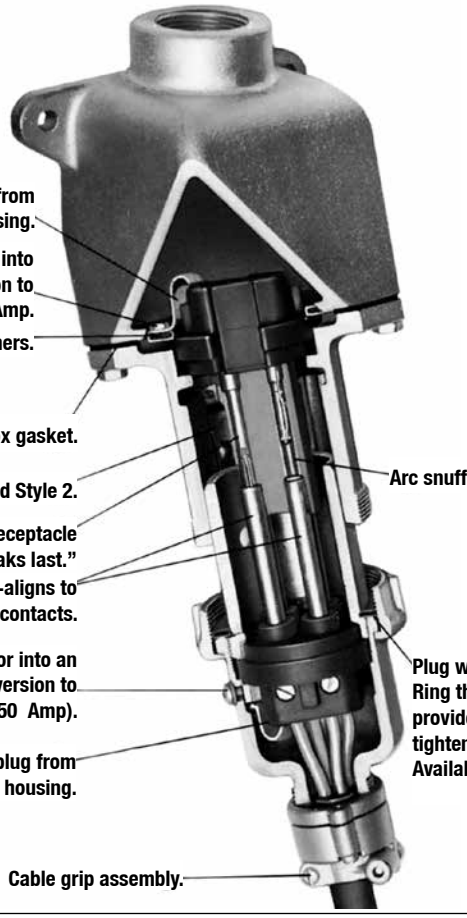
Illustrated Features



Grounding strap in Style 2 receptacle from extra pole to receptacle housing.

Screw locks receptacle housing and interior into an assembly and permits easy field conversion to reverse service for 30, 60, 100, 150, and 200 Amp.

Receptacle interior retaining washers.

Raintight mounting box gasket.

Grounding detent springs in Style 1 and Style 2.

Longer ground terminal in Style 2 receptacle "makes first, breaks last."

Floating–type plug terminal self–aligns to receptacle contacts.

Screw locks plug housing and interior into an assembly; also permits easy field conversion to reverse service (30, 60, 100, and 150 Amp).

Grounding strap in Style 2 plug from extra pole to plug housing.

Cable grip assembly.

Arc snuffing chamber.

Plug with clamping ring has neoprene gasket. Ring threads onto screw cap receptacle to provide NEMA 4X assembly when properly tightened.
Available in 30, 60, 100, and 150 Amp units.

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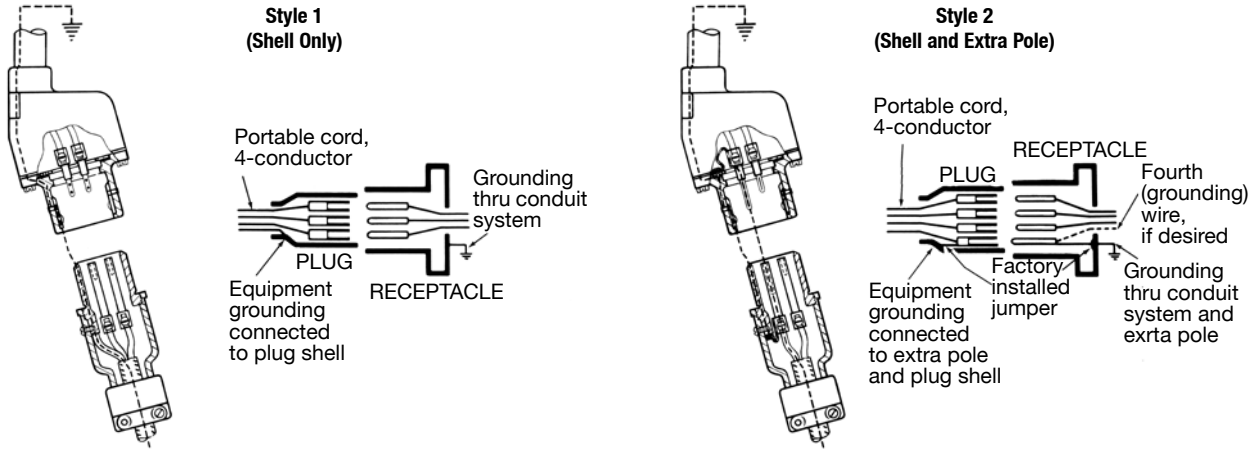
Illustrated Features

Grounding Styles



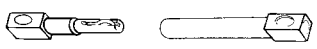
Plug—Equipment grounding conductor is wired directly to solderless lug which is connected to the plug housing with a pressure connector. All terminals are "current carrying."

Receptacle—Two detent spring clips engage the grounded plug housing on plug insertion-grounded plug shell makes contact with receptacle ground spring before line and load poles are engaged. Grounding path is maintained until after current-carrying contacts disengage. All terminals are "current carrying."

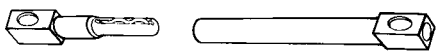
Plug—Equipment grounding conductor is not only connected to the solderless lug in the plug housing, but also to an extra grounding pole. Grounding pole has copper alloy grounding jumper strap that connects to plug housing.

Receptacle—Two detent spring clips engage grounded plug housing on plug insertion. Jumper from extra grounding pole is electrically connected to a screw on receptacle housing. Longer grounding pole "makes first and breaks last."

Pin and Sleeve Design ①

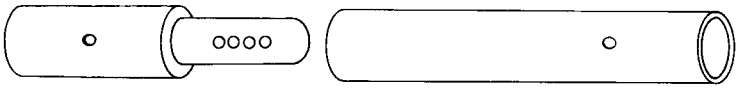


30, 60, and 100 Amp Pressure Wire Terminals.
Solid Brass Contacts with Beryllium Copper Springs.

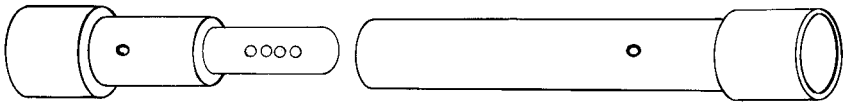


150 Amp Pressure Wire Terminals.
Solid Copper Contacts with Beryllium Copper Springs.

200 Amp Pressure Wire Terminals. Solid Copper Split–Type Contact.



400 Amp 0.84" Solder Well Wire Terminals. Solid Copper Contacts with Four Spring–Loaded Borosilicate Bearings.



400 Amp 1.25" Solder Wire Well Terminals. Solid Copper Contacts with Four Spring–Loaded Borosilicate Bearings.

① *Pins and sleeves are not sold separately. Must be purchased as entire interior replacement. Available on the Replacement Interiors pages.*

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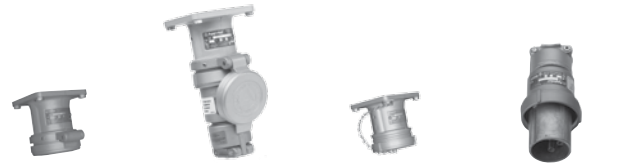
Illustrated Features

Spring Door and Screw Cap
30, 60, 100, and 150 Amp spring door and screw cap receptacles are threaded to accept clamping ring ACP plug. The ring threads onto the receptacle to form a raintight assembly with plug in use-and also to prevent plug fallout. When the plug is withdrawn, the gasketed spring door cover closes tightly against receptacle opening automatically, providing weatherproof protection. Spring door has stainless steel spring and shaft.



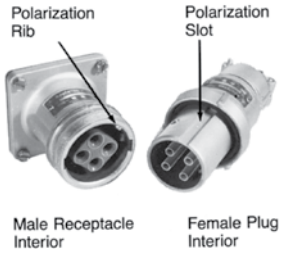
Spring Door Cover
30, 60, 100, and 150 Amp units may be located at any position in a 360° circle by adjusting a setscrew. Set screw also allows complete removal of cover. Spring door available on 200 Amp units.
NOTE: Spring Door cover in open positions for illustration only.

ACP Plugs
Supplied with bushings to accommodate a wide variety of cable diameters. 30 Amp plug clamp used in first position with smallest inside diameter bushing provides positive grip on cables as small as 0.390 inches, such as those that are used in oil rig installations.

Reversible Cable Clamps
Permits wide cable range (just loosen screws and flip over). Each position accommodates one of two bushings. Convenient in installations having different cable sizes.

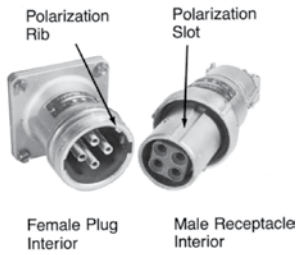
Illustrated Options

Standard Service
Energized receptacle has recessed male contacts to reduce danger of accidental touching. Plug has female contacts that are energized only upon insertion in receptacle.



Special Polarization
Special polarization is available on 30, 60, 100, 200, and 400 Amp units. Prevents plug insertion in a receptacle or connector wired for a different voltage. In installations where there are different line voltages, the special polarization option is desirable. This allows only plugs and receptacles wired for the same line voltage to be mated together. The receptacle or connector interior is positioned 22-1/2°, relative to the polarization rivet, to the right (as specified) of standard, and plug is polarized to correspond. Add suffix -**P4** to the standard or reverse service plug, receptacle or connector.

Reverse Service (Generator Application)
Useful where a "hot" plug feeds a dead receptacle. Reverse service is often used for generator applications where the receptacle houses a dead plug interior. Plug houses an energized receptacle interior, which has recessed male contacts to reduce danger of accidental touching. 30, 60, 100, 150, and 200 Amp units can be easily converted to reverse service in the field when matching plug and receptacle are ordered. 400 Amp unit is only available as a factory assembled item at extra cost. Add suffix -**RS** to receptacle or connector.



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Features at a Glance

		Receptacle Types			Contacts			Reverse Service	
Amp	Grounding Styles	Weatherproof Spring Door	NEMA 4X Screw Cap	Raintight Clamp Cover	Brass with Beryllium Copper Springs	Copper with Borosilicte Bearings	Split–type Copper Contacts	Brass Ground Contacts	In Field	Factory Only
30	1 and 2	X	X		X			Style 2	X	
60	1 and 2	X	X		X			Style 2	X	
100	1 and 2	X	X		X			Style 2	X	
150	2	X	X		X ②			Style 2	X	
200	1 and 2	X ▼		X ▼			X	Style 2	X ①	
400	1 and 2					X		Style 2		X

Application Chart

Grounding Style	Wire/Pole	Single Phase With Neutral	Single Phase Without Neutral
Style 1 (Shell Only)	2W, 2P	L1+N+G	L1+L2+G
	3W, 3P	L1+L2+N+G	
	4W, 4P		
Style 2 (Shell and Extra Pole)	2W, 3P	L1+N+G	L1+L2+G
	3W, 4P	L1+L2+N+G	

Grounding Style	Wire/Pole	Three Phase With Neutral	Three Phase Without Neutral
Style 1 (Shell Only)	2W, 2P		
	3W, 3P		L1+L2+L3+G
	4W, 4P	L1+L2+L3+N+G	
Style 2 (Shell and Extra Pole)	2W, 3P		
	3W, 4P		L1+L2+L3+G

Powertite™ Horsepower Ratings *Plug may be withdrawn in an emergency if within these maximum HP ratings. Not for normal starting/stopping.*

Phase Motor	Amps	Motor Horsepower 115 Vac	230 Vac	480 Vac	600 Vac
For Emergency Disconnect Only					
3-Phase 3W, 3P; 3W, 4P; or 4W, 4P	30	3	7-1/2	15	20
	60	7-1/2	15	30	30
	100	10	20	40	40
	150	Do Not Disconnect Under Load			
	200	20	40	50	50

Phase Motor	Amps	Motor Horsepower 115 Vac	230 Vac	480 Vac	600 Vac
1-Phase 2W, 2P or 2W, 3P	30	2	3	10	10
	60	3	10	20	20
	100	7-1/2	15	30	30
	200	15	30	40	40

Range of Wire Sizes Accommodated in Powertite™ Plug and Receptacle Terminals
60 °C (140 °F) minimum wire ratings.

30, 60, 100, and 150 Amp				200 Amp			400 Amp		
Amps	Wire Recess Dia. (Inches)	Wire Range Building	Wire Range Extra Flex.	Wire Recess Dia. (Inches)	Conductor Size	Type Conductor	Solder Recess Dia. (Inches)	Conductor Size	Type Conductor
30	.281	#10 – #6	#10 – #8	0.687	250	General Wire	0.84	500 MCM	General Wire
60	.312	#6 – #2	#6 – #4		4/0	General Wire		400 MCM	Flex. Cable
100	.391	#4 – #1	#4 – #2		4/0	Flex. Cable		400 MCM	Extra Flex.
150	.525	#2 – 2/0	#2 – 2/0		3/0	Flex. Cable	1.25	1000 MCM	General wire
					3/0	Extra Flex.		900 MCM	General Wire
					2/0	Flex. Cable		800 MCM	Extra Flex.

▼ *NEMA 4X.*
① *For receptacle only.*
② *Copper with beryllium copper springs.*

Powertite™ 200 Amp Pin and Plugs and Receptacles

600 Vac, 250 Vdc, 50-400 Hz. Sleeve Spring Door. Wire Recess Diameter: .687". Wire Size Range: 250 MCM-#2/0. Pressure Wire Terminals ①.

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Grounding Style	Wire/Pole	Receptacle with AJA Mounting Box ②	Hub Size (Inches)	Receptacle Only ③	Plug Only	Cable Dia. (Inches)
Style 1 (Shell Only)	3W, 3P	**ADJA20033-150**	1-1/2	**ADR20033**	**AP20033CD**	.875 to 1.906
		ADJA20033-200	2		**AP20033E**	1.875 to 2.500
		ADJA20033-250	2-1/2			
	4W, 4P	**ADJA20044-200**	2	**ADR20044**	**AP20044CD**	.875 to 1.906
		ADJA20044-250	2-1/2		**AP20044E**	1.875 to 2.500
Style 2 (Shell and Extra Pole)	2W, 3P	**ADJA20023-150**	1-1/2	**ADR20023**	**AP20023CD**	.875 to1.906
		ADJA20023-200	2	**ADR20023**	**AP20023E**	1.875 to 2.500
		ADJA20023-250	2-1/2			
	3W, 4P	**ADJA20034-150**	1-1/2	**ADR20034**	**AP20034CD**	.875 to1.906
		ADJA20034-200	2		**AP20034E**	1.875 to 2.500
		ADJA20034-250	2-1/2			

*For Reverse Service add suffix -**RS** to Catalog Number.*
*For Special Polarization, add suffix -**P4** to Catalog Number.*

Maximum Conductor Size

Wire Recess Dia. (Inches)	Conductor Size	Max. Strand	Type Conductor
0.687	250 MCM	37	General Wire
	4/0	19	General Wire
	4/0	259	Flexible Cable
	3/0	427	Extra Flexible Cable
	2/0	259	Flexible Cable
	2/0	259	Flexible Cable

Horsepower Ratings for Emergency Disconnect Under Load

Plug may be withdrawn in an emergency if within these maximum HP ratings. Not for normal starting and stopping.

Motor Phase	Wire/Pole	Motor Horsepower 120 Vac	240 Vac	480 Vac	600 Vac
1-Phase	2W, 3P	15HP	30HP	40HP	40HP
3-Phase	3W, 3P; 3W, 4P; or 4W, 4P	20HP	40HP	50HP	50HP

① Adapters for #4-#1 wire available, see Powertite™ 200 and 400 Amp Replacement Parts.
② For additional mounting boxes, see Aluminum Mounting Boxes.
③ Receptacle meets NEMA 3R with spring door closed and NEMA 3, 3R, 4, 4X with plug fully inserted and wing nuts fully tightened or cover closed with wing nuts fully tightened.