

## Receptacles and Plugs: Explosionproof

For use with Threaded Metal Conduit.

### Applications

- Locations where receptacles are used with stationary or portable electrically operated devices such as lighting systems, conveyors, heaters, motor-generator sets, air conditioners, compressors and pumps.
- Locations where damp or corrosive conditions are encountered.
- Class I- classified areas such as petrochemical plants, petroleum refineries, paint and chemical plants or any location where ignitable vapors or gases are present.
- Class II- locations such as process industries where there are dust hazards from handling such products as flour, grain and starch or any location where ignitable amounts of dust are present or amounts which would adversely affect performance.

### Features

- Appleton's Interchanger™ plug mates with Killark® "UGR" Series and Crouse-Hinds® "ENR" Series receptacles.
- Factory sealed- external seals not required (except EBR, EBRH, DBR, FSQX, JBR, MD2SR). Arcing, if any, is safely confined to receptacle interior.
- U-Line® offers choice of aluminum receptacle with malleable iron mounting box or all malleable iron receptacle and box.
- Energized receptacle contacts deeply recessed to reduce danger of accidental touching.
- Positive polarization: only plugs of the same style, number of poles and ampere rating may be used with these receptacles.
- Grounding through extra pole and shell for extra safety.
- Spring door keeps dust out of receptacle when plug is not in use (CPS, CES/CESD, EBR, EBRH, DBR MD2SR and JBR). U-line® receptacle is supplied with spring door with hinge at top, which may be rotated 180° or completely removed. (See page L-4 for full description of U-Line® features.) FSQX has screw cap fastened to chain.
- Unique design brass contacts exert constant pressure along entire contact surface and provide superior electrical contact.

### Class I, II, III



U-Line® /  
Contender®  
U-Line  
20 Ampere,  
Dead Front



FSQX  
30 Ampere,  
Interlocked  
Switch and  
Cover,  
Dead Front

EBRH, EBR  
30-, 60-, and 100-Ampere,  
Interlocked, Disconnect  
Switch or Interlocked  
Circuit Breaker, Dead Front



JBR  
30- and 60-  
Ampere,  
Interlocked  
Disconnect Switch,  
Dead Front



EFSR-GFI / ENR-GFI  
Factory Sealed, Explosionproof,  
Dust-Ignitionproof, Ground Fault  
Circuit Interrupter



### Class II, III



DBR  
30-, 60-, and 100-Ampere,  
Interlocked Disconnect  
Switch or Interlocked  
Circuit Breaker, Dead Front

### Class I



CPS®  
20 Ampere,  
Dead Front

Contender®  
CPS® 20 Ampere  
Delayed Action



CES / CESD  
30- and 60-  
Ampere, Delayed  
Action, Dead  
Front



CPS®-GFI  
Factory Sealed,  
Explosionproof,  
Ground Fault  
Circuit Interrupter



MD2SR  
Interlocked  
Switched  
Receptacle

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- U-Line® has blade-type contacts. FSQX, CPS, CES/CESD, EBR, EBRH, MD2SR and DBR contacts have beryllium copper wire springs.

- Positive mechanical cable clamps prevent strain on cables they meet or exceed U.L. strain relief pull-out requirements.

- Neoprene bushing compressed by cable collar prevents entrance of water.

- Insulators provide greatest dielectric and mechanical strength, lowest moisture absorption, and lowest "arc tracking."

- Smooth, rounded integral bushing in each hub protects conductor insulation. (EBR, EBRH, MD2SR and DBR have tapped conduit openings.)

- U-Line and CPS: "Dead Front" construction. To operate, insert plug and rotate. Rotation of plug activates switch to ON position during plug insertion and to OFF position during plug withdrawal.

- U-Line and Contender U-Line are both interchangeable with the Crouse-Hinds ENP plugs of like configurations. Contender U-Line receptacles are UL Classified to mount on Crouse-Hinds EDS boxes.

- Contender CPS receptacles are interchangeable with the Crouse-Hinds CPP516 plug. CPP plug is interchangeable with the Crouse-Hinds CPS receptacle.

- FSQX: "Interlocked Switch and Cover" offers double protection—plug cannot be inserted or removed unless switch is in OFF position. Interlock device in the cover breaks circuit when locking screw is backed down for cover removal. To operate, insert plug and turn switch to ON position.

- CES/CESD: "Delayed Action" construction. To operate, insert plug to first stop, move Slide-Lok® slide to right and push plug fully forward.

- EBRH/DBR/JBR: "Interlocked Disconnect Switch" provides safe connect and disconnect operation at 30, 60 or 100 ampere, 600VAC maximum. Two or three pole, non-fused motor circuit switch. EBRH permits safe operation in Class I, Group B as well as Class I, Groups C and D, Class II, Groups F, G, and Class III (DBR in Class II and III only).

- EBR/DBR: "Interlocked Circuit Breaker" provides interlocked connect and

disconnect operation as well as short circuit and thermal time delay overload protection.

- EBR, EBRH, DBR, JBR: To operate, insert plug (which automatically locks into receptacle) and turn Breaker Handle to ON position. To remove plug, turn Handle to OFF position, lift Plug Release Knob and pull plug out.

- ECC Cord Connector permits connecting a portable extension cord to an explosionproof enclosure.

- ECP plug fits any standard U-Ground non-explosionproof receptacle (NEMA 5-15R, 5-20R, or 6-20R) as well as U-Line explosionproof receptacles.

- ACP plug fits Powertite® Series non-hazardous location ADR receptacles (see Catalog Section D) as well as EBR, EBRH, JBR, MD2SR and DBR hazardous location receptacles.

- CPH plug fits Powertite® Series non-hazardous location receptacles (see Catalog Section D) as well as CES/CESD and EBR, EBRH, JBR, MD2SR and DBR hazardous location receptacles.

### Standard Materials

- *U-Line, CPS, CES/CESD*: copper-free aluminum receptacle and cover with malleable iron mounting box.

- *U-Line M series*: Malleable iron receptacle and mounting box.

- *FSQX*: malleable iron body with copper-free aluminum screw covers.

- *EBR, EBRH, JBR, MD2SR and DBR*: copper-free aluminum receptacle and mounting box.

- *ECP, CPH, ACP, FP, CPP Plugs*: copper-free aluminum housings.

- *ECC cord connectors*: copper-free aluminum housing and fiber glass reinforced polyester interior.

- *Insulating blocks*: U-Line®, CES/CESD, EBR, EBRH and DBR, ECP, CPH, ACP- fiber glass reinforced polyester. FSQX, CPS, CPP, FP-phenolic.

### Standard Finishes

- *Malleable iron mounting boxes*: triple-coat-(1) zinc electroplate, (2) dichromate and (3) epoxy powder coat.

- *U-Line receptacles and EBR, EBRH and DBR receptacles and mounting boxes*: Epoxy powder coat.

- *FSQX: malleable iron receptacles*: triple-coat-(1) zinc electroplate, (2)

dichromate and (3) epoxy powder coat.

- *CPS aluminum receptacles*: epoxy powder coat.

- *CES/CESD aluminum receptacles*: ceramic burnished.

- *Cord connector housings and caps*: epoxy powder coat.

### Options:

- U-Line all-aluminum receptacle cover and box. Suffix—A.

- Contender U-Line and CPS. Suffix—SA.

- *U-Line and CPS receptacles only* available for use in combination with two thru five gang EFD boxes incorporating such devices as pilot lights, switches and push buttons. See Catalog Sections M and N.

- **Special Polarization**: Standard receptacles, plugs and connectors have positive polarization, which ensures that only plugs of the same style, number and ampere rating can be used together. 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 interior is positioned 22-1/2°, relative to the polarization rivet, to the right (as specified) of standard, and plug is polarized to correspond. This makes it impossible to mate plugs and receptacles of dissimilar voltages. This option can be added to receptacles using the PowerTite® Plug (JBR, EBR, DBR Series). Suffix -P4.

### Accessory:

- CPS corrosion resistance kit. Order CPS233RXXKIT (For CPR23 only).

- U-Line corrosion resistance kit. order ULINE3RXXKIT.

### Compliances:

- UL Standard 1010, 894, 1682, 1686





- Appleton malleable iron products conform to ASTM A47-77, Grade 32510, which has the following properties: tensile strength, 50,000 psi; yield, 32,000 psi; and elongation, 10%.

- Appleton aluminum products are produced from a high strength copper-free (4/10 of 1% max.) alloy.



Class I, Div. 1 and 2  
Groups C,D\*

## 30 and 60 Amp CES and CESD Factory Sealed Receptacles: Explosionproof

Weatherproof Spring Cover—Grounding thru Extra Pole and Shell.  
Delayed-Action Safety Construction with Slide-Lok® Design.  
Pressure Wire Terminals.

U.S. Patent No. 3,125,394		Type	Wire/ Pole	Hub Size, Inches	Complete With Box	Catalog Number Receptacle Only♦	Replacement Interior
		<b>CES Receptacles—30 Amp and 60 Amp, 125–250VAC</b> (See H.P. ratings below.) Furnished with one vertical and two horizontal feed-thru hubs.					
		30 Amps	2W,3P	3/4	CES-3023	CESR-3023	CERI-3023
		30 Amps	3W,4P	3/4	CES-3034	CESR-3034	CERI-3034
		60 Amps	2W,3P	1-1/4	CES-6023	CESR-6023	CERI-6023
		60 Amps	3W,4P	1-1/4	CES-6034	CESR-6034	CERI-6034
		<b>CESD Receptacles—30 Amp and 60 Amp, 125–250VAC</b> (See H.P. ratings below.) Furnished with vertical feed-thru hubs.					
		30 Amps	2W,3P	3/4	CESD-3023	CESR-3023	CERI-3023
		30 Amps	3W,4P	3/4	CESD-3034	CESR-3034	CERI-3034
		60 Amps	2W,3P	1-1/4	CESD-6023*	CESR-6023*	CERI-6023
		60 Amps	3W,4P	1-1/4	CESD-6034*	CESR-6034*	CERI-6034

### CPH Plugs and Plug Interiors for use with Receptacles Above

		Type	Wire/ Pole	Cable Dia., Inches	Complete Plug	Replacement Interior
		30 Amps	2W,3P	.500-1.375	CPH-3023BC	CEPI-3023B
		30 Amps	3W,4P	.500-1.375	CPH-3034BC	CEPI-3034B
		60 Amps	2W,3P	.500-1.375	CPH-6023BC	CEPI-6023BC
		60 Amps	3W,4P	.500-1.375	CPH-6034BC	CEPI-6034BC

Pressure Terminals

### CES/CESD Max. H.P. Ratings

125–250V A.C.					480V A.C.				
Wire/Pole	Phase	Max. H.P.	Max. Amps.	Catalog Number	Wire/Pole	Phase	Max. H.P.	Max. Amps.	Catalog Number
2W,3P	1	1-1/2	30	CES/CESD-3023	2W,3P	1	1/2	7	CES/CESD-3023
3W,4P	3	3	30	CES/CESD-3034	3W,4P	3	1	7	CES/CESD-3034
2W,3P	1	1-1/2	60	CES/CESD-6023	2W,3P	1	1-1/2	30	CES/CESD-6023
3W,4P	3	5	60	CES/CESD-6034	3W,4P	3	5	30	CES/CESD-6034

♦ UL Listed with Mounting Box.

\* Class I, Division 1 and 2, Group D only.





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## CES/CESD and CPH Cross Reference Chart

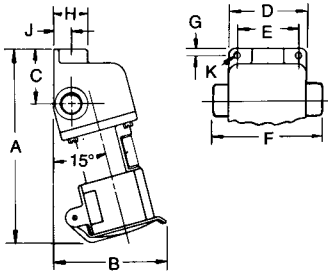
CES/CESD Slide-Lok® Receptacles and CPH Plugs feature Delayed-Action Safety Construction.

Type	Wire/ Pole	Catalog Number*		
		Appleton	Crouse-Hinds	Killark
 30 Ampere Receptacles	2W,3P	CES-3023	CES-2213	KRAJT-2303
	2W,3P	CESD-3023	CESD-2213	KRAJC-2303
	3W,4P	CES-3034	CES-2214	KRAJT-2304
	3W,4P	CESD-3034	CESD-2214	KRAJC-2304
 60 Ampere Receptacles	2W,3P	CES-6023	CES-4233	KRAJT-4603
	2W,3P	CESD-6023	CESD-4233	_____
	3W,4P	CES-6034	CES-4234	KRAJT-4604
	3W,4P	CESD-6034	CESD-4234	_____
 30 Ampere Plugs	2W,3P	CPH-3023BC	CPH-7713	KP-303D35
	2W,3P	CPH-3023BC	CPH-7913	KP-303D24
	3W,4P	CPH-3034BC	CPH-7714	KP-304D35
	3W,4P	CPH-3034BC	CPH-7914	KP-304D24
 60 Ampere Plugs	2W,3P	CPH-6023BC	CPH-7733	KP-603D245
	2W,3P	CPH-6023BC	CPH-7933	KP-603E23
	2W,3P	CPH-6023BC	_____	KP-603E45
	3W,4P	CPH-6034BC	CPH-7734	KP-604D245
	3W,4P	CPH-6034BC	CPH-7934	KP-604E23
	3W,4P	CPH-6034BC	_____	KP-604E45

### CES/CESD Components

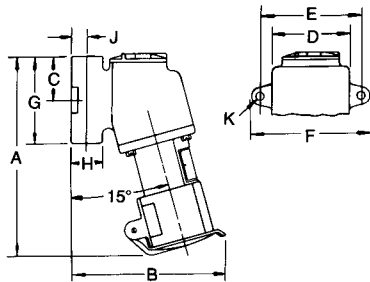
Type	Wire/ Pole	Hub Size, Inches	Back Box Only	Receptacle Only
<b>For CES—30 Amp and 60 Amp</b>				
Furnished with one vertical and two horizontal feed-thru hubs.				
30 Amps	2W,3P	3/4	CES30B	CESR3023
30 Amps	3W,4P	3/4	CES30B	CESR3034
60 Amps	2W,3P	1-1/4	CES60B	CESR6023
60 Amps	3W,4P	1-1/4	CES60B	CESR6034
<b>For CESD—30 Amp and 60 Amp</b>				
Furnished with vertical feed-thru hubs.				
30 Amps	2W,3P	3/4	CESD30B	CESR3023
30 Amps	3W,4P	3/4	CESD30B	CESR3034
60 Amps	2W,3P	1-1/4	CESD60B	CESR6023
60 Amps	3W,4P	1-1/4	CESD60B	CESR6034

## Dimensions: CES/CESD Receptacles and CPH Plugs



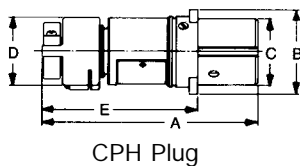
### CES Receptacles

Hub Size	Max. Amps.	A	B	C	D	E	F	G	H	J	K
Dimensions in Inches											
3/4	30	8.31	4.94	2.38	3.38	2.63	4.69	.31	1.50	.78	1/4D
1-1/4	60	11.88	6.88	2.88	5.25	4.38	7.31	.44	2.56	1.38	13/32D
Dimensions in Centimeters											
3/4	30	21.0	12.5	6.0	8.6	6.7	11.9	.8	3.8	2.0	——
1-1/4	60	30.2	17.5	7.3	13.3	11.1	18.8	1.1	6.5	3.5	——



### CESD Receptacles

Hub Size	Max. Amps.	A	B	C	D	E	F	G	H	J	K
Dimensions in Inches											
3/4	30	8.69	6.75	1.88	3.38	4.38	5.13	3.75	1.38	.69	11/32D
1-1/4	60	12.75	9.31	3.19	5.25	6.25	7.25	6.31	2.56	1.38	13/32D
Dimensions in Centimeters											
3/4	30	22.1	17.2	4.8	8.6	11.1	13.0	9.5	3.5	1.8	——
1-1/4	60	32.4	23.7	8.1	13.3	15.9	18.4	16.0	6.5	3.5	——



### CPH Plugs

Max. Amps.	Wire/Pole	A	B	C	D	E
Dimensions in Inches						
30	2W,3P;3W,4P	6.13	2.38	1.86	3.31	4.44
60	2W,3P	8.44	3.06	2.23	3.31	5.69
60	3W,4P	8.44	3.06	2.55	3.31	5.69
Dimensions in Centimeters						
30	2W,3P;3W,4P	15.6	6.0	4.7	8.4	11.3
60	2W,3P	21.4	7.8	5.7	8.4	14.5
60	3W,4P	21.4	7.8	6.5	8.4	14.5