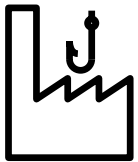

Table of contents

004–005	Russellstoll interconnection systems overview
006–010	Max-Guard overview
011	Competitive checklist, receptacles and numbering system
012–015	Load-breaking plugs, receptacles and connectors - 30 Amp
016–019	Load-breaking plugs, receptacles and connectors - 60 Amp
020–023	Load-breaking plugs, receptacles and connectors - 100 Amp
024–027	Load-breaking plugs, receptacles and connectors - 200 Amp
028–031	Load-breaking plugs, receptacles and connectors - 400 Amp
032–035	Max-Gard accessories
036–037	Max-Gard - Engineering specifications
038	Voltage selector
039–040	Max-Gard dimensions
041–047	Industrial interlocked receptacles
048–051	GSUL Safe indicator system
052–055	Dura-Gard overview
056–057	20 Amp
058–059	30 Amp
060–061	50 Amp
062	60 Amp
063–065	Dura-Gard accessories
066	Safety interlocks
067	Dura-Gard dimensions
068–069	Dura-Gard - Engineering specifications

Russellstoll interconnection systems

Overview/application guide

This catalog has been divided into sections based on standard application groups. The following is a description of each of the six general categories in which Russellstoll products appear. Applications are not limited to those listed below.



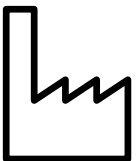
Heavy industrial/marine applications:
outdoor, severe or high abuse environments

- Industrial hook-ups
- Shore-to-ship power connections stations
- Portable generator sets
- Mills and process plants
- Agriculture
- Portable power connections
- Aerospace manufacturing and airports
- Lift stations
- Irrigation and wastewater equipment
- Industrial and shipyard welding
- Power distribution centers
- Job site power: For telephone power and communications equipment



Washdown and light marine applications:
watertight/waterproof

- Food processing plants
- Pharmaceutical manufacturing
- Bottling and beverage plants
- Barge and workboat applications
- Pulp and paper factories
- Outdoor construction sites



Industrial and commercial applications

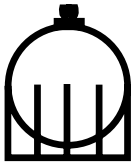
- Entertainment (lighting and sound systems)
- Machinery
- Computer-related equipment
- Welding installations
- Construction sites
- Facilities' electrical power



Control circuit and industrial interlock applications

Automotive/industrial Interlock systems were designed for the needs of the manufacturing industry. These devices are used where safety requirements mandate a mechanically interlocked system for connection and removal of plugs under full load.

- Automatic press
- Heavy-duty portable welding
- Portable systems
- Machine tool control or Servo systems
- Shipyard maintenance power
- Battery chargers
- Automated welder applications
- Food processing
- Temporary power connections



Hazardous location applications:
Class I, Div. 1/Class II, Div. 1

- Aerospace
- Steel mills and mining
- Petroleum
- Chemical
- Food processing
- Waste treatment



Computer systems:
data center and OEM products

- Raised floor applications
- Main power connections
- Critical power for test, instrumentation, telephone and medical equipment

Overview/application guide

Type		Amperage						
		20	30	50	60	100	200	400
Heavy industrial/marine (pages 6–47)	Max-Gard	–	●	–	●	●	●	●
Washdown and light marine (pages 52–69)	DuraGard	●	●	●	●	–	–	–

Max-Gard interconnection systems

Overview

30 A–400 A (30–200 A load breaking), maximum 600 V AC/250 V DC receptacles, inlets, plugs, connectors, interlocked receptacles, explosion-proof interlocked receptacles.

Safety

- **Different power supply ratings can't mix:** 24 single-rate device polarizations ensure exact voltage, frequency and phase differentiation
- **Safe connections:** Safely connect and disconnect, even in the most extreme conditions such as heavy industrial and explosion-proof environments
- **Added safety measures:** Explosion-proof rating on all plugs
- **Plugs stay in:** Standard delayed-action pull-and-turn withdrawal offers all plugs an explosion-proof rating
- **Waterproof construction:** Standard O-ringed interior components provide environmental separation; watertight mated or unmated

Durability

- **Built for durability:** Rugged cast aluminum housings with an electrostatic epoxy coating are standard, along with stainless steel hardware
- **The best connections for life:** Pins and sleeves are made from marine-grade CDA 485 brass; 200 A and 400 A pins and sleeves are silver plated

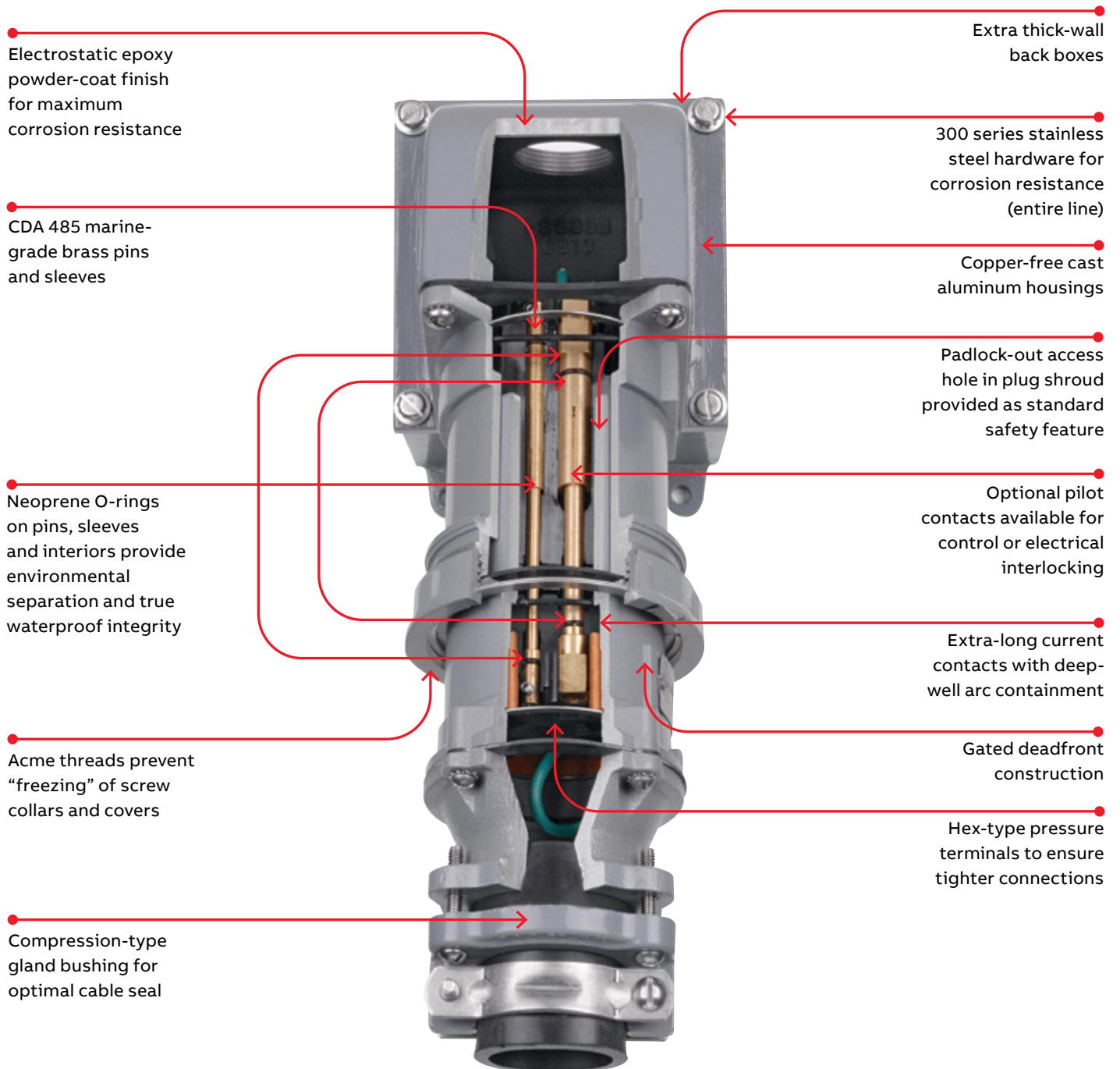
Performance

- **Foreign objects stay out:** All receptacles and connectors have a gated rotating disk (gated deadfront) on the face of the interior, which engages upon insertion
- **Any configuration you need:** Through 4-pole 5-wire configurations, all have a safety center earth ground pin design that makes first and breaks last
- **Ease of assembly:** Solderless pressure-type screw terminals with hex socket heads and rear-access, take-apart housings provide quick wiring access – No interior removal required for wiring receptacles and connectors
- **More control available:** Two optional pilot/control pins for contactors, load monitoring circuit, shunt trip or any other communication function you need
- **More power:** 150% non UL rating enables Max-Gard installations to be extended up to 600 A custom loads with separate disconnect service



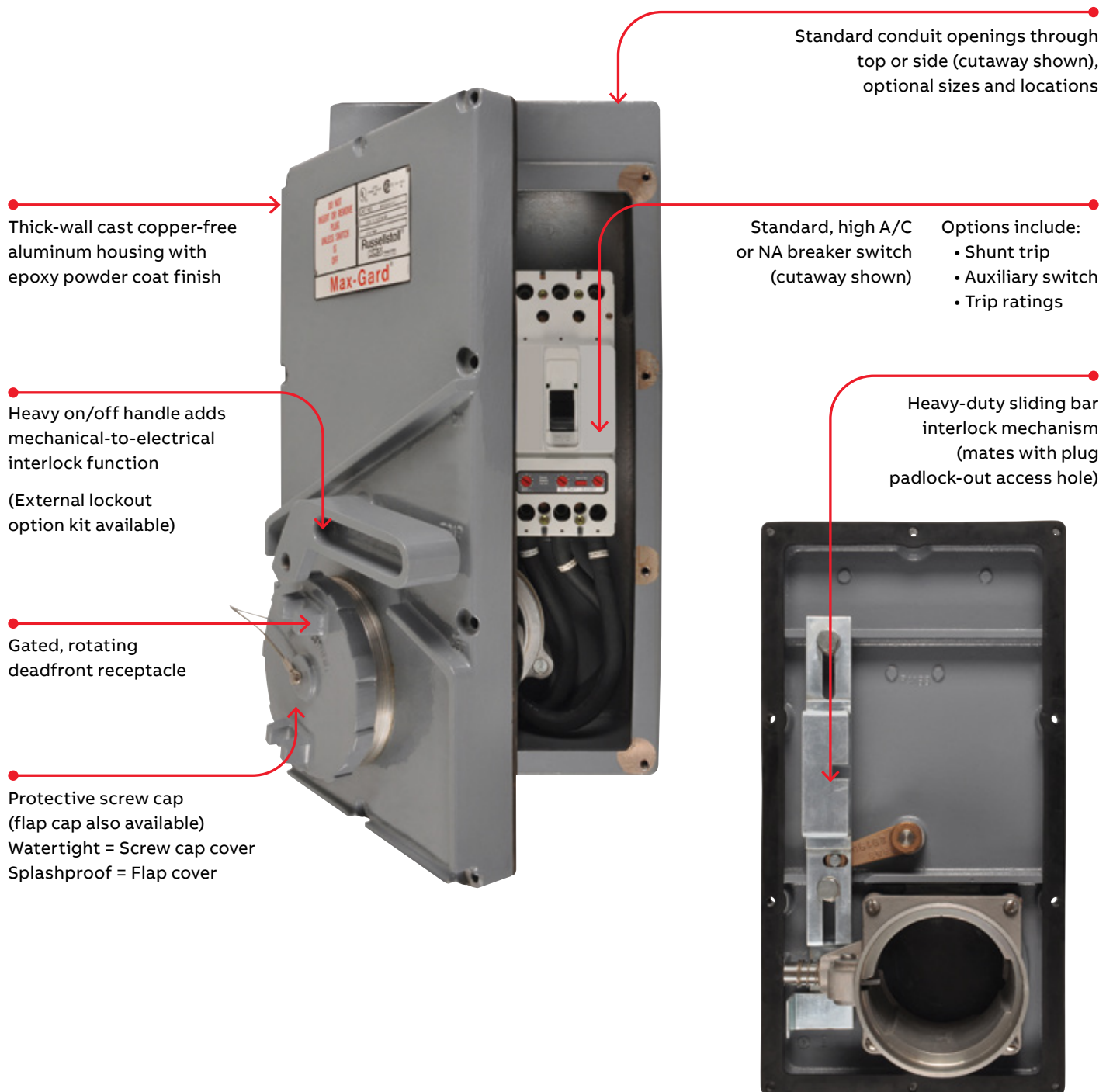
Plug and receptacle with angle adapter and junction box

- Delayed insertion/removal keyways provide explosion-proof approval for standard 30 A, 60 A and 100 A plugs and receptacles
- Available up to 4P5W + pilot; circuit interrupting/load breaking 30 A to 200 A
- Center ground contacts: Make first, break last
- Optional control/pilot contacts: Make last, break first



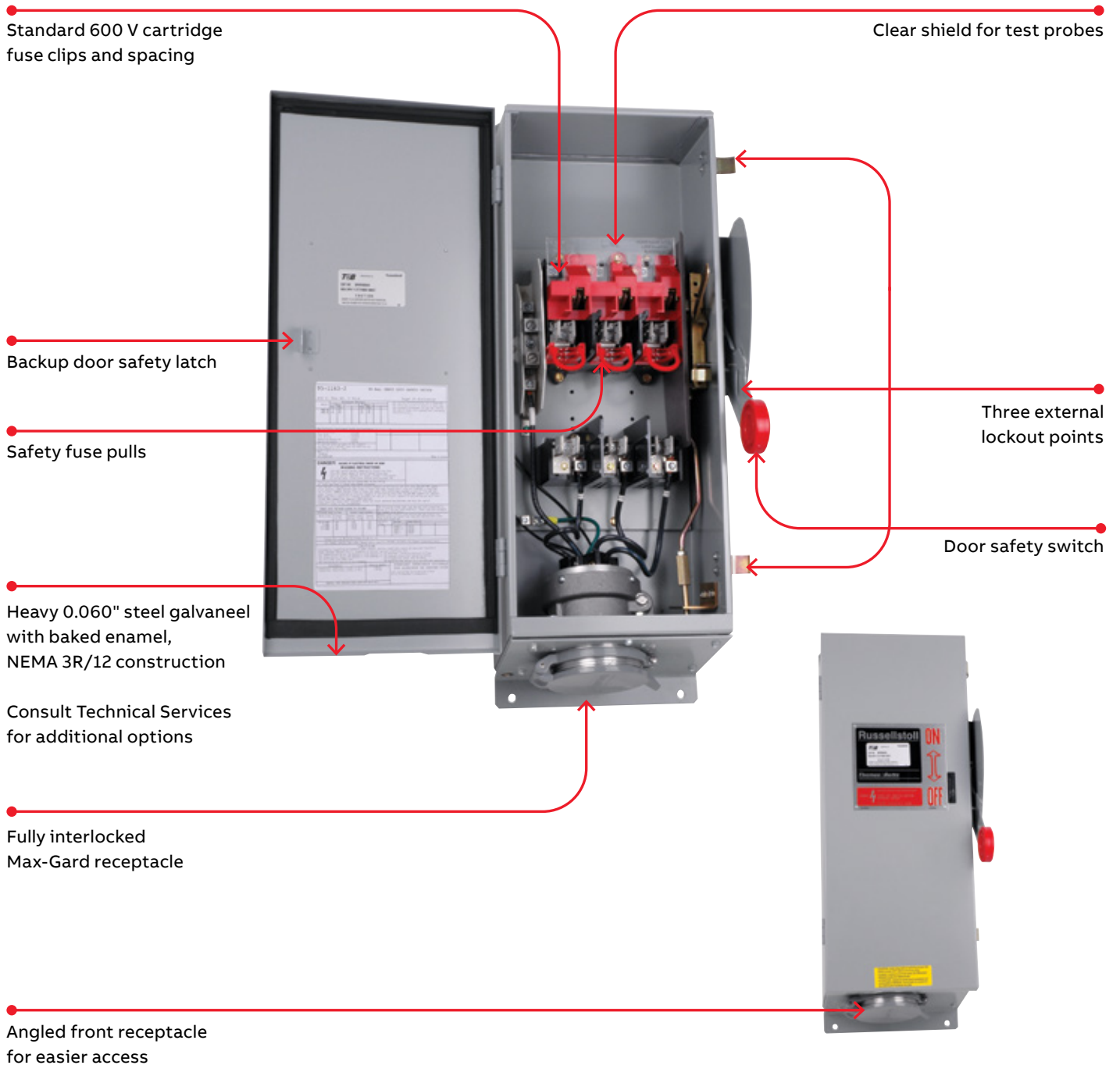
Cast aluminum circuit breaker interlocked receptacle (cutaway view)

- 30 A–400 A (30–200 A load breaking), maximum 600 V AC/250 V DC receptacles, inlets, plugs, connectors, interlocked receptacles, explosion-proof interlocked receptacles
- NEMA 4X interlocks available in 30 A–400 A ranges through 4P5W, with two optional pilot/control contacts



Fused-disconnect switch* interlocked receptacle

- 30 A–400 A (30 A–200 A load breaking), maximum 600 V AC/250 V DC receptacles, inlets, plugs, connectors, interlocked receptacles, explosion-proof interlocked receptacles
- Available in 30 A, 60 A and 100 A sizes, all polarizations through 600 V AC
- Meets Federal specification WS865C, UL file #E5239 Meets UL 98, 50, 1682, 508, 231
- Meets NEC Table 373-6(b)
- Meets major automotive specs
- * Also available as switch only



Standard 600 V cartridge fuse clips and spacing

Clear shield for test probes

Backup door safety latch

Safety fuse pulls

Three external lockout points

Heavy 0.060" steel galvaneel with baked enamel, NEMA 3R/12 construction

Consult Technical Services for additional options

Fully interlocked Max-Gard receptacle

Door safety switch

Angled front receptacle for easier access

Max-Gard interconnection systems

Explosion-proof waterproof receptacles

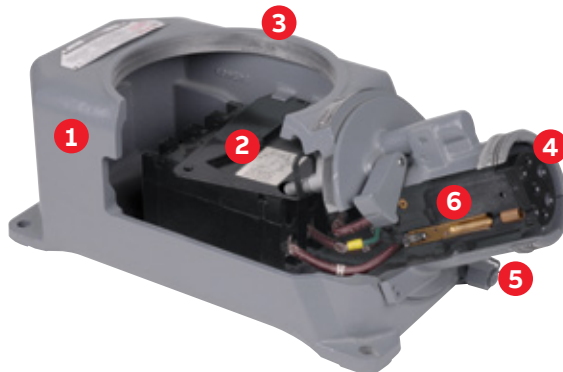
Max-Gard DBRE and DSRE series interlocks are explosion proof and waterproof (O-ring sealed), along with optional control contacts, and are fully UL listed.

01 Approvals

- UL and CSA listed for hazardous locations
- Class I, Division 1, Groups B, C and D
- Class II, Division 1, Groups F and G
- UL File E10919
- NEMA 7, 8, 9
- CSA
- DOT shipboard used above deck "green water"
- NEMA 4X
- USCG approved

02 Approvals

- UL and CSA listed for hazardous locations
- Class I, Division 1, C and D
- Class II, Division 1, Groups F and G
- UL File E10919
- NEMA 7, 8, 9
- CSA
- DOT shipboard used above deck "green water"
- NEMA 4X
- USCG approved



—
01

Explosion-proof waterproof circuit breaker interlocked receptacle

Available in 30 A, 60 A and 100 A sizes, all polarizations.

1. Heavy-duty cast aluminum housing, electrostatic epoxy coat finish
2. Standard, high AIC and NA (switched only) breakers available
3. Threaded access (cover not shown) with O-ring for explosion-proof and waterproof integrity
4. Gated deadfront safety
5. Drain plug
6. Factory-sealed receptacle interior – Accepts standard Max-Gard plugs



—
02

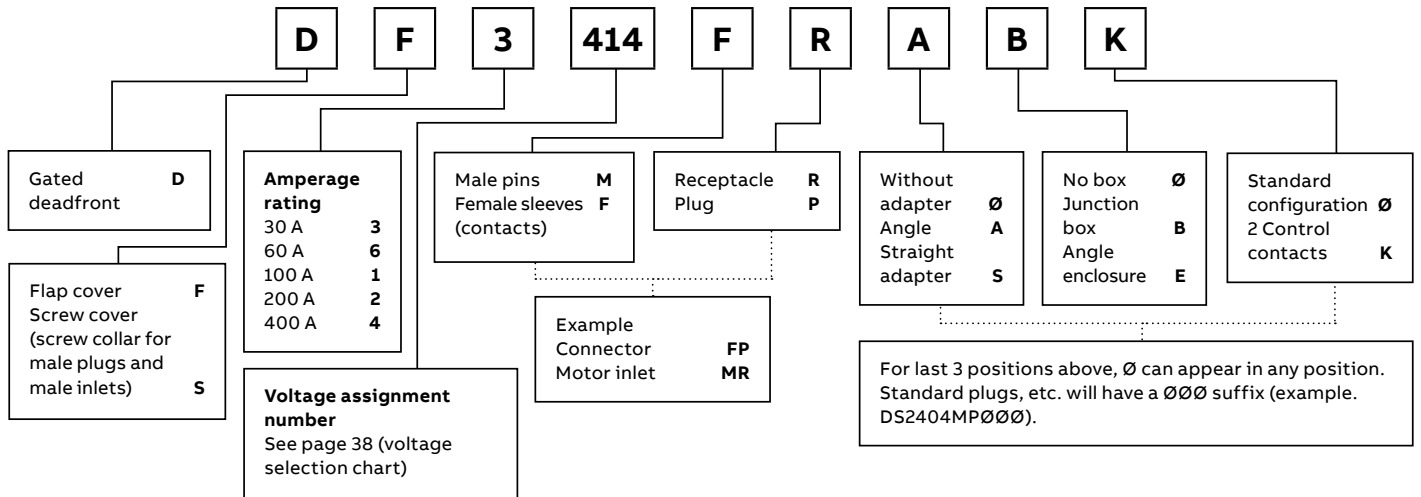
Explosion-proof waterproof non-interlocked receptacle

Available in 30 A 480 V AC max, all polarizations.

- Factory-sealed interior (no filled conduits)
 - Easy low-cost installation
1. Heavy-duty cast aluminum housing, electrostatic epoxy coat finish
 2. Threaded access (cover not shown) with O-ring for explosion-proof and waterproof integrity
 3. Gated deadfront for safety
 4. All standard polarizations available to 480 V AC
 5. Factory-sealed receptacle interior – Accepts standard Max-Gard plugs

Receptacles, plugs and connectors

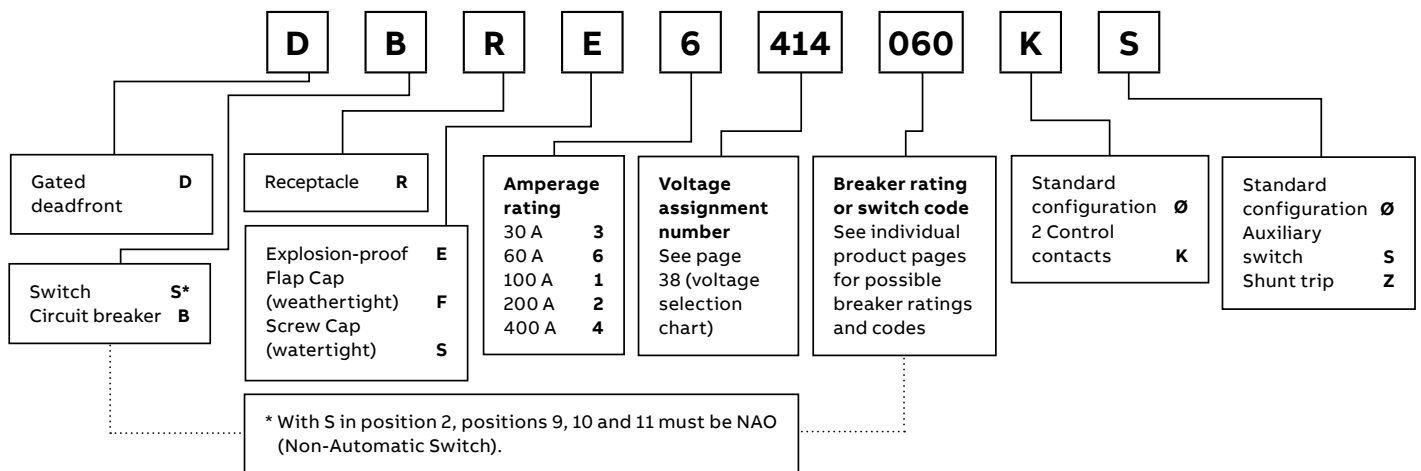
Feature	Russellstoll Max-Gard	Crouse-Hinds Arkтите**	Appleton Powertite****
Center ground contact	Yes	No	No
24 single-rated factory polarizations	Yes	No	No
Gated deadfront construction	Yes	No	No
Two optional control contacts	Yes	No	No
Marine-grade CDA485 brass pins/sleeves (200 A–400 A silver-plated)	Yes	No	No
O-rings/environmental separation, full line	Yes	No	No
Available to 5-wire (4-pole, 5-wire)	Yes	30 A and 60 A only	No
Complete line epoxy powder coated – Standard	Yes	No	Some



Interlocked receptacles

Feature	Russellstoll DBRE/DSRE series	Crouse-Hinds EPC series	Appleton EBR series (with FB breaker)
Waterproof (DurORing™) O-ring sealing	Yes	No	No
Available to 5-wire (4-pole, 5-wire) through 100 A	Yes	No	No
Gated deadfront	Yes	No	No
Center ground sleeve contact	Yes	No	No
24 single-rated factory polarizations	Yes	No	No
Class I, Div. 1, Groups B, C, D	Yes	Yes	Yes
Class II, Div. 1, Groups F and G	Yes	Yes	Yes*
Meets Coast Guard (was CG259) approvals	Yes	No	No

* Group F excepting electrically conductive dusts. ** Crouse-Hinds and Arkтите are trademarks of Cooper Industries, Inc. *** Appleton and Powertite are trademarks of Appleton Electric Inc.



Max-Gard interconnection systems

30 A standard service



Device ratings and polarizations

Pole	Wire	Conductor placement	Voltage 60 Hz	Cat. no. ▼	Standard bushing I.D. [†] (in.)	Cat. no. ▼	Standard bushing I.D. [†] (in.)
Product type				Male plug ^{**}		Female connector	
2	3		277	DS3104MP000	7/8	DF3104FP000	7/8
2	3		125	DS3107MP000	7/8	DF3107FP000	7/8
2	3		480	DS3204MP000	7/8	DF3204FP000	7/8
2	3		250	DS3207MP000	7/8	DF3207FP000	7/8
2	3		600	DS3214MP000	7/8	DF3214FP000	7/8
2	3		208	DS3216MP000	7/8	DF3216FP000	7/8
3	4		277/480	DS3304MP000	1	DF3304FP000	1
3	4		125/250	DS3307MP000	1	DF3307FP000	1
3	4		120/208	DS3316MP000	1	DF3316FP000	1
3	4		3Ø 480	DS3404MP000	1	DF3404FP000	1
3	4		3Ø 250	DS3407MP000	1	DF3407FP000	1
3	4		3Ø 600	DS3414MP000	1	DF3414FP000	1
3	4		3Ø 208	DS3416MP000	1	DF3416FP000	1
3	4		3Ø 440	DS3421MP000	1	DF3421FP000	1
4	5		3ØY 277/480	DS3504MP000	1 3/16	DF3504FP000	1 3/16
4	5		3ØY 347/600	DS3514MP000	1 3/16	DF3514FP000	1 3/16
4	5		3ØY 120/208	DS3516MP000	1 3/16	DF3516FP000	1 3/16
4	5		3ØY 250/440	DS3521MP000	1 3/16	DF3521FP000	1 3/16

Maximum 600 V AC or 250 V DC.

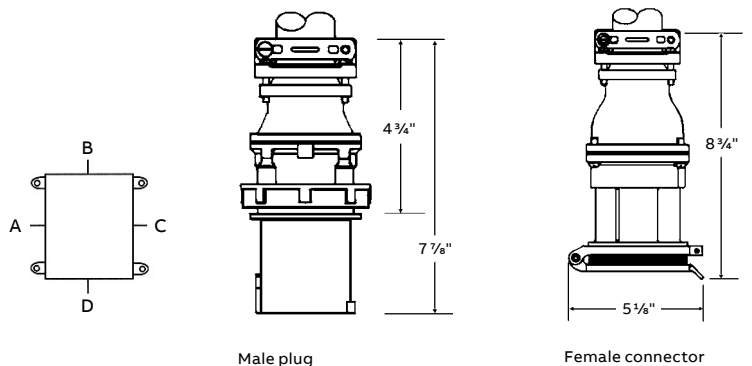
** If receptacle is desired with a straight adapter instead of standard angle adapter, substitute "S" for the "A" in the catalog number of the receptacle with angle adapter or adapter and box.

[†] Standard cable bushings shown; see page 32 for other sizes available at no extra cost if specified on order.

^{**} Always furnished with screw collar. We recommend cup cap with male plug; order catalog number DS3CC.

▼ Control contacts for plug/receptacles: Use "K" where noted. Ex: DS3104MP00K. For adapters, junction boxes and accessories, see pages 32–35.

Diagrams

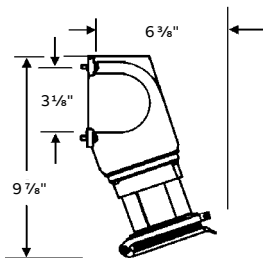




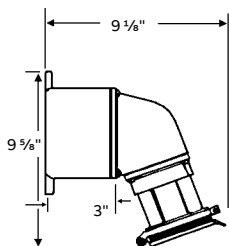
Pole	Wire	Cat. no. ▼ Female receptacle with angle enclosure	Cat. no. ▼ Female receptacle with angle adapter** and junction box	Cat. no. ▼ Female receptacle with angle adapter**	Cat. no. ▼ Female receptacle
2	3	DF3104FRØØ	DF3104FRABØ	DF3104FRAØØ	DF3104FRØØØ
2	3	DF3107FRØØ	DF3107FRABØ	DF3107FRAØØ	DF3107FRØØØ
2	3	DF3204FRØØ	DF3204FRABØ	DF3204FRAØØ	DF3204FRØØØ
2	3	DF3207FRØØ	DF3207FRABØ	DF3207FRAØØ	DF3207FRØØØ
2	3	DF3214FRØØ	DF3214FRABØ	DF3214FRAØØ	DF3214FRØØØ
2	3	DF3216FRØØ	DF3216FRABØ	DF3216FRAØØ	DF3216FRØØØ
3	4	DF3304FRØØ	DF3304FRABØ	DF3304FRAØØ	DF3304FRØØØ
3	4	DF3307FRØØ	DF3307FRABØ	DF3307FRAØØ	DF3307FRØØØ
3	4	DF3316FRØØ	DF3316FRABØ	DF3316FRAØØ	DF3316FRØØØ
3	4	DF3404FRØØ	DF3404FRABØ	DF3404FRAØØ	DF3404FRØØØ
3	4	DF3407FRØØ	DF3407FRABØ	DF3407FRAØØ	DF3407FRØØØ
3	4	DF3414FRØØ	DF3414FRABØ	DF3414FRAØØ	DF3414FRØØØ
3	4	DF3416FRØØ	DF3416FRABØ	DF3416FRAØØ	DF3416FRØØØ
3	4	DF3421FRØØ	DF3421MRABØ	DF3421FRAØØ	DF3421FRØØØ
4	5	DF3504FRØØ	DF3504FRABØ	DF3504FRAØØ	DF3504FRØØØ
4	5	DF3514FRØØ	DF3514FRABØ	DF3514FRAØØ	DF3514FRØØØ
4	5	DF3516FRØØ	DF3516FRABØ	DF3516FRAØØ	DF3516FRØØØ
4	5	DF3521FRØØ	DF3521FRABØ	DF3521FRAØØ	DF3521FRØØØ

Maximum lug wire 8 AWG 7-strand or flexible, cable entrance 0.187" diameter.
 Receptacles furnished with flap cap also have screw thread to accept male collar on plug.
 Catalog numbers shown are for flap cap receptacles; change "DF" to "DS" for ordering screw cap.
 Boldface figures are for voltage assignment. For different ratings, see page 38.
 Outlet furnished at location "B" unless otherwise specified. 1" NPT.
 For full polarization, see page 38.

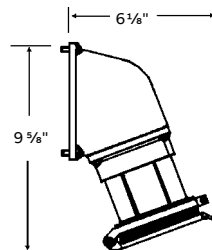
Diagrams



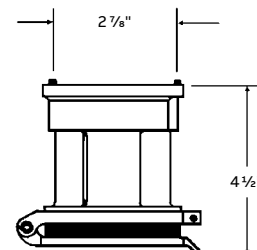
Female receptacle
with angle enclosure



Female receptacle
with angle adapter
and junction box



Female receptacle
with angle adapter



Female receptacle

Max-Gard interconnection systems

30 A reverse service



Device ratings and polarizations

Pole	Wire	Conductor placement	Voltage 60 Hz	Cat. no. ▼	Standard bushing I.D. [†] (in.)	Cat. no. ▼	Standard bushing I.D. [†] (in.)
Product type				Female connector		Male plug ^{**}	
2	3		277	DF3104FP000	7/8	DS3104MP000	7/8
2	3		125	DF3107FP000	7/8	DS3107MP000	7/8
2	3		480	DF3204FP000	7/8	DS3204MP000	7/8
2	3		250	DF3207FP000	7/8	DS3207MP000	7/8
2	3		600	DF3214FP000	7/8	DS3214MP000	7/8
2	3		208	DF3216FP000	7/8	DS3216MP000	7/8
3	4		277/480	DF3304FP000	1	DS3304MP000	1
3	4		125/250	DF3307FP000	1	DS3307MP000	1
3	4		120/208	DF3316FP000	1	DS3316MP000	1
3	4		3Ø 480	DF3404FP000	1	DS3404MP000	1
3	4		3Ø 250	DF3407FP000	1	DS3407MP000	1
3	4		3Ø 600	DF3414FP000	1	DS3414MP000	1
3	4		3Ø 208	DF3416FP000	1	DS3416MP000	1
3	4		3Ø 440	DF3421FP000	1	DS3421MP000	1
4	5		3ØY 277/480	DF3504FP000	1 3/16	DS3504MP000	1 3/16
4	5		3ØY 347/600	DF3514FP000	1 3/16	DS3514MP000	1 3/16
4	5		3ØY 120/208	DF3516FP000	1 3/16	DS3516MP000	1 3/16
4	5		3ØY 250/440	DF3521FP000	1 3/16	DS3521MP000	1 3/16

Maximum 600 V AC or 250 V DC.

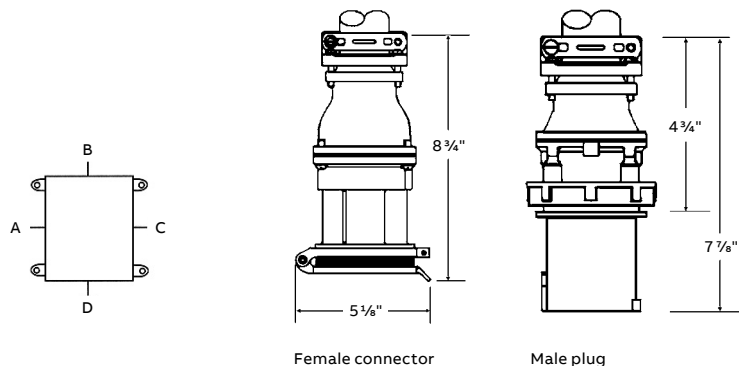
** If receptacle is desired with a straight adapter instead of standard angle adapter, substitute "S" for the "A" in the catalog number of the receptacle with angle adapter or adapter and box.

[†] Standard cable bushings shown; see page 32 for other sizes available at no extra cost if specified on order.

^{**} Always furnished with screw collar. We recommend cup cap with male plug; order catalog number DS3CC.

▼ Control contacts for plug/receptacles: Use "K" where noted. Ex: DS3104MR00K. For adapters, junction boxes and accessories, see pages 32–35.

Diagrams

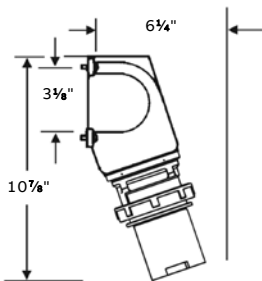




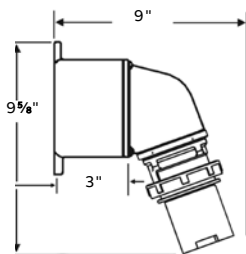
Pole	Wire	Cat. no. ▼ Male inlet with angle enclosure	Cat. no. ▼ Male inlet with angle adapter** and junction box	Cat. no. ▼ Male inlet with angle adapter**	Cat. no. ▼ Male Inlet††
2	3	DS3104MRØØ	DS3104MRABØ	DS3104MRAØØ	DS3104MRØØØ
2	3	DS3107MRØØØ	DS3107MRABØ	DS3107MRAØØ	DS3107MRØØØ
2	3	DS3204MRØØØ	DS3204MRABØ	DS3204MRAØØ	DS3204MRØØØ
2	3	DS3207MRØØØ	DS3207MRABØ	DS3207MRAØØ	DS3207MRØØØ
2	3	DS3214MRØØØ	DS3214MRABØ	DS3214MRAØØ	DS3214MRØØØ
2	3	DS3216MRØØØ	DS3216MRABØ	DS3216MRAØØ	DS3216MRØØØ
3	4	DS3304MRØØØ	DS3304MRABØ	DS3304MRAØØ	DS3304MRØØØ
3	4	DS3307MRØØØ	DS3307MRABØ	DS3307MRAØØ	DS3307MRØØØ
3	4	DS3316MRØØØ	DS3316MRABØ	DS3316MRAØØ	DS3316MRØØØ
3	4	DS3404MRØØØ	DS3404MRABØ	DS3404MRAØØ	DS3404MRØØØ
3	4	DS3407MRØØØ	DS3407MRABØ	DS3407MRAØØ	DS3407MRØØØ
3	4	DS3414MRØØØ	DS3414MRABØ	DS3414MRAØØ	DS3414MRØØØ
3	4	DS3416MRØØØ	DS3416MRABØ	DS3416MRAØØ	DS3416MRØØØ
3	4	DS3421MRØØØ	DS3421MRABØ	DS3421MRAØØ	DS3421MRØØØ
4	5	DS3504MRØØØ	DS3504MRABØ	DS3504MRAØØ	DS3504MRØØØ
4	5	DS3514MRØØØ	DS3514MRABØ	DS3514MRAØØ	DS3514MRØØØ
4	5	DS3516MRØØØ	DS3516MRABØ	DS3516MRAØØ	DS3516MRØØØ
4	5	DS3521MRØØØ	DS3521MRABØ	DS3521MRAØØ	DS3521MRØØØ

Maximum lug wire 4 AWG 7-strand or flexible, cable entrance 0.187" diameter.
 Receptacles furnished with flap cap also have screw thread to accept male collar on plug.
 Catalog numbers shown are for flap cap receptacles; change "DF" to "DS" for ordering screw cap.
 Boldface figures are for voltage assignment. For different ratings, see page 38.
 Outlet furnished at location "B" unless otherwise specified. 1" NPT.
 For full polarization, see page 38.

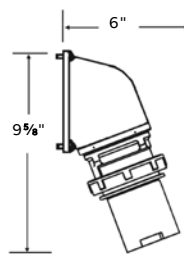
Diagrams



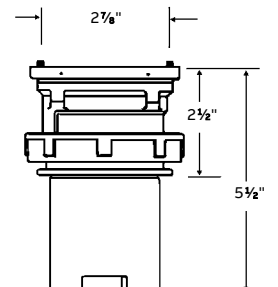
Male inlet with angle enclosure



Male inlet with angle adapter and junction box



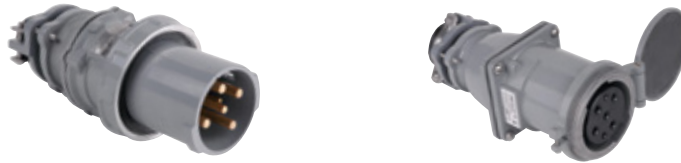
Male inlet with angle adapter



Male inlet

Max-Gard interconnection systems

60 A standard service



Device ratings and polarizations

Pole	Wire	Conductor placement	Voltage 60 Hz	Cat. no. ▼	Standard bushing I.D.† (in.)	Cat. no. ▼	Standard bushing I.D.† (in.)
Product type				Male plug††		Female connector	
2	3		277	DS6104MP000	1 3/16	DF6104FP000	1 3/16
2	3		125	DS6107MP000	1 3/16	DF6107FP000	1 3/16
2	3		480	DS6204MP000	1 3/16	DF6204FP000	1 3/16
2	3		250	DS6207MP000	1 3/16	DF6207FP000	1 3/16
2	3		600	DS6214MP000	1 3/16	DF6214FP000	1 3/16
2	3		208	DS6216MP000	1 3/16	DF6216FP000	1 3/16
3	4		277/480	DS6304MP000	1 5/16	DF6304FP000	1 5/16
3	4		125/250	DS6307MP000	1 5/16	DF6307FP000	1 5/16
3	4		120/208	DS6316MP000	1 5/16	DF6316FP000	1 5/16
3	4		3Ø 480	DS6404MP000	1 5/16	DF6404FP000	1 5/16
3	4		3Ø 250	DS6407MP000	1 5/16	DF6407FP000	1 5/16
3	4		3Ø 600	DS6414MP000	1 5/16	DF6414FP000	1 5/16
3	4		3Ø 208	DS6416MP000	1 5/16	DF6416FP000	1 5/16
3	4		3Ø 440	DS6421MP000	1 5/16	DF6421FP000	1 5/16
4	5		3ØY 277/480	DS6504MP000	1 1/2	DF6504FP000	1 1/2
4	5		3ØY 347/600	DS6514MP000	1 1/2	DF6514FP000	1 1/2
4	5		3ØY 110/208	DS6516MP000	1 1/2	DF6516FP000	1 1/2
4	5		3ØY 250/440	DS6521MP000	1 1/2	DF6521FP000	1 1/2

Maximum 600 V AC or 250 V DC.

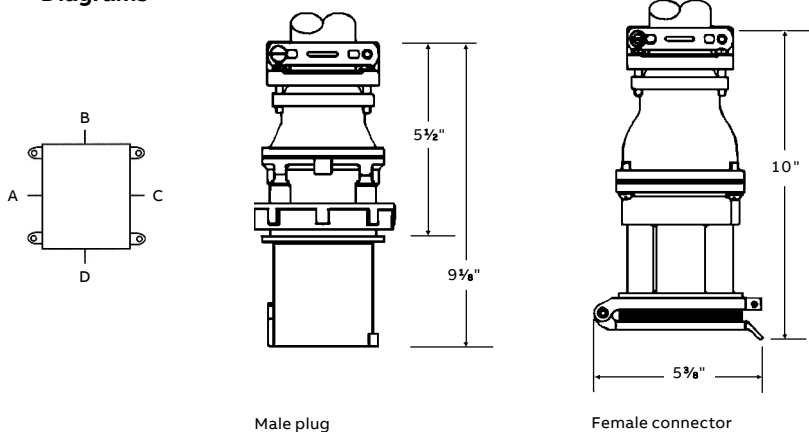
** If receptacle is desired with a straight adapter instead of standard angle adapter, substitute "S" for the "A" in the catalog number of the receptacle with angle adapter or adapter and box.

† Standard cable bushings shown; see page 32 for other sizes available at no extra cost if specified on order.

†† Always furnished with screw collar. We recommend cup cap with male plug; order catalog number DS6CC

▼ Control contacts for plug/receptacles: Use "K" where noted. Ex: DS6104MP00K. For adapters, junction boxes and accessories, see pages 32–35.

Diagrams



Male plug

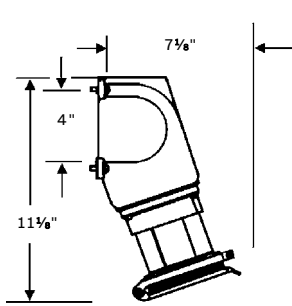
Female connector



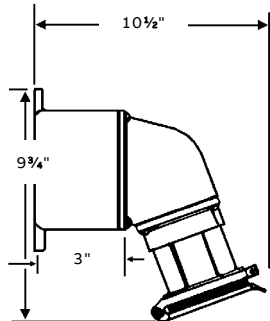
Pole	Wire	Cat. no. ▼	Cat. no. ▼	Cat. no. ▼	Cat. no. ▼
Product type		Female receptacle with angle enclosure	Female receptacle with angle adapter** and junction box	Female receptacle with angle adapter**	Female receptacle
2	3	DF6104FR0E0	DF6104FRAB0	DF6104FRA00	DF6104FR000
2	3	DF6107FR0E0	DF6107FRAB0	DF6107FRA00	DF6107FR000
2	3	DF6204FR0E0	DF6204FRAB0	DF6204FRA00	DF6204FR000
2	3	DF6207FR0E0	DF6207FRAB0	DF6207FRA00	DF6207FR000
2	3	DF6214FR0E0	DF6214FRAB0	DF6214FRA00	DF6214FR000
2	3	DF6216FR0E0	DF6216FRAB0	DF6216FRA00	DF6216FR000
3	4	DF6304FR0E0	DF6304FRAB0	DF6304FRA00	DF6304FR000
3	4	DF6307FR0E0	DF6307FRAB0	DF6307FRA00	DF6307FR000
3	4	DF6316FR0E0	DF6316FRAB0	DF6316FRA00	DF6316FR000
3	4	DF6404FR0E0	DF6404FRAB0	DF6404FRA00	DF6404FR000
3	4	DF6407FR0E0	DF6407FRAB0	DF6407FRA00	DF6407FR000
3	4	DF6414FR0E0	DF6414FRAB0	DF6414FRA00	DF6414FR000
3	4	DF6416FR0E0	DF6416FRAB0	DF6416FRA00	DF6416FR000
3	4	DF6421FR0E0	DF6421FRAB0	DF6421FRA00	DF6421FR000
4	5	DF6504FR0E0	DF6504FRAB0	DF6504FRA00	DF6504FR000
4	5	DF6514FR0E0	DF6514FRAB0	DF6514FRA00	DF6514FR000
4	5	DF6516FR0E0	DF6516FRAB0	DF6516FRA00	DF6516FR000
4	5	DF6521FR0E0	DF6521FRAB0	DF6521FRA00	DF6521FR000

Maximum lug wire 4 AWG 7-strand or flexible, cable entrance 0.302" diameter.
 Receptacles furnished with flap cap also have screw thread to accept male collar on plug.
 Catalog numbers shown are for flap cap receptacles; change "DF" to "DS" for ordering screw cap.
 Boldface figures are for voltage assignment. For different ratings, see page 38.
 Outlet furnished at location "B" unless otherwise specified. 1½" NPT.
 For full polarization, see page 38.

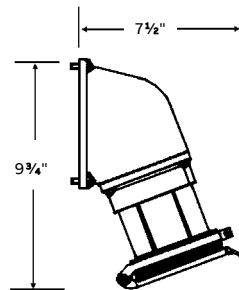
Diagrams



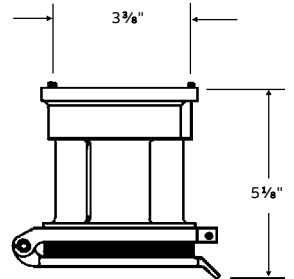
Female receptacle with angle enclosure



Female receptacle with angle adapter and junction box



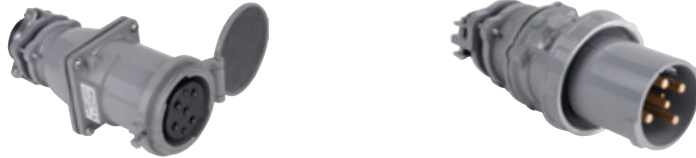
Female receptacle with angle adapter



Female receptacle

Max-Gard interconnection systems

60 A reverse service



Device ratings and polarizations

Pole	Wire	Conductor placement	Voltage 60 Hz	Cat. no. ▼	Standard bushing I.D. [†] (in.)	Cat. no. ▼	Standard bushing I.D. [†] (in.)
Product type				Female connector		Male plug ^{††}	
2	3		277	DF6104FP000	1 ³ / ₁₆	DS6104MP000	1 ³ / ₁₆
2	3		125	DF6107FP000	1 ³ / ₁₆	DS6107MP000	1 ³ / ₁₆
2	3		480	DF6204FP000	1 ³ / ₁₆	DS6204MP000	1 ³ / ₁₆
2	3		250	DF6207FP000	1 ³ / ₁₆	DS6207MP000	1 ³ / ₁₆
2	3		600	DF6214FP000	1 ³ / ₁₆	DS6214MP000	1 ³ / ₁₆
2	3		208	DF6216FP000	1 ³ / ₁₆	DS6216MP000	1 ³ / ₁₆
3	4		277/480	DF6304FP000	1 ⁵ / ₁₆	DS6304MP000	1 ⁵ / ₁₆
3	4		125/250	DF6307FP000	1 ⁵ / ₁₆	DS6307MP000	1 ⁵ / ₁₆
3	4		120/208	DF6316FP000	1 ⁵ / ₁₆	DS6316MP000	1 ⁵ / ₁₆
3	4		3Ø 480	DF6404FP000	1 ⁵ / ₁₆	DS6404MP000	1 ⁵ / ₁₆
3	4		3Ø 250	DF6407FP000	1 ⁵ / ₁₆	DS6407MP000	1 ⁵ / ₁₆
3	4		3Ø 600	DF6414FP000	1 ⁵ / ₁₆	DS6414MP000	1 ⁵ / ₁₆
3	4		3Ø 208	DF6416FP000	1 ⁵ / ₁₆	DS6416MP000	1 ⁵ / ₁₆
3	4		3Ø 440	DF6421FP000	1 ⁵ / ₁₆	DS6421MP000	1 ⁵ / ₁₆
4	5		3ØY 277/480	DF6504FP000	1 ¹ / ₂	DS6504MP000	1 ¹ / ₂
4	5		3ØY 347/600	DF6514FP000	1 ¹ / ₂	DS6514MP000	1 ¹ / ₂
4	5		3ØY 120/208	DF6516FP000	1 ¹ / ₂	DS6516MP000	1 ¹ / ₂
4	5		3ØY 250/440	DF6521FP000	1 ¹ / ₂	DS6521MP000	1 ¹ / ₂

Maximum 600 V AC or 250 V DC.

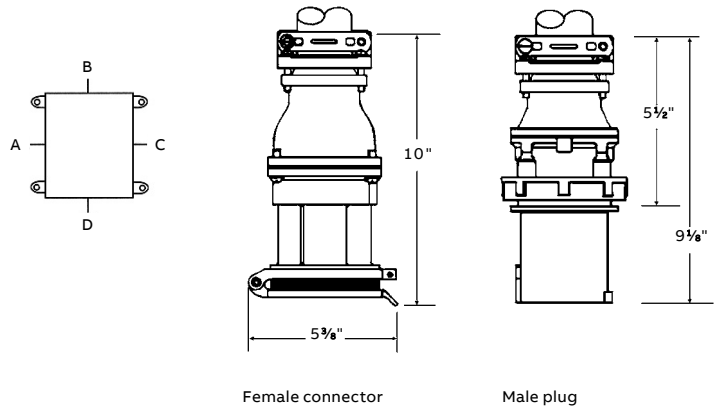
** If receptacle is desired with a straight adapter instead of standard angle adapter, substitute "S" for the "A" in the catalog number of the receptacle with angle adapter or adapter and box.

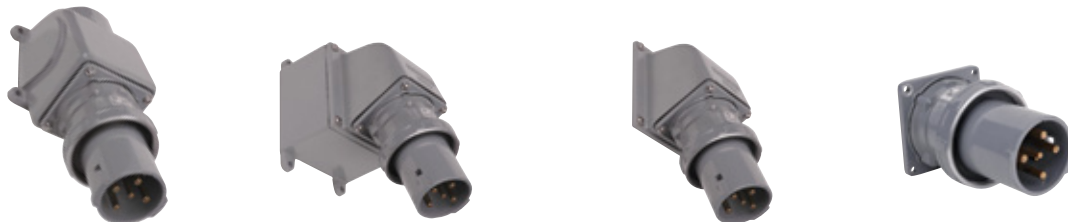
† Standard cable bushings shown; see page 32 for other sizes available at no extra cost if specified on order.

†† Always furnished with screw collar. We recommend cup cap with male plug; order catalog number DS6CC

▼ Control contacts for plug/receptacles: Use "K" where noted. Ex: DS3104MP00K. For adapters, junction boxes and accessories, see pages 32–35.

Diagrams

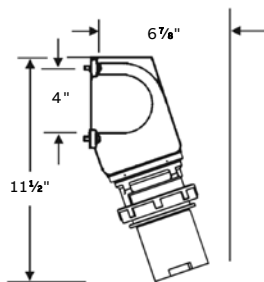




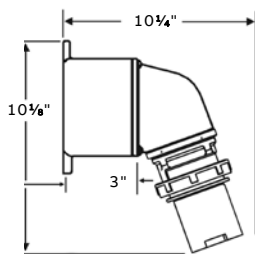
Pole	Wire	Cat. no. ▼ Male inlet with angle enclosure	Cat. no. ▼ Male inlet with angle adapter** and junction box	Cat. no. ▼ Male inlet with angle adapter**	Cat. no. ▼ Male inlet ^{††}
2	3	DS6104MR0E0	DS6104MRAB0	DS6104MRA00	DS6104MR000
2	3	DS6107MR0E0	DS6107MRAB0	DS6107MRA00	DS6107MR000
2	3	DS6204MR0E0	DS6204MRAB0	DS6204MRA00	DS6204MR000
2	3	DS6207MR0E0	DS6207MRAB0	DS6207MRA00	DS6207MR000
2	3	DS6214MR0E0	DS6214MRAB0	DS6214MRA00	DS6214MR000
2	3	DS6216MR0E0	DS6216MRAB0	DS6216MRA00	DS6216MR000
3	4	DS6304MR0E0	DS6304MRAB0	DS6304MRA00	DS6304MR000
3	4	DS6307MR0E0	DS6307MRAB0	DS6307MRA00	DS6307MR000
3	4	DS6316MR0E0	DS6316MRAB0	DS6316MRA00	DS6316MR000
3	4	DS6404MR0E0	DS6404MRAB0	DS6404MRA00	DS6404MR000
3	4	DS6407MR0E0	DS6407MRAB0	DS6407MRA00	DS6407MR000
3	4	DS6414MR0E0	DS6414MRAB0	DS6414MRA00	DS6414MR000
3	4	DS6416MR0E0	DS6416MRAB0	DS6416MRA00	DS6416MR000
3	4	DS6421MR0E0	DS6421MRAB0	DS6421MRA00	DS6421MR000
4	5	DS6504MR0E0	DS6504MRAB0	DS6504MRA00	DS6504MR000
4	5	DS6514MR0E0	DS6514MRAB0	DS6514MRA00	DS6514MR000
4	5	DS6516MR0E0	DS6516MRAB0	DS6516MRA00	DS6516MR000
4	5	DS6521MR0E0	DS6521MRAB0	DS6521MRA00	DS6521MR000

Maximum lug wire 4 AWG 7-strand or flexible, cable entrance 0.302" diameter.
 Receptacles furnished with flap cap also have screw thread to accept male collar on plug.
 Catalog numbers shown are for flap cap receptacles; change "DF" to "DS" for ordering screw cap.
 Boldface figures are for voltage assignment. For different ratings, see page 38.
 Outlet furnished at location "B" unless otherwise specified. 1½" NPT.
 For full polarization, see page 38.

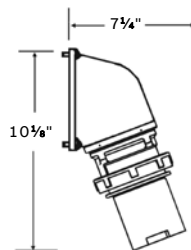
Diagrams



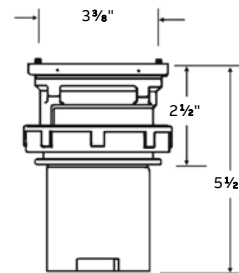
Male inlet with angle enclosure



Male inlet with angle adapter and junction box



Male inlet with angle adapter



Male inlet^{††}

Max-Gard interconnection systems

100 A standard service



Device ratings and polarizations

Pole	Wire	Conductor placement	Voltage 60 Hz	Cat. no. ▼	Standard bushing I.D. [†] (in.)	Cat. no. ▼	Standard bushing I.D. [†] (in.)	
Product type				Male plug ^{††}		Female connector		
2	3		277	DS1104MP000	1 ¹³ / ₁₆	DF1104FP000	1 ¹³ / ₁₆	
2	3		125	DS1107MP000	1 ¹³ / ₁₆	DF1107FP000	1 ¹³ / ₁₆	
2	3		480	DS1204MP000	1 ¹³ / ₁₆	DF1204FP000	1 ¹³ / ₁₆	
2	3		250	DS1207MP000	1 ¹³ / ₁₆	DF1207FP000	1 ¹³ / ₁₆	
2	3		600	DS1214MP000	1 ¹³ / ₁₆	DF1214FP000	1 ¹³ / ₁₆	
2	3		208	DS1216MP000	1 ¹³ / ₁₆	DF1216FP000	1 ¹³ / ₁₆	
3	4			277/480	DS1304MP000	1 ¹³ / ₁₆	DF1304FP000	1 ¹³ / ₁₆
3	4	125/250		DS1307MP000	1 ¹³ / ₁₆	DF1307FP000	1 ¹³ / ₁₆	
3	4	120/208		DS1316MP000	1 ¹³ / ₁₆	DF1316FP000	1 ¹³ / ₁₆	
3	4	3Ø 480		DS1404MP000	1 ¹³ / ₁₆	DF1404FP000	1 ¹³ / ₁₆	
3	4	3Ø 250		DS1407MP000	1 ¹³ / ₁₆	DF1407FP000	1 ¹³ / ₁₆	
3	4	3Ø 600		DS1414MP000	1 ¹³ / ₁₆	DF1414FP000	1 ¹³ / ₁₆	
3	4	3Ø 208		DS1416MP000	1 ¹³ / ₁₆	DF1416FP000	1 ¹³ / ₁₆	
3	4	3Ø 440		DS1421MP000	1 ¹³ / ₁₆	DF1421FP000	1 ¹³ / ₁₆	
4	5			3ØY 277/480	DS1504MP000	2	DF1504FP000	2
4	5			3ØY 347/600	DS1514MP000	2	DF1514FP000	2
4	5		3ØY 118/208	DS1516MP000	2	DF1516FP000	2	
4	5		3ØY 250/440	DS1521MP000	2	DF1521FP000	2	

Maximum 600 V AC or 250 V DC.

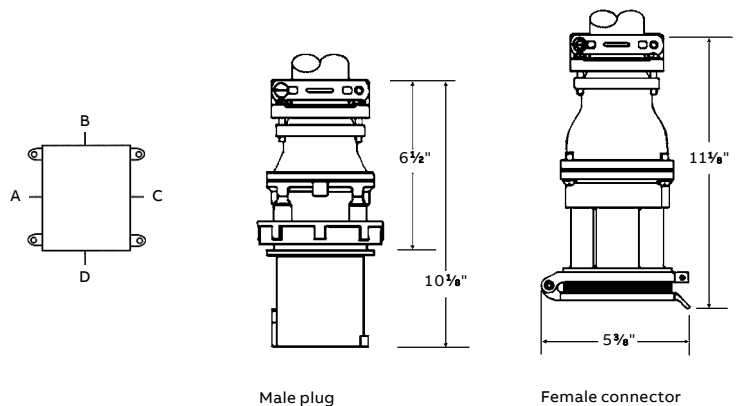
** If receptacle is desired with a straight adapter instead of standard angle adapter, substitute "S" for the "A" in the catalog number of the receptacle with angle adapter or adapter and box.

[†] Standard cable bushings shown; see page 32 for other sizes available at no extra cost if specified on order.

^{††} Always furnished with screw collar. We recommend cup cap with male plug; order catalog number DS1CC.

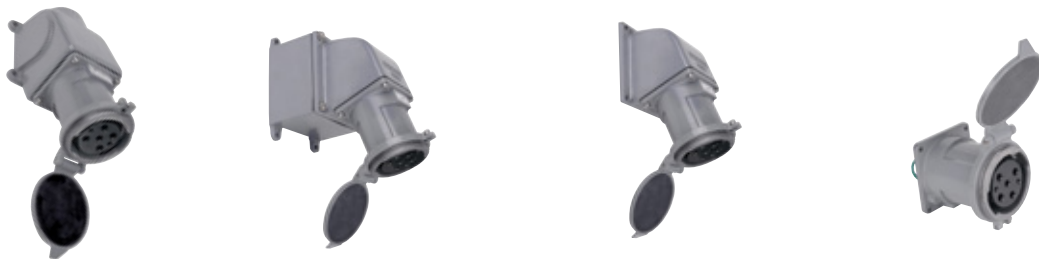
▼ Control contacts for plug/receptacles: Use "K" where noted. Ex: DS1104MP00K. For adapters, junction boxes and accessories, see pages 32–35.

Diagrams



Male plug

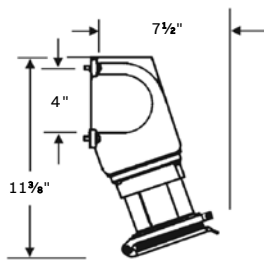
Female connector



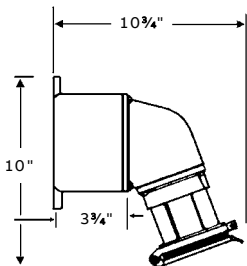
Pole	Wire	Cat. no. ▼ Female receptacle with angle enclosure	Cat. no. ▼ Female receptacle with angle adapter** and junction box	Cat. no. ▼ Female receptacle with angle adapter**	Cat. no. ▼ Female receptacle
2	3	DF1104FR0E0	DF1104FRAB0	DF1104FRA00	DF1104FR000
2	3	DF1107FR0E0	DF1107FRAB0	DF1107FRA00	DF1107FR000
2	3	DF1204FR0E0	DF1204FRAB0	DF1204FRA00	DF1204FR000
2	3	DF1207FR0E0	DF1207FRAB0	DF1207FRA00	DF1207FR000
2	3	DF1214FR0E0	DF1214FRAB0	DF1214FRA00	DF1214FR000
2	3	DF1216FR0E0	DF1216FRAB0	DF1216FRA00	DF1216FR000
3	4	DF1304FR0E0	DF1304FRAB0	DF1304FRA00	DF1304FR000
3	4	DF1307FR0E0	DF1307FRAB0	DF1307FRA00	DF1307FR000
3	4	DF1316FR0E0	DF1316FRAB0	DF1316FRA00	DF1316FR000
3	4	DF1404FR0E0	DF1404FRAB0	DF1404FRA00	DF1404FR000
3	4	DF1407FR0E0	DF1407FRAB0	DF1407FRA00	DF1407FR000
3	4	DF1414FR0E0	DF1414FRAB0	DF1414FRA00	DF1414FR000
3	4	DF1416FR0E0	DF1416FRAB0	DF1416FRA00	DF1416FR000
3	4	DF1421FR0E0	DF1421FRAB0	DF1421FRA00	DF1421FR000
4	5	DF1504FR0E0	DF1504FRAB0	DF1504FRA00	DF1504FR000
4	5	DF1514FR0E0	DF1514FRAB0	DF1514FRA00	DF1514FR000
4	5	DF1516FR0E0	DF1516FRAB0	DF1516FRA00	DF1516FR000
4	5	DF1521FR0E0	DF1521FRAB0	DF1521FRA00	DF1521FR000

Maximum lug wire 0 AWG 19-strand or 1 AWG flexible, cable entrance 0.386" diameter.
 Receptacles furnished with flap cap also have screw thread to accept male collar on plug.
 Catalog numbers shown are for flap cap receptacles; change "DF" to "DS" for ordering screw cap.
 Boldface figures are for voltage assignment. For different ratings, see page 38.
 Outlet furnished at location "B" unless otherwise specified. 2" NPT.
 For full polarization, see page 38.

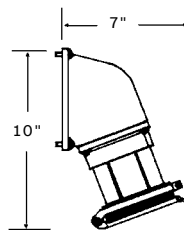
Diagrams



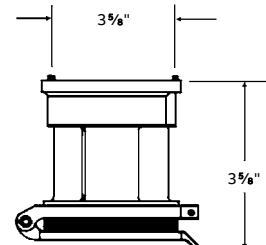
Female receptacle
with angle enclosure



Female receptacle
with angle adapter
and junction box



Female receptacle
with angle adapter



Female receptacle

Max-Gard interconnection systems

100 A reverse service



Device ratings and polarizations

Pole	Wire	Conductor placement	Voltage 60 Hz	Cat. no. ▼	Standard bushing I.D. [†] (in.)	Cat. no. ▼	Standard bushing I.D. [†] (in.)	
Product type				Female connector		Male plug ^{**}		
2	3		277	DF1104FP000	1 ¹¹ / ₁₆	DS1104MP000	1 ¹¹ / ₁₆	
2	3		125	DF1107FP000	1 ¹¹ / ₁₆	DS1107MP000	1 ¹¹ / ₁₆	
2	3		480	DF1204FP000	1 ¹¹ / ₁₆	DS1204MP000	1 ¹¹ / ₁₆	
2	3		250	DF1207FP000	1 ¹¹ / ₁₆	DS1207MP000	1 ¹¹ / ₁₆	
2	3		600	DF1214FP000	1 ¹¹ / ₁₆	DS1214MP000	1 ¹¹ / ₁₆	
2	3		208	DF1216FP000	1 ¹¹ / ₁₆	DS1216MP000	1 ¹¹ / ₁₆	
3	4			277/480	DF1304FP000	1 ¹³ / ₁₆	DS1304MP000	1 ¹³ / ₁₆
3	4	125/250		DF1307FP000	1 ¹³ / ₁₆	DS1307MP000	1 ¹³ / ₁₆	
3	4	120/208		DF1316FP000	1 ¹³ / ₁₆	DS1316MP000	1 ¹³ / ₁₆	
3	4	3Ø 480		DF1404FP000	1 ¹³ / ₁₆	DS1404MP000	1 ¹³ / ₁₆	
3	4	3Ø 250		DF1407FP000	1 ¹³ / ₁₆	DS1407MP000	1 ¹³ / ₁₆	
3	4	3Ø 600		DF1414FP000	1 ¹³ / ₁₆	DS1414MP000	1 ¹³ / ₁₆	
3	4	3Ø 208		DF1416FP000	1 ¹³ / ₁₆	DS1416MP000	1 ¹³ / ₁₆	
3	4	3Ø 440		DF1421FP000	1 ¹³ / ₁₆	DS1421MP000	1 ¹³ / ₁₆	
4	5			3ØY 277/480	DF1504FP000	2	DS1504MP000	2
4	5			3ØY 347/600	DF1514FP000	2	DS1514MP000	2
4	5		3ØY 110/208	DF1516FP000	2	DS1516MP000	2	
4	5		3ØY 250/440	DF1521FP000	2	DS1521MP000	2	

Maximum 600 V AC or 250 V DC.

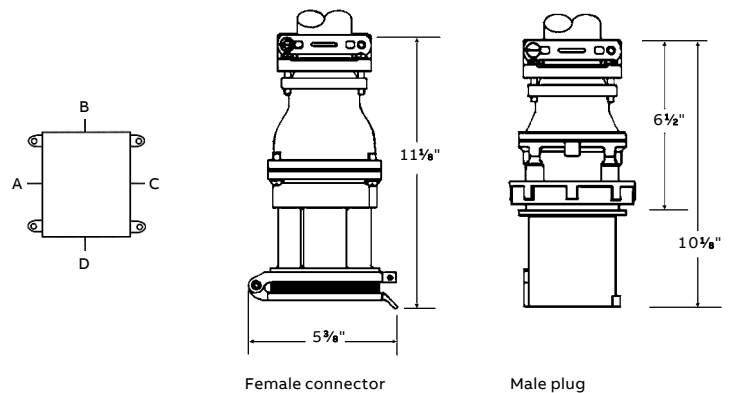
** If receptacle is desired with a straight adapter instead of standard angle adapter, substitute "S" for the "A" in the catalog number of the receptacle with angle adapter or adapter and box.

[†] Standard cable bushings shown; see page 32 for other sizes available at no extra cost if specified on order.

^{**} Always furnished with screw collar. We recommend cup cap with male plug; order catalog number DS1CC.

▼ Control contacts for plug/receptacles: Use "K" where noted. Ex: DS1104MR00K. For adapters, junction boxes and accessories, see pages 32–35.

Diagrams

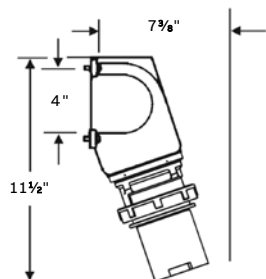




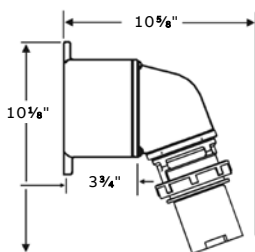
Pole	Wire	Cat. no. ▼ Male inlet with angle enclosure	Cat. no. ▼ Male inlet with angle adapter** and DJB3 junction box	Cat. no. ▼ Male inlet with angle adapter**	Cat. no. ▼ Male inlet††
2	3	DS1104MRØØ	DS1104MRABØ	DS1104MRAØØ	DS1104MRØØØ
2	3	DS1107MRØØ	DS1107MRABØ	DS1107MRAØØ	DS1107MRØØØ
2	3	DS1204MRØØ	DS1204MRABØ	DS1204MRAØØ	DS1204MRØØØ
2	3	DS1207MRØØ	DS1207MRABØ	DS1207MRAØØ	DS1207MRØØØ
2	3	DS1214MRØØ	DS1214MRABØ	DS1214MRAØØ	DS1214MRØØØ
2	3	DS1216MRØØ	DS1216MRABØ	DS1216MRAØØ	DS1216MRØØØ
3	4	DS1304MRØØ	DS1304MRABØ	DS1304MRAØØ	DS1304MRØØØ
3	4	DS1307MRØØ	DS1307MRABØ	DS1307MRAØØ	DS1307MRØØØ
3	4	DS1316MRØØ	DS1316MRABØ	DS1316MRAØØ	DS1316MRØØØ
3	4	DS1404MRØØ	DS1404MRABØ	DS1404MRAØØ	DS1404MRØØØ
3	4	DS1407MRØØ	DS1407MRABØ	DS1407MRAØØ	DS1407MRØØØ
3	4	DS1414MRØØ	DS1414MRABØ	DS1414MRAØØ	DS1414MRØØØ
3	4	DS1416MRØØ	DS1416MRABØ	DS1416MRAØØ	DS1416MRØØØ
3	4	DS1421MRØØ	DS1421MRABØ	DS1421MRAØØ	DS1421MRØØØ
4	5	DS1504MRØØ	DS1504MRABØ	DS1504MRAØØ	DS1504MRØØØ
4	5	DS1514MRØØ	DS1514MRABØ	DS1514MRAØØ	DS1514MRØØØ
4	5	DS1516MRØØ	DS1516MRABØ	DS1516MRAØØ	DS1516MRØØØ
4	5	DS1521MRØØ	DS1521MRABØ	DS1521MRAØØ	DS1521MRØØØ

Maximum lug wire 0 AWG 19-strand or 1 AWG flexible, cable entrance 0.386" diameter.
 Receptacles furnished with flap cap also have screw thread to accept male collar on plug.
 Catalog numbers shown are for flap cap receptacles; change "DF" to "DS" for ordering screw cap.
 Boldface figures are for voltage assignment. For different ratings, see page 38.
 Outlet furnished at location "B" unless otherwise specified. 2" NPT.
 For full polarization, see page 38.

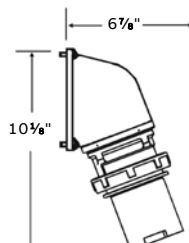
Diagrams



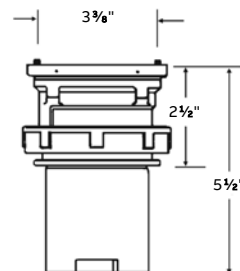
Male inlet with angle enclosure



Male inlet with angle adapter and DJB3 junction box



Male inlet with angle adapter



Male inlet

Max-Gard interconnection systems

200 A standard service



Device ratings and polarizations

Pole	Wire	Conductor placement	Voltage 60 hz	Cat. no. ▼	Standard bushing I.D. [†] (in.)	Cat. no. ▼	Standard bushing I.D. [†] (in.)
Product type				Male plug ^{††}		Female connector	
2	3		277	DS2104MP000	2 1/8	DF2104FP000	2 1/8
2	3		125	DS2107MP000	2 1/8	DF2107FP000	2 1/8
2	3		480	DS2204MP000	2 1/8	DF2204FP000	2 1/8
2	3		250	DS2207MP000	2 1/8	DF2207FP000	2 1/8
2	3		600	DS2214MP000	2 1/8	DF2214FP000	2 1/8
2	3		208	DS2216MP000	2 1/8	DF2216FP000	2 1/8
3	4		277/480	DS2304MP000	2 1/4	DF2304FP000	2 1/4
3	4		125/250	DS2307MP000	2 1/4	DF2307FP000	2 1/4
3	4		120/208	DS2316MP000	2 1/4	DF2316FP000	2 1/4
3	4		3Ø 480	DS2404MP000	2 1/4	DF2404FP000	2 1/4
3	4		3Ø 250	DS2407MP000	2 1/4	DF2407FP000	2 1/4
3	4		3Ø 600	DS2414MP000	2 1/4	DF2414FP000	2 1/4
3	4		3Ø 208	DS2416MP000	2 1/4	DF2416FP000	2 1/4
3	4		3Ø 440	DS2421MP000	2 1/4	DF2421FP000	2 1/4
4	5		3ØY 277/480	DS2504MP000	2 1/2	DF2504FP000	2 1/2
4	5		3ØY 347/600	DS2514MP000	2 1/2	DF2514FP000	2 1/2
4	5		3ØY 110/208	DS2516MP000	2 1/2	DF2516FP000	2 1/2
4	5		3ØY 250/440	DS2521MP000	2 1/2	DF2521FP000	2 1/2

Maximum 600 V AC or 250 V DC.

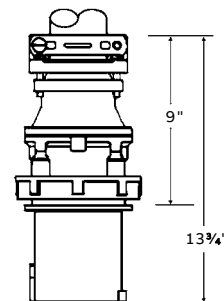
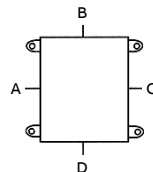
** If receptacle is desired with a straight adapter instead of standard angle adapter, substitute "S" for the "A" in the catalog number of the receptacle with angle adapter or adapter and box.

[†] Standard cable bushings shown; see page 32 for other sizes available at no extra cost if specified on order.

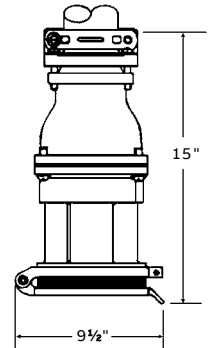
^{††} Always furnished with screw collar. We recommend cup cap with male plug; order catalog number DS2CC.

▼ Control contacts for plug/receptacles: Use "K" where noted. Ex: DS2104MP00K. For adapters, junction boxes and accessories, see pages 32–35.

Diagrams



Male plug



Female connector



Staten Island Ferry
Solution 200 A



01



02



03



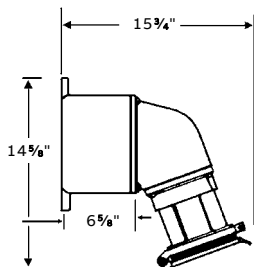
04

- 01 200 A Max-Gard connections on ferry deck
- 02 200 A Max-Gard inlets with disconnects
- 03 30 A and 200 A Max-Gard interlocks
- 04 200 A Max-Gard interlocks in parallel

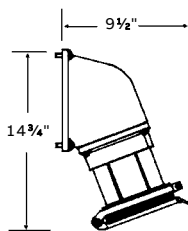
Pole	Wire	Cat. no. ▼	Cat. no. ▼	Cat. no. ▼
Product type		Female receptacle with angle adapter** and junction box	Female receptacle with angle adapter**	Female receptacle
2	3	DF2104FRABØ	DF2104FRAØØ	DF2104FRØØØ
2	3	DF2107FRABØ	DF2107FRAØØ	DF2107FRØØØ
2	3	DF2204FRABØ	DF2204FRAØØ	DF2204FRØØØ
2	3	DF2207FRABØ	DF2207FRAØØ	DF2207FRØØØ
2	3	DF2214FRABØ	DF2214FRAØØ	DF2214FRØØØ
2	3	DF2216FRABØ	DF2216FRAØØ	DF2216FRØØØ
3	4	DF2304FRABØ	DF2304FRAØØ	DF2304FRØØØ
3	4	DF2307FRABØ	DF2307FRAØØ	DF2307FRØØØ
3	4	DF2316FRABØ	DF2316FRAØØ	DF2316FRØØØ
3	4	DF2404FRABØ	DF2404FRAØØ	DF2404FRØØØ
3	4	DF2407FRABØ	DF2407FRAØØ	DF2407FRØØØ
3	4	DF2414FRABØ	DF2414FRAØØ	DF2414FRØØØ
3	4	DF2416FRABØ	DF2416FRAØØ	DF2416FRØØØ
3	4	DF2421FRABØ	DF2421FRAØØ	DF2421FRØØØ
4	5	DF2504FRABØ	DF2504FRAØØ	DF2504FRØØØ
4	5	DF2514FRABØ	DF2514FRAØØ	DF2514FRØØØ
4	5	DF2516FRABØ	DF2516FRAØØ	DF2516FRØØØ
4	5	DF2521FRABØ	DF2521FRAØØ	DF2521FRØØØ

Maximum lug wire 4/0 AWG 19-strand or flexible, cable entrance 0.625" diameter.
 Receptacles furnished with flap cap also have screw thread to accept male collar on plug.
 Catalog numbers shown are for flap cap receptacles; change "DF" to "DS" for ordering screw cap.
 Boldface figures are for voltage assignment. For different ratings, see page 38.
 Outlet furnished at location "B" unless otherwise specified. 3" NPT.
 For full polarization, see page 38.

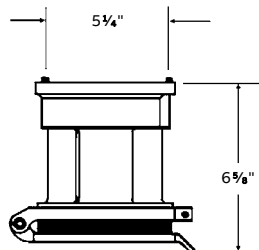
Diagrams



Female receptacle with angle adapter and junction box



Female receptacle with angle adapter



Female receptacle

Max-Gard interconnection systems

200 A reverse service



Device ratings and polarizations

Pole	Wire	Conductor placement	Voltage 60 hz	Cat. no. ▼	Standard bushing I.D. [†] (in.)	Cat. no. ▼	Standard bushing I.D. [†] (in.)
Product type				Female connector		Male plug ^{**}	
2	3		277	DF2104FP000	2 1/8	DS2104MP000	2 1/8
2	3		125	DF2107FP000	2 1/8	DS2107MP000	2 1/8
2	3		480	DF2204FP000	2 1/8	DS2204MP000	2 1/8
2	3		250	DF2207FP000	2 1/8	DS2207MP000	2 1/8
2	3		600	DF2214FP000	2 1/8	DS2214MP000	2 1/8
2	3		208	DF2216FP000	2 1/8	DS2216MP000	2 1/8
3	4		277/480	DF2304FP000	2 1/4	DS2304MP000	2 1/4
3	4		125/250	DF2307FP000	2 1/4	DS2307MP000	2 1/4
3	4		120/208	DF2316FP000	2 1/4	DS2316MP000	2 1/4
3	4		3Ø 480	DF2404FP000	2 1/4	DS2404MP000	2 1/4
3	4		3Ø 250	DF2407FP000	2 1/4	DS2407MP000	2 1/4
3	4		3Ø 600	DF2414FP000	2 1/4	DS2414MP000	2 1/4
3	4		3Ø 208	DF2416FP000	2 1/4	DS2416MP000	2 1/4
3	4		3Ø 440	DF2421FP000	2 1/4	DS2421MP000	2 1/4
4	5		3ØY 277/480	DF2504FP000	2 1/2	DS2504MP000	2 1/2
4	5		3ØY 347/600	DF2514FP000	2 1/2	DS2514MP000	2 1/2
4	5		3ØY 110/208	DF2516FP000	2 1/2	DS2516MP000	2 1/2
4	5		3ØY 250/440	DF2521FP000	2 1/2	DS2521MP000	2 1/2

Maximum 600 V AC or 250 V DC.

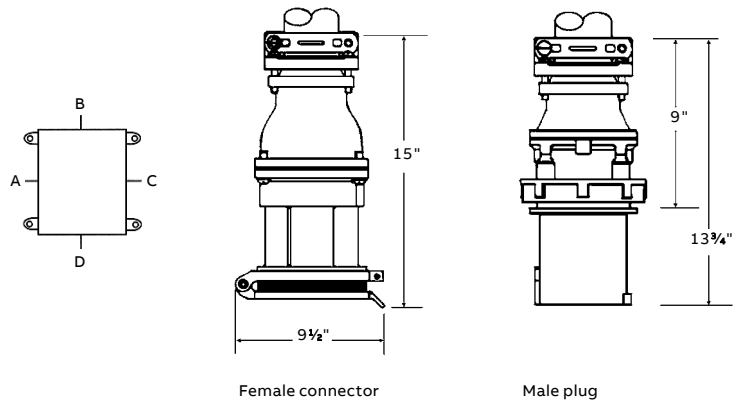
** If receptacle is desired with a straight adapter instead of standard angle adapter, substitute "S" for the "A" in the catalog number of the receptacle with angle adapter or adapter and box.

[†] Standard cable bushings shown; see page 32 for other sizes available at no extra cost if specified on order.

^{**} Always furnished with screw collar. We recommend cup cap with male plug; order catalog number DS2CC.

▼ Control contacts for plug/receptacles: Use "K" where noted. Ex: DS2104MR00K. For adapters, junction boxes and accessories, see pages 32–35.

Diagrams





MMI Trailer
Solution 200 A



Application:
Electrical hook-up of mobile medical imaging (MMI) trailers.

Mobile medical units provide trailer-transportable blood banks, dental clinics, magnetic resonance imaging (MRI), X-ray and other diagnostic equipment to many hospitals and clinics throughout the country on a regular leased basis. Safe outdoor usage connections are required for up to 200 A power supplies at each facility. Major specialized custom trailer manufacturers rely on the Max-Gard 200 A interface.

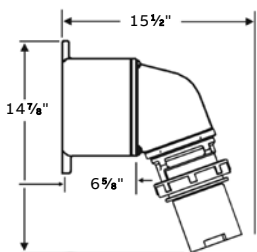
Installation:
Site-mounted 200 A receptacles with trailer-mounted plugs and connectors.

When a mobile medical unit trailer is at the desired location, a heavy-duty Max-Gard 200 A cable assembly connects the trailer with a corresponding receptacle or connector at each site, usually mounted on an outside wall. A primary safety feature is the receptacle's gated deadfront construction that ensures no exterior access to live receptacle contacts. With so many different hands involved on a daily basis, the Max-Gard epoxy powder-coat finish and rugged waterproof construction provide hospital-safe long service life.

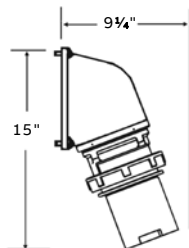
Pole	Wire	Cat. no. ▼ Male inlet with angle enclosure	Cat. no. ▼ Male inlet with angle adapter**	Cat. no. ▼ Male inlet**
2	3	DS2104MRABØ	DS2104MRAØØ	DS2104MRØØØ
2	3	DS2107MRABØ	DS2107MRAØØ	DS2107MRØØØ
2	3	DS2204MRABØ	DS2204MRAØØ	DS2204MRØØØ
2	3	DS2207MRABØ	DS2207MRAØØ	DS2207MRØØØ
2	3	DS2214MRABØ	DS2214MRAØØ	DS2214MRØØØ
2	3	DS2216MRABØ	DS2216MRAØØ	DS2216MRØØØ
3	4	DS2304MRABØ	DS2304MRAØØ	DS2304MRØØØ
3	4	DS2307MRABØ	DS2307MRAØØ	DS2307MRØØØ
3	4	DS2316MRABØ	DS2316MRAØØ	DS2316MRØØØ
3	4	DS2404MRABØ	DS2404MRAØØ	DS2404MRØØØ
3	4	DS2407MRABØ	DS2407MRAØØ	DS2407MRØØØ
3	4	DS2414MRABØ	DS2414MRAØØ	DS2414MRØØØ
3	4	DS2416MRABØ	DS2416MRAØØ	DS2416MRØØØ
3	4	DS2421MRABØ	DS2421MRAØØ	DS2421MRØØØ
4	5	DS2504MRABØ	DS2504MRAØØ	DS2504MRØØØ
4	5	DS2514MRABØ	DS2514MRAØØ	DS2514MRØØØ
4	5	DS2516MRABØ	DS2516MRAØØ	DS2516MRØØØ
4	5	DS2521MRABØ	DS2521MRAØØ	DS2521MRØØØ

Maximum lug wire 4/0 AWG 19-strand or flexible, cable entrance 0.625" diameter.
 Receptacles furnished with flap cap also have screw thread to accept male collar on plug.
 Catalog numbers shown are for flap cap receptacles; change "DF" to "DS" for ordering screw cap.
 Boldface figures are for voltage assignment. For different ratings, see page 38.
 Outlet furnished at location "B" unless otherwise specified. 3" NPT.
 For full polarization, see page 38.

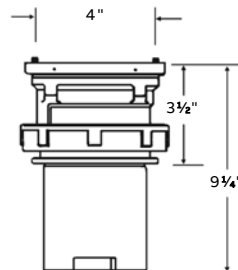
Diagrams



Male inlet with angle enclosure



Male inlet with angle adapter



Male inlet

Max-Gard interconnection systems

400 A standard service



Device ratings and polarizations

Pole	Wire	Conductor placement	Voltage 60 hz	Cat. no. ▼	Standard bushing I.D. [†] (in.)	Cat. no. ▼	Standard bushing I.D. [†] (in.)
Product type				Male plug ^{††}		Female connector	
2	3		277	DS4104MP000	2¾	DF4104FP000	2¾
2	3		125	DS4107MP000	2¾	DF4107FP000	2¾
2	3		480	DS4204MP000	2¾	DF4204FP000	2¾
2	3		250	DS4207MP000	2¾	DF4207FP000	2¾
2	3		600	DS4214MP000	2¾	DF4214FP000	2¾
2	3		208	DS4216MP000	2¾	DF4216FP000	2¾
3	4		277/480	DS4304MP000	3	DF4304FP000	3
3	4		125/250	DS4307MP000	3	DF4307FP000	3
3	4		120/208	DS4316MP000	3	DF4316FP000	3
3	4		3Ø 480	DS4404MP000	3	DF4404FP000	3
3	4		3Ø 250	DS4407MP000	3	DF4407FP000	3
3	4		3Ø 600	DS4414MP000	3	DF4414FP000	3
3	4		3Ø 208	DS4416MP000	3	DF4416FP000	3
3	4		3Ø 440	DS4421MP000	3	DF4421FP000	3
4	5		3ØY 277/480	DS4504MP000	3¾	DF4504FP000	3¾
4	5		3ØY 347/600	DS4514MP000	3¾	DF4514FP000	3¾
4	5		3ØY 110/208	DS4516MP000	3¾	DF4516FP000	3¾
4	5		3ØY 250/440	DS4521MP000	3¾	DF4521FP000	3¾

Maximum 600 V AC or 250 V DC.

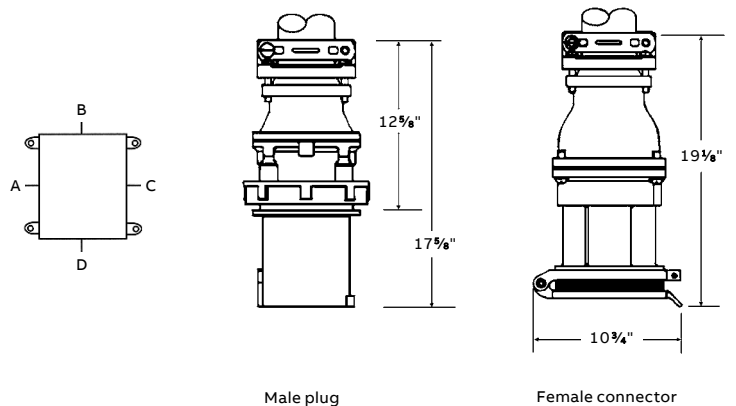
** If receptacle is desired with a straight adapter instead of standard angle adapter, substitute "S" for the "A" in the catalog number of the receptacle with angle adapter or adapter and box.

[†] Standard cable bushings shown; see page 32 for other sizes available at no extra cost if specified on order.

^{††} Always furnished with screw collar. We recommend cup cap with male plug; order catalog number DS4CC.

▼ Control contacts for plug/receptacles: Use "K" where noted. Ex: DS4104MP00K. For adapters, junction boxes and accessories, see pages 32–35.

Diagrams





Shore-to-ship power Solution 400 A



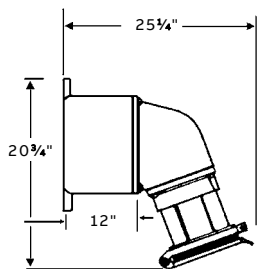
Application:
Shore power to marine vessels – Sightseeing boats. When docked, marine vessels need shore power when their engines aren't running. Dockside designs need to be as safe as possible during heavy use, rough treatment and adverse weather conditions. High amperage-rated systems are installed using parallel power delivery with cross-network protection.

Installation:
400 A male inlets and power connectors with control contacts. Watertight devices are necessary for dockside installations. Max-Gard connections go further with O-rings on both pins and interiors for environmental separation and true waterproof performance. The male inlet center ground pin feature and keyed entry design align easily, make ground first and break last, while quarter-turn insertion delayed-action removal and locking screw collars provide accidental pull-out protection. Upon connector insertion, two auxiliary control contacts complete a contactor circuit, which powers the line through a make-last-and-break-first configuration. Contactors are installed separately in an on-shore sheltered power distribution panel. This can be wired for each contactor or for multiple connections; if one plug is removed, power is cut off.

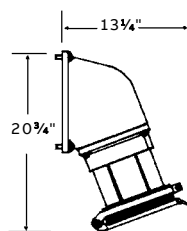
Pole	Wire	Cat. no. ▼	Cat. no. ▼	Cat. no. ▼
Product type		Female receptacle with angle adapter** and junction box	Female receptacle with angle adapter**	Female receptacle
2	3	DF4104FRABØ	DF4104FRAØØ	DF4104FRØØØ
2	3	DF4107FRABØ	DF4107FRAØØ	DF4107FRØØØ
2	3	DF4204FRABØ	DF4204FRAØØ	DF4204FRØØØ
2	3	DF4207FRABØ	DF4207FRAØØ	DF4207FRØØØ
2	3	DF4214FRABØ	DF4214FRAØØ	DF4214FRØØØ
2	3	DF4216FRABØ	DF4216FRAØØ	DF4216FRØØØ
3	4	DF4304FRABØ	DF4304FRAØØ	DF4304FRØØØ
3	4	DF4307FRABØ	DF4307FRAØØ	DF4307FRØØØ
3	4	DF4316FRABØ	DF4316FRAØØ	DF4316FRØØØ
3	4	DF4404FRABØ	DF4404FRAØØ	DF4404FRØØØ
3	4	DF4407FRABØ	DF4407FRAØØ	DF4407FRØØØ
3	4	DF4414FRABØ	DF4414FRAØØ	DF4414FRØØØ
3	4	DF4416FRABØ	DF4416FRAØØ	DF4416FRØØØ
3	4	DF4421FRABØ	DF4421FRAØØ	DF4421FRØØØ
4	5	DF4504FRABØ	DF4504FRAØØ	DF4504FRØØØ
4	5	DF4514FRABØ	DF4514FRAØØ	DF4514FRØØØ
4	5	DF4516FRABØ	DF4516FRAØØ	DF4516FRØØØ
4	5	DF4521FRABØ	DF4521FRAØØ	DF4521FRØØØ

Maximum lug wire 500 kcmil 37-strand or flexible, cable entrance 0.937" diameter.
Receptacles furnished with flap cap also have screw thread to accept male collar on plug.
Catalog numbers shown are for flap cap receptacles; change "DF" to "DS" for ordering screw cap.
Boldface figures are for voltage assignment. For different ratings, see page 38.
Outlet furnished at location "B" unless otherwise specified. 4" NPT.
For full polarization, see page 38.

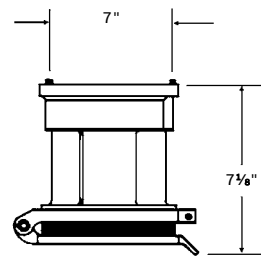
Diagrams



Female receptacle with angle adapter and junction box



Female receptacle with angle adapter



Female receptacle

Max-Gard interconnection systems

400 A reverse service



Device ratings and polarizations

Pole	Wire	Conductor placement	Voltage 60 Hz	Cat. no. ▼	Standard bushing I.D. [†] (in.)	Cat. no. ▼	Standard bushing I.D. [†] (in.)
Product type				Female connector		Male plug ^{††}	
2	3		277	DF4104FP000	2¾	DS4104MP000	2¾
2	3		125	DF4107FP000	2¾	DS4107MP000	2¾
2	3		480	DF4204FP000	2¾	DS4204MP000	2¾
2	3		250	DF4207FP000	2¾	DS4207MP000	2¾
2	3		600	DF4214FP000	2¾	DS4214MP000	2¾
2	3		208	DF4216FP000	2¾	DS4216MP000	2¾
3	4		277/480	DF4304FP000	3	DS4304MP000	3
3	4		125/250	DF4307FP000	3	DS4307MP000	3
3	4		120/208	DF4316FP000	3	DS4316MP000	3
3	4		3Ø 480	DF4404FP000	3	DS4404MP000	3
3	4		3Ø 250	DF4407FP000	3	DS4407MP000	3
3	4		3Ø 600	DF4414FP000	3	DS4414MP000	3
3	4		3Ø 208	DF4416FP000	3	DS4416MP000	3
3	4		3Ø 440	DF4421FP000	3	DS4421MP000	3
4	5		3ØY 277/480	DF4504FP000	3¾	DS4504MP000	3¾
4	5		3ØY 347/600	DF4514FP000	3¾	DS4514MP000	3¾
4	5		3ØY 120/208	DF4516FP000	3¾	DS4516MP000	3¾
4	5		3ØY 250/440	DF4521FP000	3¾	DS4521MP000	3¾

Maximum 600 V AC or 250 V DC

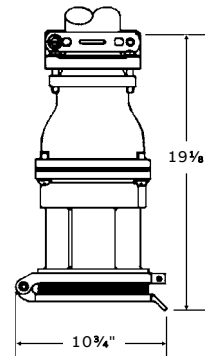
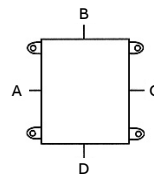
** If receptacle is desired with a straight adapter instead of standard angle adapter, substitute "S" for the "A" in the catalog number of the receptacle with angle adapter or adapter and box.

† Standard cable bushings shown; see page 32 for other sizes available at no extra cost if specified on order.

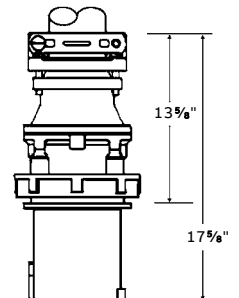
†† Always furnished with screw collar. We recommend cup cap with male plug; order catalog number DS4CC.

▼ Control contacts for plug/receptacles: Use "K" where noted. Ex: DS4104MR00K. For adapters, junction boxes and accessories, see pages 32–35.

Diagrams



Female connector



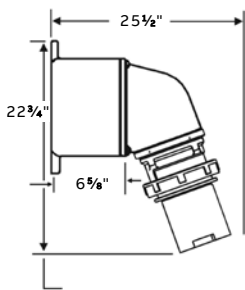
Male plug^{††}



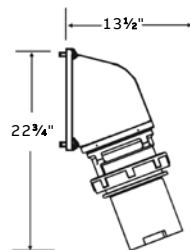
Pole	Wire	Cat. no. ▼ Male inlet with angle adapter** and junction box	Cat. no. ▼ Male inlet with angle adapter**	Cat. no. ▼ Male inlet**
2	3	DS4104MRABØ	DS4104MRAØØ	DS4104MRØØØ
2	3	DS4107MRABØ	DS4107MRAØØ	DS4107MRØØØ
2	3	DS4204MRABØ	DS4204MRAØØ	DS4204MRØØØ
2	3	DS4207MRABØ	DS4207MRAØØ	DS4207MRØØØ
2	3	DS4214MRABØ	DS4214MRAØØ	DS4214MRØØØ
2	3	DS4216MRABØ	DS4216MRAØØ	DS4216MRØØØ
3	4	DS4304MRABØ	DS4304MRAØØ	DS4304MRØØØ
3	4	DS4307MRABØ	DS4307MRAØØ	DS4307MRØØØ
3	4	DS4316MRABØ	DS4316MRAØØ	DS4316MRØØØ
3	4	DS4404MRABØ	DS4404MRAØØ	DS4404MRØØØ
3	4	DS4407MRABØ	DS4407MRAØØ	DS4407MRØØØ
3	4	DS4414MRABØ	DS4414MRAØØ	DS4414MRØØØ
3	4	DS4416MRABØ	DS4416MRAØØ	DS4416MRØØØ
3	4	DS4421MRABØ	DS4421MRAØØ	DS4421MRØØØ
4	5	DS4504MRABØ	DS4504MRAØØ	DS4504MRØØØ
4	5	DS4514MRABØ	DS4514MRAØØ	DS4514MRØØØ
4	5	DS4516MRABØ	DS4516MRAØØ	DS4516MRØØØ
4	5	DS4521MRABØ	DS4521MRAØØ	DS4521MRØØØ

Maximum lug wire 500 kcmil 37-strand or flexible, cable entrance 0.937" diameter.
 Receptacles furnished with flap cap also have screw thread to accept male collar on plug.
 Catalog numbers shown are for flap cap receptacles; change "DF" to "DS" for ordering screw cap.
 Boldface figures are for voltage assignment. For different ratings, see page 38.
 Outlet furnished at location "B" unless otherwise specified. 4" NPT.
 For full polarization, see page 38.

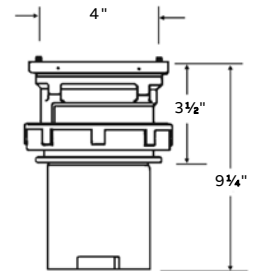
Diagrams



Male inlet with angle adapter and junction box



Male inlet with angle adapter



Male inlet

Max-Gard interconnection systems

Cable bushings for Max-Gard plugs and connectors



Size No. 3 and 6
(identification letter
inside hole)



Size No. 10, 20 and 40

- To order non-standard bushing, add cable bushing number to the end of a catalog number. The bushing is furnished at no additional cost at time of order.

Ex: DF2504FP000/DF2032.

- Shaded areas show cable bushings provided with a strain-relief neck; larger bushings are collar style.

Cable bushings for Max-Gard plugs and connectors

Hole diameter for cable (in.)	Size 3 30 A	Size 6 60 A	Size 10 100 A	Size 20 200 A	Size 40 400 A
0.625	JG63	–	–	–	–
0.750	JG64	JG104	–	–	–
0.875	Std. 2P3W JG65	JG105	–	–	–
1.000	Std. 2P3W JG66	JG106	DF1020	DF2020	–
1.188	Std. 3P4W JG67	Std. 2P3W JG107	DF1022	DF2022	–
1.313	–	Std. 3P4W JG108	DF1024	DF2024	–
1.375	JG69	–	–	–	–
1.500	JG610	Std. 4P5W JG1010	DF1026	DF2026	–
1.625	–	–	–	–	–
1.688	–	JG1011	Std. 2P3W DF1027	DF2027	–
1.813	–	–	Std. 3P4W DF1029	DF2029	–
1.875	–	JG1013	DF1030	Std. 2P3W DF2032	–
2.000	–	–	Std. 4P5W DF1032	–	–
2.125	–	–	–	Std. 3P4W DF2034	–
2.250	–	–	–	Std. 4P5W DF2036	–
2.500	–	–	–	DF2040	–
2.625	–	–	–	–	DF4042
2.750	–	–	–	–	DF4044
3.000	–	–	–	–	Std. 3P4W DF4048
3.250	–	–	–	–	Std. 4P5W DF4054

Standard cable bushings

Notes: When ordering, select bushing size slightly larger than your cable O.D. for best fit.
Material – Neoprene

Max-Gard interconnection systems

Adapters for conduit and fittings & replacement flap covers and screw covers



JPA conduit adapters

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

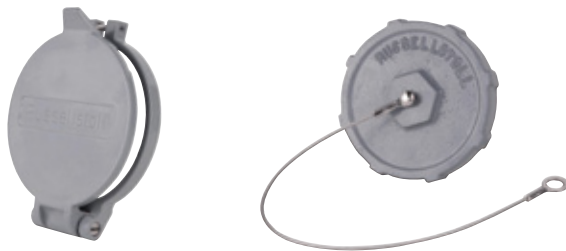
Adapters for conduit and fittings

30 Amp cat. no.	Tapped hole size NPT (in.)	60 Amp cat. no.	Tapped hole size NPT (in.)	100 Amp cat. no.	Tapped hole size NPT (in.)	200 Amp cat. no.	Tapped hole size NPT (in.)	400 Amp cat. no.	Tapped hole size NPT (in.)
JPA62	¾	JPA104	1¼	DFA14	1¼	DFA25	1½	DFA46	2
JPA63	1	JPA105	1½	DFA15	1½	DFA26	2	DFA47	2½
JPA64	1¼	JPA106	2	DFA16	2	DFA27	2½	DFA48	3
JPA65	1½	-	-	-	-	-	-	-	-

Material – Cast aluminum, corrosion-resistant copper-free alloy, electrostatic epoxy coated. 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.

Ex.: Cat. no. DS3107MP000 with adapter tapped 1 would be Cat. no. DS3107MP000/JPA63.



DFC6

DSC6

- For connectors, receptacles and interlocks.









Replacement flap covers and screw covers

Cat. no.	Description	Amperage
DFC3	Flap cover assembly (weathertight)	30
DFC6	Flap cover assembly (weathertight)	60
DFC10	Flap cover assembly (weathertight)	100
DFC20	Flap cover assembly (weathertight)	200
DFC40	Flap cover assembly (weathertight)	400
DSC3	Screw cap and STS – Lanyard assembly (watertight)	30
DSC6	Screw cap and STS – Lanyard assembly (watertight)	60
DSC10	Screw cap and STS – Lanyard assembly (watertight)	100
DSC20	Screw cap and STS – Lanyard assembly (watertight)	200
DSC40	Screw cap and STS – Lanyard assembly (watertight)	400

Max-Gard interconnection systems

Accessories for receptacles

Accessories for receptacles

Description	30 A Cat. no.	60 A Cat. no.	100 A Cat. no.	200 A Cat. no.	400 A Cat. no.
Cup caps					
 <p>For watertight plugs/inlets. Cup caps are used where portable equipment is on a standby basis and plugs are not in use. 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.</p>	DS3CC	DS6CC	DS1CC	DS2CC	DS4CC
Adapter flush frames – Single gang					
 <p>Provide suitable means for mounting box covers of junction box receptacles flush in a wall.</p>	JFA3	JFA6	JFA10	JFA20	-
Adapters for conduit box receptacles					
 <p>Adapters to fit existing boxes and for special mounting requirements can also be furnished. Consult your ABB representative.</p>					
 <p>20° Vertical angle adapter</p>	JAA6-AB6	JAA10	DAA10	DAA20	-
30° Vertical angle adapter	-	-	-	-	DAA40
45° Vertical angle adapter	JAA6-45	JAA10-45	-	-	-
Straight adapter	JRA6-AB6	JRA10	DRA10	DRA20	DRA40
Junction box – Single gang					
	JB6-1	JB10-B150	JB10-B200	DJB20	DJB40
Angle enclosure					
	JE6	JE10	JE10M	-	-
MACK adapter plates					
 <p>Enables mounting of Max-Gard receptacles to competitive existing back boxes. This involves removing the existing non-hazardous location receptacle from back box, inserting adapter plate and installing Max-Gard receptacle. Adapter plates are available for competitors' boxes including Hubbel, Killark, Appleton and Crouse-Hinds.</p>	DCCA3	DCCA6	DCCA10	DCCA20	-
Russellstoll adapter plates					
 <p>Adapt Max-Gard receptacles to existing J-Line, angle type and heavy-service Ever-Lok back boxes.</p>	DRCA3	DRCA6	DRCA10	-	-

Max-Gard interconnection systems

Replacement interiors for receptacles, connectors, plugs and male inlets



Replacement interiors for receptacles, connectors, plugs and male inlets

Rating	Poles/ wires	Voltage polarization (V AC)	Corresponding male interior assembly		Corresponding female interior assembly	
			Plug/inlet	Male interior	Connector/receptacle*	Female interior
30 A	2P3W	125	DS3107MP000	DFPU3107	DF3107FP000	DFRU3107
	2P3W	250	DS3207MP000	DFPU3207	DF3207FP000	DFRU3207
	3P4W	125/250	DS3307MP000	DFPU3307	DF3307FP000	DFRU3307
	3P4W	3-ph 480	DS3404MP000	DFPU3404	DF3404FP000	DFRU3404
	4P5W	277/480	DS3504MP000	DFPU3504	DF3504FP000	DFRU3504
60 A	2P3W	250	DS6207MP000	DFPU6207	DF6207FP000	DFRU6207
	3P4W	125/250	DS6307MP000	DFPU6307	DF6307FP000	DFRU6307
	3P4W	3-ph 480	DS6404MP000	DFPU6404	DF6404FP000	DFRU6404
	4P5W	277/480	DS6504MP000	DFPU6504	DF6504FP000	DFRU6504
100 A	2P3W	250	DS1207MP000	DFPU1207	DF1207FP000	DFRU1207
	3P4W	125/250	DS1307MP000	DFPU1307	DF1307FP000	DFRU1307
	3P4W	3-ph 480	DS1404MP000	DFPU1404	DF1404FP000	DFRU1404
	4P5W	277/480	DS1504MP000	DFPU1504	DF1504FP000	DFRU1504
200 A	3P4W	277/480	DS2304MP000	DFPU2304	DF2304FP000	DFRU2304
	3P4W	3-ph 480	DS2404MP000	DFPU2404	DF2404FP000	DFRU2404
	4P5W	277/480	DS2504MP000	DFPU2504	DF2504FP000	DFRU2504
400 A	3P4W	277/480	DS4304MP000	DFPU4304	DF4304FP000	DFRU4304
	3P4W	3-ph 480	DS4404MP000	DFPU4404	DF4404FP000	DFRU4404
	4P5W	277/480	DS4504MP000	DFPU4504	DF4504FP000	DFRU4504

Note: For other interiors not shown, use same polarization index as plug, connector, etc. Ex: DS6416MP000 plug uses a DFPU6416 interior. If your original product had option "K - Control Contacts," include a "K" at the end of the replacement part number. Ex: If your plug/inlet is a DS3404MP00K, then the male replacement interior would be a DFPU3404K. If your connector/receptacle is a DF3404FP00K, then your female replacement/interior would be a DFRU3404K.

* To order replacement interior parts for the Max-Gard Interlock, replace "DFRU" with "DFIU".

Accessories for interlocked NEMA 12/3R receptacles

Accessories for interlocked NEMA 12/3R receptacles

Description	30 A	60 A	100 A	200 A	400 A
	Cat. no.	Cat. no.	Cat. no.	Cat. no.	Cat. no.
Fused disconnect interlocked receptacle with safety switch 30-100 A					
1 NO - 1 NC contact	F34757	F34757	F34757	-	-
2 NO - 2 NC contact	F34758	F34756B	-	-	-
Copper body lugs - 6 lugs per kit	F34756A	F34756B	F34756C	-	-
Type R fuse clips - 3 per kit	F34755A	F34755B	F34755C	-	-
Neutral block	F34754A	F34754B	F34754B	-	-

Max-Gard interconnection systems

Pin and sleeve plugs, receptacles and systems

- 1.0 Scope**
- 1.1 This document covers multi-contact pin and sleeve, industrial grade, arc-quenching, circuit interrupting-rated electrical plugs, motor plugs, connectors, receptacles, mechanically interlocked receptacles and assorted accessories. Usable in dry, damp, wet, marine and/or hazardous locations for electrical power circuits. Devices are to be rated 30, 60, 100, 200 and/or 400 amperes at 600 V AC, 50–400 Hz and 250 V DC maximum. Devices are also rated for continuous use in temperatures from -40 °C to +130 °C. These devices must provide internal environmental seals for marine and extreme wet applications and can be electrically interlocked.
- 1.2 The devices described shall be ABB/ Russellstoll Max-Gard catalog numbers as specified.
- 2.0 Product classifications (features)**
- 2.1 **Gated deadfront** – All receptacles and connectors must have a rotating disk on the face of the interior, which provides live contact isolation and environmental separation.
- 2.2 **Delayed action arc containment** – All devices upon disconnect under load shall have provision so the arc is contained and extinguished within the insulation cavity, making it impossible to withdraw a live plug.
- 2.3 **Flap cover or screw cover option** – Flap cover option must provide weathertight capability by utilizing a spring actuated self-closing flap. Watertight capability shall be obtained by using a gasketed screw cap.
- 2.4 **Polarization** – All devices shall be factory polarized for amperage, voltage, frequency and phase; thus providing a single voltage rating, single interface system.
- 2.5 **Grounding** – The grounding of the device shall be accomplished through a separate center ground (earth) make-first and break-last pole on all devices for complete system grounding.
- 2.6 **Pole capabilities** – All devices shall accommodate up to four power pins plus a separate center ground pin and they shall be integral with the connector bodies (five pins total).
- 2.7 **Interior type** – Interiors must be male (pin type) or female (sleeve type). Pins and sleeves shall also be self-aligning and self-wiping/self-cleaning.
- 2.8 **Control contacts** – All devices must have an option for two control contacts, which shall be make-last and break-first for use in electrical interlocks and/or control circuits. See table below.
- 2.9 **Conductor terminals** – Pin and sleeve connections shall employ solderless pressure-type screw terminals and be sized to accept stranded or solid copper conductors in AWG sizes (max. O.D.s as noted). The screw terminals shall also have socket heads to ensure proper torquing of wires.
- 2.10 **Environmental seals** – Each device must have an environmental seal or O-ring around all interiors and around each pin and sleeve to prevent water and contaminants from entering the wiring compartment. This provides waterproof capability, even when not mated.
- 2.11 **Hazardous location** – All standard plugs 30, 60 and 100 A shall be UL and CSA listed for hazardous location class I division 1, groups C and D; class II division 1, groups F and G. A hazardous location circuit breaker-protected interlock shall also be applicable to the same environments and possess all the same product features as outlined above. Enclosures shall meet NEMA 8 hazardous outdoor-duty classifications and shall meet shipboard use above deck in accordance with the Department of Transportation (USCG “Green Water”).

Rating for pilot/control contacts

Thermal continuous current amps	Maximum current amps									
	120 V		240 V		480 V		600 V		Max. volt ampere	
	Make	Break	Make	Break	Make	Break	Make	Break	Make	Break
10 (#12 AWG)	60	6	30	3	15	1.5	12	1.2	7200	720

Contact rating code designation A-600, Table 119.1 – UL 508 heavy pilot duty load (720 VA/600 V AC) maximum

Max-Gard interconnection systems

Pin and sleeve plugs, receptacles and systems

- 2.12 **Lockout devices** – Plug connection lockout is achieved by a padlock through plug sleeve housing hole provided for this purpose. On Hazardous location/explosion proof interlock receptacles, lockout shall additionally be achieved by separate lockout accessory available from the factory. On standard interlocks, lockout accessory/ construction is available from the factory.
- 3.0 Materials requirements**
- 3.1 **Housings** – Plug, motor plug, receptacles, connectors and interlock housings, associated covers and caps, screw collars, and clamp holders shall be made of copper-free cast aluminum (max. 0.004% copper).
- 3.2 **Finish** – All external surfaces except those that provide means of grounding shall be epoxy powder coated to resist corrosion.
- 3.3 **Hardware** – All hardware, external and springs, shall be stainless steel. Cable clamps shall be stainless steel or epoxy powder coated, copper-free cast aluminum.
- 3.4 **Insulators** – All device body insulators shall be molded from glass-reinforced high-strength thermoset polyester, minimum of UL 94-V0 flammability rated.
- 3.5 **Contacts** – Contacts base material shall be made of a conductive copper alloy (brass CDA485) to prevent dezincification. Accessory material of the contacts shall be made of a compatible corrosion resistant material.
- 3.6 **Environmental seals** – Environmental gaskets and O-rings shall be made of Neoprene material.
- 4.0 Design and construction requirements**
- 4.1 **circuit interrupting rating** – All devices 30, 60, 100 and 200 A shall be tested to be interrupted at 150% of rated current. Additionally, all devices shall be designed and tested to interrupt 100% of rated current.
- 4.2 **Wiring** – All devices shall be wired from the rear requiring no disassembly of the pins and/or sleeves from the insulated body.
- 5.0 Applicable documents (compliances)**
- 5.1 **Underwriters Laboratories (UL)** – The devices specified herein shall be listed in applicable sections of UL Standards 1010, 231, 1682 and 1686, File Nos. E2630, E57324, E68085, E123752.
- 5.2 **Canadian Standard Association (CSA)** – The devices specified shall be listed in the applicable sections of CSA C22.2-182.1, File Number LR14096.
- 5.3 **International Electro-Technical Commission (IEC)** – The 30-, 60- and 100 A devices specified shall have been tested and comply with IEC 309-1.
- 5.4 **Federal Department of Transportation** – Refrigerated National Shipboard location devices shall meet and comply with Federal Register volume 47, number 68, subpart 111.79.
- 5.5 **Standards** – The devices specified shall comply with Military Standards MIL-STD-105 and 1344; ASTM Standards D570 and D2565; NEMA Standard PR4-1983; and OSHA regulations when installed in accordance with the National Electrical Code® (NEC).
- 5.6 **NEMA 250 enclosures standard**
- NEMA 1** – General Purpose for indoor use; guards against contact with equipment.
- NEMA 3R** – Outdoor use primarily to protect against rain, sleet, wind-blown dust and damage from external ice formation.
- NEMA 4** – Indoor or outdoor use to protect against windblown dust and rain; splashing and hose-directed water.
- NEMA 4X** – Watertight, dust-tight corrosion-resistant for indoor or outdoor applications.
- NEMA 6** – Watertight, casual/ temporary immersion.
- NEMA 7** – Class I (Hazardous) for indoor use in Class I areas, per NEC.
- NEMA 8** – Class I (Hazardous) for indoor use in Class I, oil-immersed equipment.
- NEMA 9** – Class II (Hazardous) for indoor use in Class II areas, per NEC.
- NEMA 12** – Industrial use, dust-tight for indoor use to protect against dust, falling dirt and dripping non-corrosive liquids.
- NEC and National Electrical Code are registered trademarks of the National Fire Protection Association, Inc.

Max-Gard interconnection systems

Single polarization/multiple service* assigned voltages and wiring systems

Single polarization/multiple service* assigned voltages and wiring systems

N-R1-G		R1-S2-G		N-R1-S2-G		R1-S2-T3-G		N-R1-S2-T3-G		2P+G(DC)	
Voltage assign. no.	Voltage	Voltage assign. no.	Voltage	Voltage assign. no.	Voltage	Voltage assign. no.	Voltage	Voltage assign. no.	Voltage	Voltage assign. no.	Voltage Index
101	220 V-50 Hz	201	380 V-50 Hz	301	220/380 V-50 Hz	401	380 V-50 Hz	501	220/380 V-50 Hz	-	01
103	127 V-50 Hz	203	220 V-50 Hz	303	220/127 V-50 Hz	403	220 V-50 Hz	503	220/127 V-50 Hz	-	03
104	277 V-60 Hz	204	480 V-60 Hz	304	277/480 V-60 Hz	404	3Ø 480 V-60 Hz	504	3ØY 277/480 V-60 Hz	-	04
105	250 V-50 Hz	205	440 V-50 Hz	305	250/440 V-50 Hz	405	3Ø 440 V-50 Hz	505	3Ø 250/440 V-50 Hz	-	05
107	125 V-60 Hz	207	250 V-60 Hz	307	125/250 V-60 Hz	407	3Ø 250 V-60 Hz	507	3ØY 125/250 V-60 Hz	-	07
108	220 V-60 Hz	208	380 V-60 Hz	308	220/380 V-60 Hz	408	3Ø 380 V-60 Hz	508	3Ø 220/380 V-60 Hz	-	08
109	100 V-60 Hz	209	220 V-60 Hz	309	100/220 V-60 Hz	409	3Ø 220 V-60 Hz	509	3Ø 100/220 V-60 Hz	-	09
111	115 V-400 Hz	211	220 V-400 Hz	311	220/115 V-400 Hz	411	220 V-400 Hz	511	220/115 V-400 Hz	-	11
-	-	-	-	-	-	-	-	513	230 V DC	613	250 V DC 13
114	347 V-60 Hz	214	600 V-60 Hz	314	347/600 V-60 Hz	414	3Ø 600 V-60 Hz	514	3ØY 347/600 V-60 Hz	-	14
115	100 V-50 Hz	215	220 V-50 Hz	315	100/220 V-50 Hz	415	3Ø 220 V-50 Hz	515	3Ø 100/220 V-50 Hz	-	15
116	120 V-60 Hz	216	208 V-60 Hz	316	120/208 V-60 Hz	416	3Ø 208 V-60 Hz	516	3ØY 120/208 V-60 Hz	-	16
117	120 V-400 Hz	217	208 V-400 Hz	317	120/208 V-400 Hz	417	3Ø 208 V-400 Hz	517	3Ø 120/208 V-400 Hz	-	17
-	-	-	-	-	-	-	208 V	-	-	618	28 V DC 18
-	-	-	-	-	-	-	-	-	-	-	20
-	-	221	440 V-60 Hz	321	250/440 V-60 Hz	421	3Ø 440 V-60 Hz	521	3ØY 250/440 V-60 Hz	-	21
-	-	-	-	-	-	-	250 V	Reserved	-	-	22
-	-	-	-	-	-	-	480 V	Reserved	-	-	23
-	-	-	-	-	-	-	600 V	Reserved	-	-	24

Max-Gard receptacles and plugs may be furnished in any of the above voltage and phasing systems.

To order any device in a voltage and phasing not shown in the preceding catalog pages, substitute the Voltage Assignment Number in the above chart for that portion of the listed catalog number appearing in boldface type.

Example: 200 A weathertight receptacle with flap cover, angle adapter and junction box for 3Ø 480 V (3-pole and ground) is DF2404FRAB0.

To change to 3Ø 208 V, the catalog number becomes DF2416FRAB0.

Note: All devices may be furnished with two control contacts. Add "K" to the end of the catalog number, in place of last position Ø.

* Dual-voltage or multiple-service applications (for any given polarization number) – Example: A factory installation may consist of all receptacles specified and wired at polarization 507. This is a 3-phase, Y-125/250 V-60 Hz supply. However, all circuit requirements "below" 507 ie 407,307,207 and 107 can also all be met. For instance, a 207 plug can draw power from a 507 receptacle. See chart above.

For non-interrupting polarizations at 45, 90, 150, 300, 600 A ratings, consult Technical Services.

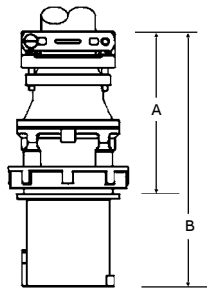
Max-Gard interconnection systems

Dimensions

Male plug

Amp	A (in.)	B (in.)
30	4 ³ / ₄	7 ⁷ / ₈
60	5 ¹ / ₂	9 ⁵ / ₈
100	6 ¹ / ₂	10 ⁵ / ₈
200	9	13 ³ / ₄
400	12 ⁵ / ₈	17 ⁵ / ₈

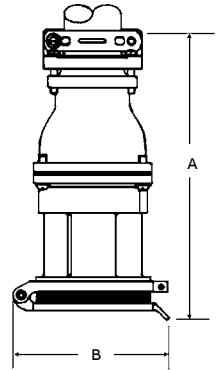
Diagram*



Connector

Amp	A (in.)	B (in.)
30	8 ³ / ₄	5 ¹ / ₈
60	10	5 ³ / ₈
100	11 ¹ / ₈	5 ³ / ₈
200	15	9 ¹ / ₂
400	19 ¹ / ₈	10 ³ / ₄

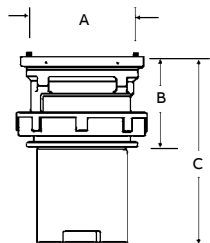
Diagram*



Male inlet

Amp	A (in.)	B (in.)	C (in.)
30	2 ⁷ / ₈	2 ¹ / ₂	5 ¹ / ₂
60	3 ³ / ₈	2 ¹ / ₂	5 ¹ / ₂
100	3 ³ / ₈	2 ¹ / ₂	5 ¹ / ₂
200	5 ¹ / ₄	3 ¹ / ₂	9 ¹ / ₄
400	3 ³ / ₈	4 ³ / ₈	9 ¹ / ₄

Diagram

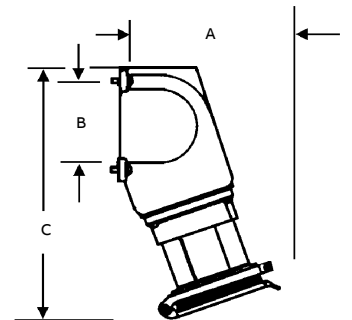


* Flap covers shown –
Screw covers available.
On all, screw covers
have nominal effect
on outside dimensions.

Receptacle with angle enclosure

Amp	A (in.)	B (in.)	C (in.)
30	6 ³ / ₈	3 ³ / ₈	9 ⁷ / ₈
60	7 ¹ / ₈	4	11 ¹ / ₈
100	7 ¹ / ₂	4	11 ³ / ₈
200	-	-	-
400	-	-	-

Diagram



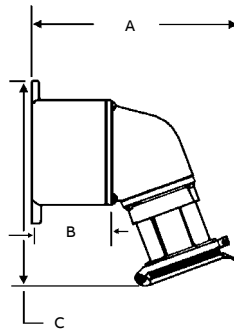
Max-Gard interconnection systems

Dimensions

Receptacle with angle adapter and DJB junction box

Amp	Dimensions (in.)		
	A (in.)	B (in.)	C (in.)
30	9 $\frac{1}{8}$	3	9 $\frac{5}{8}$
60	10 $\frac{1}{2}$	3	9 $\frac{3}{4}$
100	10 $\frac{3}{4}$	3 $\frac{3}{4}$	10
200	15 $\frac{3}{4}$	6 $\frac{5}{8}$	14 $\frac{5}{8}$
400	25 $\frac{1}{4}$	12	20 $\frac{3}{4}$

Diagram*

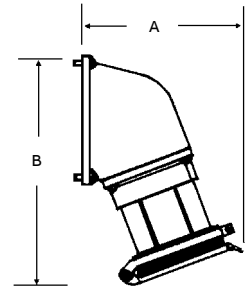


* Flap covers shown — screw covers available. On all, screw covers have nominal effect on outside dimensions.

Receptacle with angle adapter

Amp	Dimensions (in.)	
	A (in.)	B (in.)
30	6 $\frac{1}{8}$	9 $\frac{5}{8}$
60	7 $\frac{1}{2}$	9 $\frac{3}{4}$
100	7	10
200	9 $\frac{1}{2}$	14 $\frac{3}{4}$
400	13 $\frac{3}{4}$	20 $\frac{3}{4}$

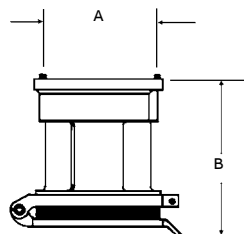
Diagram*



Receptacle only

Amp	Dimensions (in.)	
	A (in.)	B (in.)
30	2 $\frac{7}{8}$	4 $\frac{1}{2}$
60	3 $\frac{3}{8}$	5 $\frac{1}{8}$
100	3 $\frac{5}{8}$	5 $\frac{3}{8}$
200	5 $\frac{1}{4}$	6 $\frac{5}{8}$
400	7	7 $\frac{1}{8}$

Diagram



Max-Gard interconnection systems

Industrial interlocked receptacles & sample installation



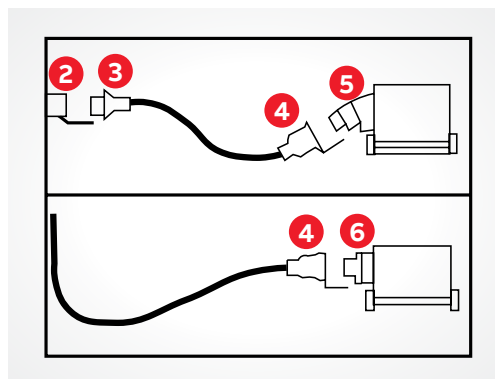
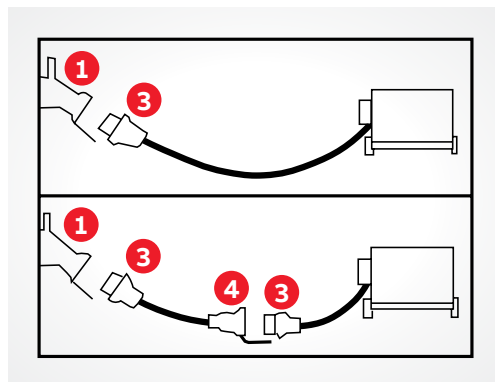
Industrial interlocked receptacles are available in 30 through 400 A. Switched receptacles have mechanical linkages for added safety. Safety features include:

- Plugs cannot be inserted unless power is safely turned off
- Plugs cannot be removed until power is safely turned off
- Specialty designs may also automatically disengage power if plug is removed while power is on, either mechanically or electrically

Applications

Applications where these units are most commonly used are:

- Welding stations in automotive and heavy industry
- Temporary and portable power distribution for construction
- Marine shore-to-ship power
- Industrial machinery installation
- Portable power distribution, vehicle and gen-set power for aerospace
- Custom systems in all industries



Sample installation: Fixed power source (wall) to remote/portable location

1. Receptacle (wall-mounted female)
2. Receptacle (panel-mounted female)
3. Plug (attachment)
4. Female connector
5. Male Inlet with angle adapter
6. Male inlet with straight adapter

Other installations: generator power sources, custom control circuits, multiple voltage service — contact Technical Services.

Max-Gard interconnection systems

Max-Gard fused-disconnect** interlocked receptacle with disconnect switch



Max-Gard fused-disconnect interlocked receptacle with safety switch meets UL, NEC and major automotive specifications. This unit is the maximum in:

Safety

- Door safety switch with three external lockout points
- Safety fuse pulls for standard class R fuses
- Backup door safety latch

Durability

- Heavy 0.060" steel galvannealing with baked enamel, NEMA 3R/12 construction
- Clear shield for test probes

Performance

- Standard 600 V cartridge fuse clips and spacing
- Fully interlocked Max-Gard receptacle
- Angled front receptacle for easier access

User made possible conduit hubs

Amp	Std. NPT thread outlet (in.)	Max. (in.)
30	1½	2½
60	2	2½
100	2	2½

Specifications on pages 38–39.

Ordering information



Amp	Poles/wires	Voltage	Fused disconnect** interlocked receptacle NEMA 12/3R Cat. no. ▼	Mating Max-Gard plug Cat. no. ▼	Std. bushing I.D. (in.)
30	2P3W	125	DFRF31070	DS3107MP000	7/16
30	2P3W	250	DFRF32070	DS3207MP000	7/16
30	3P4W	3Ø250	DFRF33070	DS3307MP000	1
30	3P4W	3Ø480	DFRF34040	DS3404MP000	1
30	4P5W	277/480	DFRF35040	DS3504MP000	1 13/16
60	2P3W	250	DFRF62070	DS6207MP000	1 13/16
60	3P4W	125/250	DFRF63070	DS6307MP000	1 13/16
60	3P4W	3Ø480	DFRF64040	DS6404MP000	1 13/16
60	4P5W	277/480	DFRF65040	DS6504MP000	1 1/2
100	2P3W	250	DFRF12070	DS1207MP000	1 13/16
100	3P4W	125/250	DFRF13070	DS1307MP000	1 13/16
100	3P4W	3Ø480	DFRF14040	DS1404MP000	1 13/16
100	4P5W	277/480	DFRF15040	DS1504MP000	2

Maximum 600 V AC or 250 V DC

▼Control contacts (position 9) use "K" example: DFRF1207K.

Always use liquidtight fittings to limit condensation entry.

Notes: **Non-fused, non-UL version available:

Specify DNRF _____

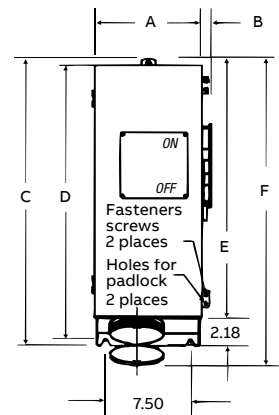
Standard polarizations shown. Boldface figures are for voltage assignment; For different ratings, see page 38.

Dimensions



Amp	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)
30	9½	¾	25¾	25	22¾	30
60	9½	¾	25¾	25	22¾	30
100	9½	¾	25¾	25	22¾	30

Diagram



Max-Gard interconnection systems

Maximum 600 V AC/250 V DC



Conduit hubs: (at B or E)

Amp	Std. NPT thread outlet (in.)	Max. (in.)
30	1½	2½
60	1½	2½
100	2	2½
200	2	3
400	4	4

Ordering information



Amp	Poles/wires	Voltage	Mechanically interlocked receptacle NEMA 4X Cat. no. ▼	Mating Max-Gard plug Cat. no. ▼	Std. bushing I.D. (in.)
30	2P3W	125	DBRS310703000	DS3107MP000	7/8
30	2P3W	250	DBRS320703000	DS3207MP000	7/8
30	3P4W	3Ø250	DBRS330703000	DS3307MP000	1
30	3P4W	3Ø480	DBRS340403000	DS3404MP000	1
30	4P5W	277/480	DBRS350403000	DS3504MP000	1 3/16
60	2P3W	250	DBRS620706000	DS6207MP000	1 3/16
60	3P4W	125/250	DBRS630706000	DS6307MP000	1 3/16
60	3P4W	3Ø480	DBRS640406000	DS6404MP000	1 3/16
60	4P5W	277/480	DBRS650406000	DS6504MP000	1 1/2
100	2P3W	250	DBRS120710000	DS1207MP000	1 13/16
100	3P4W	125/250	DBRS130710000	DS1307MP000	1 13/16
100	3P4W	3Ø480	DBRS140410000	DS1404MP000	1 13/16
100	4P5W	277/480	DBRS150410000	DS1504MP000	2
200	3P4W	277/480	DBRS230720000	DS2307MP000	1 1/4
200	3P4W	3Ø480	DBRS240420000	DS2404MP000	2 1/4
200	4P5W	277/480	DBRS250420000	DS2504MP000	2 1/2
400	3P4W	277/480	DBRS430740000	DS4307MP000	3
400	3P4W	3Ø480	DBRS440440000	DS4404MP000	3
400	4P5W	277/480	DBRS450440000	DS4504MP000	3 1/4

(Flap-cap available by replacing DBRS with DBRF)

▼Control contacts (position 12) use "K" example: DBRS6104060K0
 Shunt trip breaker (position 13) add "Z" to above: DBRS6104060KZ
 Breaker trip ratings (positions 9, 10, 11) 30 A use 030; 60 A use 060;
 alternate trip ratings available – Consult Technical Services
 Non-Auto Sw. NAO (repl. DBRF with "DSRF")

For additional full line and polarization options, see page 38.

Boldface figures are for voltage assignment; For different ratings, see page 38.

Max-Gard NEMA 4X interlocks are ideal for demanding non-hazardous areas where dust, dirt, moisture and corrosion might be a problem – such as shipyards, food processing facilities, manufacturing operations or similar areas.

Safety

- Gated deadfront waterproof receptacle
- Standard, high AIC or NA/switch circuit breaker
- Protective screw cap for watertight protection

Durability

- Thick-wall cast copper-free aluminum housing with epoxy powder-coat finish
- Heavy-duty sliding bar interlock mechanism

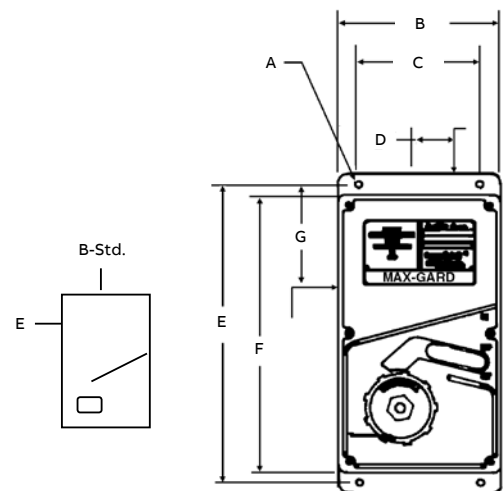
Performance

- Heavy on/off handle adds mechanical ability to electrical interlock function
- Standard conduit openings through top or side

Dimensions

Amp	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)
30	3/8	8 3/4	6 1/2	1 1/2	16 1/4	15 3/8	3 1/8
60	3/8	8 3/4	6 1/2	1 1/2	16 1/4	15 3/8	3 1/8
100	3/8	8 3/4	6 1/2	1 1/2	16 1/4	15 3/8	3 1/8
200	9/16	12 1/4	9	2 1/2	26 1/4	24 3/4	5
400	9/16	15 1/2	12	3	30 1/2	29	6

Diagrams



Max-Gard interconnection systems

Explosion-proof applications



Russellstoll hazardous-duty plugs, receptacles and interlocks are designed to support a variety of installation needs throughout 20 A, 30 A, 60 A and 100 A ranges where division 1, class 1 NEC guidelines require the utmost in safety.

Unique among others, the Russellstoll Max-Gard also offers true O-ring sealed waterproof design protection in addition to standard threaded flame-path construction employed elsewhere. In rough service, washdown and outdoor applications, Max-Gard performance goes beyond normal explosion-proof ratings.

With coming increases in harmonized designations for classifications between NFPA/NEC and IEC (international) hazardous area standards, a quick reference classification chart is provided below. In all cases, the customer must determine and approve proper area classification standards and degree of harmonized standards acceptance.

Explosion-proof applications

Hazardous materials environment	U.S. NEC standards	Euro IEC standards
Gas or vapor	Div. 1, Class I	Zone 0 and 1
	Div. 2, Class I	Zone 2
Dust	Div. 1, Class II	Zone 10
	Div. 2, Class II	Zone 11
Fibers/flyings	Div. 1, Class III	Zone 10
	Div. 2, Class III	Zone 11
Group applications	NEC Art. 500	NEC Art. 505
	Class I: groups	Zones 0, 1 and 2
Div. 1 and 2, Class I	A: Acetylene	IIC
	B: Hydrogen	
	C: Ethylene	IIB
	D: Propane	IIA

The above chart is presented for quick reference only and should only be used in conjunction with noted articles. Further definition of harmonized standards will be supported by Russellstoll through appropriate specification efforts whenever practical.

Max-Gard interconnection systems

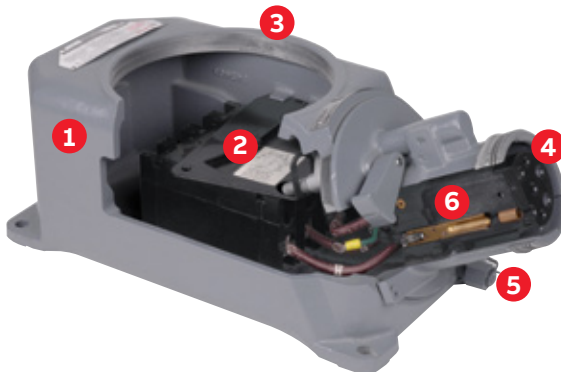
Max-Gard DBRE and DSRE series interlocks are the only devices certified both explosion-proof and waterproof, along with optional control contacts, and are fully UL listed.

01 Approvals

- UL and CSA listed for hazardous locations
- Class I, Division 1, Groups B, C and D
- Class II, Division 1, Groups F and G
- UL File E10919
- NEMA 7, 8, 9
- CSA
- DOT shipboard used above deck "green water"
- NEMA 4X
- USCG approved

02 Approvals

- UL and CSA listed for hazardous locations
- Class I, Division 1, C and D
- Class II, Division 1, Groups F and G
- UL File E10919
- NEMA 7, 8, 9
- CSA
- DOT shipboard used above deck "green water"
- NEMA 4X
- USCG approved



—
01

Explosion-proof waterproof circuit breaker interlocked receptacle

Available in 30 A, 60 A and 100 A sizes, all polarizations.

1. Heavy-duty cast aluminum housing, electrostatic epoxy coat finish
2. Standard, high AIC and NA (switched only) breakers available
3. Threaded access (cover not shown) with O-ring for explosion-proof and waterproof integrity
4. Gated deadfront safety
5. Drain plug
6. Factory-sealed receptacle interior – Accepts standard Max-Gard plugs



—
02

Explosion-proof waterproof non-interlocked receptacle

Available in 30 A 480 V AC max, all polarizations.

- Factory-sealed interior (no filled conduits)
 - Easy low-cost installation
1. Heavy-duty cast aluminum housing, electrostatic epoxy coat finish
 2. Threaded access (cover not shown) with O-ring for explosion-proof and waterproof integrity
 3. Gated deadfront for safety
 4. All standard polarizations available to 480 V AC
 5. Factory-sealed receptacle interior – Accepts standard Max-Gard plugs

Max-Gard interconnection systems

Maximum 600 V AC or 250 V DC



Explosion-proof applications

Amp	Poles/ wires	Voltage (V AC)	Cat. no. ▼	Cat. no. ▼	Cat. no. ▼	Std. bushing I.D.* (in.)
Product type			Explosion-proof interlocked receptacle with circuit breaker, Class I, Class II	Explosion-proof receptacle, Class I, Class II	Male plug	
30	2P3W	125	DBRE310703000	DSE3107FR0	DS3107MP000	7/8
30	2P3W	250	DBRE320703000	DSE3207FR0	DS3207MP000	7/8
30	3P4W	3Ø250	DBRE330703000	DSE3307FR0	DS3307MP000	1
30	3P4W	3Ø480	DBRE340403000	DSE3404FR0	DS3404MP000	1
30	4P5W	277/480	DBRE350403000	DSE3504FR0	DS3504MP000	1 3/16
60	2P3W	250	DBRE620706000	–	DS6207MP000	1 3/16
60	3P4W	3Ø250	DBRE630706000	–	DS6307MP000	1 5/16
60	3P4W	3Ø480	DBRE640406000	–	DS6404MP000	1 5/16
60	4P5W	277/480	DBRE650406000	–	DS6504MP000	1 1/2
100	2P3W	250	DBRE120710000	–	DS1207MP000	1 11/16
100	3P4W	3Ø250	DBRE130710000	–	DS1307MP000	1 13/16
100	3P4W	3Ø480	DBRE140410000	–	DS1404MP000	1 13/16
100	4P5W	277/480	DBRE150410000	–	DS1504MP000	2

* For additional bushing sizes, accessories and specification information, see pages 32–37.

Note: For additional full line and polarization options, see page 40.

▼ Control contacts (position 12) use "K" example: DBRE6404060K0

Shunt trip breaker (position 13) add "Z" to above: DBRE6404060KZ

Breaker trip ratings (positions 9, 10, 11) 30 amp use 030;

60 A use 060; alternate trip ratings are available – Consult technical services

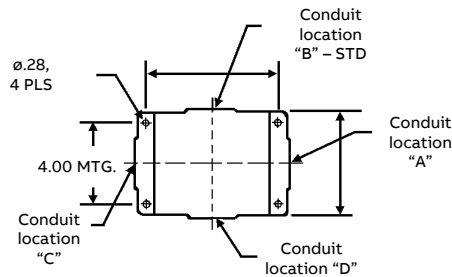
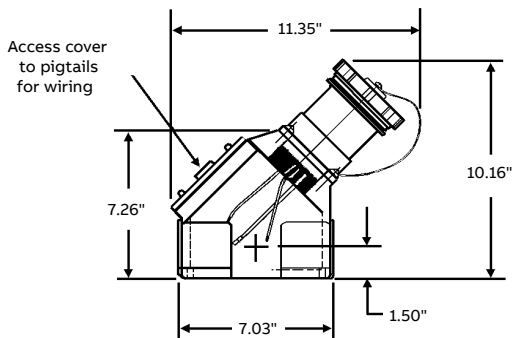
Non-auto Sw. NAO (repl. "DBRE" with "DSRE")

Boldface figures are for voltage assignment; For different ratings, see page 38.

Max-Gard interconnection systems

Dimensions

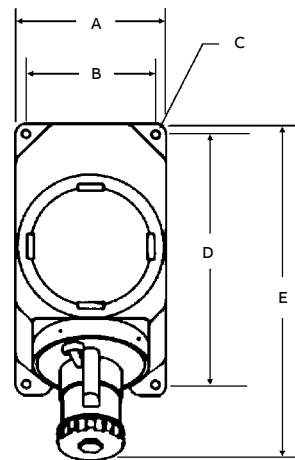
Explosion-proof receptacle



Bottom view
 (possible conduit sizing are: 0.750–14 NPT, 1.00–11.5 NPT, 1.25–11.5 NPT with 1.00–11.5 NPT at location "B" as standard)

Explosion-proof interlocked receptacle

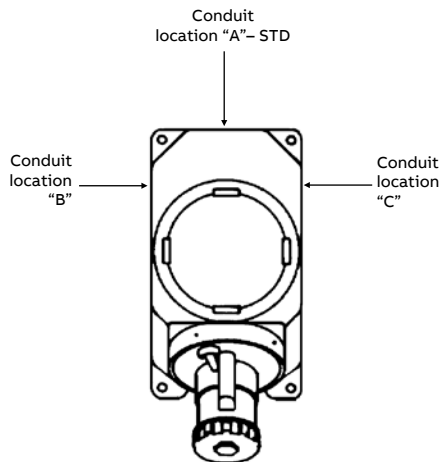
Amp	Dimensions (in.)				
	A	B	C	D	E
30	8¾	7½	½	14¾	20
60	8¾	7½	½	14¾	20
100	8¾	7½	½	14¾	20



Conduit sizing

Amp	Standard (in.)
30	1.25
60	1.50
100	2.00

Note: Range is 0.750–14 NPT through 2.00–11.5 NPT.



GSUL safe ground indicator system

Prevents operation of pumps without a safe ground for static dissipation.

Class I, Division 1, Groups C, D, and Zone 1, Groups IIB, IIA; NEMA 7 Class II, Division 1, Groups E, F, G; NEMA 9

01 Unit shown with covers removed



01

Applications

Volatile or classified areas such as:

- Tank farms
- Petrochem
- Cosmetics
- Grain mills
- Vehicular or rail transport

Specifications

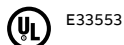
Enclosure: Cast copper-free aluminum with epoxy powder-coated finish

Outlets: Regularly furnished tapped 3/4" NPT

Relay Contacts: Rated 1/3 hp, 10 A, 120 V AC;

1/2 hp, 10 A, 240 V AC

Certifications: UL listed, CSA certified



Instant visual confirmation of safe ground

The Russellstoll GSUL safe ground indicator system is designed to ensure that a safe ground has been established for dissipating ever-present static electricity from tank vehicles, carriers, drums and other conductive equipment before allowing the transfer of flammable materials. The GSUL indicates the establishment of a safe ground via two parallel-connected green signal lights. Two lights are used for redundancy – If one lamp burns out, visual indication of safe grounding will be maintained by the other.

Intrinsically safe circuitry

The GSUL safe ground indicator system features an intrinsically safe, low-energy ground-sensing circuit, which does not carry sufficient electrical energy to cause ignition in classified hazardous locations.

In operation, the ground-sensing circuit extends through the grounding clamp and its connection to the ground indicator, the metal portion of the vehicle between the jaw terminals of the clamp and earth ground electrode.

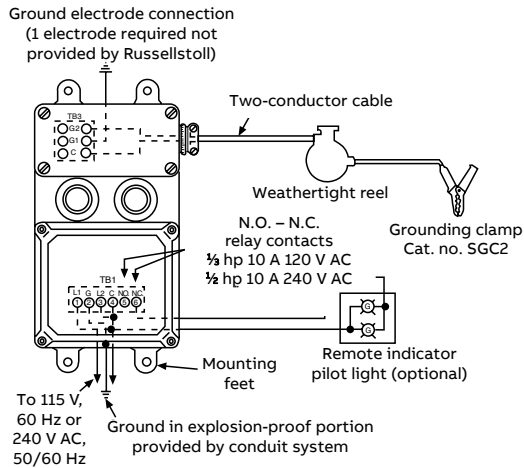
Pumps won't operate until safe ground is established

A control relay in the GSUL safe ground indicator system provides interlocked control of pump motors at the loading platform. The electronic control circuit will be de-energized while the green lights are off. Attaching the clamps to the tank closes the interlocking contact and energizes the control circuits to the motors.

01 Wiring diagram

GSUL safe operating features

- Two redundant, parallel green indicator lights glow when safe ground is established
- Lamps offer approximately 20,000 hours of operating life
- Unit may be ordered without lights where remote visual indication is desired
- Intrinsically safe, simplified circuitry
- Integral, intrinsically safe wiring compartment with approved strain-relief fitting for connection of cable from grounding clamp
- Solid-state actuating and control circuits mounted on removable printed circuit board
- Enclosure protects components against moisture
- Control relay provided for interlocked control of pump motor at loading rack
- Grounding clamp (ordered separately) provides dual isolated tip contacts in a heavy-duty cast-aluminum handle design



01

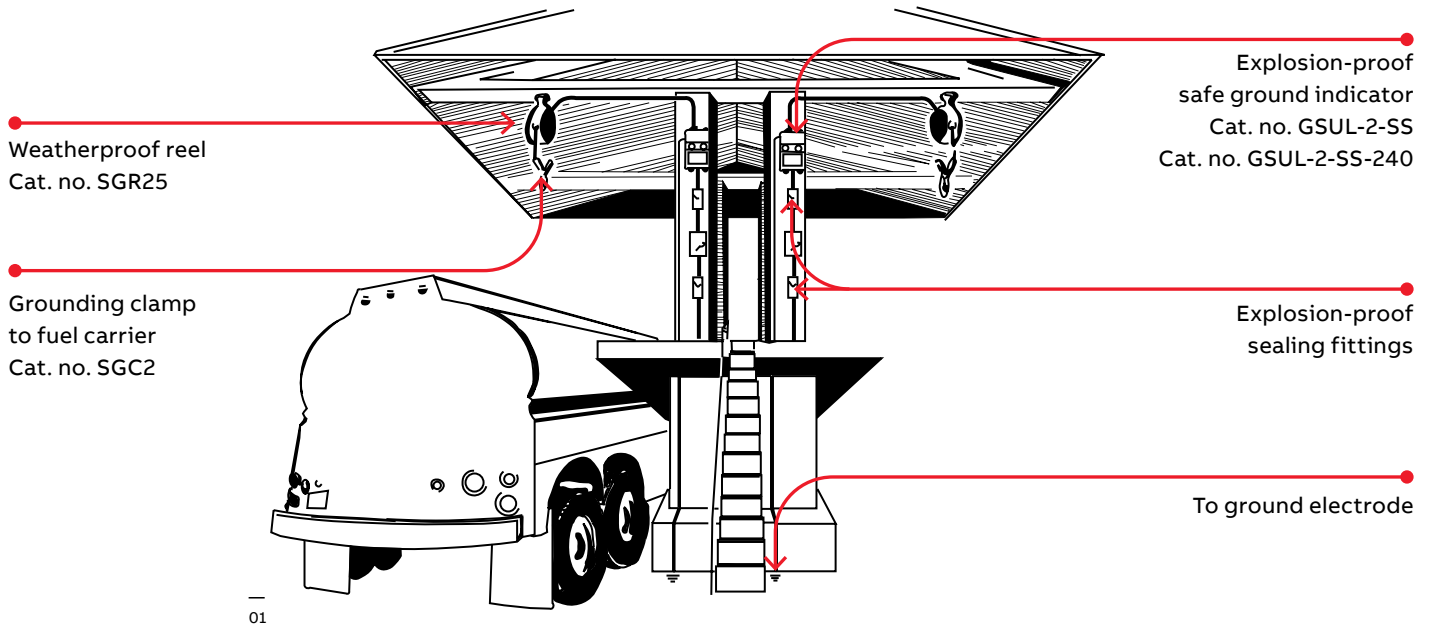
GSUL safe ground indicator system

Prevents operation of pumps without a safe ground for static dissipation.

01 Loading rack illustration suggests a typical installation, which includes an explosion-proof switch, explosion-proof sealing fittings, weathertight reel and the GSUL-2-SS safe ground indicator with 2-wire grounding clamp.

02 GCC1

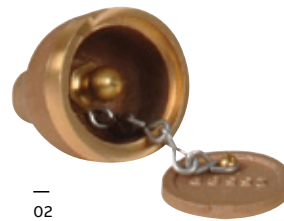
Typical installation



Aerospace/industrial static ground devices

Static grounding receptacles are used in airport and aerospace installations worldwide during fueling, testing and maintenance procedures. Normal mounting is concrete/tarmac floor inset, threaded onto copper ground rod.

Heavy brass construction cup includes optional cover and receptacle's contact pin. Accommodates a wide variety of single-contact (copper on steel wire) static ground wire clamps in service.



Cat. no.	Description
GCC1	Ground cup with cover*
GC1	Ground cup without cover*
F06146	Replacement contact tip**

* Hub is tapped for $\frac{3}{4}$ "-10.

** Hub is tapped for $\frac{1}{2}$ "-13.

GSUL safe ground indicator system

Maximum 600 V AC or 250 V DC



GSUL-2-SS



SGR25, SGR50, SGR75



SGC2

Maximum 600 V AC or 250 V DC

	Cat. no.	Description
<p>GSUL-2-SS</p>	<p>GSUL2SS Safe ground indicator with indicator lights, 120 V, UL/CSA</p> <p>GSUL2SS-240 Safe ground indicator with indicator lights, 240 V, CSA</p> <p>SGC2 Safe ground static clamp</p> <p>SGR25 Weathertight retracting reel with 25 ft. of 12/2 SJO-W cable</p> <p>SGR50 Weathertight retracting reel with 50 ft. of 12/2 SJO-W cable</p> <p>SGR75 Weathertight retracting reel with 75 ft. of 12/2 SJO-W cable</p>	
<p>Replacement parts for GSUL</p>		
<p>SGR25, SGR50, SGR75</p>	<p>Replacement parts for GSUL</p>	
<p>SGC2</p>	<p>Replacement parts for GSUL</p> <p>C13662 Printed circuit board, 120 V (includes relay)</p> <p>GX24RCB Printed circuit board, 240 V (includes relay)</p> <p>F30674 Control relay</p> <p>F30602 Lamp socket assembly</p> <p>ELAG Pilot light globe assembly (green)</p> <p>310993 Lamp for GSUL2SS</p> <p>Replacement parts for SGC2</p> <p>GX2TK Ground clamp repair kit</p>	

DuraGard waterproof connections

Features and benefits



Non-metallic plugs, connectors, receptacles and inlets – 20, 30, 50 and 60 A, maximum 600 V AC/250 V DC

Safety

- **Truly waterproof:** Not just watertight, but waterproof (tested under 1000 PSI)
- **Exclusive waterproof features:** The only thermoplastic connector designed to prevent short circuits due to water ingress under high water pressure
- **Different power supply ratings can't mix:** Six single-rate device polarizations ensure exact voltage, frequency and phase differentiation
- **Added safety measures:** Safety ground makes first, breaks last
- **Ultimate waterproof connection:** Watertight mated or unmated, while many watertight specifications cover mated connections only

Durability

- **Designed for durability:** DuraV® housing material specially selected for hot or cold and chemical washdown duty (flame-safe UL 94-V0 rated housings)
- **Versatile functionality:** Pin and sleeve design enables higher current flow at cooler temperatures due to large contact circular areas
- **Built to last:** A longer system life under corrosive environments

Performance

- **Long life:** Round, self-cleaning, constant-pressure pin and sleeve contacts of solid CDA 360 brass for long, reliable electrical life
- **Easy installation:** Drop-in assemble interior and easy pressure screw wire termination
- **Reliability:** DurOring sealing system for each pin and sleeve and interior assembly
- **Application flexibility:** Bushing size available for every cable diameter
- **Continuous operation:** Superior performance in corrosive environments

Russellstoll line selections for outdoor (and indoor) applications

DuraGard to 3P4W 20 through 60 A

The toughest design and construction in thermoplastic safety, durability and performance in UL 94-V0 flame-rated DuraV material. With DurOring sealed pins, sleeves and interiors are watertight even unmated. A 30 A and 50 A circuit breaker interlock line in DuraV are the best choices for standard voltage polarization options through 600 V AC (interlock to 480 V AC).

Interlocked outlets 20 through 60 A

USCG accepted 20–50 A convenience interlocked receptacles accept DuraGard plugs. Built from aluminum or brass for rough-service installations, in switched or circuit breaker formats, their extremely heavy-duty designs provide maximum durability.

IEC (IP67) to 4P5W 20 to 100 A

Thermoplastic international standard IEC 309-2 or CEE-17 connector usage is growing especially in OEM, export and standard performance applications. The IP67 style is watertight when mated and directly interchangeable with other manufacturers. International designations shadow U.S. amperage ratings: 20/(16), 30/(32), 60/(63) and 100/(125) amps. IP67 devices have screw collars or flap/screw covers, with catalog number “W” suffixes.

Usage

Any application where:

- Electrical connections need protection from water and/or dust entrance to the contacts or the wiring compartment
- Cable-to-connector sealing and device locking designs are critical

Typical application groups

Marine

- Lighting connectors
- Shore-to-ship power
- Low-power welding
- Power distribution panels
- Shipboard power outlets
- Barge power connection

Construction and agricultural

- Generator set panels
- Portable tools and equipment
- Irrigation systems panels
- Portable lighting and equipment

Food processing, brewery/beverage, pulp and paper, pharmaceuticals, portable building power

- Welding outlets
- Motor power connections
- Lighting systems
- Machinery interconnections
- Process control power systems

OEMs

- Export machinery
- Critical power connections and welding systems
- Transportable equipment



DuraGard waterproof connections

DuraGard pin and sleeve connections

- 01 Pulp and paper
- 02 Food processing
- 03 Beverage and bottling
- 04 Pharmaceutical manufacturing

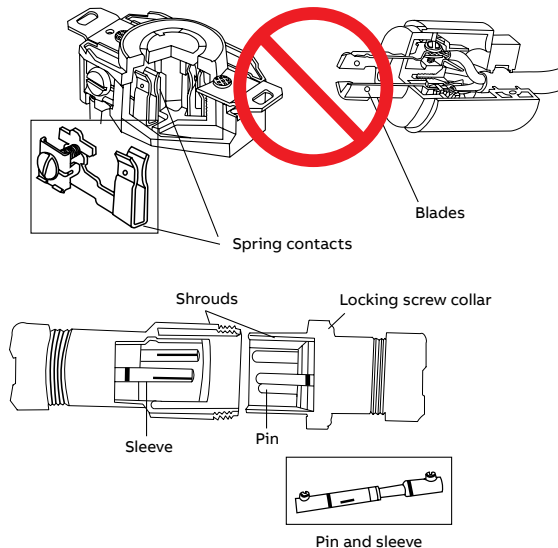
Washdown duty, chemical, outdoor, industrial and marine use non-metallic plugs, connectors receptacles and inlets – 20, 30, 50 and 60 A, maximum 600 V AC/250 V DC

Pin and sleeve contact devices consist of round male pins that are inserted into tubular female sleeves. Current flows through a large pin-to-sleeve circular contact area. Because current is not restricted through point contact only, higher current flow and cooler operating temperatures are achieved in a compact connection. Wiping action during insertion or withdrawal provides positive self cleaning. Shrouded pins and sleeves are protected from physical damage or casual access and aid in polarization features of the line. The shroud and screw collar completely lock plugs to receptacles or connectors for a reliable connection. Step on the cord, kick or drop a plug – your connection will remain tight.

Pin and sleeve devices are the safety standard for high-current applications worldwide.

Bladed plug and receptacle

Spring blade contact designs offer point contact only, with minimal mechanical support in receptacles. Higher heat is generated in use as contacts loosen with age and dirt accumulation, resulting in failures. Exposed blade contacts can easily be damaged. Contacts are both the electrical and mechanical locking method.



Pin and sleeve connector and plug

Pin and sleeve design enables higher current flow at cooler temperatures due to large circular contact area. Sleeves act as retainers for the pins, making a reliable connection. Shrouded pins and sleeves are protected from damage and inadvertent access. Locking housing screw collars provide for a reliable, long-lasting connection with electrical contacts separate.

The water spray test

1000-PSI water spray was directly applied at the face of DuraGard receptacles. No damage occurred, and no water penetrated the housing or cord seal. DuraGard plugs, connectors and receptacles are designed to withstand water spray test at 1000 PSI. No extra boots or adapters required.



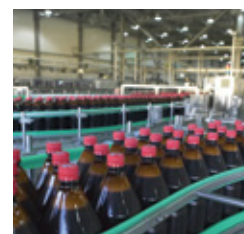
DuraGard: designed for the toughest washdown applications



01



02



03



04

The ultimate in waterproof connections

- Washdown duty, chemical, outdoor, industrial and marine use non-metallic plugs, connectors receptacles and inlets – 20, 30, 50 and 60 A, maximum 600 V AC/250 V DC
- 20, 30, 50 and 60 A, 600 V AC, 20 A, 250 V DC

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- Lockout capable (30/50/60A plugs):**
- Access hole (not seen) for padlock hasp
 - Interlock engagement CDA 360 solid brass pin and sleeve contacts

- Waterproof cable sealing:**
- Neoprene compression bushing cable locking system
 - Locking bushing nut with external cable clamps
 - Bushing sizes available for any cable size

- Waterproof locking connections:**
- Locking screw collars with O-ring gaskets
 - Housing mechanical support and pin and sleeve connection

- High reliability, high-performance connections:**
- CDA 360 solid brass pin and sleeve contacts

- Safety specified voltage connections:**
- Safety ground makes first breaks last
 - Voltage polarized to meet NEC 210-7 and OSHA standards

- Long-lasting self-cleaning connections:**
- Full round pin and sleeve contacts

- Durable and UL 94-V0 flame rated housings:**
- DuraV high-impact body and collars
 - Thermoset interiors
 - Deadfront construction

- Fast, easy, rear-load wiring and assembly:**
- Drop-in assembly interior
 - Sleeve and cable bushing
 - Easy-in pressure screw wiring terminations

- Dry wiring compartments:**
- DurOring sealing system for each pin and sleeve and interior assembly

01 50 A plug and connector shown

DuraGard waterproof connections

20 A standard service



Device ratings and polarizations

Pole	Wire	Safety polarization (receptacle)	Voltage	Cat. no. <input type="checkbox"/> Male plug	Cat. no. <input type="checkbox"/> Female connector
2	3		125 V AC	9P23U1	9C23U1
2	3		250 V AC	9P23U2	9C23U2
2	3		277 V AC	9P23U3	9C23U3
2	3		480 V AC	9P23U4	9C23U4
2	3		600 V AC	9P23U5	9C23U5
2	3	through 600 V AC/250 V DC		9P23U0	9C23U0
3	4		125/250 V AC	9P24U1	9C24U1
3	4		3Ø 250 V AC	9P24U2	9C24U2
3	4		3Ø 480 V AC	9P24U4	9C24U4
3	4		3Ø 600 V AC	9P24U5	9C24U5
3	4	through 600 V AC/250 V DC		9P24U0	9C24U0

Maximum 600 V AC/250 V DC

Add suffix - / xxxx for bushing I.D. (page 64) or conduit adapter assembled.

♦ "W" suffix is watertight; "F" suffix for splash-proof spring flap cover.

* Consult Technical Services.



Pole	Wire	Standard bushing I.D.: Plug/conn.*	Cat. no. ▼
Product type			Female receptacle
2	3	Standard 0.625"; or optional size, see page 64	9R23U1W
2	3	Standard 0.625"; or optional size, see page 64	9R23U2W
2	3	Standard 0.625"; or optional size, see page 64	9R23U3W
2	3	Standard 0.625"; or optional size, see page 64	9R23U4W
2	3	Standard 0.625"; or optional size, see page 64	9R23U5W
2	3	Standard 0.625"; or optional size, see page 64	9R23U0W
3	4	Standard 0.625"; or optional size, see page 64	9R24U1W
3	4	Standard 0.625"; or optional size, see page 64	9R24U2W
3	4	Standard 0.625"; or optional size, see page 64	9R24U4W
3	4	Standard 0.625"; or optional size, see page 64	9R24U5W
3	4	Standard 0.625"; or optional size, see page 64	9R24U0W

Maximum 600 VA/250 V DC

□ Add suffix - / xxxx for bushing I.D. (page 64) or conduit adapter assembled.

♦ "W" suffix is watertight; "F" suffix for splash-proof spring flap cover.

* Consult Technical Services.

DuraGard waterproof connections

30 A standard service and 30 A reverse service



Device ratings and polarizations

Pole	Wire	Safety polarization (receptacle)	Voltage	Cat. no. ▼ <input type="checkbox"/>	Cat. no. ▼ <input type="checkbox"/>
Product type				Male plug	Female connector
2	3		125 V AC	9P33U1	9C33U1
2	3		250 V AC	9P33U2	9C33U2
2	3		277 V AC	9P33U3	9C33U3
2	3		480 V AC	9P33U4	9C33U4
2	3		600 V AC	9P33U5	9C33U5
2	3		through 600 V AC/250 V DC	9P33U0	9C33U0
3	4		125/250 V AC	9P34U1	9C34U1
3	4		3Ø 250 V AC	9P34U2	9C34U2
3	4		3Ø 480 V AC	9P34U4	9C34U4
3	4		3Ø 600 V AC	9P34U5	9C34U5
3	4		through 600 V AC/250 V DC	9P34U0	9C34U0

Maximum 600 V AC/250 V DC

Add suffix - / xxxx for bushing I.D. (page 64) or conduit adapter assembled.

◆ "W" suffix indicates watertight receptacle; "F" suffix indicates splash-proof spring flap cover included.

* Consult Technical Services.



Pole	Wire	Standard bushing I.D.: Plug/conn.*	<input type="checkbox"/> Cat. no. ▼ Female receptacle	<input type="checkbox"/> Cat. no. ▼ Female plug (reverse service)	<input type="checkbox"/> Cat. no. ▼ Male receptacle (reverse service)
Product type					
2	3	Standard 0.700"; for optional size, see page 64	9R33U1W	9F33U1	9B33U1F
2	3		9R33U2W	9F33U2	9B33U2F
2	3		9R33U3W	9F33U3	9B33U3F
2	3		9R33U4W	9F33U4	9B33U4F
2	3		9R33U5W	9F33U5	9B33U5F
2	3		9R33U0W	9F33UØ	9B33UØF
3	4	Standard 0.750"; for optional size, see page 64	9R34U1W	9F34U1	9B34U1F
3	4		9R34U2W	9F34U2	9B34U2F
3	4		9R34U4W	9F34U4	9B34U4F
3	4		9R34U5W	9F34U5	9B34U5F
3	4		9R34U0W	9F34UØ	9B34UØF

Add suffix - / xxx for bushing I.D. (page 64) or conduit adapter assembled.
 ♦ "W" suffix indicates watertight receptacle; "F" suffix indicates splash-proof spring flap cover included.
 * Consult Technical Services.

DuraGard waterproof connections

50 A standard service and 50 A reverse service



Device ratings and polarizations

Pole	Wire	Safety polarization (receptacle)	Voltage	Cat. no. ▼ <input type="checkbox"/>	Cat. no. ▼ <input type="checkbox"/>
Product type				Male plug	Female connector
2	3		125 V AC	9P53U1	9C53U1
2	3		250 V AC	9P53U2	9C53U2
2	3		277 V AC	9P53U3	9C53U3
2	3		480 V AC	9P53U4	9C53U4
2	3		600 V AC	9P53U5	9C53U5
2	3		through 600 V AC/250 V DC	9P53U0	9C53U0
3	4		125/250 V AC	9P54U1	9C54U1
3	4		3Ø 250 V AC	9P54U2	9C54U2
3	4		3Ø 480 V AC	9P54U4	9C54U4
3	4		3Ø 600 V AC	9P54U5	9C54U5
3	4		through 600 V AC/250 V DC	9P54U0	9C54U0

Maximum 600 V AC/250 V DC

Add suffix - / xxxx for bushing I.D. (page 64) or conduit adapter assembled.

♦ "W" suffix is watertight; "F" suffix for splash-proof spring flap cover.



Pole	Wire	Standard bushing I.D.: Plug/conn.*	<input type="checkbox"/> Cat. no. ▼	<input type="checkbox"/> Cat. no. ▼	<input type="checkbox"/> Cat. no. ▼
Product type			Female receptacle	Female plug (reverse service)	Male receptacle (reverse service)
2	3	Standard 0.925"; for optional size, see page 64	9R53U1W	9F53U1	9B53U1F
2	3		9R53U2W	9F53U2	9B53U2F
2	3		9R53U3W	9F53U3	9B53U3F
2	3		9R53U4W	9F53U4	9B53U4F
2	3		9R53U5W	9F53U5	9B53U5F
2	3		9R53U0W	9F53UØ	9B53UØF
3	4	Standard 0.925"; for optional size, see page 64	9R54U1W	9F54U1	9B54U1F
3	4		9R54U2W	9F54U2	9B54U2F
3	4		9R54U4W	9F54U4	9B54U4F
3	4		9R54U5W	9F54U5	9B54U5F
3	4		9R54U0W	9F54UØ	9B54UØF

Add suffix - / xxxx for bushing I.D. (page 64) or conduit adapter assembled.

◆ "W" suffix is watertight; "F" suffix for splash-proof spring flap cover.

* Consult Technical Services.

DuraGard waterproof connections

60 A standard service



Device ratings and polarizations

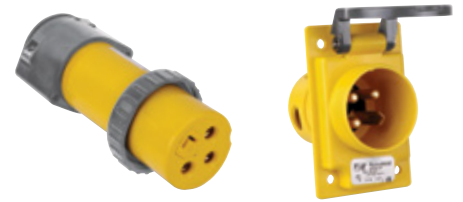
Pole	Wire	Safety polarization (receptacle)	Standard bushing I.D.: Plug/conn.*	Voltage	☐	☐	☐
					Cat. no. ▼	Cat. no. ▼	Cat. no. ▼
Product type					Male plug	Female connector	Female receptacle
2	3		Standard 1.000"; for optional size, see page 64	125 V AC	9P63U1	9C63U1	9R63U1
2	3			250 V AC	9P63U2	9C63U2	9R63U2
3	4		Standard 1.000"; for optional size, see page 64	125/250 V AC	9P64U1	9C64U1	9R64U1
3	4			3Ø 250 V AC	9P64U2	9C64U2	9R64U2

Maximum 600 V AC or 250 V DC

☐ Add suffix — / xxxx for bushing I.D. (page 64) or conduit adapter assembled.

♦ "W" suffix is watertight; "F" suffix for splash-proof spring flap cover.

60 A reverse service



Device ratings and polarizations

Pole	Wire	Safety polarization (receptacle)	Standard bushing I.D.: Plug/conn.*	Voltage	☐	☐
					Cat. no. ▼	Cat. no. ▼
Product type					Female plug	Male receptacle
2	3		Standard 1.000"; for optional size, see page 64	125 V AC	9F63U1	9B63U1
2	3			250 V AC	9F63U2	9B63U2
3	4		Standard 1.000"; for optional size, see page 64	125/250 V AC	9F64U1	9B64U1
3	4			3Ø 250 V AC	9F64U2	9B64U2

☐ Add suffix – / xxxx for bushing I.D. (page 64) or conduit adapter assembled.


♦ "W" suffix is watertight; "F" suffix for splash-proof spring flap cover.

* Consult Technical Services.

DuraGard waterproof connections

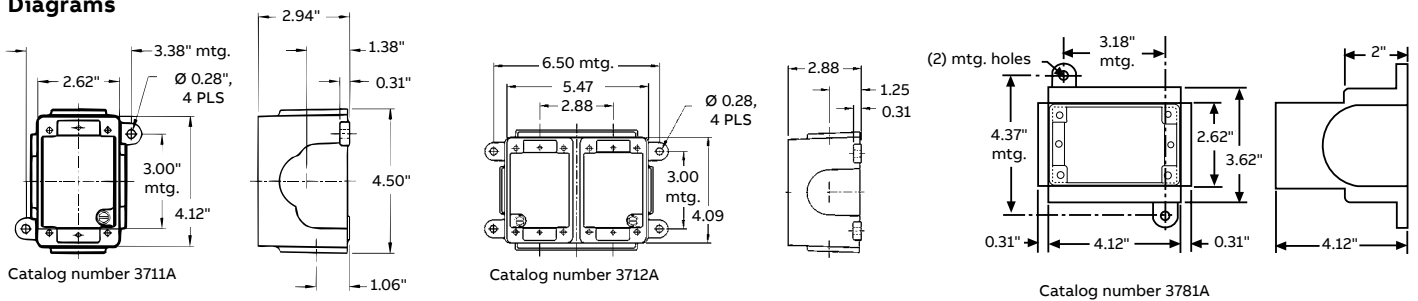
Conduit boxes (for surface mounting)

Type FD


	Type	Cast aluminum Cat. no.	Cast brass Cat. no.	Use with
	Single	3711A	3731-RS	20 A
	Double	3712A	3732-RS	30 A
	DSFD	3781A	-	50 A

Note: 3/4" NPT hole std. additional accessories are available.
Please consult your ABB representative.

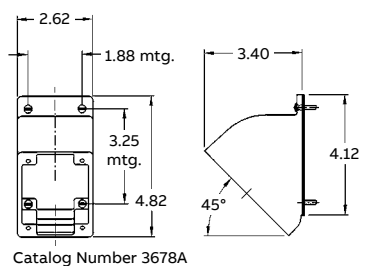
Diagrams



45° Angle adapter

	Cast aluminum Cat. no.	Cast brass Cat. no.
	3678A	3678B



Diagrams




DuraGard waterproof connections

Conduit adapter kits, cable busings, and replacement caps

Conduit adapter kits (plugs or connectors)

	Size (in.)	20 A	30 A	50 A	60 A
		Cat. no.	Cat. no.	Cat. no.	Cat. no.
	1/2	9X2C50	9X3C50	–	–
	3/4	9X2C75	9X3C75	9X5C75	9X6C75
	1	–	9X3C10	9X5C10	9X6C10

Cable bushings

	Max. cable O.D. (in.)	20 A	30, 50 & 60 A
		Cat. no.	Cat. no.
	0.375	C16984A	–
	0.437	C16984B	–
	0.500	C16984C	–
	0.545	–	2000-11
	0.562	C16984D	–
	0.606	B16506	–
	0.620	–	2000-03
	0.625	B16524	–
	0.700	–	2000-04
	0.750	–	2000-01
	0.800	–	2000-06
	0.870	–	2000-02
	0.925	–	2000-12
1.000	–	2000-05	





20 A
cable bushing

(Minimum limit 85% of O.D. size for sealing.)

Material – Oil-resistant Neoprene.

State catalog number followed by slash (/) and max. cable O.D.; example: 9P33U1/1000 will order the 1.000" bushing instead of the standard 0.700" bushing for the 9P33U1.

Replacement caps

	Description	20 A	30 A	50 A	60 A
		Cat. no.	Cat. no.	Cat. no.	Cat. no.
	Screw cap (connector)	9X2PSC	9X3PSC	9X5PSC	9X6PSC
	Cup cap (plug)	–	9X3CC	9X3CC	9X3CC
	Screw cap (receptacle)	–	7X3RCW	7X5RCW	7X6RCW
	Flap cap (receptacle)	–	7X3RCF	7X5RCF	7X6RCF

9X2PSC

7X3RCF

9X3CC

7X6RCW

DuraGard waterproof connections

Replacement interiors



Replacement interiors

Amps	Poles/ wires	Voltage polarization	Male interior assembly	Female interior assembly	Cat. no.
20	2P3W	125 V AC	9XM23U1	9XF23U1	9XF23U1
20	2P3W	250 V AC	9XM23U2	9XF23U2	9XF23U2
20	2P3W	277 V AC	9XM23U3	9XF23U3	9XF23U3
20	2P3W	480 V AC	9XM23U4	9XF23U4	9XF23U4
20	2P3W	600 V AC	9XM23U5	9XF23U5	9XF23U5
20	2P3W	through 600 V AC/250 V DC	9XM23U0	9XF23U0	9XF23U0
30	2P3W	125 V AC	9XM33U1	9XF33U1	9XF33U1
30	2P3W	250 V AC	9XM33U2	9XF33U2	9XF33U2
30	2P3W	277 V AC	9XM33U3	9XF33U3	9XF33U3
30	2P3W	480 V AC	9XM33U4	9XF33U4	9XF33U4
30	2P3W	600 V AC	9XM33U5	9XF33U5	9XF33U5
30	2P3W	through 600 V AC/250 V DC	9XM33U0	9XF33U0	9XF33U0
50	2P3W	125 V AC	9XM53U1	9XF53U1	9XF53U1
50	2P3W	250 V AC	9XM53U2	9XF53U2	9XF53U2
50	2P3W	480 V AC	9XM53U4	9XF53U4	9XF53U4
50	2P3W	600 V AC	9XM53U5	9XF53U5	9XF53U5
50	2P3W	through 600 V AC/250 V DC	9XM53U0	9XF53U0	9XF53U0
20	3P4W	125/250 V AC	9XM24U1	9XF24U1	9XF24U1
20	3P4W	3Ø 250 V AC	9XM24U2	9XF24U2	9XF24U2
20	3P4W	3Ø 480 V AC	9XM24U4	9XF24U4	9XF24U4
20	3P4W	3Ø 600 V AC	9XM24U5	9XF24U5	9XF24U5
20	3P4W	through 600 V AC/250 V DC	9XM24U0	9XF24U0	9XF24U0
30	3P4W	125/250 V AC	9XM34U1	9XF34U1	9XF34U1
30	3P4W	3Ø 250 V AC	9XM34U2	9XF34U2	9XF34U2
30	3P4W	3Ø 480 V AC	9XM34U4	9XF34U4	9XF34U4
30	3P4W	3Ø 600 V AC	9XM34U5	9XF34U5	9XF34U5
30	3P4W	through 600 V AC/250 V DC	9XM34U0	9XF34U0	9XF34U0
50	3P4W	125/250 V AC	9XM54U1	9XF54U1	9XF54U1
50	3P4W	3Ø 250 V AC	9XM54U2	9XF54U2	9XF54U2
50	3P4W	3Ø 480 V AC	9XM54U4	9XF54U4	9XF54U4
50	3P4W	3Ø 600 V AC	9XM54U5	9XF54U5	9XF54U5
50	3P4W	through 600 V AC/250 V DC	9XM54U0	9XF54U0	9XF54U0
60	2P3W	125 V AC	9XM63U1	9XF63U1	9XF63U1
60	2P3W	250 V AC	9XM63U2	9XF63U2	9XF63U2
60	3P4W	125/250 V AC	9XM64U1	9XF64U1	9XF64U1
60	3P4W	3Ø 250 V AC	9XM64U2	9XF64U2	9XF64U2

DuraGard waterproof connections

Safety interlocks



The only non-metallic, 22 kAIC, 30 A and 50 A series circuit breaker interlocked receptacle available today!

Circuit breaker interlocked outlet:

- 30 A and 50 A ranges and polarizations to 480 V AC
- 22 kA interrupt capacity breaker
- Easy handle reset after trip
- Auxiliary switch or other options

User friendly – Flexible mounting:

- Variable footprint mounting tabs
- Compact size fits 8" standard I-beam webs
- Conduit entry from top, bottom or side ($\frac{3}{4}$ ", 1" or 1 $\frac{1}{4}$ " NPT)
- Large red handle with lockout access

Flame rated and DuraV tough housing:

- UL 94-V0 housing and interior with stainless steel components
- High-impact thermoplastic housing
- NEMA 4X construction

Safety interlocks

Amps	Poles/wires	Voltage	Safety interlock with circuit breaker [†]	Circuit breaker trip rating (A)	Mating plug	Rotary controller	Replacement interior	Cat. no.
30	3P4W	125/250 V AC	9MT34U1W30B	30	9P34U1	9MI34U1WNAB	9XL34U1	
30	3P4W	3Ø 250 V AC	9MT34U2W30B	30	9P34U2	9MI34U2WNAB	9XL34U2	
30	3P4W	3Ø 480 V AC	9MT34U4W30B	30	9P34U4	9MI34U4WNAB	9XL34U4	
30	3P4W	3Ø 600 V AC	9MT34U5W30B	30	9P34U5	9MI34U5WNAB	9XL34U5	
30	3P4W	through 600 V AC/3P4W	9MT34U0W30B	30	9P34U0	9MI34U0WNAB	9XL34U0	
50	3P4W	125/250 V AC	9MT54U1W50B	50	9P54U1	9MI54U1WNAB	9XL54U1	
50	3P4W	3Ø 250 V AC	9MT54U2W50B	50	9P54U2	9MI54U2WNAB	9XL54U2	
50	3P4W	3Ø 480 V AC	9MT54U4W50B	50	9P54U4	9MI54U4WNAB	9XL54U4	
50	3P4W	3Ø 600 V AC	9MT54U5W50B	50	9P54U5	9MI54U5WNAB	9XL54U5	
50	3P4W	through 600 V AC/3P4W	9MT54U0W50B	50	9P54U0	9MI54U0WNAB	9XL54U0	

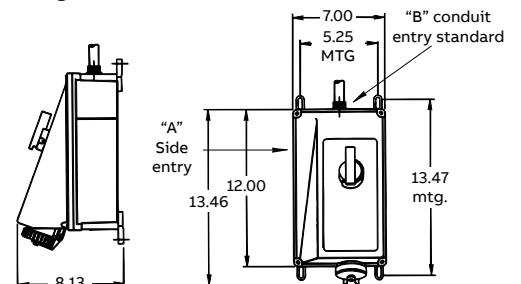
Note: 1. Change suffix for alternate trip ratings. Example: 9MT54U2W30B – 50 A, 3P4W, safety interlock with 30 A circuit breaker, conduit top entry.

♦ Change "W" to "F" for flap cap access. Example: 9MI34U2F30B – 30 A, 3P4W, safety interlock with rotary controller and flap cap.

(Minimum limit 85% of O.D. size for sealing.)

Foot and hardware replacement Kit: Cat. no. 9XLMF (non-metallic) and Cat. no. 9XLMF-SS (stainless steel).

Diagrams



DuraGard waterproof connections

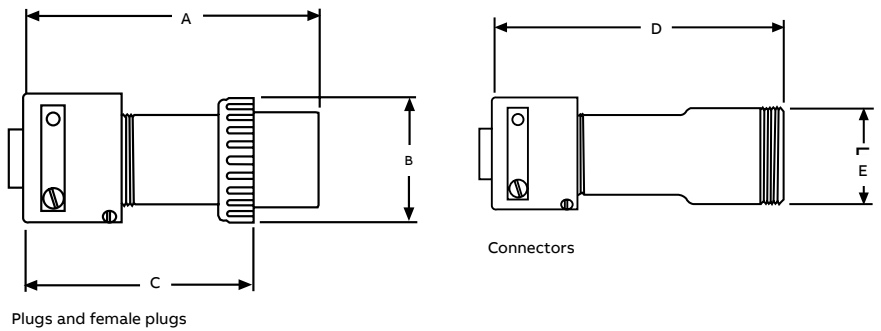
Dimensions

Plugs and female plugs

Amps		A*	B	C*	D	E	Max. AWG	Terminal Ø in./mm
20	Inches	3.87	2.16	2.75	4.75	1.88	12	0.140/0.0055
	mm	98.3	54.9	69.9	120.7	47.8		
30	Inches	5.385	2.38	4.16	6.25	2.13	8	0.235/0.0092
	mm	136.6	60.5	105.7	158.8	54.1		
50	Inches	5.75	2.38	4.16	6.25	2.13	6	0.235/0.0092
	mm	146.1	60.5	105.7	158.8	54.1		
60	Inches	5.75	2.38	4.16	6.25	2.13	6	0.235/0.0092
	mm	146.1	60.5	105.7	158.8	54.1		

* Dimensions will vary slightly with assembly.

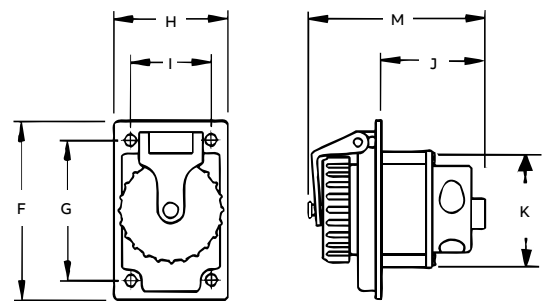
Diagrams



Receptacles and male receptacles

Amps		F	G	H	I	J	K	M	Max. AWG	Terminal Ø in./mm
20	Inches	4.14	3.25	2.66	1.88	1.49	2.26	3.17	12	0.140/0.0055
	mm	105.2	82.6	67.6	47.8	37.8	57.4	80.5		
30	Inches	4.14	3.25	2.66	1.88	2.44	2.71	4.12	8	0.235/0.0092
	mm	105.2	82.6	67.6	47.8	62.0	68.8	104.6		
50	Inches	4.14	3.25	2.66	1.88	2.44	2.71	4.12	6	0.235/0.0092
	mm	105.2	82.6	67.6	47.8	62.0	68.8	104.6		
60	Inches	4.14	3.25	2.66	1.88	2.44	2.71	4.12	6	0.235/0.0092
	mm	105.2	82.6	67.6	47.8	62.0	68.8	104.6		

Diagrams



Screw cover shown. Flap cover also available; no dimensional changes.

DuraGard waterproof connections

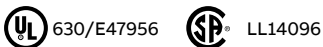
Plugs, connectors and receptacles



Materials

Part	Material
Contact carrier interior	Molded arc-resistant UL 94-V0 phenolic thermoset
Housing, gland nuts, screw collar rings	DuraV UL 94-V0, high-impact thermoplastic
O-rings	Buna-N (nitrile)
Contacts: pins and sleeves	Brass CDA 360
Hinge pins (receptacle)	Stainless steel
Terminals	Brass CDA 360
Terminal screws, flap springs, assembly screws, nuts, hardware	Stainless steel
Gland friction washer	20 A – nylon 30, 50 and 60 A – aluminum
Cable clamp bushing	Neoprene

Approvals



* TUV & PSE listed product also available; contact Technical Services.

Performance – Electrical

Application	Performance
Dielectric voltage withstand	3000 V
Max. Working voltage	6000 V RMS (minimum creepage distance and minimum clearance per UL 840)
Circuit interrupting/load breaking	UL listed and CSA certified for circuit interrupting at full rated current
Temperature rise	Max. 30 °C/86 °F temperature rise at full rated current after 50 cycles of overload at 150% rated current at 0.75 pf

Performance – Mechanical

Application	Performance
Impact resistance	Per UL 1682 paragraph 34
Cord accommodation	Round portable service cords. 10 standard diameters from 0.405" to 1.00", custom sizes to spec
Terminal identification	In accordance with UL 1682
Cable pull out force	In accordance with UL 1682
Product identification	Identification label and molded in name
Lockout/tagout	Lockout/tagout hole on plug complies with OSHA Reg. 29 CFR 1910.147

Performance – Environmental

Application	Performance
Moisture resistance	Per UL 1682 paragraph 49 watertight/flap screw cover on receptacle, O-rings on all pins and sleeves, interiors and plug shell. Watertight even when not engaged
Flammability	V0 or better per UL 94
Operating Temperatures	Maximum continuous: 95 °C/203 °F Minimum: -40 °C/-40 °F without impact
Chemicals	Resists standard industrial hydrocarbons, acids, bases and solvents
UV resistance	UV resistant housing per UL 746C

DuraGard waterproof connections

Safety interlocks

Performance – Electrical

Application	Performance
Dielectric voltage withstand	3000 V
Max. Working voltage	480 V RMS (minimum creepage distance and minimum clearance per UL 840) (using circuit breaker)
Circuit interrupting/ load breaking	UL listed and CSA certified for circuit interrupting at full rated current
Temperature rise	Max. 30 °C/86 °F temperature rise at full rated current after 50 cycles of overload at 150% rated current at 0.75 pf
Shrouded contacts	Complies with California Code Title 8, Art. 51, S2510.7(b) for devices exceeding 300 V AC

Performance – Mechanical

Application	Performance
Impact resistance	Per UL 1682 Paragraph 34
Wiring accommodation	Conduit entries at top, side and bottom, 0.750" NPT top entry standard
Terminal identification	In accordance with UL 1682
Plug pull out force	In accordance with UL 1682
Product identification	Identification label
Lockout/tagout	Lockout/tagout access on switch complies with OSHA Reg. 29 CFR 1910.147

Performance – Environmental

Application	Performance
Moisture resistance	Per UL 1682 Paragraph 49. Watertight/ flap screw cover on receptacle, O-rings on all pins and sleeves, interiors and plug shell. Watertight even when not engaged (screw cover closed/locked)
Flammability	V0 or better per UL 94
Operating Temperatures	Maximum continuous: 95 °C/203 °F Minimum: -40 °C /-40 °F without impact (Note: per C/B trip at elevated temps.)
Chemicals	Resists standard industrial hydrocarbons, acids, bases and solvents
UV resistance	UV-resistant housing per UL 746C

Materials

Part	Material
Contact carrier interior	Molded arc-resistant UL 94-V0 thermoset material
Housing, gland nuts, screw collar rings	DuraV UL 94-V0, high-impact Thermoplastic
O-rings	Buna-N (Nitrile)
Contacts: pins and sleeves	Brass CDA 360
Hinge pins (receptacle)	Stainless steel
Terminals	Brass CDA 360
Terminal screws, flap springs, assembly screws, nuts, hardware	Stainless steel
Gland friction washer	20 A – nylon 30, 50 and 60 A – aluminum
Cable clamp bushing	Neoprene

Approvals

