# **Arktite® Heavy Duty Circuit Breaking Plugs and Connectors**

NEMA 4 Watertight Dimensions Page 968

60 A, 600 VAC/250 VDC, 50\*\*-400 hertz

Plug

			T		
Mating APJ Plugs†			Mating APR Connectors		
Style 1					
Description	Cat. #	Cable Dia.	Cat. #	Cable Dia.	
2-wire,	APJ6275	0.50 to 1.45	APR6255	0.50 to 1.45	
3-wire,	APJ6375	0.50 to 1.45	APR6355	0.50 to 1.45	
4-wire,	APJ6475	0.50 to 1.45	APR6455	0.50 to 1.45	
5-wire, } 5-pole }	APJ6575	0.50 to 1.45			
,	Style 2				
2-wire,	APJ6385	0.50 to 1.45	APR6365	0.50 to 1.45	
3-wire,	APJ6485	0.50 to 1.45	APR6465	0.50 to 1.45	
4-wire, } 5-pole	APJ6585	0.75 to 1.45	APR6565 APR6567	0.88 to 1.38 1.38 to 1.88	

Connector

#### NOTES:

Standard 60 A assemblies, for use where extra wiring space is not needed, are listed on page 942. For listing of additional back boxes, see pages 957 and 958.

§ Weatherproof when used with spring door or threaded cap covers.

† Furnished with cable grip and neoprene bushing.

‡ AJ back boxes are square, making it possible to install with hub in several positions. \* Pressure connectors are standard. Crimp/solder type terminators are optionally available for 2, 3 and 4-pole 30 ampere, 3 and 4-pole 60 and 100 ampere. For details, see table on page 938. To specify, add the suffix "T" to the catalog number. For example: AREA6313-T (Assembly) APJ6375-T (Plug) AR631-T (Receptacle)

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\*\* For use on systems less than 60 hertz the receptacles, plugs and connectors are for disconnect use only.

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## **Application:**

Arktite circuit breaking plugs and receptacles are used:

• to supply power to portable electrically operated devices such as motor-generator sets, compressors, heating and cooling units, welders, conveyors, lighting systems and similar equipment

• where temporary power is needed, such as at trailers, building units, heavy machinery and similar equipment

• wherever electrical loads must be quickly disconnected from power source

• in a typical installation, where a large machine utilizes a number of electrical motor drives and for ease of adjustment, removal, maintenance and replacement, each motor is connected by portable cord and *Arktite* receptacles rather than permanently wired

• in areas where dust, dirt, moisture and corrosion are a problem

• indoors and outdoors in non-hazardous areas of chemical plants, process industry facilities, meat packing plants, manufacturing plants and similar industrial locations

#### Features:

• Circuit breaking: Plugs through 200 ampere rating may be disconnected under load; 400 ampere units are for service disconnect use only.

• Receptacles accept only plugs of the same amperage rating, style and number of poles, making it impossible to mismate, and provides for positive polarization.

• Extra wide electrical spacing allows for maximum safety.

• Insulator materials are the result of intensive testing. Selection has been made based on highest dielectric strength, maximum mechanical and impact resistance, lowest moisture absorption and highest arc tracking resistance.

A variety of installations is possible due to the availability of several types of back boxes.
Designed to withstand rough usage and the

Designed to withstand rough usage and the effects of adverse environments.
 Reversible interiors, 30, 60 and 100 ampere

(except 30 and 60 ampere, 5-pole) *Arktite* plug and receptacle interiors are interchangeable using a screwdriver. This makes it possible to feed a normally deenergized receptacle from an energized plug with usual *Arktite* safety; no energized contacts are exposed.

 Additional features are indicated in the view at right:

Grounding contact in Style 2 is bonded to the receptacle housing.

Easily wired interior assemblies in receptacles and plugs. See table on page 938 for type of contacts in units.

3 *Arktite* Style 2, illustrated here, has an extra grounding contact which forms a parallel circuit with the circuit formed by the plug sleeve and receptacle detent spring, and assures continuity of the grounding

safety circuit under severe service. Grounding contact is no longer than the others, so grounding circuit is made first and broken last.

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The arc formed by pulling the plug is instantly snuffed in the deep, confined insulated arcing chamber while the plug contact is still a considerable distance inside. The arc cannot travel over to the other side of the circuit or to the housing.

• Detent spring forms a grounding path from plug sleeve to receptacle housing. *Arktite* plugs and receptacles are made in two styles. With either style, the portable appliance is grounded before it is energized and remains grounded until after it is deenergized. (*Arktite* Style 1, not illustrated here, is for conditions where it is desired to use the contact of the plug sleeve with the detent spring to complete the grounding safety circuit. The extra grounding conductor in the portable cable is connected to the plug sleeve by a pressure connector.)

Each plug contact fits closely the opening of its individual arcing chamber.
Grounding contact is bonded to the plug sleeve. Grounding contact is keyed to its proper location to prevent mispolarization.

 Ø Arktite connectors' gasketing system provides unsurpassed watertight integrity.
 Ø All-aluminum UNI-SHELL™ threaded construction provides added strength to withstand extreme physical abuse.

> NEW! NEMA 4 Rating

> > Arktite Style 2 60 ampere

NEW! Smaller Cable Range

● Arktite's TRI-LOCK<sup>™</sup> cable grip has three clamps that tighten around the cable to securely lock it in place, even when subjected to extreme flexing and jerking.

 The unique SURE-SEAL<sup>™</sup> cable gland provides a complete environmental seal by distributing pressure equally around the circumference of the cable.
 Wrenching surfaces make *Arktite* connector quick and easy to assemble.

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# **Arktite® Heavy Duty Circuit Breaking Plugs and Receptacles**

**Industrial Heavy Duty** Non-Hazardous Areas

## Grounding:

Crouse-Hinds utilizes two methods for completing the grounding circuit in plugs and receptacles (See diagrams below). Refer to National Electrical Code Article 250.

# Style 1:

A Style 1 plug is one in which the grounding conductor in the flexible cable is bonded to the plug sleeve by a pressure connector. A Style 1 receptacle is one which is grounded by virtue of the fact that it is an integral part of a grounded conduit system. On insertion, the plug sleeve makes contact with detent springs of the grounded receptacle housing

before line and load poles engage, and on withdrawal, remains in contact until after line and load poles disengage. Therefore, exposed metal parts of the portable equipment or plug are suitably grounded. Style 2:

A Style 2 metallic housing plug is one in which the arounding conductor in the flexible cable is bonded to the extra (grounding) pole and metal plug sleeve by a pressure connector. A Style 2 metallic housing receptacle is one in which the extra (grounding) pole is electrically connected to the equipment grounding conductor and the metal receptacle housing which itself is

Made of

Krydon

material

non-metallic



Style 1 units ground the portable device and the plug via the grounding conductor and the plug shell to the receptacle housing. The receptacle is grounded by virtue of its being an integral part of the conduit system.



(grounding) contact which forms a parallel circuit with the circuit formed by the plug sleeve and receptacle detent spring. Style 2 units with nonmetallic housings utilize the extra contact only for connecting the grounding circuit.

grounded by virtue of the fact that it is an integral part of a grounded conduit system. In Style 2, non-metallic housing plugs and receptacles, the extra pole is used for grounding since the housings are nonconductive. In a Style 2 receptacle, the arounding connection is made before line and load poles engage, and is broken after the line load poles disengage. Furthermore, upon insertion, the plug sleeve of metal shelled units, makes contact with detent springs of the grounded receptacle housing before line and load poles engage, and on withdrawal, remains in contact until after line and load poles disengage. Therefore, exposed metal parts of the portable equipment or plug are suitably grounded.

#### **Corrosive Locations:**

Section 300-6 of the National Electrical Code/Canadian Electrical Code requires that, under conditions favorable to corrosion, all equipment, including enclosures and conduit, be protected against corrosion since they form an essential grounding path. In alternating current systems, running a separate conductor, usually of copper, back to the common grounding electrode may be advisable. This may be run through the conduit containing the circuit conductors. At the receptacle, this grounding conductor should be connected to the extra (grounding) pole by the pressure connector provided for that purpose. Where such an extra grounding conductor is used, Style 2 receptacles should be used.

#### Standard Materials:

• Metallic receptacle housings, plug and cord connector bodies - high impact strength copper-free aluminum

• Nonmetallic receptacles, plugs and cord connectors - Krydon® fiberglass-reinforced polyester material

• Back boxes: 20, 30, 60, 100 and 200 ampere - cast aluminum; 400 ampere -Feraloy® iron alloy

• Insulation (metallic products): (2-, 3-, and 4-pole) 30, 60, 100, 200, 400 ampere fiberglass-reinforced polyester; 20, 30 ampere (5-pole) - melamine

 Contacts: pressure, solder, binding screw – brass; crimp/solder - leaded red brass; 20, 30, 60, 100 ampere - telurium copper; 200, 400 ampere

# Standard Finishes:

• Feraloy—electrogalvanized and aluminum acrylic paint

- Aluminum natural
- Krydon fiberglass-reinforced polyester material - grev
- Fiberglass-reinforced polyester insulation (red)
- Melamine natural (brown)
- Brass natural
- Leaded red brass electro-tin-plate

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# Arktite<sup>®</sup> Heavy Duty Circuit Breaking§ Plugs and Receptacles

**Industrial Heavy Duty Non-Hazardous Areas** 

### **Options:**

• The following special options are available from factory by adding suffix to Cat. No.:

Suffix to be Added to

Description	

Reversed contacts. Receptacle	
assembled with plug interior	
(exposed contacts), plug	
assembled with receptacle interior	
(recessed contacts). For	
applications where plug is	
energized to feed normally de-	
energized receptacle. Available on	
30 through 400 ampere units	S22
NOTE: 30 (2, 3, 4-pole), 60 and 100	
ampere interiors can be	
interchanged in the field using a	
screwdriver. Factory conversion is	
required for 200 and 400 ampere	
products.	
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Special polarity. For use where two or more receptacles of the same ampere rating, style and number of poles are to be installed in the same area for use on different voltages and/or frequencies. Prevents insertion of a plug in a receptacle with different electrical rating. Available on 20 through 400 ampere units as follows: Receptacle interior rotated 221/2 degrees to right and plug changed

# Accessories:

Accessories include a variety of angle adapters, panel adapters and back boxes for *Arktite* receptacles, listed on pages 957-959. Included are wire mesh cable grips and protective caps for *Arktite* plugs, listed on page 959.

# Certifications and Compliances:

• UL Standards: 1682, 514; 1010 (APJ and NPJ plugs only) • CSA Standard: C22.2 No. 182.1

#### Typical installation



## **Electrical Rating Ranges:**

- Voltage 600 vac, 50 to 400 hertz; 250 vdc
- Amperes 20, 30, 60, 100, 200 and 400

#### Maximum Horsepower Ratings

	Continuous Duty Ampere Rating	Motor Horsepower†				
Electrical System	Plug and Receptacle	120 Volts	240 Volts	480 Volts	600 Volts	
Single-phase	30 60 100 200	2 5 10 15	3 10 20 40	7.5 25	10 20	
Three-phase	30 60 100 200	3 10 15 30	5 20 30 60	10 40 40 25	10 50 25 15	

### Wire Sizes:

The table below lists the diameter of the wire recess in *Arktite* plug and receptacle contacts so that maximum size of bare conductor can be figured. Range of wire sizes shown in table is intended only as a guide. Depending on type of wire used (building wire, flexible or extra flexible cable) and its construction (number and size of strands), bare copper diameters vary widely.

#### **Diameter of Wire Recess in Plug and Receptacle Contacts**

Ampere	Contact	Diameter	Wire Size‡		
Rating	Туре	of Recess	Building	Extra Flex	
20	Binding Screw	N/A	#14-#12	#14-#12	
30 (2, 3, & 4-pole)	Pressure	.281	#10-#6	#10-#8	
30 (2, 3, & 4-pole)	Crimp/Solder*	.180	#10-#8**	#10-#8	
30 (5-pole)	Solder	.188	#12-#6	#12-#8	
60 (2, 3, 4 & 5-pole)	Pressure	.312	#6-#4	#8-#4	
60 (3 & 4-pole)	Crimp/Solder*	.277	#6-#4**	#8-#4	
100 (2, 3 & 4-pole)	Pressure	.390	#4-#1	#4-#2	
100 (3 & 4-pole)	Crimp/Solder*	.390	#2-#1**	#2-#2	
200 (Std. 3 & 4-pole)	Crimp/Solder	.56	#1-4/0	#1-3/0	
200 (Lg. 3 & 4-pole)	Crimp/Solder	.75	4/0-250MCM	3/0-250MCM	
400 (Std. 3 & 4-pole)	Crimp/Solder	.84	250-500MCM	250-400MCM	
400 (Lg. 3 & 4-pole)	Crimp/Solder	1.25	500-1000MCM	400-750MCM	

\* Optional—suffix "T"—see listing pages

\*\* Smaller sizes may be used with well reducers - information on request.

<sup>†</sup> Horsepower ratings are based on Crouse-Hinds testing in which locked-rotor currents were interrupted by withdrawing the plug from the receptacle. It is highly recommended, however, that such use be limited to emergency conditions only; and that a horsepower rated switch be used for motor disconnect.

‡ Do not use wire size smaller than minimum size recommended.

§ 400A rated units are for service disconnect use only.

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