

Max-Gard interconnection systems

Industrial interlocked receptacles & sample installation



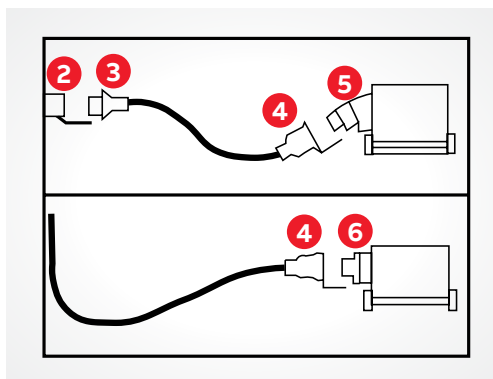
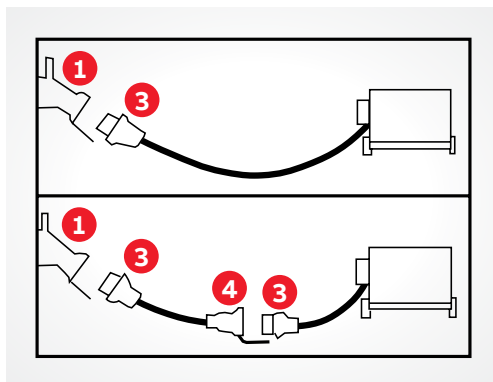
Industrial interlocked receptacles are available in 30 through 400 A. Switched receptacles have mechanical linkages for added safety. Safety features include:

- 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	⅞
30	2P3W	250	DFRF32070	DS3207MP000	⅞
30	3P4W	3Ø250	DFRF33070	DS3307MP000	1
30	3P4W	3Ø480	DFRF34040	DS3404MP000	1
30	4P5W	277/480	DFRF35040	DS3504MP000	1⅜
60	2P3W	250	DFRF62070	DS6207MP000	1⅜
60	3P4W	125/250	DFRF63070	DS6307MP000	1⅜
60	3P4W	3Ø480	DFRF64040	DS6404MP000	1⅜
60	4P5W	277/480	DFRF65040	DS6504MP000	1½
100	2P3W	250	DFRF12070	DS1207MP000	1⅜
100	3P4W	125/250	DFRF13070	DS1307MP000	1⅜
100	3P4W	3Ø480	DFRF14040	DS1404MP000	1⅜
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 _____

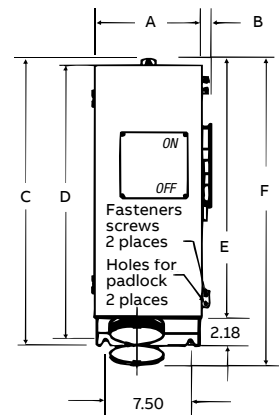
Standard polarizations shown. Boldface figures are for voltage assignment; For different ratings, see page 38.

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

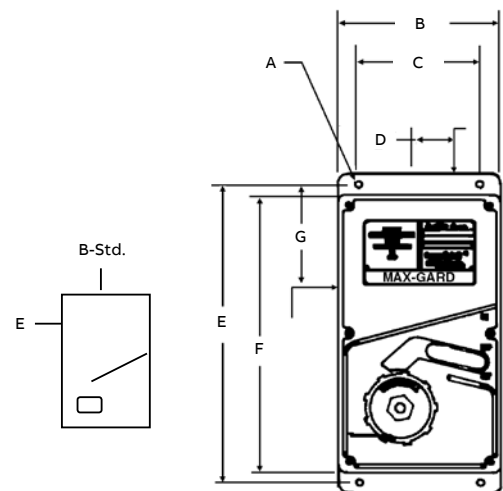
Performance

- 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

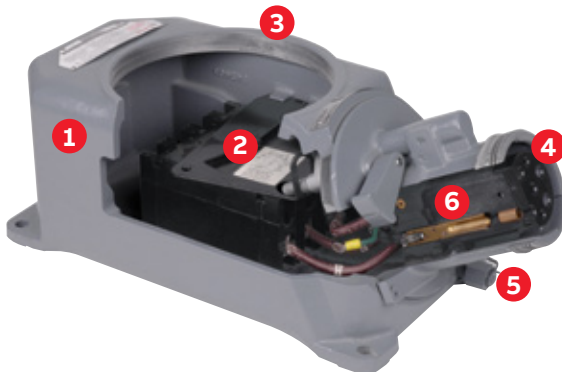
Max-Gard DBRE and DSRE series interlocks are the only devices certified both explosion-proof and waterproof, along with optional control contacts, and are fully UL listed.

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



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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



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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

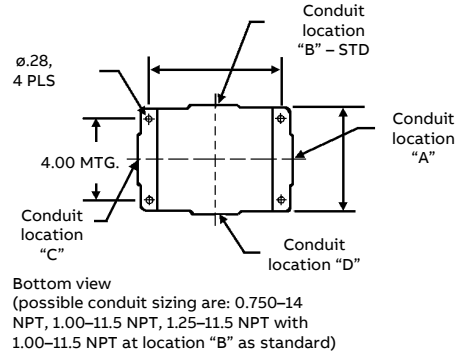
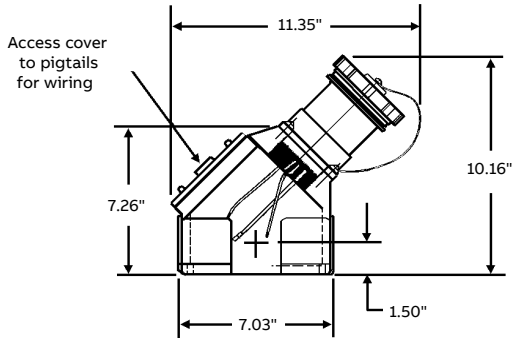
Non-auto Sw. NAO (repl. "DBRE" with "DSRE")

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

Max-Gard interconnection systems

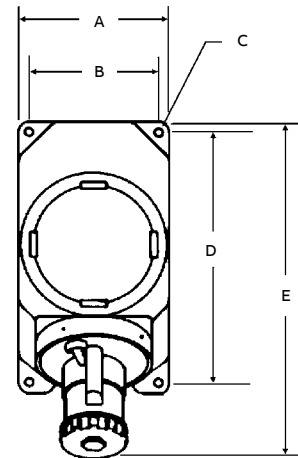
Dimensions

Explosion-proof receptacle



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.

