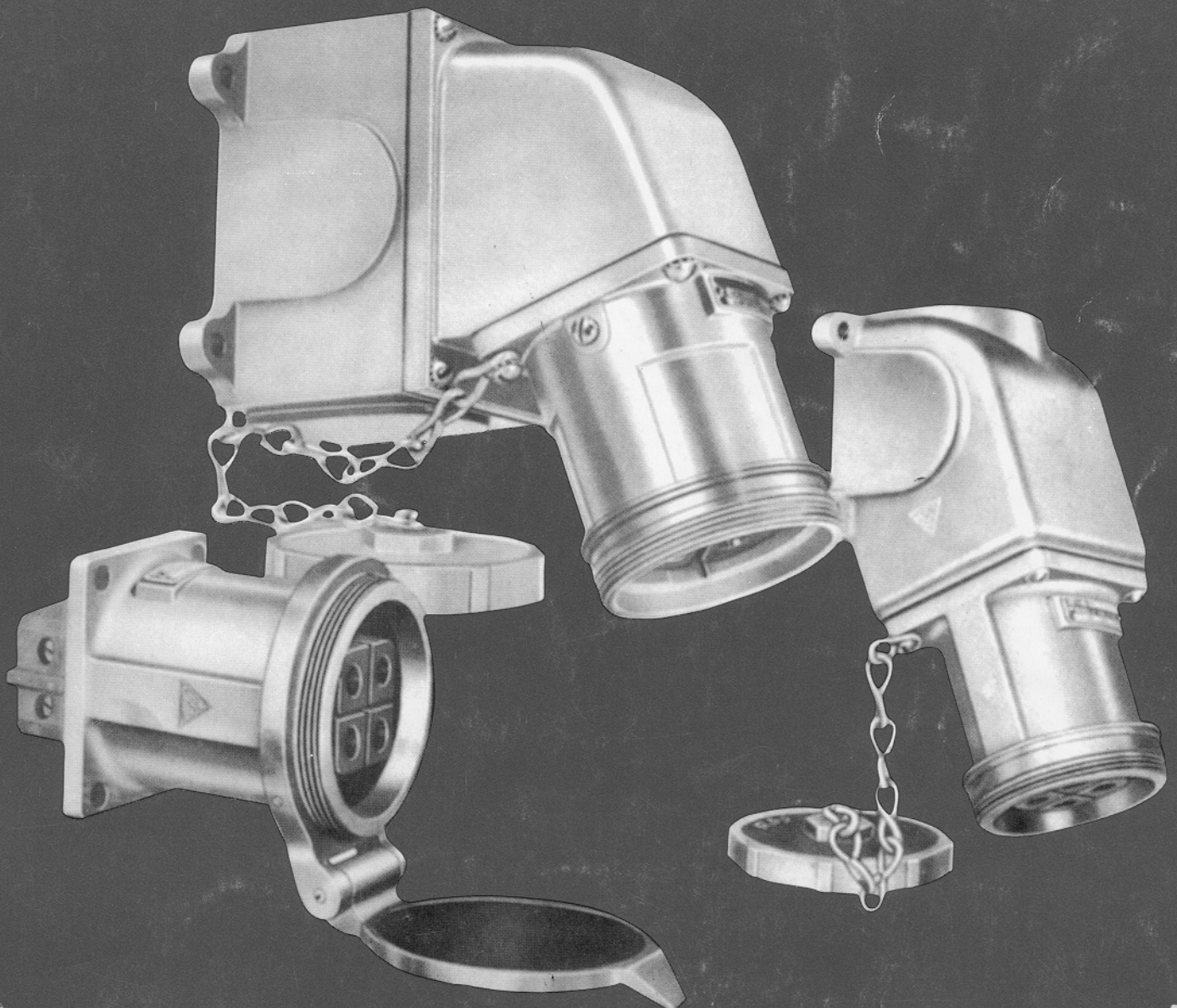


Angle Type

Load Breaking
Plugs, Connectors
& Receptacles



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PRODUCT OVERVIEW

Angle Type Receptacles, Plugs and Connectors – Special Features

Load Breaking – receptacles, plugs and connectors assure complete circuit breaking under full rated loads – without the use of an external switch. Deep insulating chambers confine and snuff out arcing.

Positive Two-way Polarization – an external rib on the plug fits into a corresponding groove in the receptacle or connector housing insuring quick, correct engagement. Cross connections are impossible. A secondary polarizing key has been added to all housings which provides non-interchangeability between devices of different voltage ratings – plugs will fit receptacles and connectors of the same voltage and ampere rating only.

Grounding – Style 1: Grounding through the metal housings of the receptacle, plug and connector. Style 2: Grounding through a separate pole in the receptacle, plug and connector. See page 11.

Progressive Assembly – receptacles, plugs and connectors are designed so that housings, interiors and other components all assemble in a rapid and practical manner. Receptacles can easily be converted to angle, straight or panel mounted styles in the field using only a screw driver. See page 3.

Receptacles

Housings – cast aluminum, corrosion resistant, copper free alloy, electrostatic epoxy power coat finish. Other metals available – prices and information on application.

Interiors – molded arc-resisting composition with machined, full floating, self-aligning contacts. Interiors are polarized and can be assembled in the correct position only. See page 9.

Conduit Entrances – for additional or larger outlets specify size and location. Use symbols as per diagram in outlet locations in notes, (under each amperage group). Maximum conduit sizes are listed on page 5.

Flush Mounting – consult factory.

Weathertight – styles have spring actuated self closing hinged flaps. Weathertight receptacles will accommodate waterproof plugs of comparable ratings.

Watertight – styles have gasketed screw caps.

Plugs and Connectors

Housings – plugs: stainless steel (200A is plated); Connectors: copper free, cast aluminum, corrosion resistant alloy, electrostatic epoxy powder coat finish.

Interiors – molded arc-resisting composition with machined, full floating, self-aligning contacts. Interiors are polarized and can be assembled in housings in the correct position only. See page 9.

Adapters – plugs and connectors available with adapters for rigid conduit or armored cable and non-metallic cable or flexible conduit. See page 10.





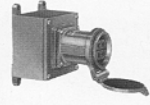













Cable Bushings – neoprene strain relief cable bushing furnished with hole I.D. size as listed under each amperage group. Other sizes available at no extra cost.

Female Connector – can be furnished with flap cover or retained screw cap. Consult factory.

Watertight Plugs – will also fit weathertight receptacles and connectors of comparable ratings.

RECEPTACLE MOUNTING OPTIONS

Progressive Assembly

Mounting Style	Use:	Current Rating			
		30 Amp	60 Amp	100 Amp	200 Amp
Standard Series 	 Receptacle +	See pg. 4* +	See pg. 4* +	See pg. 4* +	See pg. 4* +
	 Vertical or Square Mount Box +	JB3 1" Std. Conduit Size +	JB6 1 1/2" Std. Conduit Size +	JB10 2" Std. Conduit Size +	JB20 2 1/2" Std. Conduit Size +
	 Angle Adapter	JAA3 (20°) or JAA3-45 (45°)	JAA6-AB6 (20°) or JAA6-45 (45°)	JAA10 (20°) or JAA10-45 (45°)	JAA20
Series FCR/SCR Straight 	 Receptacle +	See pg. 4* +	See pg. 4* +	See pg. 4* +	See pg. 4* +
	 Vertical or Square Mount Box +	JB3 1" Std. Conduit Size +	JB6 1 1/2" Std. Conduit Size +	JB10 2" Std. Conduit Size +	JB20 2 1/2" Std. Conduit Size +
	 Straight Adapter	JRA3	JRA6-AB6	JRA10	JRA20
Series FCB/SCB 	 Receptacle +	See pg. 4* +	See pg. 4* +	See pg. 4* +	See pg. 4* +
	 30° Angle Adapter	JAAB3	JAAB6	JAAB10	JAAB20
Series FCE/SCE 	 Receptacle +	See pg. 4* +	See pg. 4* +	See pg. 4* +	N/A
	 Angle Enclosure	JE3 1" Std. Conduit Size	JE6 1 1/2" Std. Conduit Size	JE10 2" Std. Conduit Size	
Series FCH/SCH Horizontal 	 Receptacle +	See pg. 4* +	N/A	N/A	N/A
	 Horizontal Mount Box +	JB3 1" Std. Conduit Size +			
	 Angle Adapter	JHA3 (20°)			

* Select appropriate receptacle (only) by rating, configuration and voltage listed on Page 4.

ORDERING INFORMATION

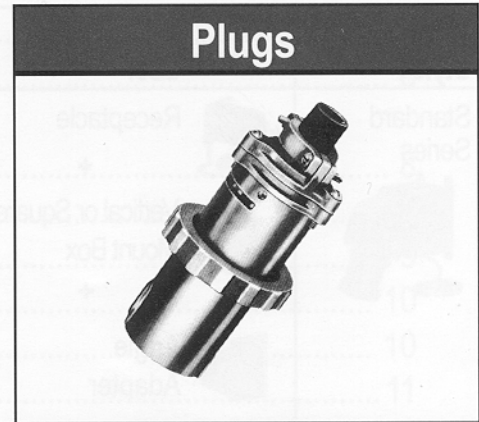
Angle Type Circuit Breaking Plugs, Connectors & Receptacles

Max. 600VAC / 250VDC

Two Polarizations Available:

480VAC / 250VDC

600VAC / 200VDC



Current Rating	Weathertight / Watertight	Configuration	Max. 480VAC	Max. 600VAC
30 Amp	Weathertight (Series FC)	2P, 3W	3317	7317
		3P, 3W*	3117W	7117W
	Watertight (Series SC)	3P, 4W	3318	7318
		4P, 4W*	3118W	7118W
60 Amp	Weathertight (Series FC)	2P, 3W	3327-78	7327-78
		3P, 3W*	3127W-78	7127W-78
		3P, 4W	3328-78	7328-78
	Watertight (Series SC)	4P, 4W*	3128W-78	7128W-78
2P, 3W		3327-78	7327-78	
100 Amp	Weathertight (Series FC)	3P, 4W	3328-78	7328-78
		4P, 4W*	3128W-78	7128W-78
		2P, 3W	3327-78	7327-78
	Watertight (Series SC)	3P, 4W	3328-78	7328-78
		2P, 3W	3337-72	7337-72
		3P, 3W*	3137W-72	—
200 Amp	Weathertight (Series FC)	3P, 4W	3338-72	7338-72
		4P, 4W*	3138W-72	7138W-72
	Watertight (Series SC)	2P, 3W	3337-72	7337-72
		3P, 4W	3338-72	7338-72
200 Amp	Weathertight (Series FC)	3P, 4W	3348	7348
		4P, 4W*	3148W	7148W
200 Amp	Watertight (Series SC)	3P, 4W	3348	7348


For Receptacle Mounting Options, see page 3.

Std. Cable Bushing Size: see page 8 for other sizes

* Housing Ground Only (Style 1 Grounding) see page 11.

Current Rating	Bushing	Max. AWG
30	7/8"	# 8, -7 strand or flexible
60	1 3/16"	# 4, -7 strand or flexible
100	1 1/2"	# 0, -19 strand or no. 1 flexible
200	2"	# 4/0, -19 strand or flexible

DIMENSIONS

Connectors		Receptacles			
		 Receptacle Only		 Standard Series	
Max. 480VAC	Max. 600VAC	Max. 480VAC	Max. 600VAC	Max. 480VAC	Max. 600VAC
3417 3217W	7417 7217W	FCF3113 FCF3113W	FCF7113 FCF7113W	3113 3113W	7113 7113W
3418 3218W	7418 7218W	FCF3114 FCF3114W	FCF7114 FCF7114W	3114 3114W	7114 7114W
3417 3418	7417 7418	SCF3313 SCF3314	SCF7313 SCF7314	3313 3314	7313 7314
3427-78 3227W-78	7427-78 7227W-78	FCF3123-78 FCF3123W-78	FCF7123-78 FCF7123W-78	3123-78 3123W-78	7123-78 7123W-78
3428-78 3228W-78	7428-78 7228W-78	FCF3124-78 FCF3124W-78	FCF7124-78 FCF7124W-78	3124-78 3124W-78	7124-78 7124W-78
3427-78 3428-78	7427-78 7428-78	SCF3323-78 SCF3324-78	SCF7323-78 SCF7324-78	3323-78 3324-78	7323-78 7324-78
3437-72 3237W-72	7437-72 —	FCF3133-72 FCF3133W-72	FCF7133-72 —	3133-72 3133W-72	7133-72 —
3438-72 3238W-72	7438-72 7238W-72	FCF3134-72 FCF3134W-72	FCF7134-72 FCF7134W-72	3134-72 3134W-72	7134-72 7134W-72
3437-72 3438-72	7437-72 7438-72	SCF3333-72 SCF3334-72	SCF7333-72 SCF7334-72	3333-72 3334-72	7333-72 7334-72
3448 3248W	7448 7248W	FCF3144 FCF3144W	FCF7144 FCF7144W	3144 3144W	7144 7144W
3448	7448	SCF3344	SCF7344	3344	7344

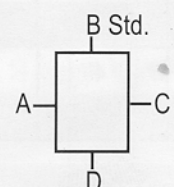
Cable Conduit Adapters: see page 10.

Maximum lug wire size: AWG 0-19 strand or AWG 1 Flexible.

Conduit Entrance :

Current Rating	Std. Size	Max. Size
30	7/8"	1 1/4"
60	1 3/16"	1 1/2"
100	1 1/2"	2"
200	2"	2 1/2"

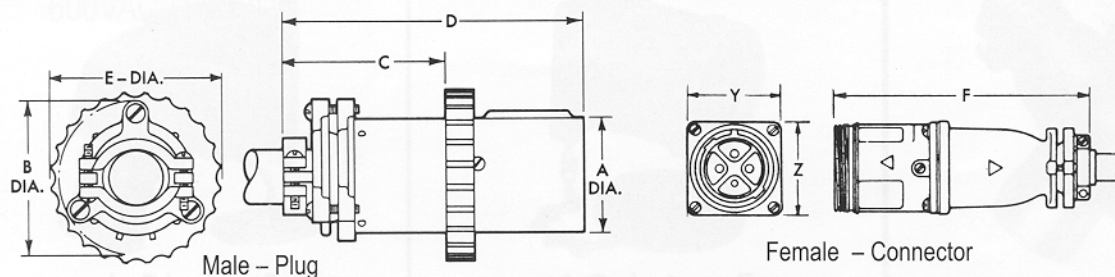
Outlet Location: Standard Series



DIMENSIONS

Plugs and Connectors

Series FC and SC Watertight



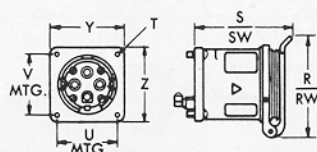
Dimensions for 2, 3 or 4 wire Weathertight and Watertight Units

Amp	A	B	C	E	D		F		Y		Z	
					480V	600V	480V	600V	480V	600V	480V	600V
30*	1 7/8"	2 5/8"	2 5/8"	3"	5"	6"	7 5/8"	8 5/8"	2 3/4"	2 3/4"	2 3/4"	2 3/4"
60*	2 1/2"	3 3/8"	3 5/8"	3 3/4"	6 5/8"	8"	9 5/8"	10 5/8"	3 1/2"	3 1/2"	3 1/2"	3 1/2"
100	2 1/2"	3 3/4"	4 1/4"	3 3/4"	8 1/2"	8 1/2"	10 7/8"	10 7/8"	4"	4"	4"	4"
200	4"	5"	8 1/8"	6"	14"	14"	15 3/8"	15 3/8"	5 5/8"	5 5/8"	5 5/8"	5 5/8"

* 30 and 60 ampere plugs are also used on Types FCA and SCA
 + Length of plug exposed when engaged in receptacle or connector

Receptacles

Series FCF and SCF



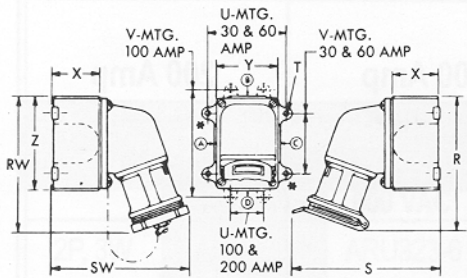
Dimensions for 2, 3 or 4 wire Units

Amp	Z	Y	V	U	T	S		SW		Panel Opening
						480V	600V	480V	600V	
30	2 3/4"	2 3/4"	2 1/4"	2 1/4"	.213	3 1/4"	4 1/2"	3 7/8"	4 7/8"	2 1/4" D
60	3 1/2"	3 1/2"	2 7/8"	2 7/8"	9/32"	4 5/8"	5 7/8"	4 3/4"	6"	2 7/8" D
100	4"	4"	3 3/8"	3 3/8"	9/32"	5 7/8"	5 7/8"	6"	6"	3"
200	5 5/8"	5 5/8"	4 7/8"	4 7/8"	11/32"	6 5/8"	6 5/8"	7 1/4"	7 1/4"	4 7/8"

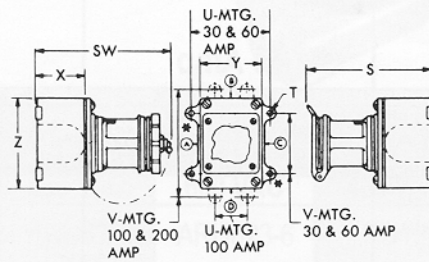
DIMENSIONS

Receptacle Mounting Styles

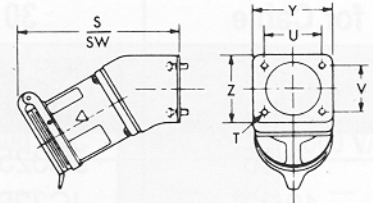
Standard Series



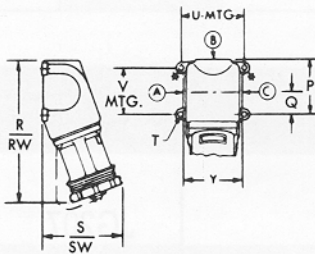
Series FCR-SCR



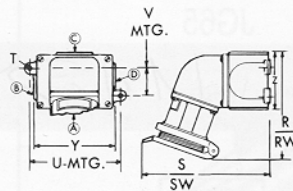
Series FCB-SCB



Series FCE-SCE



Series FCH-SCH



Note:

U = horizontal mounting hole centers
V = vertical mounting hole centers

Amp	Series	480 and 600 Volts								S		SW		R		RW		Panel Opening
		Z	Y	X	V	U	T	Q	P	480V	600V	480V	600V	480V	600V	480V	600V	
30	Standard (20°)	4 1/2	3	2 3/8	2 11/16	3 11/16	1/4	-	-	7 3/8	7 3/4	6 3/4	7 1/8	7	8	7	8 1/8	-
	Standard (45°)	4 1/2	3	2 3/8	2 11/16	3 11/16	1/4	-	-	7 7/8	8 5/8	7 1/4	8	6 5/8	7 1/4	6 1/2	7 1/8	-
	FCR-SCR	4 1/2	3	2 3/8	2 11/16	3 11/16	1/4	-	-	6 3/4	7 3/4	6 7/8	7 7/8	-	-	-	-	-
	FCB-SCB	3 1/8	3 1/8	-	2 1/4	2 1/4	1/4	-	-	6 1/4	7	6 1/8	6 5/8	-	-	-	-	2 1/4 D
	FCE-SCE	-	3 1/2	-	-	4	1/4	1 1/4	2 3/8	5 1/4	5 1/2	4 5/8	4 7/8	7 1/4	8 3/8	7 1/4	8 3/8	-
	FCH-SCH	3 5/16	4 1/2	2 3/8	3 11/16	2 11/16	1/4	-	-	7 1/4	7 3/4	6 3/4	7	6 1/8	7	6 3/8	7 3/8	-
60	Standard (20°)	5 5/8	4	3	3 13/16	4 15/16	11/32	-	-	9 1/4	9 1/2	8 5/8	9	8 7/8	10	9	10	-
	Standard (45°)	5 5/8	4	3	3 13/16	4 15/16	11/32	-	-	9 7/8	10 5/8	9 3/8	10	8 1/4	9 1/4	8	9	-
	FCR-SCR	5 5/8	4	3	3 13/16	4 15/16	11/32	-	-	8 3/8	9 3/4	8 1/2	10	-	-	-	-	
	FCB-SCB	3 3/16	3 5/8	-	2 3/16	2 5/8	9/32	-	-	7 3/4	9	7 1/4	8 3/4	-	-	-	-	2 1/2 D
	FCE-SCE	-	4 1/4	-	3 1/8	4 1/2	9/32	1 9/16	3 11/16	6 3/8	6 3/4	5 3/4	6 1/2	9 3/4	11	9 1/2	10 3/4	-
100	Standard (20°)	5 1/2	5 1/2	3 3/4	6 3/4	4 1/4	11/32	-	-	10 3/4	10 3/4	10	10	10 1/2	10 1/2	10 1/2	10 1/2	-
	Standard (45°)	5 1/2	5 1/2	3 3/4	6 3/4	4 1/4	11/32	-	-	11 3/4	11 3/4	11 1/4	11 1/4	9 1/2	9 1/2	9	9	-
	FCR-SCR	5 1/2	5 1/2	3 3/4	6 3/4	4 1/4	11/32	-	-	12 1/4	12 1/4	12 1/4	12 1/4	-	-	-	-	
	FCB-SCB	3 3/16	3 5/8	-	2 3/16	2 5/8	9/32	-	-	9 1/4	9 1/4	8 3/4	8 3/4	-	-	-	-	2 1/2
200	Standard (20°)	8 5/16	8 5/16	6 5/16	9 5/8	7 1/8	3/8	-	-	15 5/8	15 5/8	15 1/8	15 1/8	14 5/8	14 5/8	14 5/8	10 1/2	-
	Standard (45°)	8 5/16	8 5/16	6 5/16	9 5/8	7 1/8	3/8	-	-	16 5/8	16 5/8	16 1/4	16 1/4	13 1/4	13 1/4	13	13	-
	FCR-SCR	8 5/16	8 5/16	6 5/16	9 5/8	7 1/8	3/8	-	-	15 7/8	15 7/8	16 3/8	16 3/8	-	-	-	-	
	FCB-SCB	4	4	-	2 3/4	2 3/4	11/32	-	-	13 1/8	13 1/8	12 3/4	12 3/4	-	-	-	-	3 1/4

ACCESSORIES

CABLE BUSHINGS

For Angle Type Plugs and Connectors

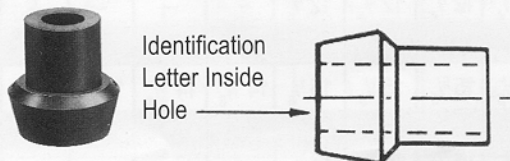
Boxed catalog numbers are standard bushing sizes provided unless otherwise specified.

Hole Diameter for Cable	30 Amp	60 Amp	100 Amp	200 Amp
3/8"	JG31			
1/2"	JG32			
9/16"	JG325			
19/32"	JG32B			
5/8"	JG33	JG63		
3/4"	JB34	JG64	JG104	
25/32"	JG341			
7/8"	JG35	JG65	JG105	
15/16"	JG355			
1"	JG36*	JG66	JG106	JG206
1 1/8"	JG361*			
1 3/16"		JG67	JG107	JG207
1 5/16"			JG108	JG208
1 3/8"		JG69*		
1 1/2"		JG610*	JG1010	JG2010
1 11/16"			JG1011	JG2011
1 13/16"				JG2012
1 7/8"			JG1013*	
2"				JG2014
2 1/8"				JG2015
2 1/4"				JG2016
2 1/2"				JG2017*

Notes:

Material – Neoprene

Standard Cable Bushings:



Size No. 3 – 6 – 10 and 20

*** Oversize Cable Bushings:**



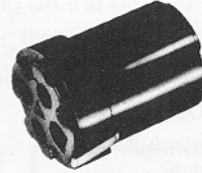
Size No. 3 – 6 – 10 and 20

ACCESSORIES

REPLACEMENT INTERIORS

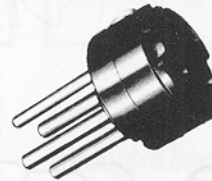
For Receptacles, Connectors, Plugs & Male Inlets

Female Interiors: Receptacles & Connectors



	30 Amp		60 Amp		100 Amp		200 Amp	
	480 VAC	600 VAC	480 VAC	600 VAC	480 VAC	600 VAC	480 VAC	600 VAC
2P, 3W	ARU323	ARU323-6	ARU623	ARU623-6	ARU123	—	—	—
3P, 3W	ARU333	ARU333-6	ARU633	ARU633-6	ARU133	—	—	—
3P, 4W	ARU334	ARU334-6	ARU634	ARU634-6	ARU134	ARU134-6	ARU234	ARU234-6
4P, 4W	ARU344	ARU344-6	ARU644	ARU644-6	ARU144	ARU144-6	ARU244	ARU244-6

Male Interiors: Plugs & Male Inlets

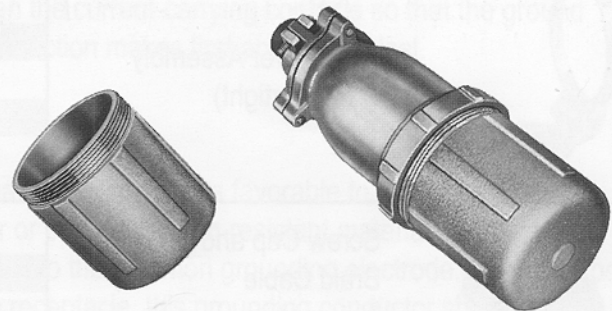


	30 Amp		60 Amp		100 Amp		200 Amp	
	480 VAC	600 VAC	480 VAC	600 VAC	480 VAC	600 VAC	480 VAC	600 VAC
2P, 3W	APU323	APU323-6	APU623	APU623-6	APU123	—	—	—
3P, 3W	APU333	APU333-6	APU633	APU633-6	APU133	—	—	—
3P, 4W	APU334	APU334-6	APU634	APU634-6	APU134	APU134-6	APU234	APU234-6
4P, 4W	APU344	APU344-6	APU644	APU644-6	APU144	APU144-6	APU244	APU244-6

CUP CAPS FOR WATERTIGHT (SERIES SC) PLUGS

480 Volts A.C. or 600 Volts A.C.

Amperes	Cat. No.
30	F30717
60 } 100 }	F30718
200	F30719A



Cup Caps are used:

- Where portable equipment is on a standby basis and plugs are not in use
- To effectively protect insulation and contacts from excessive moisture, dirt, dust and corrosion.

Material - cast aluminum, corrosion-resistant copper-free alloy, electrostatic epoxy coated, with steel braid cable attached.

ACCESSORIES

ADAPTERS FOR CONDUIT AND FITTINGS For use on Angle Type Plugs and Connectors

Adapters are tapped NPT standard pipe thread to accommodate rigid conduit or standard connectors for armored and non-metallic cable or flexible conduit.



JPA 64
Conduit
Adapter



60A Plug
Equipped with
JPA 64
Adapter

Plug or Connector Sizes

30 Amp Cat. No.	Tapped Hole Size NPT	60 Amp Cat. No.	Tapped Hole Size NPT	100 Amp Cat. No.	Tapped Hole Size NPT	200 Amp Cat. No.	Tapped Hole Size NPT
JPA31	1/2"	JPA63	1"	JPA104	1 1/4"	JPA205	1 1/2"
JPA32	3/4"	JPA64	1 1/4"	JPA105	1 1/2"	JPA206	2"
JPA33	1"	JPA65	1 1/2"	JPA 106	2"	JPA207	2 1/2"

NOTES:



Material - cast aluminum, corrosion-resistant copper-free alloy, natural finish. Furnished complete with gasket and screws.

To specify standard plugs or connectors equipped with one of the above adapters, add the catalog number of the adapter selected to the catalog number of the plug or connector. Complete list price is the list price of the device plus list price of the adapter.

Example: Cat. No. 3328 with adapter tapped 1-inch would be Cat. No. 3328 / JPA63.

COVERS

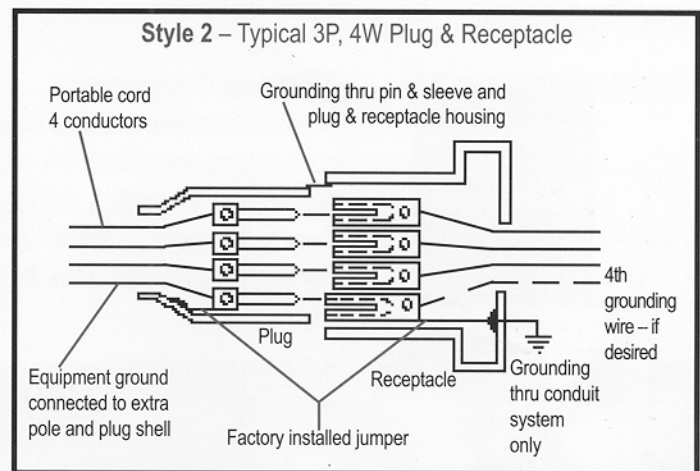
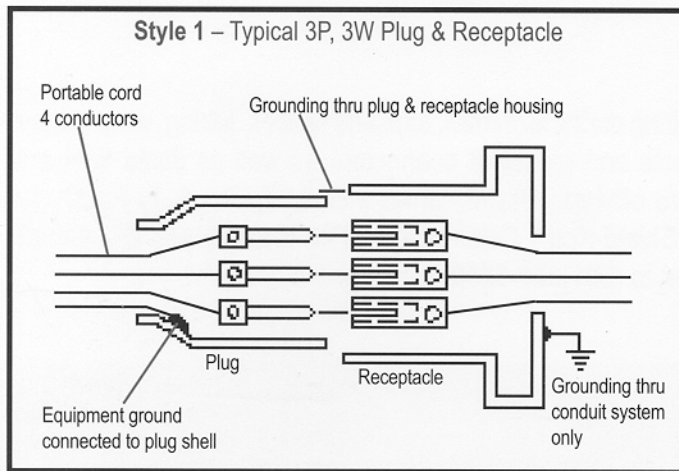
For Connectors & Receptacles

Description	Amperage	Cat. No.
 Flap Cover Assembly (Weathertight)	30	JFC3
	60	JFC6
	100	JFC6
	200	FC20
 Screw Cap and Braid Cable Assembly (Watertight)	30	JSC3
	60	JSC6
	100	JSC6
	200	SC20

ANGLE TYPE GROUNDING DATA

Effective grounding of portable electric equipment is necessary to protect operators from electric shock. The National Electrical Code requires that in most cases exposed non-current-carrying metal parts of portable equipment shall be grounded if operated at more than 150 volts to ground. Grounding must be used in other than residential occupancies, when used in damp or wet locations or by persons standing on the ground or on metal floors or working inside of metal tanks or boilers, except where supplied through an insulating transformer with ungrounded secondary of not over 50 volts.

Plugs and receptacles provide for grounding of portable equipment in either of two ways:



STYLE 1

Through Metal Housings of Plug and Receptacle

In this system shown above, the equipment grounding conductor in the flexible cable is electrically connected directly to the plug or cable connector housing by a suitable terminal. The receptacle is grounded by being part of a grounded conduit system.

When inserted, the plug housing makes contact with the grounded receptacle or connector housing by means of the receptacle ground spring before the current-carrying contacts engage. On withdrawal it remains in contact until after the current-carrying contacts disengage.

STYLE 2

Through a Separate Grounding Pole in Plug and Receptacle

In this system shown above, the equipment grounding conductor in the flexible cable is electrically connected to the equipment grounding pole in the plug or cable connector interior. The grounding pole of the receptacle interior is electrically connected by a spring strap jumper to the receptacle housing which itself is grounded by being part of the ground spring of the receptacle or connector housing as described in system number one.

The grounding contact in a type 2 receptacle is longer than the current-carrying contacts so that the ground connection makes first and breaks last.

Corrosive Locations: The National Electrical Code requires that under conditions favorable to corrosion, the grounding conductor for enclosures and equipment be of copper or other corrosion-resistant material. In alternating current systems, this necessitates running another conductor back to the common grounding electrode. 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 required, Style 2 receptacles should be used.