

Russellstoll®

DuraGard® Waterproof Connections Overview

Defined

- 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

Russellstoll Line Selections for Outdoor (and Indoor) Applications

DuraGard to 3P4W 20 through 60A

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 30A and 50A Circuit Breaker Interlock line in DuraV are the best choices for standard voltage polarization options through 600VAC (Interlock to 480VAC).

Interlocked Outlets 20 through 60A

USCG Accepted 20–50A 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 100A

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.



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 Overview

Washdown Duty, Chemical, Outdoor, Industrial and Marine Use Non-Metallic Plugs, Connectors, Receptacles and Inlets — 20, 30, 50 and 60 Amp, Maximum 600VAC/250VDC



The Next Generation: DuraGard® Waterproof Connectors

Severe environments and high-pressure washdown duty applications require durable, waterproof and safe connections. Russellstoll takes design reliability to new heights with Safety Grade™ standards for truly waterproof connectors. Many watertight specifications cover mated connections only. DuraGard connectors are designed to be watertight mated or unmated, thus offering the ultimate waterproof connection. DuraGard connectors are also UL94-V0 flame rated for safety and utilize a durable, efficient pin and sleeve contact design that is voltage polarized to meet NEC® 210-7 and OSHA standards. DuraGard... designed for maximum safety, durability and performance.

Washdown Industrial/Light Marine — DuraGard®

DuraGard® Features Make the Performance Difference.



Not just “watertight”; Waterproof for Washdown Duty: DurORing™ Sealing

- Specifically designed for wet environments with our unique DurORing™ sealing system. Unit is watertight mated or unmated
- Eliminates need for costly “weather boots” or “adapters”
- Compact size
- “Lockout Ready” plugs have padlock access hole in front (30A/50A)

Durable, Tough and Flame Safety Rated Housings

- DuraV® housing material specially selected for hot or cold washdown duty
- Flame safe UL94-V0 rated housings
- Superior performance in corrosive environments
- High-visibility yellow housings

Safe and Reliable Power Connections: Pin and Sleeve, Voltage Polarized

- Long life: round, self-cleaning, constant pressure pin and sleeve contacts of solid CDA 360 brass for long, reliable electrical life
- More power, operates cooler: large circular electrical contact area enables more current flow with lower temperature rise
- Ground pin keyed for voltage polarization (O-ring seal)

Easy to Wire

- No twist-off “Locking Plugs”: integral threaded screw collars and compression-type bushings make wiring a snap
- Fast assembly and wiring: “Drop-In” rear-loaded interiors use no assembly screws versus 3–5 or more with other connectors, 30A/50A/60A connectors use unique E-Z Tite™ external gland lock screw, also

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DuraGard® Waterproof Connections Overview

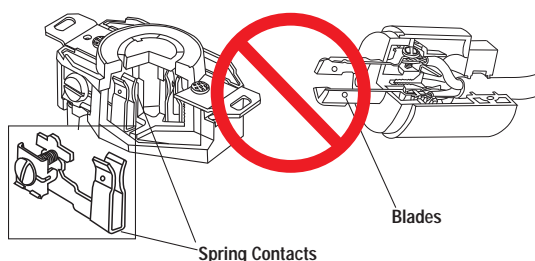
Washdown Duty, Chemical, Outdoor, Industrial and Marine Use Non-Metallic Plugs, Connectors Receptacles and Inlets — 20, 30, 50 and 60 Amp, Maximum 600VAC/250VDC

DuraGard® Pin and Sleeve Connections

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

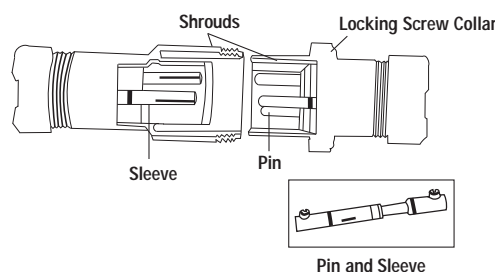
damage or casual access and aid in polarization features of the line. The shroud and screw collar completely lock plugs to receptacles or connectors for a reliable connection. Step on the cord, kick or drop a plug — your connection will remain tight. **Pin and Sleeve devices are the safety standard for 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

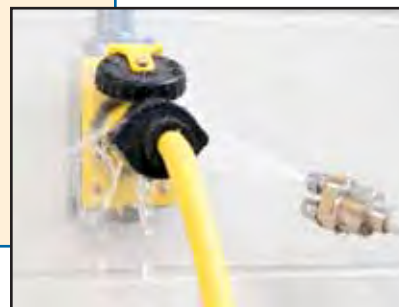


Pin and Sleeve design enables higher current flow at cooler temperatures due to large circular contact area. Sleeves act as retainers for the pins, making a reliable connection. Shrouded pins and sleeves are protected from damage and inadvertent access. Locking housing screw collars provide for a reliable,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



Pulp and Paper



Food Processing



Beverage and Bottling



Pharmaceutical Manufacturing

DuraGard® Waterproof Connections Overview

Washdown Duty, Chemical, Outdoor, Industrial and Marine Use Non-Metallic Plugs, Connectors Receptacles and Inlets — 20, 30, 50 and 60 Amp, Maximum 600VAC/250VDC

The Ultimate in Waterproof Connection

20, 30, 50 and 60 Amp, 600VAC
20 Amp, 250VDC

Lockout Capable: (30/50/60A Plugs)

- Access hole (not seen) for padlock hasp
- Interlock engagement CDA 360 solid brass pin and sleeve contacts

High Reliability, High-Performance Connections:

- CDA 360 solid brass pin and sleeve contacts

Long-Lasting Self-Cleaning Connections:

- Full round pin and sleeve contacts

Fast, Easy, Rear-Load Wiring and Assembly:

- Drop-in assembly interior
- Sleeve and cable bushing
- Easy-in pressure screw wiring terminations

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

Safety Specified Voltage Connections:

- Safety ground makes first breaks last
- Voltage polarized to meet NEC® 210-7 and OSHA standards

Durable and UL94-V0 Flame Rated Housings:

- DuraV® high impact body and collars
- Thermoset interiors
- Deadfront construction

Dry Wiring Compartments:

- DurOring™ Sealing System for each pin and sleeve and interior assembly

(50 Amp Plug and Connector Shown)

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