2P Plugs and Receptacles For Industrial Heavy Duty Hazardous Area Use

Application and Selection

Application:

● To connect portable or movable electrical equipment, such as motors, motor-generator sets, tools, light systems.

Considerations for Selection:

Environmental:
● The environment of the enclosure location in terms of NEC/CEC compliance.
● Material and construction to withstand rough usage and atmospheric conditions.
Electrical:†
● Sufficient current carrying capacity to meet load requirements.
● Compatibility with electrical system (new or existing installation).
● Interchangeability of plugs with other hazardous and non-hazardous area receptacles.
See ''Quick Selector'' below and ''Interchangeability Chart'' on page 1001 for guidance.

Options:

Special polarity arrangements available as options, as well as special back boxes and hub arrangements for some series. See listing pages for details.

Quick Selector Chart

Receptacle Series	NEC Compliances	Electrical Rating†		Mating Plug
		Poles	Amps & Volts	
CES, CESD	Cl. I, Division 1 and 2, Groups C,D	2-wire, 3-pole 3-wire, 4-pole	30A, 120-240VAC 7A, 460VAC①	CPH
			60A, 115-230VAC 30A, 460VAC①	
CPR	Non-Hazardous	2-wire, 3-pole	20A, 125-250VAC 20A, 18VDC	CPP
CPS	Cl. I, Division 1 and 2, Groups C,D	2-wire, 3-pole	20A, 125-250VAC 20A, 18VDC 30A, 125-250VAC 7A, 480VAC①	CPP
		3-wire, 4-pole	30A, 125-250VAC 7A, 460VAC①	CPP
DR	Cl. II, Division 1 and 2, Groups F,G	2-wire, 2-pole 2-wire, 3-pole 3-wire, 3-pole 3-wire, 4-pole 4-wire, 4-pole	30A, 480VAC	APJ, NPJ*
	Cl. II, Division 1 and 2, Groups F,G	2-wire, 3-pole 3-wire, 3-pole 3-wire, 4-pole 4-wire, 4-pole	60A, 480VAC	APJ, NPJ*
	Cl. I, Division 1 and 2, Groups C,D	2-wire, 3-pole 3-wire, 4-pole	60A, 480VAC	APJ, NPJ*
ENR	Cl. I, Division 1 and 2, Groups B,C,D Cl. II, Division 1 and 2, Groups F,G Cl. III	NEMA 5 & 6 Config.	20A, 125VAC 20A, 250VAC	ENP

WARNING: CPR *Arktite*® cable connectors are for use in non-hazardous areas only.

† If higher ratings are needed, refer to receptacles interlocked with safety switches and circuit breakers in Section 4P.
* NPJ plug is available in 2-wire, 3-pole and 3-wire, 4-pole ratings.
① CSA certified units are rated at 600 VAC.

Plugs and Receptacles For Industrial Heavy Duty Hazardous Area Use

Interchangeablility Chart

Interchangeability Chart

Many of the plugs listed in this section can be used interchangeably with receptacles from other sections, both in hazardous and non-hazardous areas, **provided electrical rating and style of plug and receptacle are the same.** The following table is a summary of possible combinations.

Plugs Shown in Section 2P	Can be Used with these Receptacle Series	Listed in Section	Plug & Receptacle Electrical Rating
APJ	AR, NR, NPR	1P	30 and 60 amp.
	DR	2P	2-wire, 3-pole
	FSQ, EPC, EPCB, EBBR	4P	3-wire, 4-pole
	DBR, WSR, NSR, NBR	3P, 4P	30 and 60 amp. 3-wire, 4-pole
CPH	AR, NR, NPR	1P	30 and 60 amp.
	DR	2P	2-wire, 3-pole
	FSQ, EPC, EPCB, EBBR	4P	3-wire, 4-pole
	DBR, WSR, NBR, NSR	3P, 4P	30 and 60 amp. 3-wire, 4-pole
CPP	AR, NR, NPR	1P	30 amp. 2-wire, 3-pole 3-wire, 4-pole
	DBR, WSR, NBR, NSR	3P, 4P	30 amp. 3-wire, 4-pole

Arktite® Circuit Breaking CPS Receptacles and CPP Plugs

Delayed Action
Factory Sealed

Cl. I, Div. 1 & 2, Groups C,D
Explosionproof
Wet Locations

Application:

CPS receptacles, angle and straight types, and CPP 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
- in petroleum refineries, chemical and petrochemical plants, and other process industry facilities where similar hazards exist

Features:

- The delayed action feature permits the plug to be used as an emergency push-pull switch
- CPS receptacles are equipped with a rotating mechanism which prevents complete withdrawal of the CPP plug in one continuous movement. Details of operation are illustrated and explained below

Fig. 1

Fig. 2

Fig. 3

Figure 1 shows a CPS angle type receptacle assembly with CPP plug fully engaged. **Figure 2** shows the plug withdrawn until it is stopped by the delayed action mechanism. In this position the circuit has been broken and the arc has been snuffed in the contact chambers. To completely withdraw the plug as shown in **Figure 3**, the delayed action release lever mush 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.
- CPS receptacles are factory sealed to simplify installation and wiring – external seals are not required
- Series 152 receptacles have top hinged cover design, with 45° downward angled receptacle housing, to provide superior environmental protection from accumulations of dust, snow, ice, and water
- Back boxes used for angle type receptacles are standard EDS bodies. Assemblies are listed with single and two gang bodies and dead end or through feed hubs – ½″ to 1″ sizes
- Back boxes used for straight type receptacles are available with a variety of hub arrangements in ½″ and ¾″ sizes
- **All receptacles and 30 ampere plugs are provided with pressure terminals for ease of field wiring. 20 ampere plugs have solder terminals.**

Grounding:

- NEC Article 501 and CEC Part 1 Section 18 requires 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
- CPS receptacles and CPP plugs are provided with an extra grounding pole
- In 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 grounding pole. In the receptacle, grounding is accomplished through the conduit system

Interchangeability of Plugs with Non-Hazardous Location Receptacles:

- 30 ampere CPP plugs can also be used with standard 30 ampere AR Arktite receptacles of the same style and number of poles, thus permitting portable devices suitable for use in hazardous locations to be connected to receptacles in both hazardous and non-hazardous areas

NOTE: Equipment to be used in hazardous areas must be suitable for use in the specific hazardous location.

Standard Materials:

- Receptacle housings – die cast copper-free aluminum
- EDS Back boxes – *Feraloy*® iron alloy (U.S.)/Copper-free aluminum (Canada)
- Other back boxes – Feraloy iron alloy
- Plug exteriors – copper-free aluminum or Krydon® fiberglass-reinforced polyester material. See listings
- Insulation – all receptacles and plugs – Krydon fiberglass-reinforced polyester material
- Pressure or solder contacts – brass
- Crimp/solder contacts – leaded red brass

Standard Finishes:

- Copper-free aluminum – aluminum acrylic paint.
- *Feraloy* – electrogalvanized and aluminum lacquer
- Fiberglass-reinforced polyester – natural (red, white)
- Brass – natural
- Leaded red brass – electro-tin-plate

Electrical Rating Ranges:

- Angle type – 20 and 30 amperes; 125 and 250 VAC
- Straight type – 20 amperes; 125 and 250 VAC

Certifications and Compliances:

- NEC/CEC: Class I, Division 1 and 2, Groups C,D
- UL Standard: 1010
- CSA Standard C22.2 No. 30

Arktite® Circuit Breaking CPS Receptacles and CPP Plugs

Delayed Action
Factory Sealed

Cl. I, Div. 1 & 2, Groups C,D
Explosionproof
Wet Locations

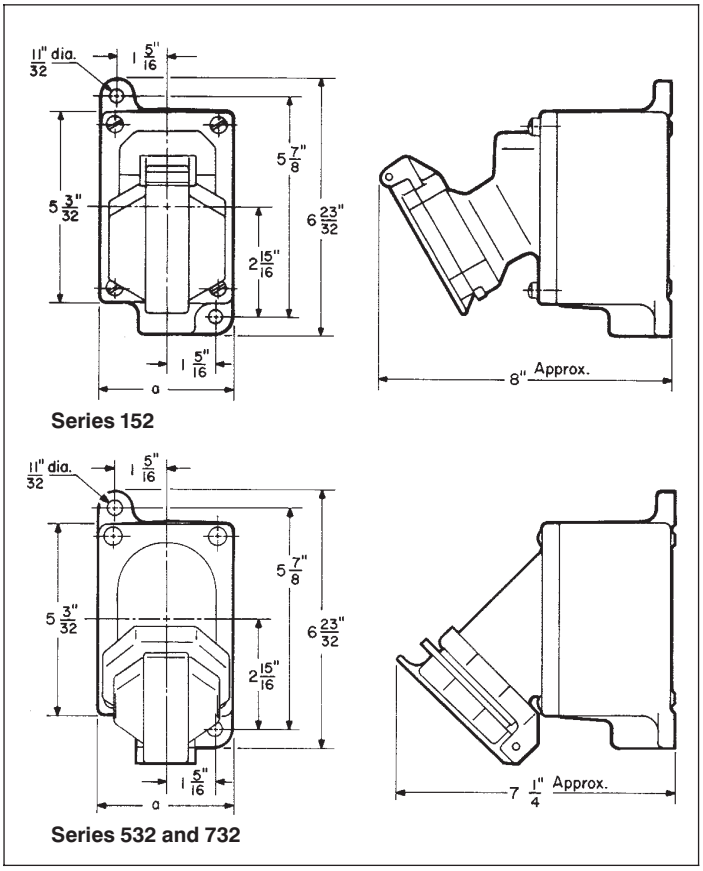
Options:

● Material: copper-free aluminum, natural finish, is available on certain back boxes. See listings. Add suffix SA to Cat. No.

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

Description	Suffix to be Added to Cat. #
Receptacle interior rotated 22½ degrees to right (viewed from face) and plug changed to match. 30 ampere units only	S4
Combination of receptacles and EFS/EFD or EDS series devices, such as pilot lights, switches, push button stations, etc., can be furnished using three, four and five gang bodies	Specify
Hub arrangements other than those listed can be supplied	Specify

Dimensions

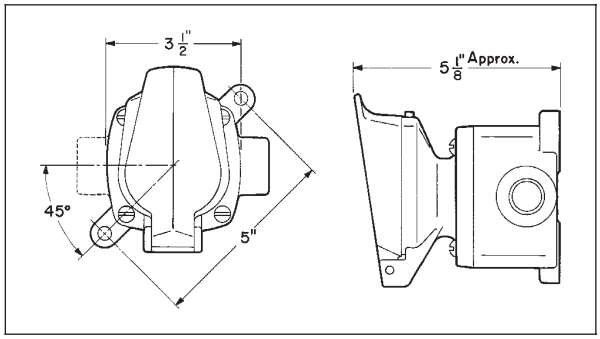


Series 152

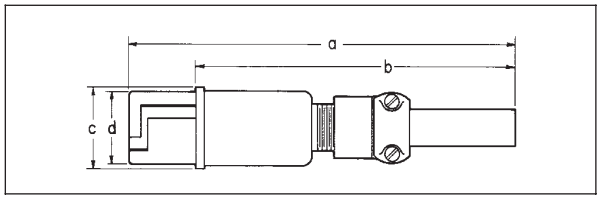
Series 532 and 732

Angle type receptacles

a = 3½ for single gang
7 3/16 for two gang



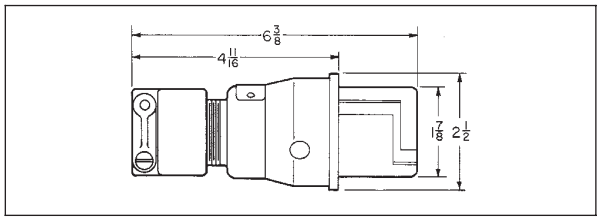
Straight type receptacles



20 Ampere plugs

Cat. #	a†	b†	C	d
CPP516	8⅜	6⅞	1¾	1 9/16
CPP512	7	5½	1¾	1 9/16

†These dimensions are approximate and vary with cable size.

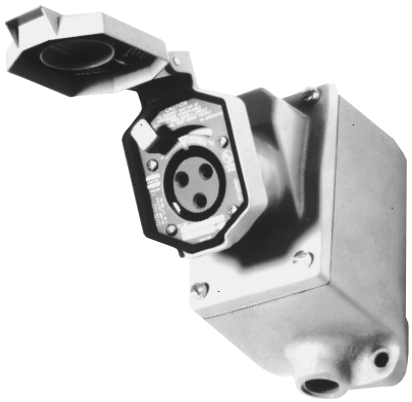


30 Ampere plugs

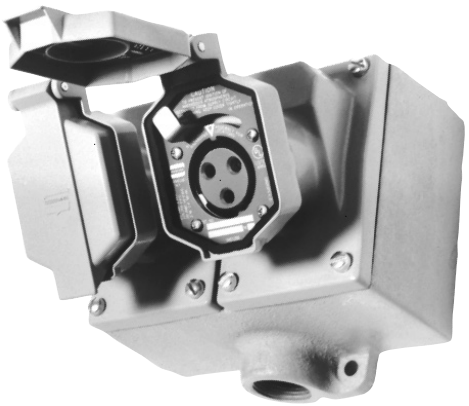
Arktite® Circuit Breaking CPS Receptacles and CPP Plugs

Delayed Action
Factory Sealed

Cl. I, Div. 1 & 2, Groups C,D
Explosionproof
Wet Locations

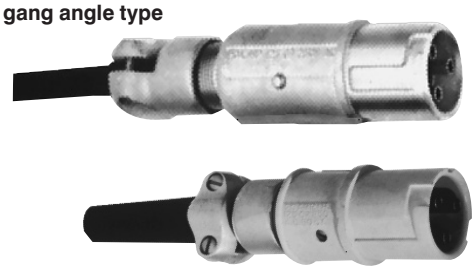


CPS152 – Single gang angle type



CPS152 – Two gang angle type

CPS152R – Receptacle unit only



CPP plugs with
mechanical cable grip and Neoprene bushing

Style 2 – Grounded through extra pole and shell

Rating	Description		Hub Size	Single Gang Receptacle Assembly Cat. #	Two Gang Receptacle Assembly Cat. #	Cable Dia.	Plug With Aluminum Handles Cat. #	Plug With High Impact Molded Composition Handle Cat. #	Receptacle Unit only Cat. #
20A, 1 HP, 125-250VAC, 60 hertz, 20A, 18VDC	2-wire, 3-pole	Dead End	½	CPS152-101*	CPS152-102*	† .312 to .625	CPP516 ♦	CPP512 ♦	CPS152R
			¾	CPS152-201*	CPS152-202*				
			1	CPS152-301*	CPS152-302*				
		Through Feed	½	CPS152-111*	CPS152-112*				
			¾	CPS152-211*	CPS152-212*				
			1	CPS152-311*	CPS152-312*				
30A, 1½ HP, 125-250VAC, 60 hertz, 7A, ½ HP, 480VAC①, 60 hertz	2-wire, 3-pole	Dead End	½	CPS532-101	CPS532-102	† .375 to .875	CPP4553		CPS532R
			¾	CPS532-201	CPS532-202				
			1	CPS532-301	CPS532-302				
		Through Feed	½	CPS532-111	CPS532-112				
			¾	CPS532-211	CPS532-212				
			1	CPS532-311	CPS532-312				
30A, 3 HP, 125-250VAC, 60 hertz, 7A, 1 HP, 480VAC①, 60 hertz	3-wire, 4-pole	Dead End	½	CPS732-101	CPS732-102	† .375 to .875	CPP4752		CPS732R
			¾	CPS732-201	CPS732-202				
			1	CPS732-301	CPS732-302				
		Through Feed	½	CPS732-111	CPS732-112				
			¾	CPS732-211	CPS732-212				
			1	CPS732-311	CPS732-312				

* Back boxes are available in copper-free aluminum. To order, add suffix SA to the Cat. No.
① CSA certified units are rated at 600 VAC at 7A.

† Receptacles will take any of the plugs grouped in the bracket opposite the receptacle listings.

♦ 20 amp plugs are furnished with solder terminations at standard, ground contacts have pressure terminations.

CPS straight type shown with plug

Style 2 – Grounded through extra pole and shell
2-wire, 3-pole
20A, 1HP, 125-250VAC, 60-400 hertz, 20A, 18VDC

CPS Dead End

Hub Size	Assembly Cat. #	Body Cat. #
½	CPS14-120	CPS120
¾	CPS14-20	CPS20

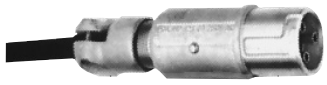
CPS Through Feed

Hub Size	Assembly Cat. #	Body Cat. #
½	CPS14-121	CPS121
¾	CPS14-21	CPS21

CPS Receptacle Unit

With Spring Door

Cat. # CPS14R



With aluminum handle

With high impact molded composition handle

CPP Plugs

With Mechanical Cable Grip and Neoprene Bushing

Cable Dia.	Aluminum Cat. #	Composition Cat. #
.312 to .625	CPP516	CPP512

2P Arktite® CPR Cable Connector Receptacles Delayed Action Circuit Breaking

Application:

CPR *Arktite* delayed action cable connector receptacles are used in **non-hazardous areas only*:**

- to make up adapter sets for connecting portable devices having CPP plugs to receptacles in non-hazardous areas. This is accomplished by equipping one end of the length of cable with the CPR receptacle and the other with a plug to mate with the receptacle in the non-hazardous area.
- to make up extension cords using the CPR receptacle at one end and a CPP plug at the other

Features:

- Spring door housing with the same delayed action rotating mechanism provided in CPS receptacles listed on pages 1002 through 1005
- Pressure terminals are furnished for ease of wiring
- Gland nut with mechanical cable grip and bushing for effective strain relief

Standard Materials:

- Housing – copper-free aluminum
- Insulation – fiberglass-reinforced polyester
- Contacts – brass

Standard Finishes:

- Copper-free aluminum – natural
- Fiberglass-reinforced polyester – natural (red)
- Brass – natural

* CSA certified unit suitable for Class I Groups C and D (not available in USA).

Style 2 – Grounded through extra pole and shell. For use with CPP516 and CPP512 series plugs listed on page 1005.

Description	Rating	Cable Dia.	Cat. #
2-wire, 3-pole	20A, 1HP, 125-250VAC, 60 hertz 20A, 18 VDC	.375 to .625	CPR154

ENR Dead Front Interlocked Circuit Breaking Receptacles

ENP Plugs General Purpose Ark●Gard® 2; Factory Sealed

Cl. I, Div. 1 & 2, Groups B†,C,D
Cl. II, Div. 1 & 2, Groups F,G
Cl. III
NEMA 3,7BCD,9FG,12

Explosionproof
Dust-Ignitionproof
Raintight
Wet Locations

Application:

ENR receptacles and ENP plugs are used:
- with portable electrical equipment such as compressors, tools, lighting systems, and similar devices
- in areas made hazardous by the presence of flammable vapors and gases or combustible dusts
- wherever portable electrical equipment is likely to be transferred from hazardous to nonhazardous areas
- in damp and corrosive areas
- when power requirements do not exceed 20 amperes
- where general purpose application is required

Features:

- *Ark•Gard 2* receptacle incorporates three spring-loaded slide keys that prevent the receptacle face plate from being rotated until the ENP plug is fully inserted into the receptacle. To make the connection, the ENP plug is fully inserted; and the receptacle face moved inward by pushing the plug forward (**Fig. 1**). The plug is then rotated, (**Fig. 2**), closing the circuit. As rotation begins, the plug becomes locked in the receptacle and cannot be accidentally disengaged. In making or breaking the circuit, any resulting electrical arc is confined in the factory-sealed chamber.
- Factory-sealed chamber encloses the potential arcing components between two explosion-proof threaded joints. These threads are specially coated to guarantee freedom of movement, which ensures on-off action. No additional seals are required.
- One piece molded gasket seals cover plate and ENP plug when plug is inserted, providing full environmental protection at the receptacle face.
- Top-hinged cover design with 45° downward angle provides superior protection in damp, wet, and dirty locations.
- Molded-in contact design provides superior interior contact reliability.
- ENP plugs can be used in nonhazardous areas with standard U-ground NEMA/EEMAC configuration 5 and 6 receptacles, eliminating the need for two separately equipped portable units of the same type. The ENR receptacle will not accept standard NEMA/EEMAC configuration plugs.
- ENP plug handle body is designed with an internal cord strain relief mechanism and a cable sealing grommet which will accept various cable diameters.
- Field assembly is accomplished with standard tools.
- Use standard EDS back boxes.

† Single gang receptacles purchased as a complete assembly with EDS back box are suitable for Class I, Group B usage. Two gang receptacles can be modified for Class I, Group B usage. Add the letter B to Cat. No. Example: ENRB22201. Seals must be installed within 1½″ of each conduit opening. Receptacle units only (ie. ENR5201) are not suitable for Class I, Group B.

Figure 1

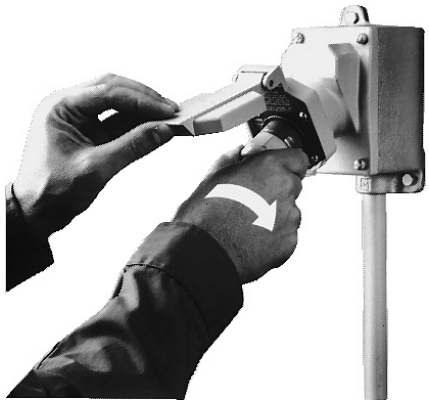


Figure 2

Grounding:

- NEC Article 501 and CEC Section 18 requires 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. ENR receptacles and ENP plugs are provided with an extra grounding pole.

Standard Materials:

- Receptacle housing, spring door and plug body – die cast copper-free aluminum
- Interiors: receptacle – *Krydon*® fiberglass-reinforced polyester material; plugs – nylon 100
- Contacts: receptacle blade – brass; receptacle switch – silver; plug – brass
- Receptacle cover hinge pin and spring – stainless steel
- Receptacle gasket – neoprene
- Plug bushing – neoprene

Standard Finishes:

- Copper-free aluminum – aluminum acrylic paint
- Brass – natural

Electrical Rating Ranges:

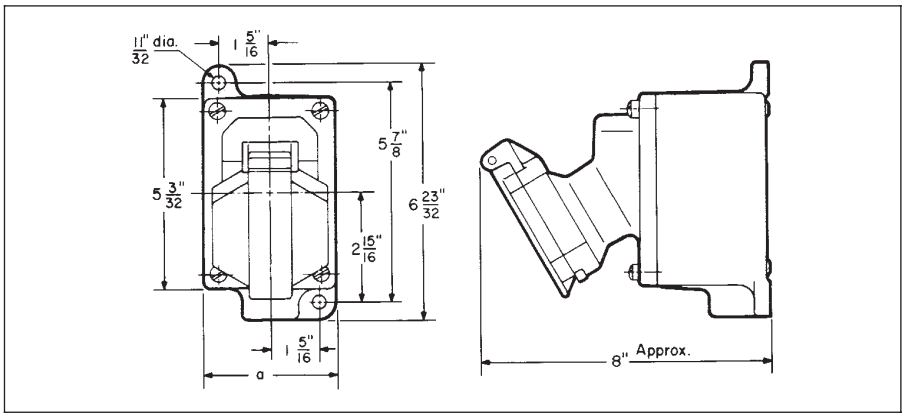
- Receptacles – 20 amperes; 125 vac and 250 vac, 50-400 hertz
- Plugs – 15 amperes; 125 vac and 250 vac, 50-400 hertz
  20 amperes; 125 vac and 250 vac, 50-400 hertz

Certifications and Compliances:

- NEC:
  Class I, Division 1 and 2, Groups B†,C,D
  Class II, Division 1 and 2, Groups F,G
  Class III
- ANSI/UL Standard 1010
- NEMA/EEMAC 3,7BCD,9FG
- CEC:
  Class I, Division 1 and 2, Groups B, C, D
  Class II, Division 1 and 2, Group G
  Class III

CAUTION: To reduce the risk of ignition of hazardous atmospheres, do not use plugs or receptacles in Class II, Group F locations that contain electrically conductive dusts.

Dimensions



a=3½ for single gang; 7⁹⁄₁₆ for two gang.

US: 1-866-764-5454 CAN: 1-800-265-0502

ENR Dead Front Interlocked Circuit Breaking Receptacles

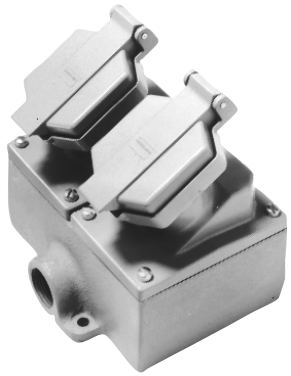
ENP Plugs General Purpose (For US NEC Applications); Ark•Gard® 2; Factory Sealed

Cl. I, Div. 1 & 2, Groups B*,C,D
Cl. II, Div. 1 & 2, Groups F,G
Cl. III
NEMA 3,7BCD,9FG,12

Explosionproof
Raintight
Wet Locations
Dust-Ignitionproof

ENR single gang dead end assembly

ENR single gang dead end assembly with spring door open



ENR two gang dead end assembly

ENR two gang dead end assembly with one spring door open

ENR receptacle only, with spring door open

ENP plug

Receptacle Rating	Description	Hub Size	Single Gang Receptacle Assembly Cat. # ‡	Two Gang Receptacle Assmebly Cat. # ‡	Receptacle Unit Only Cat. #	NEMA Config.	15 Amp Plug Cat. #	NEMA Config.	20 Amp Plug Cat. #	NEMA Config.
20 amp, 125 volt	Dead End	½	ENR11201	ENR12201	ENR5201	5-20R	ENP5151	5-15P	ENP5201	5-20P
		¾	ENR21201	ENR22201						
		1	ENR31201	ENR32201						
	Through Feed	½	ENRC11201	ENRC12201						
		¾	ENRC21201	ENRC22201						
		1	ENRC31201	ENRC32201						
20 amp, 250 volt	Dead End	½	ENR11202	ENR12202	ENR6202	6-20R	ENP6152	6-15P	ENP6202	6-20P
		¾	ENR21202	ENR22202						
		1	ENR31202	ENR32202						
	Through Feed	½	ENRC11202	ENRC12202						
		¾	ENRC21202	ENRC22202						
		1	ENRC31202	ENRC32202						

* Single gang receptacles purchased as a complete assembly with EDS back box are suitable for Class I, Group B usage. Two gang receptacles can be modified for Class I, Group B usage. Add the letter B to Cat. No. Example: ENRB22201. Seals must be installed within 1½" of each conduit opening. Receptacle units only (ie. ENR5201) are not suitable for Class I, Group B.

‡ With Feraloy® Iron Alloy EDS, EDSC back boxes.

ENR Dead Front Interlocked Circuit Breaking Receptacles

ENP Plugs; General Purpose (For CEC Applications) Ark•Gard® 2; Factory Sealed

Cl. I, Div. 1 & 2, Groups B*,C,D Explosionproof
Cl. II, Div. 1 & 2, Group G Raintight
Cl. III Wet Locations
EFC 3,7BCD,9G,12 Dust-Ignitionproof

ENR single gang dead end assembly

ENR single gang dead end assembly with spring door open

ENR two gang dead end assembly

ENR two gang dead end assembly with one spring door open

Receptacle Rating	Description	Hub Size	Single Gang Receptacle Assembly Cat. # ‡	Two Gang Receptacle Assembly Cat. # ‡	Receptacle Unit Only Cat. #	EEMAC Config.	Plug Cat. #	EEMAC Config.
15 amp, 125 volt	Dead End	½	ENR11151	ENR12151	ENR5151	5-15R	ENP5151	5-15P
		¾	ENR21151	ENR22151				
		1	ENR31151	ENR32151				
	Through Feed	½	ENRC11151	ENRC12151				
		¾	ENRC21151	ENRC22151				
		1	ENRC31151	ENRC32151				
15 amp, 250 volt	Dead End	½	ENR11152	ENR12152	ENR6152	6-15A	ENP6152	6-15P
		¾	ENR21152	ENR22152				
		1	ENR31152	ENR32152				
	Through Feed	½	ENRC11152	ENRC12152				
		¾	ENRC21152	ENRC22152				
		1	ENRC31152	ENRC32152				
20 amp, 125 volt	Dead End	½	ENR11201	ENR12201	ENR5201	5-20R	ENP5201	5-20P
		¾	ENR21201	ENR22201				
		1	ENR31201	ENR32201				
	Through Feed	½	ENRC11201	ENRC12201				
		¾	ENRC21201	ENRC22201				
		1	ENRC31201	ENRC32201				
20 amp, 250 volt	Dead End	½	ENR11202	ENR12202	ENR6202	6-20R	ENP6202	6-20P
		¾	ENR21202	ENR22202				
		1	ENR31202	ENR32202				
	Through Feed	½	ENRC11202	ENRC12202				
		¾	ENRC21202	ENRC22202				
		1	ENRC31202	ENRC32202				

* Single gang receptacle units can be modified for Class 1, Group B usage. Add suffix B to the Cat. No. Example: ENRB11201. Seals must be installed immediately adjacent to each conduit opening.

‡ 15A With Copper-free aluminum EDS, EDSC back boxes. 20A with *Feraloy*® iron alloy EDS, EDSC back boxes

2P GFS Ground Fault Circuit Interrupter

Cl. I, Div. 1 & 2, Groups C,D
Cl. II, Div. 1, Groups E,F,G
Cl. II, Div. 2, Groups F,G
Cl. III
NEMA/EFC 7CD,9EFG,12

Explosionproof
Dust-Ignitionproof

Application:

GFS ground fault circuit interrupters are used:

- with portable electrical equipment such as tools, lighting systems, compressors and similar devices for personnel protection
- in areas made hazardous by the presence of flammable vapors, gases or combustible dusts
- in branch circuits of 15 to 20 amperes at 125 volts AC
- in conjunction with ENR or CPS152 receptacles

Features:

- Factory sealed chamber encloses the ground fault circuit interrupter (GFCI) and its potentially arcing components in an enclosure with explosion-proof ground joints. No additional sealing is required when proper body is used.
- GFCI protects personnel against possible injury due to unwanted ground faults; meets requirements for personnel protection as defined in the *National Electrical Code*®.
- GFCI is feed-through type to serve several receptacles.
- Decentralized GFCI protection on branch circuits permits immediate identification of circuit where a ground fault is occurring; does not interrupt power on total branch circuit if tripped or when periodically tested; significantly reduces incidence of nuisance tripping; provides for use of 125 VAC portable lighting even when working on metal floors or catwalks.
- Field installation is accomplished with standard tools.
- Can be installed on any Cooper Crouse-Hinds single or multiple gang EDS or EDSC device box.

Standard Materials:

- Cover – sand cast copper-free aluminum
- Sealing well – die cast copper-free aluminum
- Pushbuttons and guards – stainless steel
- Shaft seals – neoprene
- Interior – body – polycarbonate; contacts – brass

Standard Finishes:

- Copper-free aluminum – aluminum lacquer
- Stainless steel – natural
- Polycarbonate – natural (ivory)
- Brass – natural

Electrical Rating Ranges:

- 20 amperes
- 125 VAC
- 5 milliampere trip setting
- Class A per ANSI/UL943

Certifications and Compliances:

- NEC/CEC:
  Class I, Division 1 and 2, Groups C,D
  Class II, Division 1, Groups E,F,G
  Class II, Division 2, Groups F,G
  Class III
- ANSI/UL Standard: 943, 1203
- NEMA/EEMAC 7CD, 9EFG, 12
- CSA Standard C22.2 No. 30, 144

Ordering Information

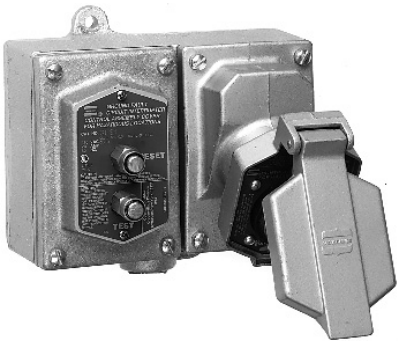
Amps	Description	Cat. #
20	Factory-sealed ground fault circuit interrupter – 5 milliampere trip	GFS-1

Application Recommendations:

GFS-1 can be installed in an EDS back box (pg. 397) for point-of-use protection or for protection of downstream receptacles.

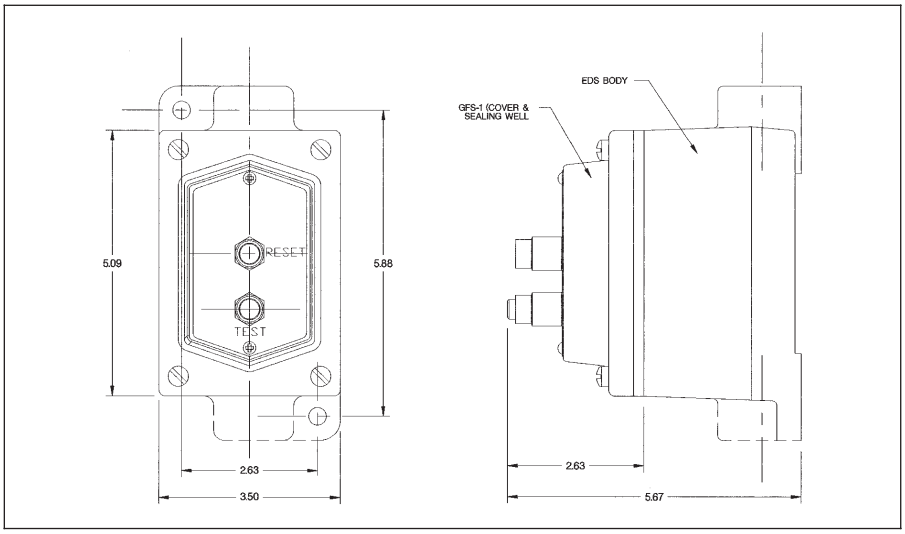
GFS-1 with EDS271 back box

GFS-1 can be used with ENR or CPS receptacles and EDS back box for circuit interrupter protection of portable equipment.



GFS-1 with EDS172 back box and ENR5201 receptacle

Dimensions



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

Application:

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 below:

Fig. 1

Fig. 2

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.

Fig. 3

Fig. 4

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.
- 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 ¾″ and 1¼″ conduit hubs, as shown in the listings and dimensions on page 1012.

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 locatioins 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

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

Electrical Rating Ranges:

- 30 and 60 amperes

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

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

Options:

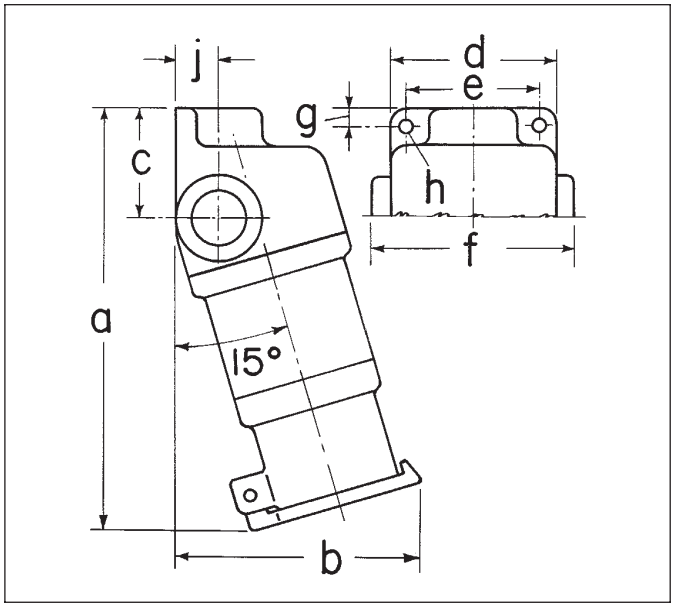
- The following special options are available from factory by adding suffix to Cat. No.:

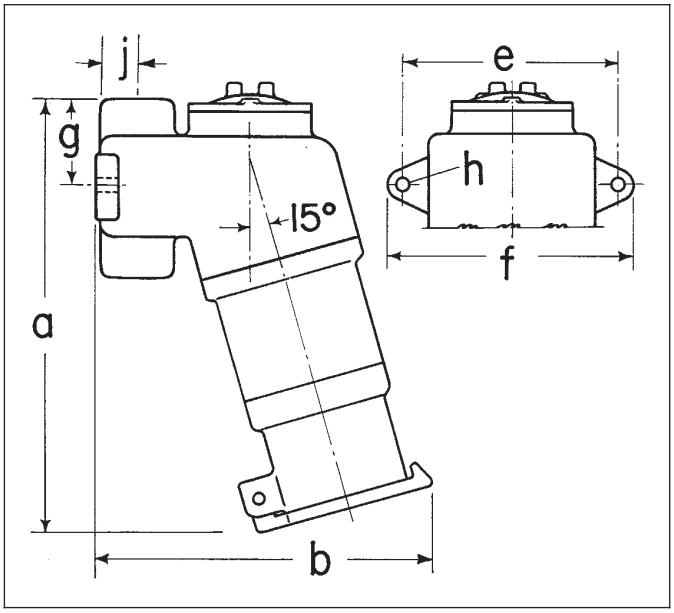
Description	Suffix to be Added to Cat. #
Special polarity – for use where two or more receptacles of the same ampere rating, style and number of poles are to be installed in the same area for use on different voltages. Available as follows: Receptacle interior rotated 22½ degrees clockwise when viewed from face and plug changed to match	S4

CES and CESD Arktite Receptacles

Circuit Breaking
Delayed Action, CPH Plugs
Dimensions

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



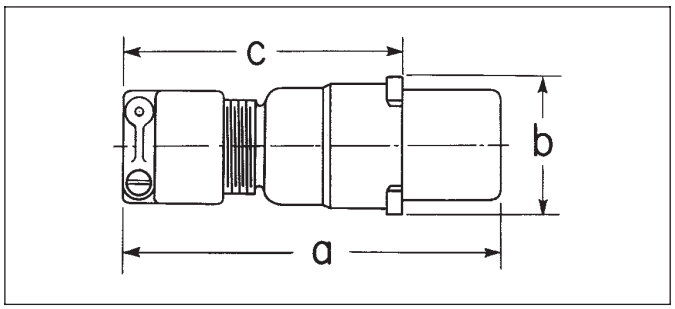


CES

Cat. #	a	b	c	d	e	f	g	h	j
CES2213									
CES2214	7 7/16	4 5/8	2 3/16	3 3/8	2 3/4	4 1/8	5/16	11/32	7/8
CES4233									
CES4234	12	7	2 7/8	5 1/4	4 3/8	6 1/8	7/16	13/32	1 1/8

CESD

Cat. #	a	b	e	f	g	h	j
CESD2213							
CESD2214	7 5/8	6 3/8	4 1/4	5	1 7/8	11/32	13/16
CESD4233							
CESD4234	13 1/2	9 5/8	6 1/4	7 1/4	3	13/32	1 3/16



CPH

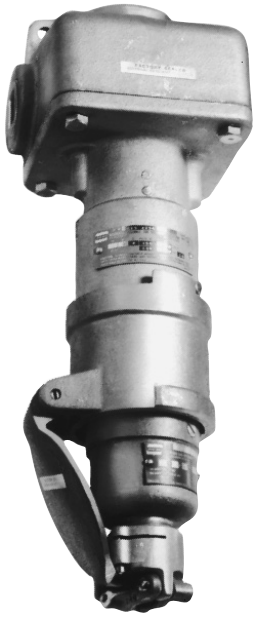
Cat. #	a	b	c
CPH7713	6	2 3/8	4 5/16
CPH7913	6 7/16	2 3/8	4 3/4
CPH7714	6	2 3/8	4 5/16
CPH7914	6 7/16	2 3/8	4 3/4
CPH7733	7 3/4	2 3/4	5
CPH7933	8 1/8	2 3/4	5 3/8
CPH7734	7 3/4	3 1/16	5
CPH7934	8 1/8	3 1/16	5 3/8

* 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



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	Circuit	Phase	Max. HP	Max. Amps	Volts at 60 Cycles AC	CES Cat. #	CESD Cat. #
¾	2-wire, 3-pole	1	½	7	480①		
			1½	30	120 to 240	CES2213	CESD2213
¾	3-wire, 4-pole	3	1	7	480①		
			3	30	120 to 240	CES2214	CESD2214
1¼	2-wire, 3-pole	1	3	30	480①		
				60	120 to 240	CES4233	CESD4233
1¼	3-wire, 4-pole	3	5	30	480①		
				60	120 to 240	CES4234	CESD4234

CPH Plugs with mechanical cable grip and Neoprene bushing

CPH Plugs

Circuit	Phases	Max. HP	Max. Amps	Volts at 60 Cycles AC
2-wire, 3-pole	1	½	7	480①
		1½	30	120 to 240
3-wire, 4-pole	3	1	7	480①
		3	30	120 to 240
2-wire, 3-pole	1	3	30	480①
			60	120 to 240
3-wire, 4-pole	3	5	30	480①
			60	120 to 240

CABLE DIA.

.375 to .875	.500 to .875	.875 to 1.375
CPH7713		CPH7913
CPH7714		CPH7914
	CPH7733	CPH7933
	CPH7734	CPH7934

* In U.S. CESD are also suitable for Class I, Group C when used with immediately adjacent seals.
① CSA certified units are rated at 600 volts.