

## Industrial Heavy Duty Non-hazardous Areas

### Applications:

Arktime circuit breaking plugs and receptacles are used:

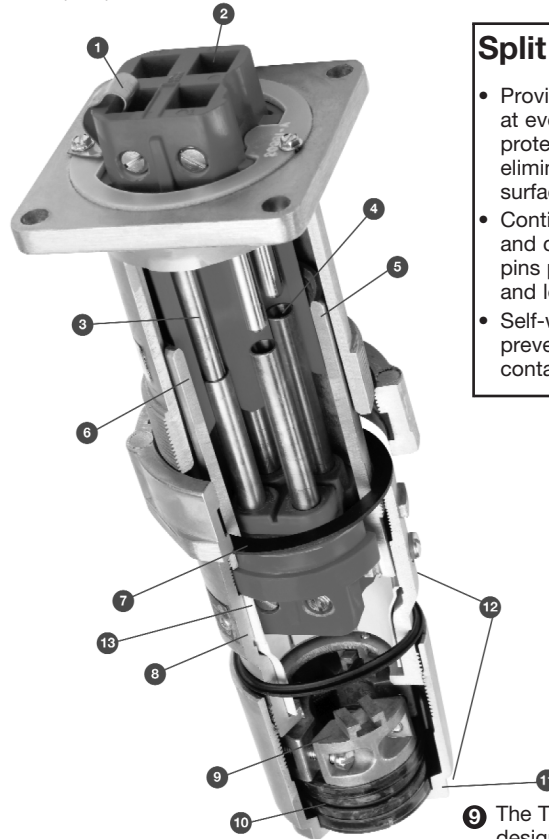
- To supply power to portable electrically operated devices such as motor-generator sets, compressors, heating and cooling units, welders, conveyors, lighting systems and similar equipment
- Where temporary power is needed, such as at trailers, building units, heavy machinery and similar equipment
- 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 Arktime 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 100 ampere rating may be disconnected under load; 150-400 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 mismatch, 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 effects of adverse environments.
- Reversible interiors, 30, 60 and 100 ampere (except 30 and 60 ampere, 5-pole) Arktime plug and receptacle interiors are interchangeable using a screwdriver. This makes it possible to feed a normally de-energized receptacle from an energized plug with usual Arktime safety; no energized contacts are exposed.

### Certifications and Compliances:

- UL Standards: 1203\*; 1682, 1686
- CSA Standard: C22.2 No. 182.1
- CE (LVD) 2006/95/EEC\*\*



### Split Pin Contact Design:

- Provides nearly 360° of contact at every insertion, ensuring protection against heat rise and eliminating arcing on critical surfaces
- Continuous contact over length and circumference of mated pins provides superior safety and long-term performance
- Self-wiping at every insertion to prevent environmental contamination build-up



### • The additional features below are called out in the illustration on this page

- 1 The ground contact is bonded to the receptacle housing (Style 2)
- 2 Unimpeded, easy-access phase and ground terminals make wire termination quick and easy
- 3 Grounding contacts that make-first and break-last in the unlikely event of keyway failure
- 4 An arc formed when the plug is being removed is instantly snuffed in the deep confined insulated arcing chamber
- 5 A detent spring forms a parallel grounding path through the metallic plug sleeve and receptacle housing and is the first contact to make and the last to break
- 6 The plug sleeve is keyed to the receptacle to prevent mispolarization
- 7 The gasketing system provides unsurpassed watertight integrity (NEMA 4)
- 8 All aluminum Uni-Shell™ construction provides superior strength in abusive environments
- 9 The Tri-Lock™ cable grip has 3-piece design that equally distributes gripping power around perimeter of cable. Cord jacket does not get pinched, eliminating potential for damage to both internal conductors and external cable jacket. Cable grip is located inside plug housing, eliminating corrosion of vital hardware and making plug maintenance easy.
- 10 The unique Sure-Seal™ cable gland has two gasket sizes which fit entire range of cable diameters, reducing risk of improper assembly. The gasket ratchets into the Tri-lock™ cable grip to prevent plug from turning or loosening in high vibration areas.
- 11 Wrenching surfaces make Arktime plugs quick and easy to assemble
- 12 Smooth and contoured design of plug housing eliminates occurrence of cable grip snagging or breaking off. Tri-Lock™ screws are captive so cable grip cannot come apart during assembly. Prevents critical screws from getting lost during installation.
- 13 Plastic sleeve between insulator body and housing minimizes possibility of electrical shock in event of ground failure. Increases creepage and clearance protection.

\* APJ and NPJ plugs only

\*\* Excludes 200A and 400A APR Connectors

## Delayed Action Circuit Breaking CPH Plugs

### Applications:

CES and CESD receptacles with CPH plugs are used:

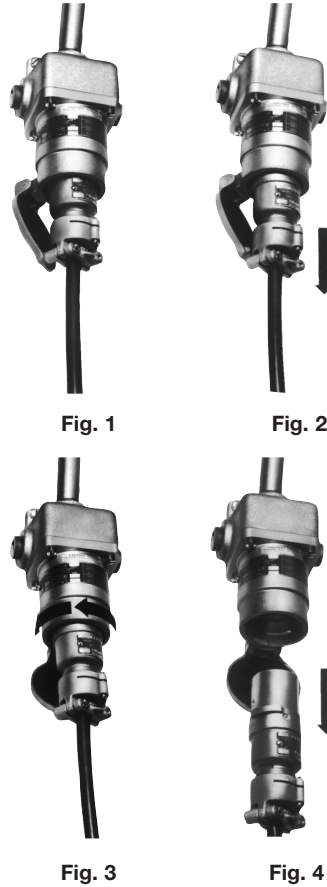
- With portable electrically operated devices such as motor-generator sets, compressors, conveyors, portable tools, lighting systems and similar equipment
- In locations which are hazardous due to the presence of flammable vapors or gases
- In damp or corrosive locations
- At petroleum refineries, chemical and petrochemical plants, and other process industry facilities where similar hazards exist

### Features:

- CES and CESD receptacles are equipped with a delayed action rotating sleeve which prevents complete withdrawal of the CPH plug in one continuous movement
- The delayed action feature permits the plug to be used as an emergency push-pull switch
- Details of operation are illustrated and described to the right:
- Receptacles are factory sealed to simplify installation and wiring. External seals are not required.
- The 30 ampere receptacles are provided with pressure terminals for field connection. The 60 ampere receptacles have flexible leads. Plugs are equipped with solder terminals.
- Two arrangements are provided for the 3/4" and 1 1/4" conduit hubs, as shown in the listings and dimensions see page 1310.

### Certifications and Compliances:

- NEC/CEC:  
 CES – Class I, Division 1 and 2, Groups C, D;  
 CESD – Class I, Division 1 and 2, Group D\*
- ANSI/UL Standard: 1010
- CSA Standard: C22.2 No. 182.1



**Figure 1** above shows a CES receptacle assembly with CPH plug fully engaged.  
**Figure 2** shows the plug withdrawn until it is stopped by the delayed action sleeve. In this position the circuit has been broken and the arc has been snuffed in the contact chambers.  
**Figure 3** shows the delayed action receptacle sleeve rotated approximately 45° to allow withdrawal of plug from receptacle.  
**Figure 4** shows the plug completely withdrawn. To accomplish this, the delayed action sleeve must be rotated counterclockwise. The time required to actuate the mechanism permits dissipation of the arc-generated heat before contacts and arcing chambers are opened to the atmosphere. When inserting the plug, the reverse procedure is followed.

### Options:

The following special options are available from the factory by adding the suffix to the Cat. #:

Description	Suffix
• 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. Receptacle interior rotated 22 1/2° clockwise when viewed from face and plug changed to match .....	<b>S4</b>

### Standard Materials:

- Back boxes – *Feraloy*® iron alloy
- Receptacle housings – 30 ampere – copper-free aluminum; 60 ampere – *Feraloy*® iron alloy
- Plug bodies – copper-free aluminum
- Insulation – *Krydon*® fiberglass-reinforced polyester
- Contacts – brass or hard-drawn copper

### Standard Finishes:

- *Feraloy* – electrogalvanized and aluminum acrylic paint
- Copper-free aluminum – natural
- *Krydon* material – red
- Brass and copper – natural

### Grounding:

- NEC article 501 and CEC Part 1 Section 18 require that metal frames or exposed non-current-carrying metal parts of portable devices used in hazardous locations be grounded through an extra conductor in the portable cord.
- CES and CESD receptacles and CPH plugs are provided with an extra grounding pole for attachment of the grounding wire. In the plugs, provision is made for attachment of the grounding wire to the grounding pole. In addition, direct connection is provided between plug and receptacle housings and the ground pole. In the receptacles, grounding is accomplished through the conduit system.

### Interchangeability of Plugs with Non-hazardous Location Receptacles:

- CPH plugs can also be used with standard AR and NR receptacles of the same ampere rating, style and number of poles, thus permitting portable devices which are suitable for use in hazardous locations to be connected to receptacles in both hazardous and non-hazardous areas
- Portable devices for non-hazardous areas equipped with APJ and NPJ *Arktite* plugs cannot be used with CES and CESD receptacles

### Electrical Rating Ranges:

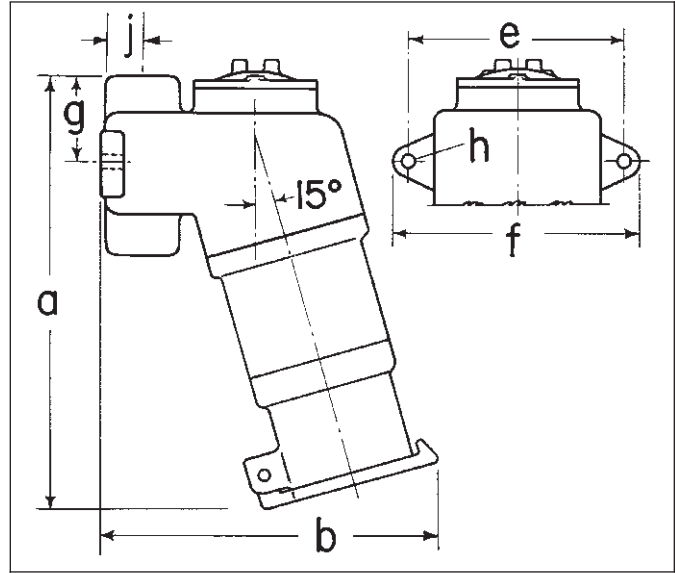
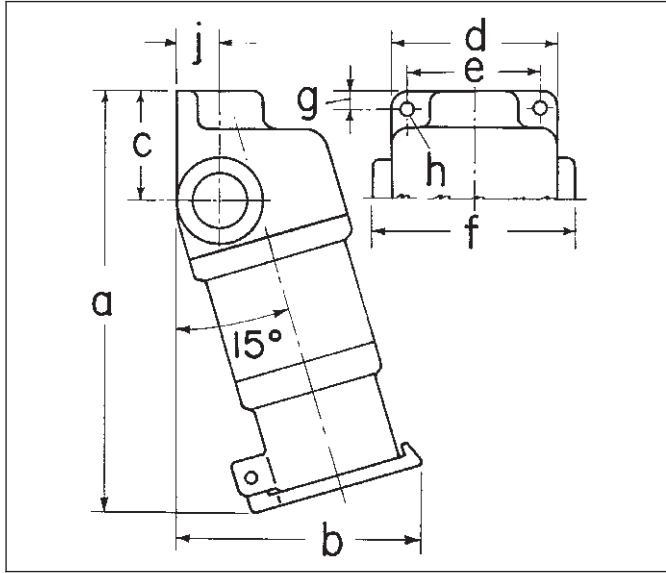
- 30 and 60 amperes



\*For U.S. CESD are also suitable for Class I, Group C when used with immediately adjacent seals.

**Delayed Action Circuit Breaking  
 CPH Plugs Dimensions**

**Dimensions  
 In Inches:**

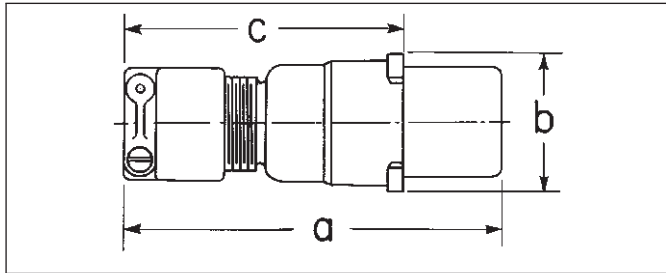


**CES**

Cat. #	a	b	c	d	e	f	g	h	j
CES2213									
CES2214	7 <sup>1</sup> / <sub>16</sub>	4 <sup>5</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>32</sub>	7 <sup>1</sup> / <sub>8</sub>
CES4233									
CES4234	12	7	2 <sup>7</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>4</sub>	4 <sup>3</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>32</sub>	1 <sup>1</sup> / <sub>8</sub>

**CESD**

Cat. #	a	b	e	f	g	h	j
CESD2213							
CESD2214	7 <sup>5</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>4</sub>	5	1 <sup>7</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>32</sub>	1 <sup>3</sup> / <sub>16</sub>
CESD4233							
CESD4234	13 <sup>1</sup> / <sub>2</sub>	9 <sup>5</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>4</sub>	3	1 <sup>3</sup> / <sub>32</sub>	1 <sup>9</sup> / <sub>16</sub>



**CPH**

Cat. #	a	b	c
CPH7713	6	2 <sup>3</sup> / <sub>8</sub>	4 <sup>5</sup> / <sub>16</sub>
CPH7913	6 <sup>7</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>4</sub>
CPH7714	6	2 <sup>3</sup> / <sub>8</sub>	4 <sup>5</sup> / <sub>16</sub>
CPH7914	6 <sup>7</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>4</sub>
CPH7733	7 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub>	5
CPH7933	8 <sup>1</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	5 <sup>5</sup> / <sub>8</sub>
CPH7734	7 <sup>3</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>16</sub>	5
CPH7934	8 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>16</sub>	5 <sup>5</sup> / <sub>8</sub>

2P

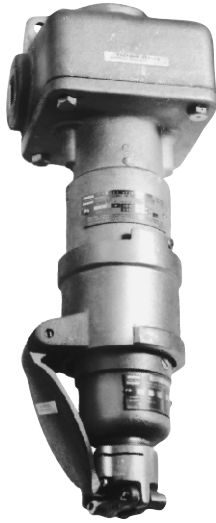
\*In U.S. CESD are also suitable for Class I, Group C when used with immediately adjacent seals.

# CES and CESD Arktite® Receptacles

## Delayed Action Circuit Breaking CPH Plugs

CESD – Cl. I, Div. 1 & 2, Group D\*  
 CES – Cl. I, Div. 1 & 2, Groups C, D  
 Explosionproof  
 Wet Locations  
 Factory Sealed

**2P**



CES Receptacles with three hubs – one on each side and one at top – and two pipe plugs with CPH plug fully engaged.



CESD Receptacles with vertical through feed hubs and one pipe plug. Removable threaded cover at top to facilitate pulling wires.

### CES/CESD Receptacles

Hub Size (In.)	Circuit	Phase	Max. HP	Max. Amps	Volts at 60 Cycles AC	CES Cat. #	CESD Cat. #
3/4	2-wire, 3-pole	1	1/2 1 1/2	7 30	480† 120 to 240	CES2213	CESD2213
3/4	3-wire, 4-pole	3	1 3	7 30	480† 120 to 240	CES2214	CESD2214
1 1/4	2-wire, 3-pole	1	3	30 60	480† 120 to 240	CES4233	CESD4233
1 1/4	3-wire, 4-pole	3	5	30 60	480† 120 to 240	CES4234	CESD4234



CPH Plugs with mechanical cable grip and neoprene bushing.

### CPH Plugs

Circuit	Phase	Max. HP	Max. Amps	Volts at 60 Cycles AC	Cable Diameter		
					.375 to .875	.500 to .875	.875 to 1.375
2-wire, 3-pole	1	1/2	7	480†	CPH7713		CPH7913
		1 1/2	30	120 to 240			
3-wire, 4-pole	3	1	7	480†	CPH7714		CPH7914
		3	30	120 to 240			
2-wire, 3-pole	1	3	30	480†		CPH7733	CPH7933
			60	120 to 240			
3-wire, 4-pole	3	5	30	480†		CPH7734	CPH7934
			60	120 to 240			

†CSA certified units are rated at 600 volts.

\*In U.S. CESD are also suitable for Class I, Group C when used with immediately adjacent seals.