

MaxGard®

DuraGard®

ABB IEC



**ROYAL ELECTRIC SUPPLY
COMPANY**

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WE GET IT
24/7 Emergency Material Access

Thomas & Betts

A Member of the ABB Group

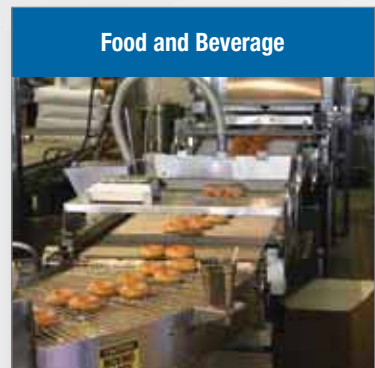
Choose Thomas & Betts and connect to the power you need.

For over 100 years, Thomas & Betts has successfully applied innovative design and manufacturing techniques to meet the changing needs of the marketplace. Today, we offer more than 100,000 electrical components and systems to terminate, connect, fasten, protect and identify wires, components and raceway. Our vast offering makes us one of the largest and best sources of electrical components in North America.

At T&B, we're committed to:

- Products which provide solutions to your electrical needs
- Convenience of single-order, single-shipment to your site for thousands of stocking items
- Expert local point of contact for clear, consistent information regarding training, codes and standards
- Quality brands that have proven themselves over time
- Inventive design and manufacture of problem-solving products
- Offering a best-of-class warranty and returns policy
- Uniform carton labeling with additional bar-coding for convenient inventory management
- Nationwide network of stocking electrical distributors
- Outstanding customer service capability
- Supplying you with the right products, convenient packaging, on-time delivery and competitive pricing

We deliver the solutions that make your job easier and offer the power to bring it all together in one package. Call us today and let us help you profit from sourcing your electrical products from the leader, Thomas & Betts.



The Russellstoll® Advantage

Russellstoll® interconnection systems has added ABB IEC Industrial Pin and Sleeve to its product line to enhance the Thomas & Betts industrial interconnect selection. The consolidation of these industry-leading interconnection systems creates one of the market's most comprehensive offerings of explosion-proof, heavy- and light-industrial plugs, sockets, connectors and receptacles, which range from 20 to 600 amps.



Russellstoll® Pin and Sleeve Power Connectors

MaxGard® — Heavy Industrial Applications

Harsh environments and extreme conditions such as explosion-proof areas, high-corrosion atmospheres and rugged terrain

Applications:

- Mining
- Oil & Gas
- Heavy Marine
- Welding Equipment
- Industrial OEMs



MaxGard®

DuraGard® — Light Industrial Applications

Waterproof (1000-PSI water test)

Areas where there are size constraints, chemicals, moisture, high water pressure and the need for waterproof rather than water-resistant protection

Applications:

- Data Centers
- Food & Beverage
- Shore-to-Ship Power
- Portable Power
- Distribution Equipment Manufacturers
- Industrial OEMs



DuraGard®

ABB IEC 60 309 — Light Industrial Applications

International IEC 60 309 — IP67 Watertight

Situations that require international interchangeability, watertight construction and corrosion and chemical resistance

Applications:

- Data Centers
- Food & Beverage
- Shore-to-Ship Power
- Portable Power
- Distribution Equipment Manufacturers
- Industrial OEMs



ABB

MaxGard® Interconnection Systems

30A–400A (30–200A Load Breaking), Maximum 600VAC/250VDC
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- and 400-amp pins and sleeves are silver plated

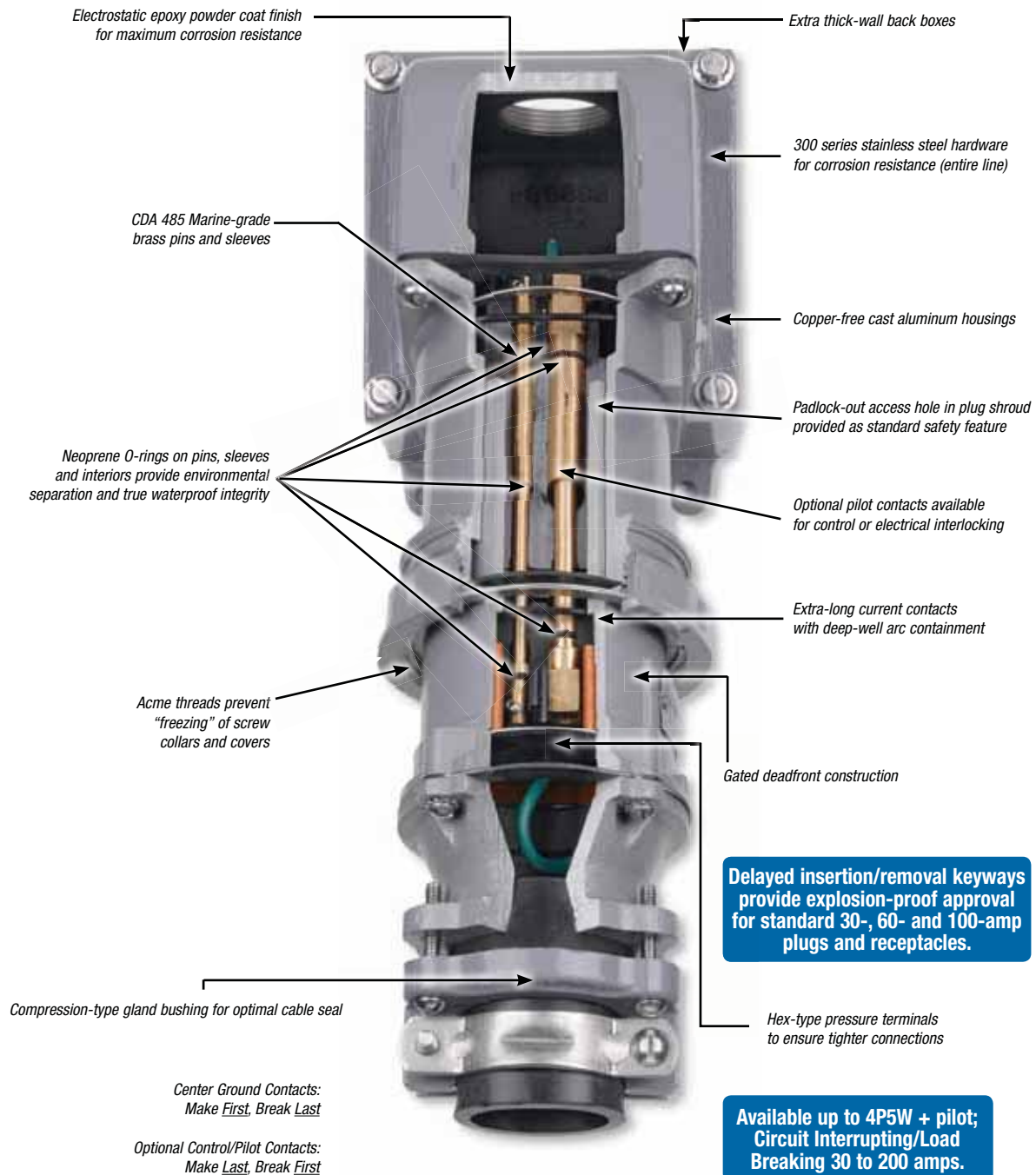
Performance

- **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 MaxGard® installations to be extended up to 600-amp custom loads with separate disconnect service

MaxGard® Interconnection Systems

30A–400A (30–200A Load Breaking), Maximum 600VAC/250VDC Receptacles, Inlets, Plugs, Connectors, Interlocked Receptacles, Explosion-Proof Interlocked Receptacles

Plug and Receptacle with Angle Adapter and Junction Box

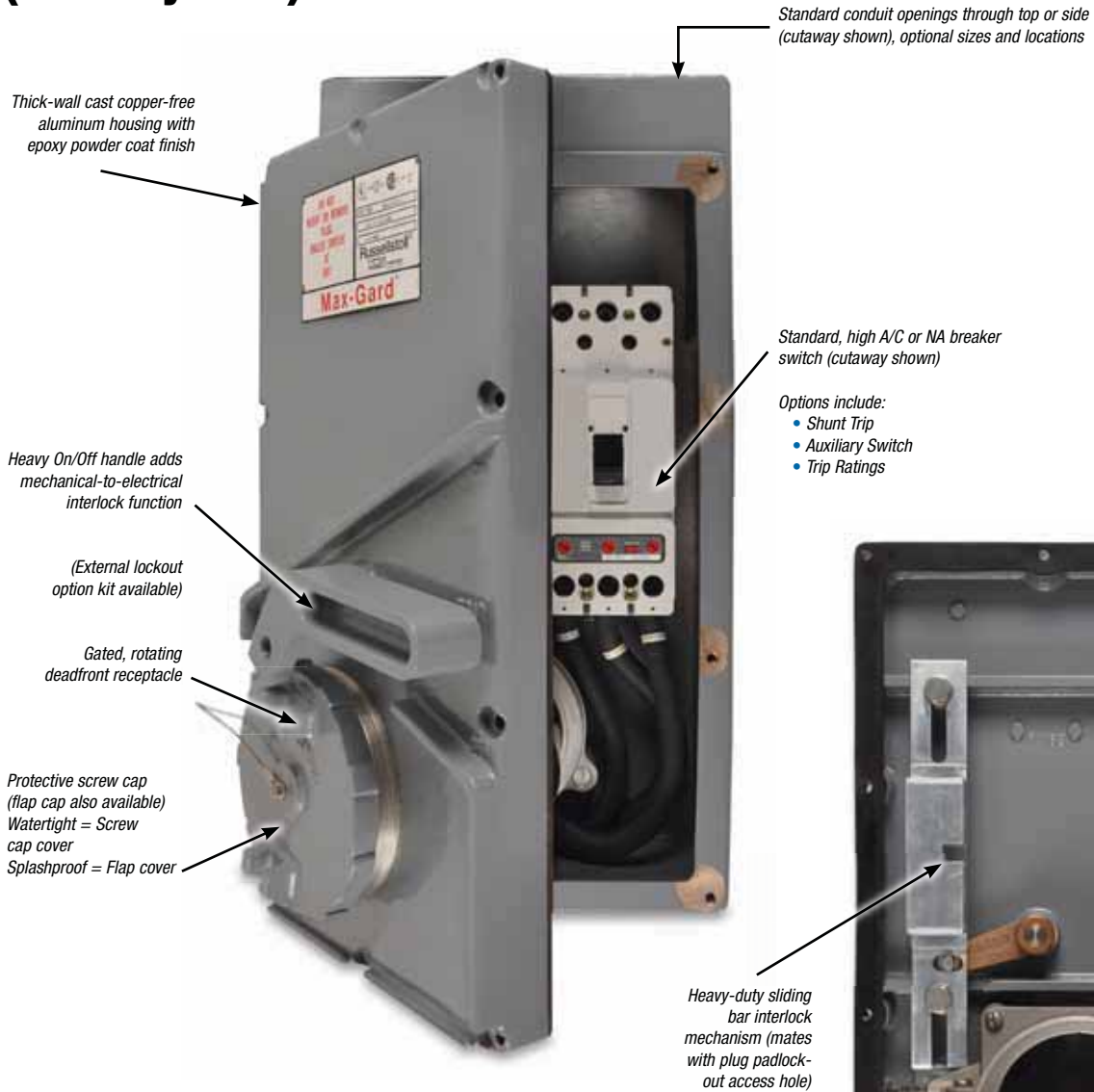


MaxGard® Interconnection Systems

30A–400A (30–200A Load Breaking), Maximum 600VAC/250VDC Receptacles, Inlets, Plugs, Connectors, Interlocked Receptacles, Explosion-Proof Interlocked Receptacles

Cast Aluminum Circuit Breaker Interlocked Receptacle (Cutaway View)

Russellstoll® Pin and Sleeve Power Connectors



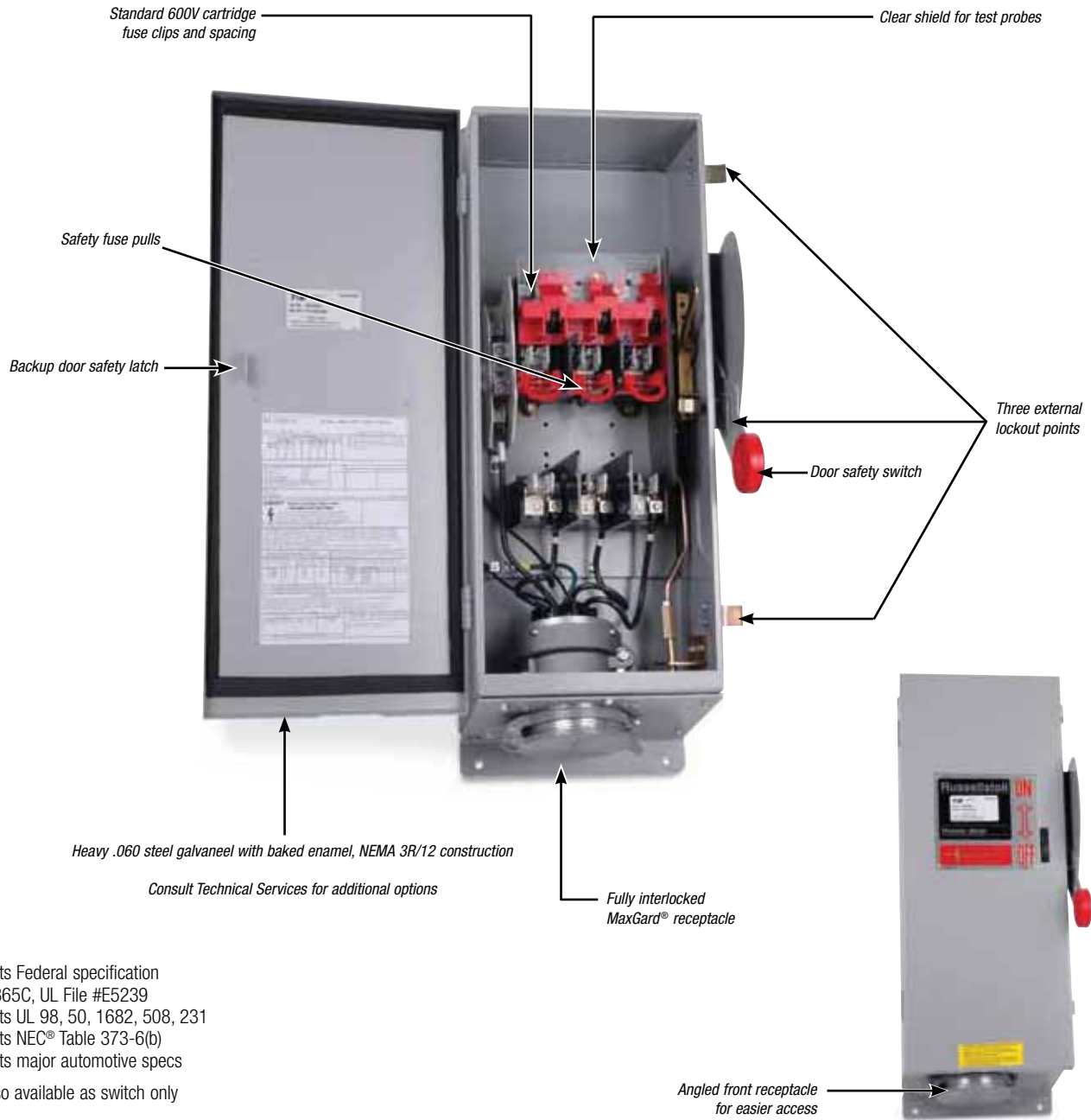
NEMA 4X interlocks available in 30–400-amp ranges through 4P5W, with 2 optional pilot/control contacts.

MaxGard® Interconnection Systems

30A–400A (30–200A Load Breaking), Maximum 600VAC/250VDC
Receptacles, Inlets, Plugs, Connectors, Interlocked Receptacles, Explosion-Proof Interlocked Receptacles

Fused-Disconnect Switch* Interlocked Receptacle

Available in 30-, 60- and 100-amp sizes, all polarizations through 600VAC.



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

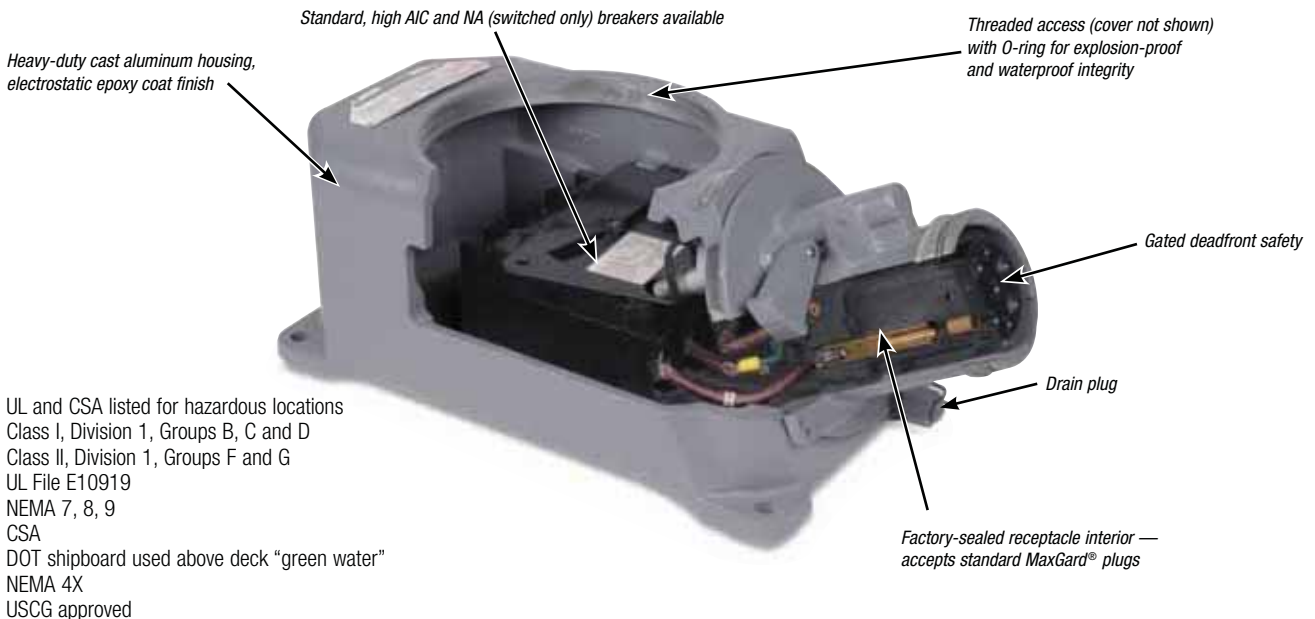
MaxGard® Interconnection Systems

30A–400A (30–200A Load Breaking), Maximum 600VAC/250VDC
Receptacles, Inlets, Plugs, Connectors, Interlocked Receptacles, Explosion-Proof Interlocked Receptacles

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

Explosion-Proof Waterproof Circuit Breaker Interlocked Receptacle

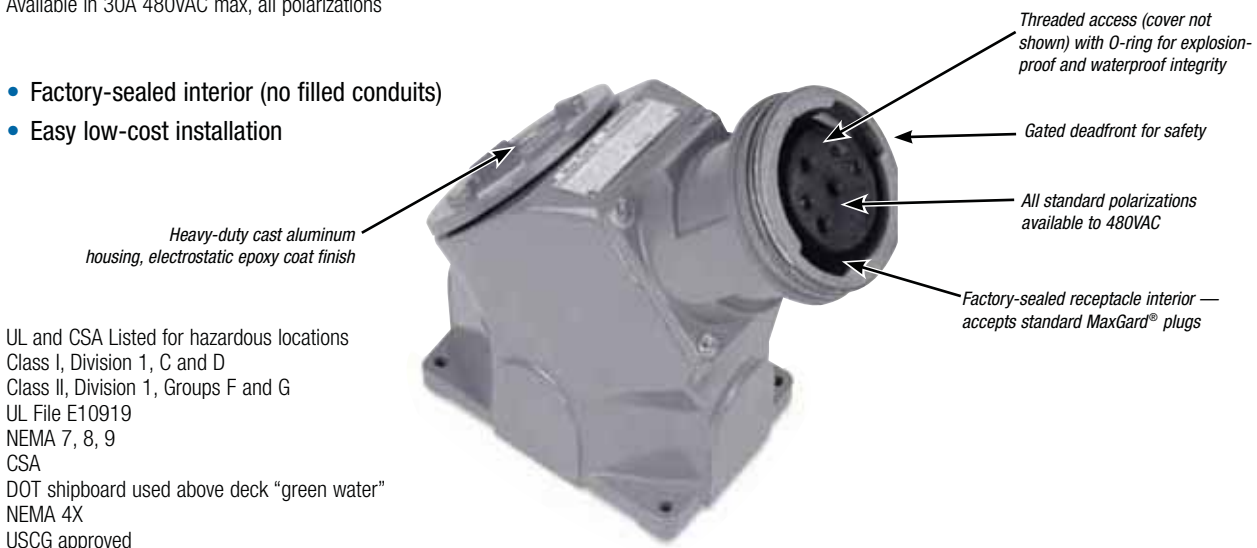
Available in 30-, 60- and 100-amp sizes, all polarizations.



Explosion-Proof Waterproof Non-Interlocked Receptacle

Available in 30A 480VAC max, all polarizations

- Factory-sealed interior (no filled conduits)
- Easy low-cost installation



DuraGard® Waterproof Connections

Non-Metallic Plugs, Connectors, Receptacles and Inlets — 20, 30, 50 and 60 Amp, Maximum 600VAC/250VDC

Russellstoll® Pin and Sleeve Power Connectors



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

DuraGard® Waterproof Connections

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

Food Processing, Brewery/ Beverage, Pulp and Paper, Pharmaceuticals, Portable Building Power

- Welding Outlets
- Motor Power Connections
- Lighting Systems
- Machinery Interconnections
- Process Control Power Systems

Construction and Agricultural

- Generator Set Panels
- Portable Tools and Equipment
- Irrigation Systems Panels
- Portable Lighting and Equipment

OEMs

- Export Machinery
- Critical Power Connections and Welding Systems
- Transportable Equipment

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

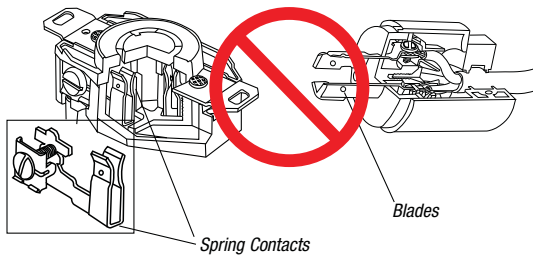
DuraGard® Waterproof Connections

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

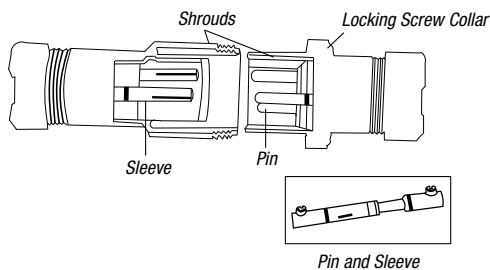
Pin and Sleeve contact devices consist of round male pins that are inserted into tubular female sleeves. Current flows through a large pin-to-sleeve circular contact area. Because current is not restricted through point contact only, higher current flow and cooler operating temperatures are achieved 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

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 Connections

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:

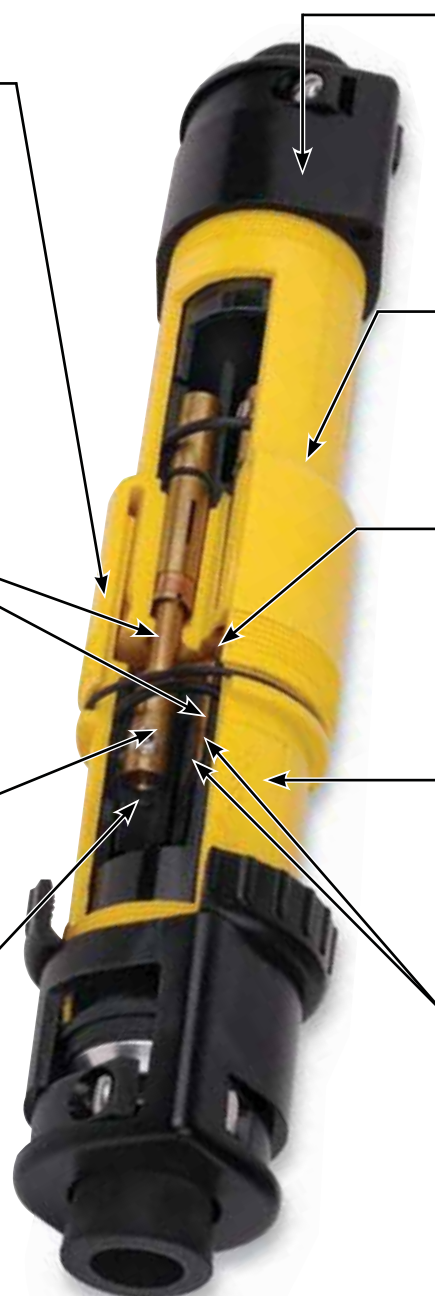
- Safety ground makes first breaks last
- Voltage polarized to meet NEC® 210-7 and OSHA standards

Durable and UL® 94-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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ABB IEC 60 309 International Pin and Sleeve

Approved According to IEC 60 309-1, -2, -4 — Range from 16 up to 125 Amp, up to 600V, IP67 (Watertight)

Russellstoll® Pin and Sleeve Power Connectors



Safety

- **Proven performance:** With more than 30 years of experience, ABB IEC Pin and Sleeve Connectors are the brand of choice around the globe
- **Added safety measures:** Plugs and connectors are equipped with a double cable clamp system to prevent cable detachment and provide a higher level of cable strain relief
- **Safe connections:** Mechanical interlocks guarantee no access to plug insertion or removal until power is off

Durability

- **Designed for durability:** The housings are made of thermoplastic polyester (PBT) grade Valox® 357 material, which guarantees highest possible durability in this industry
- **Lasting components:** Interconnectors are highly resistant to chemicals like mineral and organic acid, organic solvents and petroleum
- **Built to last:** All external screws are made of stainless steel to prevent corrosion
- **Reinforced for high current reliability:** The contact carrier is made of fiberglass-reinforced nylon material for sizes between 60A–125A, which reduces the need for and expense of replacement parts

Performance

- **Continuing operation:** The self-cleaning pin and sleeve design keeps the connection resistance on the lowest level, reducing down time
- **Long lasting:** Machine-calibrated sleeves with stainless steel springs provide accurate contact pressure over time
- **Resilience:** Corrosion-resistant steel screws at terminals provide clamping pressure over time
- **Easy installation:** Clear terminal markings inside and at the front of the devices

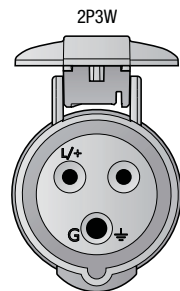
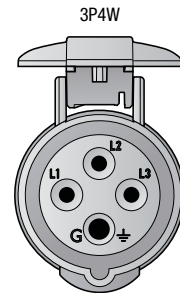
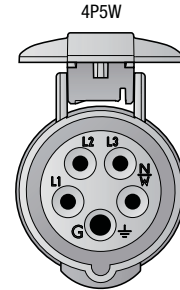
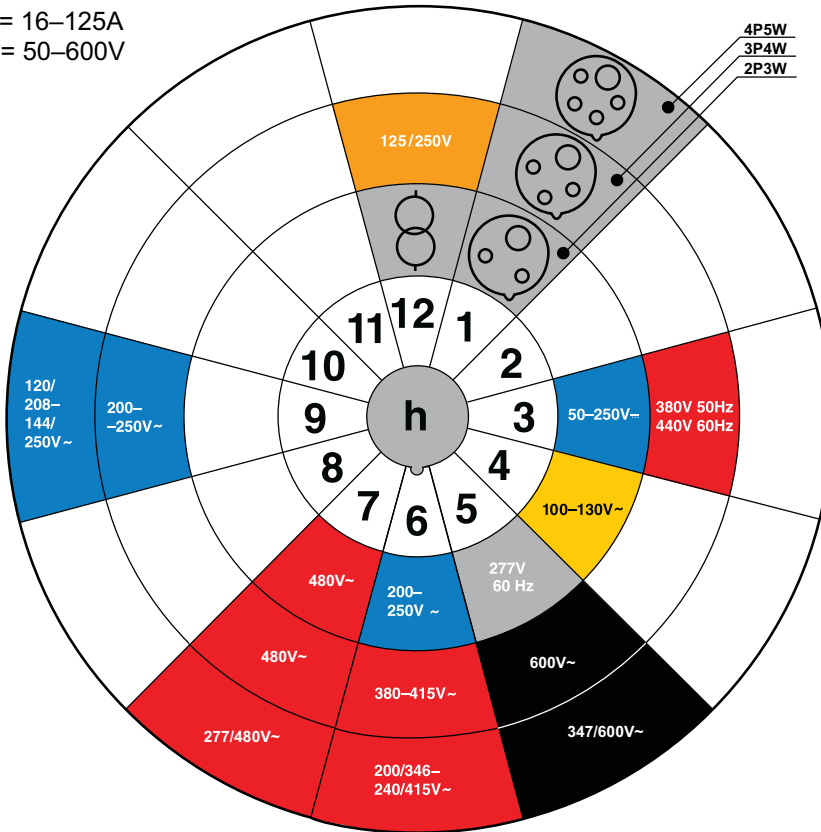


Valox is a registered trademark of SABIC.

ABB IEC 60 309 International Pin and Sleeve

IEC 60 309-2 "Clock"

$I_o = 16-125A$
 $U_o = 50-600V$



Russellstoll® Pin and Sleeve Power Connectors

Standard voltages

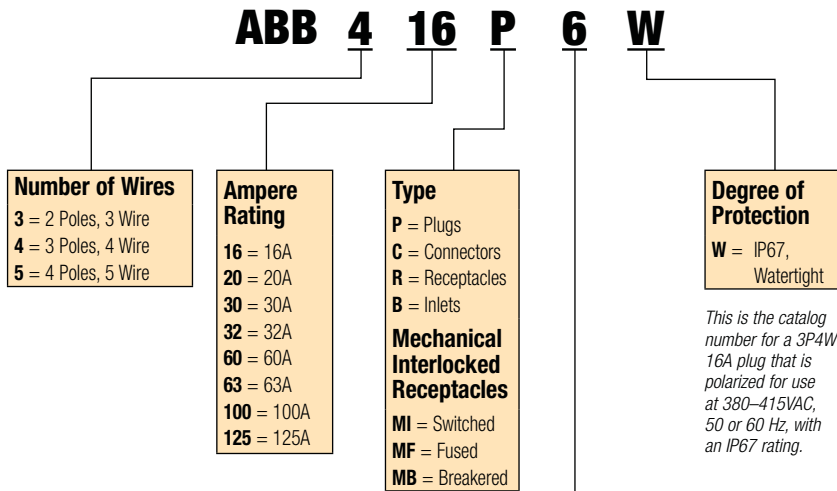
Color codes according to IEC 60 309-1, -2

POSITION OF EARTHING SLEEVE ACCORDING TO IEC 60309-2 (CLOCK)		2P3W	3P4W	4P5W
1	■	Optional voltage (not stated below)	■	Optional voltage (not stated below)
3	■	50-250V DC	■	380V 50 Hz to 440V 60 Hz
4	■	100-130V 50/60 Hz		
5	■	277V 60 Hz	■	600V 50/60 Hz
6	■	200-250V 50/60 Hz	■	380-415V 50/60 Hz
7	■	480V 50/60 Hz	■	480V 50/60 Hz
9			■	200-250V 50/60 Hz
12	■	Supply from isolating transformer	■	125/250V

ABB IEC 60 309 International Pin and Sleeve

Part Number Configuration

Russellstoll® Pin and Sleeve Power Connectors



Standard voltages

Color codes according to IEC 60 309-1, -2

POSITION OF EARTHING SLEEVE ACCORDING TO IEC 60309-2 (CLOCK)		2P3W	3P4W	4P5W
1	■	Optional voltage (not stated below)	■	Optional voltage (not stated below)
3	■	50–250V DC	■	380V 50 Hz to 440V 60 Hz
4	■	100–130V 50/60 Hz		
5	■	277V 60 Hz	■	347/600V 50/60 Hz
6	■	200–250V 50/60 Hz	■	200/346–240/415V 50/60 Hz
7	■	480V 50/60 Hz	■	277/480V 50/60 Hz
9			■	120/208–144/250V 50/60 Hz
12	■	Supply from isolating transformer	■	125/250V

ABB IEC 60 309 International Pin and Sleeve

Mechanical Interlocks

Mechanical Interlocks are used in applications with high demands on safety, durability and performance. Perfect for applications with frequent connection/disconnection, and to use in public areas.

The housing is made of thermoplastic polyester (PBT) grade Valox® 357 material, which is a tough plastic that withstands heavy-duty usage and most chemicals found in industrial environments.

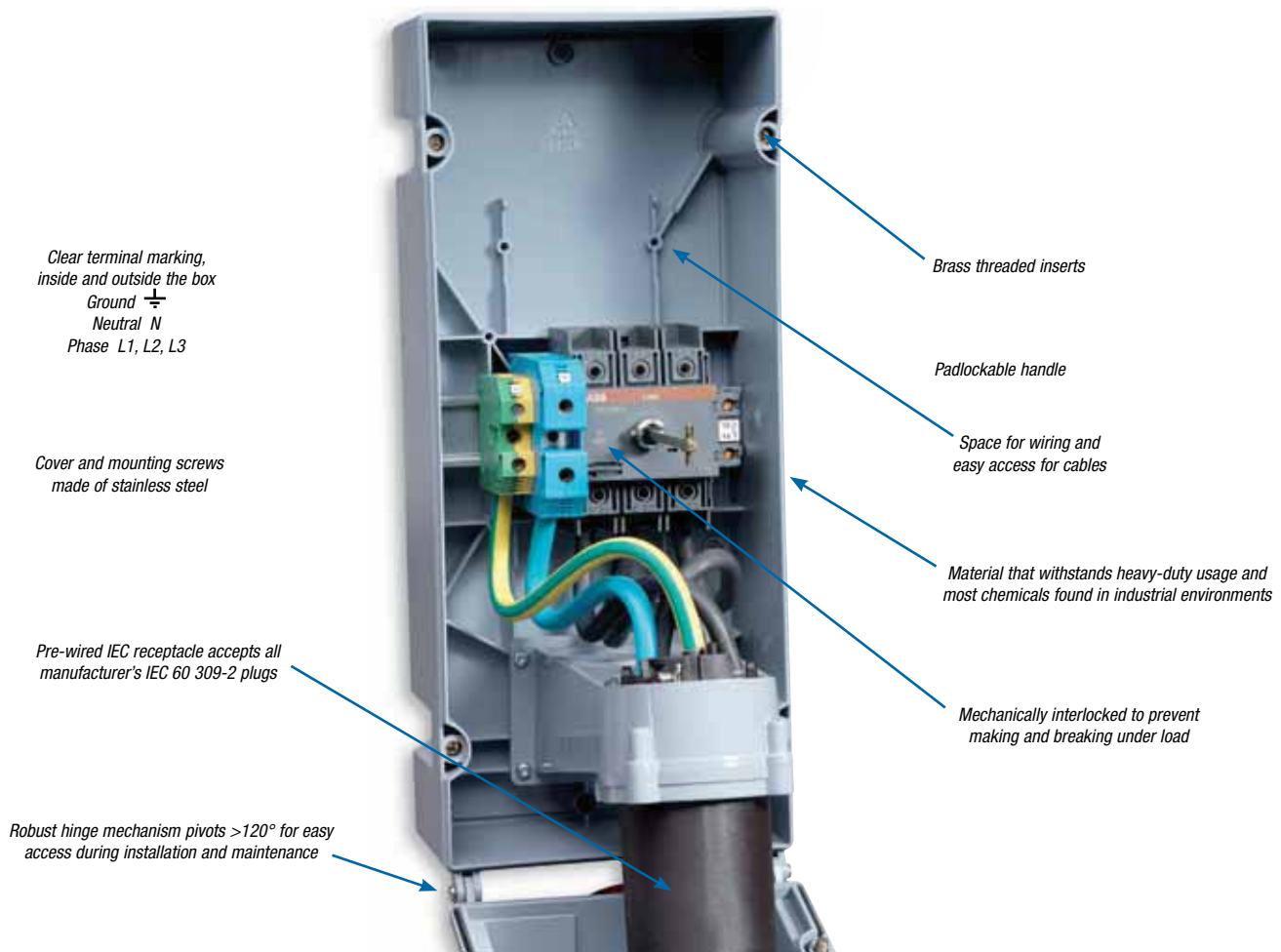
Features

- IP67 watertight
- 16–125A, 50–600VAC
- IEC 60 309-2, -4
- All external screws are made of stainless steel

Application examples

- Chemical industry
- Sawmills
- Airports
- Hospitals

ABB4100M6W



Valox is a registered trademark of SABIC.

ABB IEC 60 309 International Pin and Sleeve

Pin and Sleeve Plugs & Connectors

Pin and Sleeve Plugs & Connectors are for applications in environments that have high demand of functionality and safety. The robust housing is made of thermoplastic polyester (PBT) grade Valox® 357 material. The product is available as watertight (IP67, 16–125A). The devices are equipped with internal and external cable clamps. The 100A and 125A devices are equipped with two screws on each terminal.

Features

- IP67 watertight
- 16–125A, 50–600VAC
- IEC 60 309-1, -2
- All external screws are made of stainless steel

Application examples

- Industry/workshops
- Harbors/shipyards
- Mines
- Food & beverage

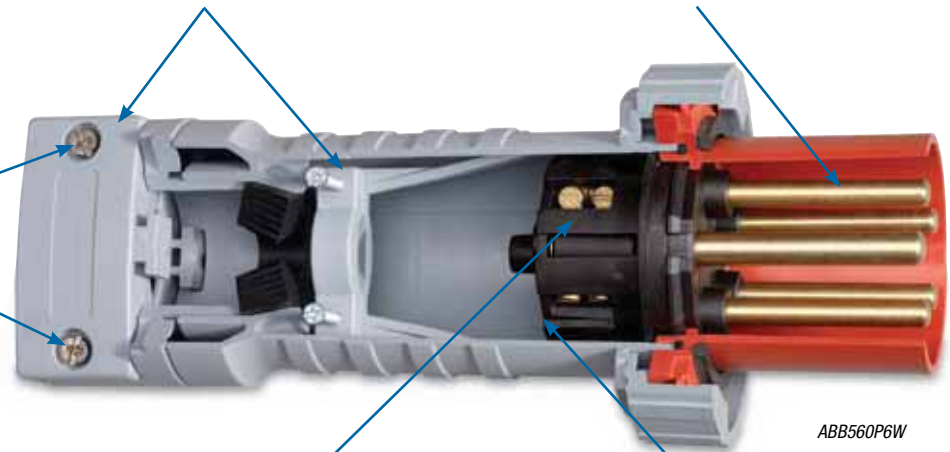
Russellstoll® Pin and Sleeve Power Connectors

Clear marking, at the front and the rear of the terminals
Ground \perp
Neutral N
Phase L1, L2, L3

Internal and external cable clamp

Clean brass pins

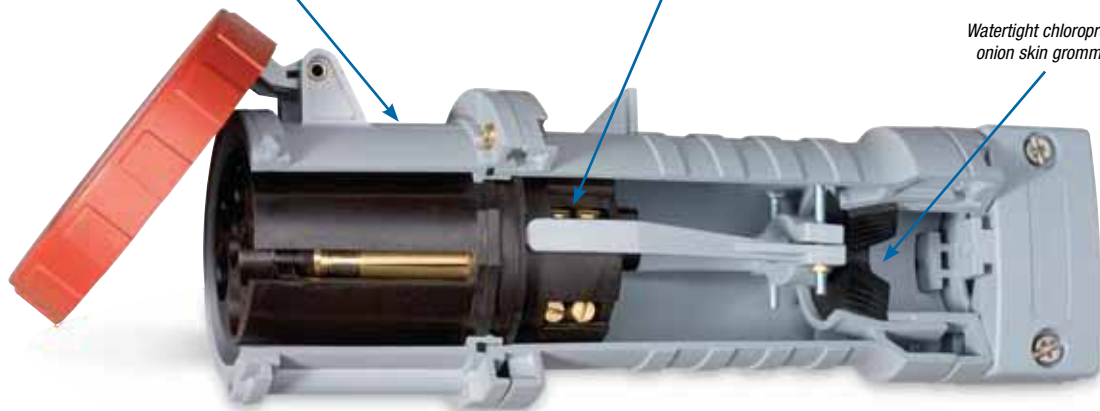
External screws made of stainless steel



Robust plastic housing that withstands most chemicals found in industrial environments

Two screws at each terminal to assure safe and reliable cable connection (on 60A–125A product; lower amperages have a single screw)

Rear terminals, raised lettering, identification contacts



Watertight chloroprene onion skin grommet

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