

## Thermoplastic DuraGard® 30, 50 & 60 Amp Circuit Interrupting Receptacles, Plugs & Connectors



### WARNING

Risk of electrical shock. De-energize all power prior to installation or repair.

### APPLICATION

Thermoplastic DuraGard® plugs, receptacles and connectors are ideal for washdown duty, harsh environments and wet locations. They can be found in a broad range of industrial uses, from chemical and food processing to data processing and mining; in marine applications both shipboard and dockside.

Pin and sleeve contact design allows DuraGard® devices to be tailored to specific industrial applications and special purpose work in accordance with the National Electrical Code and local codes. The devices are rated and polarized for specific voltages and amperages, preventing dangerous mismatching of devices of different ratings.

### PREPARATION

#### 1. Recommended Tools

Torque Wrench	Screw Drivers
Ohmmeter	Wire Strippers
Allen Wrench	3/16" Dia. Drive Pin (opt.)

2. Select cable size from table according to ampere rating of device.

Ampere Rating	30	50, 2P3W	50, 3P4W	60
Cable Size Awg.	8	6	6	6
Cord Type	S, SJ	S, SJ	SC, SCE, SCT, PPE, G, G-GC, W	SC, SCE, SCT, PPE, G, G-GC, W

3. Establish a wiring pattern so the same colored wire is put in the same terminal on all plugs, receptacles and connectors in the system. DuraGard® devices are polarized so the plug will enter the receptacle or connector only one way.
4. Interior markings for wiring as follows:

2p 3w	3p 4w
X/L1,Y/L2,G/⊕	X/L1,Y/L2,Z/L3,G/⊕

5. Proceed to Receptacle Installation or Plug and Connector Installation as applicable.



### WARNING

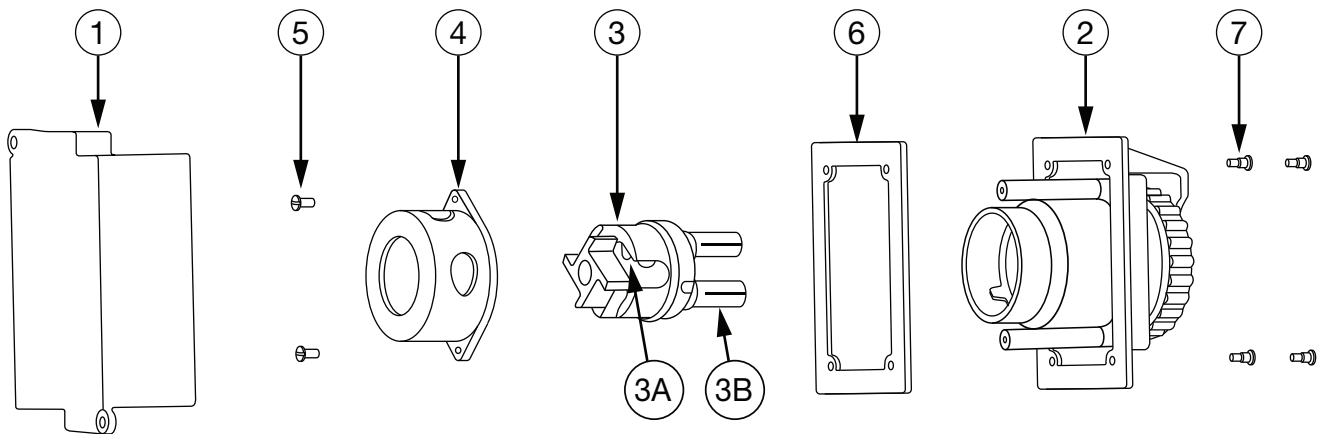
Equipment connected to circuits having different voltages, frequencies or types of current (AC or DC) must not have interchangeable attachment plugs per NEC Section 406.3(F).



### CAUTION

Use only copper or copper clad aluminum wire with box mounted outlet or inlet. Use of other wire may result in the connector failing in service.

## Receptacle Installation



#### 6. Turn power OFF.

7. Securely mount junction box #1 (purchased separately) and install service supply. Pull cable into junction box #1 leaving enough cable to connect to receptacle #2. Slide gasket #6 over supply cable from box.

**NOTE:** Receptacle #2 is pre-assembled with 3, 4 and 5.

8. Strip cable jacket 1 inch to 2-5/8 inches.  
Strip conductors 1/2 inch (30 & 50A) or 3/4 inch (60A).

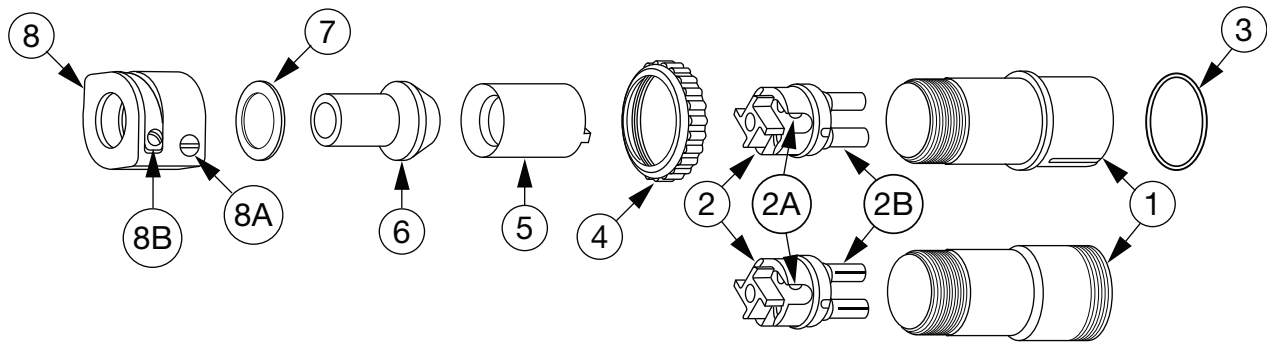
**NOTE:** For male receptacles (reverse service) items #3B are pins.

9. Loosen pressure screws #3A in sleeves. Insert stripped end of each conductor in sleeve #3B or pin #3B in accordance with wiring pattern established in Preparation Step #3.

10. Tighten pressure screws #3A to 20 in-lbs (30 & 50A) or 25 in-lbs (60A) of torque.

11. Assemble gasket #6 and receptacle #2 to junction box #1 with 4 screws #7.

## Plug and Connector Installation



**\*NOTE:** Hand assemble both cable clamp yokes (#8B), and both machine screws and nuts (supplied loose) onto cable gland nut #8 as shown. Alternately tighten screws to firmly grip cable & bushing to 10-15 in-lbs. Use of power tools is NOT recommended unless verified torque limit <15 in-lbs.

### 6. Turn power OFF.

7. Strip cable jacket 1 to 2 inches (30 & 50A) or 2-5/8 inches (60A). Strip conductors 1/2 inch (30 & 50A) or 3/4 inch (60A).
8. Disassemble device removing gland nut #8, glide washer #7, bushing #6, liner #5, collar nut #4 (furnished with plug only) and interior #2 from housing #1.

**NOTE:** Connector interior is separated from housing by inserting a small screwdriver or drive pin in current sleeve from the front and tapping the pin lightly.

9. Loosen screws #8B (2). Slide gland nut #8, glide washer #7, bushing #6, (conical face towards device) liner #5, and collar nut #4 over supply cable.

**NOTE:** For female plugs (reverse service) item 2B are sleeves.

10. Loosen pressure screws #2A in pins or #2A in sleeves. Insert stripped end of each conductor in pin #2B or sleeve #2B in accordance with wiring pattern established in Preparation Step #3.
11. Tighten pressure screws #2A to 20 in-lbs (30 & 50A) or 25 in-lbs (60A) of torque.

12. Reassemble interior #2 in housing #1 by lining up 2 tabs in housing with 2 notches on interior.
  - a. Plug interiors can be rotated to "seat" by grasping pins while slowly turning housings. Interior must seat flat against housing inner ring (liner #5 with housing #1).
  - b. Connector interiors are assembled by lining up ground sleeve with interior ground carrier sleeve. Push firmly until entire interior is seated.

**NOTE:** O-rings on plug & connector interiors are lubricated at factory for sealing and ease of assembly. If additional lubricant is required, apply a non-conductive lubricant such as GE type G661 silicone compound.

13. Slide liner #5 down cable, to seat on the interior (inside housing). Liner can be rotated by hand (note keyways) until properly engaged. Liner #5 seats completely inside housing #1, flush with back end.
14. Position bushing #6 (conical face down) into liner #5, with glide washer ring #7 on top. Secure in place with gland nut #8. Tighten gland nut #8 on housing #1 to 40 in-lbs or until bushing compression firmly grips cable. Maximum compression of bushing is approximately 10% or 90% of original I.D. Other bushing sizes are available. Maximum torque on gland nut #8 is 80 in-lbs. Gland nut #8 has an additional thread locking screw #8A, tightened to 2 in-lbs. See \*Note for screws /clamp #8B.

**NOTE:** Make sure O-ring gasket #3 is on housing (for plugs only).

## ELECTRICAL TESTING

Do not connect to power until the following electrical tests have been performed.

1. Make continuity checks of wiring with ohmmeter to verify correct phasing and grounding connections.
2. Check insulation resistance to be sure system does not have any short circuits or unwanted grounds.

Connect all devices in the system, turn the power on and test the system.

**MAINTENANCE MANAGER:** Please record the following information for your records.

\_\_\_\_\_  
COMPLETE CATALOG NO.  
(As shown on device label)

\_\_\_\_\_  
DATE OF INSTALLATION

## MAINTENANCE

Inspection of electrical equipment used in industrial and heavy use situations must be conducted regularly to ensure proper function and safety.

Check for the following items during inspection:

1. Unsecured contact wire terminals
2. Cracked or broken housings
3. An unfastened or loose ground conductor
4. Deteriorated or misplaced gaskets
5. Loose or missing screws

**⚠ WARNING! ⚠**

**If any part of a new plug, receptacle or connector appears to be missing or damaged, DISCONTINUE USE IMMEDIATELY. Call factory for return. Use only new authorized Russellstoll factory replacement parts for any repairs.**

**WARRANTY:** Thomas & Betts sells this product with the understanding that the user will perform all necessary tests to determine the suitability of this product for the user's intended application. Thomas & Betts warrants that this product will be free from defects in materials and workmanship for a period of two (2) years following the date of purchase. Upon prompt notification of any warranted defect, Thomas & Betts will, at its option, repair or replace the defective product or refund the purchase price. Proof of purchase is required. Misuse or unauthorized modification of the product voids all warranties.

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