Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) 3-Part Format, including *MasterFormat, SectionFormat,* and *PageFormat,* as described in *The Project Resource Manual—CSI Manual of Practice, Fifth Edition.*

This section must be carefully reviewed and edited by the Architect or Engineer to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the Drawings. Delete all “Specifier Notes” after editing this section.

Section numbers are from *MasterFormat 2010 Update.*

**SECTION 26 27 26.17**

**WIRING DEVICES: NON-METALLIC PIN AND SLEEVE**

Specifier Notes: Delete any information below in Parts 1, 2 or 3 which is not required or relevant for the project.

**PART 1 – GENERAL**

**1.01 SUMMARY**

A. Section Includes: Non-metallic pin & sleeve, industrial grade, circuit interrupting rated electrical plugs, male inlets, connectors, receptacles, and assorted accessories that meet IEC 60 309 standards. Usable in dry, damp, wet, marine and/or industrial locations for electrical power circuits.

B. Related Sections:

1. Section 26 27 26.11 Wiring Devices: Metallic Pin and Sleeve for Industrial and

Marine Applications.

2. Section 26 27 26.13 Wiring Devices: Multi-Circuit Rectangular Connectors

**1.02 REFERENCES**

A. National Electrical Manufacturers Association (NEMA):

1. NEMA 250: Enclosures for Electrical Equipment

B. Underwriters Laboratories, Inc. (UL):

1. UL 94: Standard for Tests for Flammability of Plastic

Materials for Parts in Devices and Appliances

2. UL 746C: Standard for Polymeric Materials - Use in

Electrical Equipment Evaluations

3. UL 840: Safety standard for Insulation Coordination

Including Clearances and Creepage Distances

for Electrical Equipment

4. UL 1682: Safety Standard for Plugs, Receptacles, and

Cable Connectors of the Pin and Sleeve Type

5. UL 1686: Pin and Sleeve Configurations

C. International Electro-Technical Commission (IEC):

1. IEC 60 309-1: Plugs, Socket-Outlets and Couplers for

Industrial Purposes

2. IEC 60 309-2: Specifies circular housing, number of pins and their arrangement.

3. IEC 60 309-4: Interconnects and outlets.

D. Canadian Standard Association (CSA):

1. CSA C22.2-182.1: Industrial Type Special Use Attachment

Plugs, Receptacles and Connectors

2. CSA C22.1 Canadian Electrical Code Part I (CEC)

E. Intertek Semko

F. National Fire Protection Association (NFPA)

1. NFPA 70 National Electrical Code (NEC)

**1.03 SUBMITTALS**

A. Comply with Section 01 33 00 – Submittal Procedures.

B. Product Data:

1. Submit manufacturer’s descriptive literature and product specifications

for each product.

2. Manufacturer’s product drawings.

**1.04 QUALITY ASSURANCE**

A. Manufacturer Qualifications: Products shall be free of defects in material and workmanship.

1. Furnished products shall be listed or classified by third party agencies suitable for the intended purpose.
   1. **WARRANTY**
2. Product is warranted free of defects in material and workmanship.
3. Product is warranted to perform the intended function within design limits.

**PART 2 – PRODUCTS**

**2.01 GENERAL**

A. These devices shall be UL Listed, CSA, and Intertek SEMKO Certified for circuit interrupting at full rated current.

B. Devices shall be rated 16A at 415 VAC maximum. Devices shall be rated 20, 30, 60, 100 amperes at 600 VAC, and 250 VDC maximum. Devices shall be rated 32, 63, 125 amperes at 415 VAC maximum.

C. These devices shall have the following catalog numbering scheme:

1. ABB\_P\_WPlugs

2. ABB\_C\_W Connectors

3. ABB\_R\_WReceptacles

4. ABB\_B\_WInlets

D. These devices shall provide internal environmental seals for marine and extreme wet applications.

E. These devices shall be used with hard service cord or junior hard service cord in accordance to the NEC table 400.4.

**2.02 MANUFACTURERS**

A. Acceptable Manufacturers:

Thomas & Betts Corporation

8155 T&B Blvd

Memphis, TN 38125

800-816-7809, 901-252-5000

[www.tnb.com](http://www.tnb.com)

ABB AB

Arnöleden 2

611 39 Nyköping

Sweden

www.abb.com

Product: Russellstoll® ABB IEC Watertight connections

**2.03 DESIGN AND PERFORMANCE REQUIREMENTS**

1. for amperage Plugs, receptacles, inlets and connector housings, associated covers and caps, and screw collars shall be made from high impact thermoplastic PBT grade Valox ™ (including the carrier material) with the following properties:

1. Shall be listed according to the UL 94 V-0 flammability requirements.

2. Shall be listed F1 according to UL746C for outdoor use.

B. Mated connectors shall meet the IP 69K watertight standard.

1. All internal and external screws and springs shall be stainless steel.
2. All cable bushing shall be made of watertight chloroprene grommet.
3. Plugs and connectors shall have both internal and external cable clamping mechanisms.
4. Pins shall be secured with 2 stainless steel screws at each terminal.

G. Pin and sleeve contacts base material shall be made of from conductive copper alloy, brass. Accessory material of the contacts shall be made of a compatible corrosion resistant material.

H. Watertight screw cover over receptacle and when connected and screwed. Watertight capability shall be obtained by using a gasketed screw cap. The watertight/flap screw cover shall meet the requirements for NEMA types 4X and IP 67 of IEC 60 529 and IEC 60 309-2 standards.

J. All devices shall be factory polarized, voltage, frequency and phase. This shall provide a single voltage rating, single interface system.

K. The grounding of the device shall be accomplished through a separate integrated safety ground make-first and break-last pole on all devices for complete system grounding

L. Interiors shall be male (pin type) or female (sleeve type).

M. The interlocking devices will contain brass threaded inserts.

N. Pin and sleeve connections shall employ solderless pressure type screw terminals and be sized to accept stranded or solid copper conductors in AWG sizes as follows:

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Dimmension** | |
| **Device** | | **In.** | **mm** |
| 16A–20A | 2P3W | 0.350–0.860 | 9–22 |
| 16A–20A | 3P4W | 0.350–0.860 | 9–22 |
| 16A–20A | 4P5W | 0.437–1.187 | 11–30 |
| 30A–32A | 2P3W | 0.437–1.187 | 11–30 |
| 30A–32A | 3P4W | 0.437–1.187 | 11–30 |
| 30A–32A | 4P5W | 0.437–1.450 | 11–37 |
| 60A–63A | 2P3W | 0.670–1.625 | 17–41 |
| 60A–63A | 3P4W | 0.670–1.625 | 17–41 |
| 60A–63A | 4P5W | 0.670–1.625 | 17–41 |
| 100A–125A | 2P3W | 0.950–1.875 | 24–48 |
| 100A–125A | 3P4W | 0.950–1.875 | 24–48 |
| 100A–125A | 4P5W | 0.950–1.875 | 24–48 |
| 100A–125A | 4P5W | 0.950–1.875 | 24–48 |

The screw terminals shall also have socket heads to insure proper torquing of wires.

**PART 3 – EXECUTION**

**3.1 INSTALLATION**

A. Installation shall be in accordance to the NEC, CEC and manufacturer’s instructions.

**END OF SECTION**