

## 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 1362.

### 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



Fig. 1



Fig. 2



Fig. 3



Fig. 4

**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**Figure 2** shows the plug withdrawn until it is stopped by the delayed action sleeve.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**Figure 4** shows the plug completely withdrawn.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 ..... | S4     |

### 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

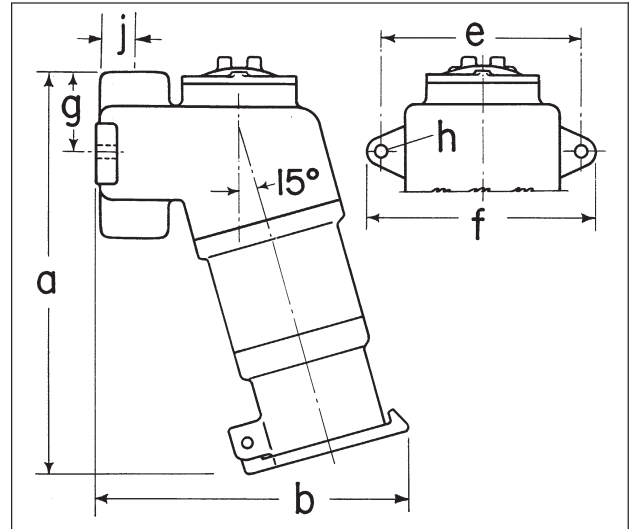
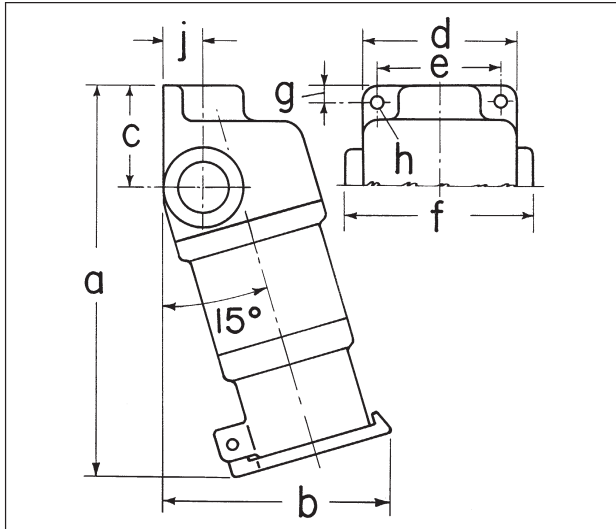
\*For U.S. CESD are also suitable for Class I, Group C when used with immediately adjacent seals.

# 2P CES and CESD Arktite® Receptacles

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

## Delayed Action Circuit Breaking CPH Plugs Dimensions

### Dimensions In Inches:

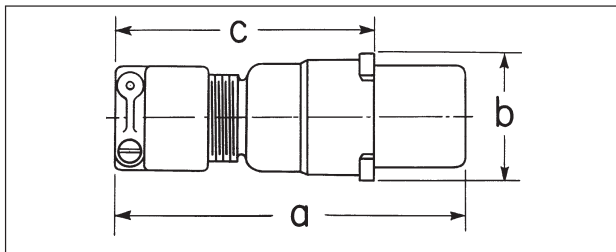


#### CES

Cat. #	a	b	c	d	e	f	g	h	j
CES2213	7 <sup>7</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>7</sup> / <sub>8</sub>
CES2214									
CES4233	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>
CES4234									

#### CESD

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



#### 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>3</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>3</sup> / <sub>8</sub>

2P

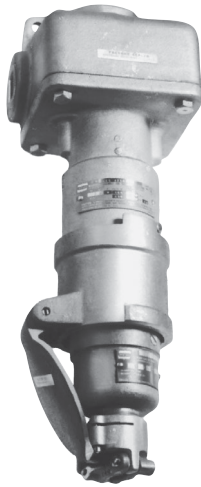
\*In U.S. CESD are also suitable for Class I, Group C when used with immediately adjacent seals.

# CES and CESD Arktite® Receptacles

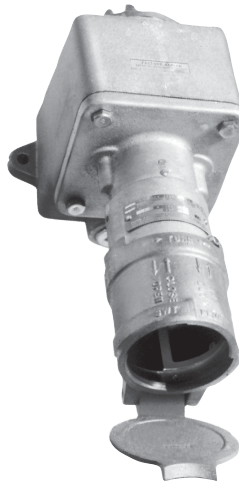
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**2P**

## Delayed Action Circuit Breaking CPH Plugs



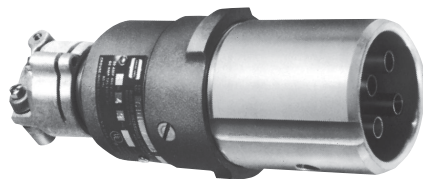
CES Receptacles with three hubs – one on each side and one at top – and two pipe plugs with CPH plug fully engaged.



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	<b>CES2213</b>	<b>CESD2213</b>
3/4	3-wire, 4-pole	3	1 3	7 30	480† 120 to 240	<b>CES2214</b>	<b>CESD2214</b>
1 1/4	2-wire, 3-pole	1	3	30 60	480† 120 to 240	<b>CES4233</b>	<b>CESD4233</b>
1 1/4	3-wire, 4-pole	3	5	30 60	480† 120 to 240	<b>CES4234</b>	<b>CESD4234</b>



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†	<b>CPH7713</b>		<b>CPH7913</b>
		1 1/2	30	120 to 240			
3-wire, 4-pole	3	1	7	480†	<b>CPH7714</b>		<b>CPH7914</b>
		3	30	120 to 240			
2-wire, 3-pole	1	3	30	480†		<b>CPH7733</b>	<b>CPH7933</b>
			60	120 to 240			
3-wire, 4-pole	3	5	30	480†		<b>CPH7734</b>	<b>CPH7934</b>
			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.