

# INSTALLATION, OPERATION & MAINTENANCE DATA SHEET FOR VSI20 Series Receptacles and Plugs

## 20 Amp Receptacle VSI20R and Plug VSI20P For Hazardous and Corrosive Applications

*Please read this entire document  
 before beginning any work.*



### 1. Safety Instructions

Installation and maintenance of these plugs and receptacles should only be performed by skilled and experienced personnel in accordance with the National Electrical Code (NEC) (NFPA 70) and any local regulations which relate to hazardous (classified) locations.

#### CAUTION:

- \* **Disconnect power supply before installing or servicing these plugs and/or receptacles.**
- \* A modification to this product, other than noted on this form, is not permitted.
- \* Operate only clean, undamaged plugs & receptacles with observations of the operating parameters in section 2.
- \* For a Class I Zone 1 conduit installation, conduit seals are required; refer to NEC 505.16 (B) (1). For any other cable or conduit installation NO seals are required.
- \* Use only approved wiring methods for the location, with the associated conduit/cable fittings.
- \* The receptacle is suitable for use on a circuit capable of delivering not more than 10,000 rms symmetrical amperes, 600V maximum, when protected by properly sized Class J fuses.

### 2. Technical Data

Please refer to the technical data on the nameplates.

- 2.1 Certification:** FM Project: 3024590 & CSA File 240743  
 Class I, Zone 1 & 2, AEx de IIC T6  
 Ex de IIC T6  
 Class I, Division 2, Groups ABCD;  
 Class II, Division 1&2, Groups EFG; Class III



**2.2 Ambient temperature range:**

-22°F to +131°F (-30°C to +55°C).

**2.3 Storage temperature range:**

-67°F to +212°F (-55°C to +100°C).

**2.4 Environmental protection:** IP 66 / Type 3, 4, 4X.

Covers must be tight when plug is not inserted to maintain environmental protection. Observe the labels on the plug and receptacle.

### 3. Receptacle Installation

#### 3.1 Enclosure mounting

Securely mount the receptacle in a vertical position using four 1/4" (6 mm) screws and suitable washers. Dimensions are marked on the back of the receptacle housing.

### 3.2 Conduit/Cable Installation

For conduit installation, connect rigid conduit to the hub and avoid misalignment.

For cable installation, connect a listed cable fitting.

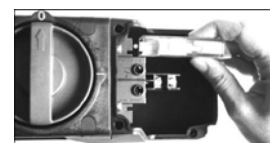
Conduit or cable fittings should not be tightened more than 50 ft-lbs (68 N-m) of torque.

### 3.3 Wiring

Open the terminal cover and connect the supply conductors. If  $T_a$  is < 45°C, use 75°C wire; if  $T_a$  is > 45°C use 90°C wire. The terminals accept up to two wires which are 16 AWG through 10 AWG per terminal. Allow proper length for bending and cut the conductors to length. Strip the conductor insulation 13/32" (10 mm) from the end. Insert the conductors into the appropriate terminals which are marked to correspond with the markings inside the plug. Torque all terminal screws to 16 in-lbs (1.8 N-m); including all unused terminals.

### 3.4 Installation of Auxiliary Contact Block (optional)

One or two blocks, either for I.S. or non-I.S. circuits can be installed by snapping them into either side of the main terminal block. These contact blocks also can be retrofitted and must be installed according to IOM Form No. K1289. See *Parts and Accessories* for block types.



### 3.5 Installation of Additional Entries

Additional top and side wiring entries can be installed in the receptacle by punching through hole(s) 1-1/8" nominal dia. for 3/4" NPT. See *Parts and Accessories* for hub mounting kits used on the various receptacle types. These kits contain a bonding plate, locknut(s), bonding jumper wire with connection screw. Insert entry fitting through the enclosure hole, tighten into the bonding plate and secure with locknut. Connect the bonding jumper to the terminal marked Ⓢ. On the 4 and 5-wire version, a second 3/4" NPT bottom fitting can be installed in place of the existing hole close-up plug by installing a 3/4" NPT fitting (with locknut). Also, see *Parts and Accessories*.

### 4. Horsepower Rating

Voltage AC	3-Phase	1-Phase
600V	15 HP	-
480V	10 HP	5 HP
240V	5 HP	3 HP
120V	3 HP	1.5 HP

**SEE PLUG WIRING  
 INSTRUCTIONS ON  
 REVERSE SIDE**

# INSTALLATION, OPERATION & MAINTENANCE DATA SHEET

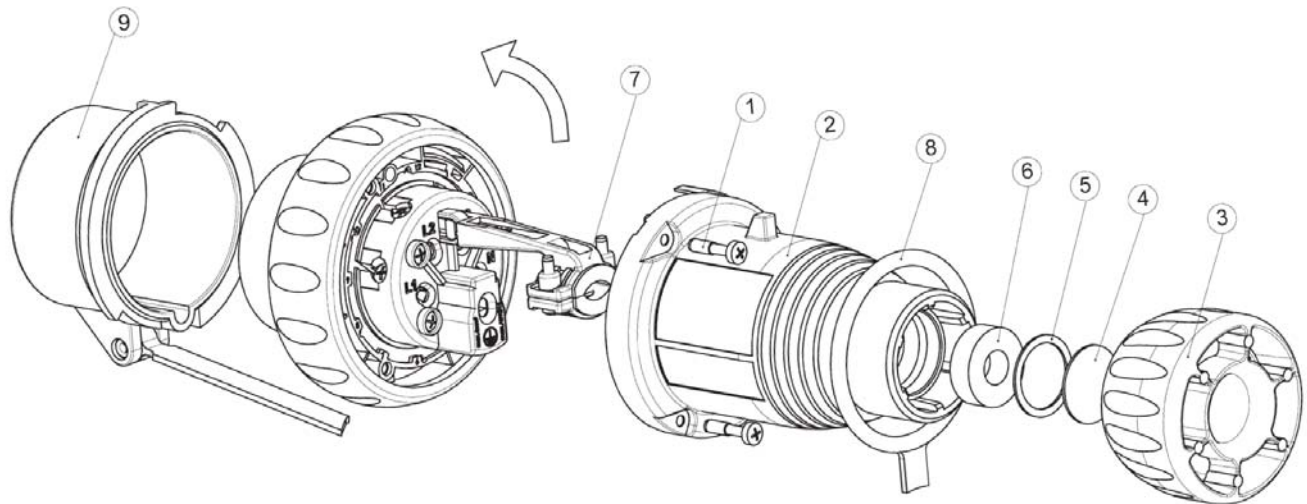


Figure 1

## 5. Wiring of Plug VSI20P

### 5.1 Cord Type

Select a flexible cord with copper conductors of the appropriate insulation, ampacity, and temperature (75°C or 90°C) rating. For installations in the U.S., refer to the NEC, section 400.4, 400.5, 501.140, 502.140 and 503.140.

**NOTE:** Cords with O.D. between 0.3" and 0.8" can be used. Maximum wire range for plug terminals is 1 x 16 AWG up to 1 x 12 AWG.

### 5.2 Cord Preparation

Cut the cord cleanly - Do not strip away cord jacket or conductor insulation at this time.

### 5.3 Opening the Plug

Referring to Figure 1 above, loosen screws (1) and remove the plug housing (2). Then unscrew the compression collar (3) and remove the close-up disc (4) and discard it. Then remove the friction washer (5) and grommet (6).

### 5.4 Insert the Cord

Guide the compression collar (3) and the friction washer (5), over the cord.

#### 5.4.1 Install Cord Grommet

The grommet (6) is a universal onion ring style which accommodates several cord diameters by removing (cutting out) the inner undersized diameters. The grommet should fit snugly on the cord. The grommet may require lubrication in order to slide over the cord. Use talcum powder or an equivalent material rated for use on electrical products. Slide the grommet over the cord with the cuts toward the plug housing (2).

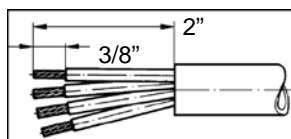
**NOTE:** If the grommet slides freely over the cord, there will be insufficient sealing for Class II and Class III Hazardous Locations.

#### 5.4.2 Install Strap and Plug Housing on Cord

Slide the strap ring (8) and the plug housing (2) over the cord.

### 5.5 Cord Preparation

Dress the cord by removing the outer jacket and fillers for a length of 2" (50 mm) and strip the insulation off of each conductor a distance of 3/8" (10 mm) from the end.



### 5.6 Connection to Terminals

Flip the strain relief (7) out of the way. Attach the leads to the appropriate terminals and torque with 16 in-lbs (1.8 N-m).

**CAUTION:** The equipment grounding conductor (green wire) is to be connected to the terminal marked Ⓧ.

### 5.7 Strain Relief

Open the clamp (7) and adjust the clamping size to the O.D. of the cord (this may require removing 1 or 2 of the clamp inserts, if necessary). Then flip the strain relief back and clamp the cord using 14 in-lbs (1.6 N-m) torque.

### 5.8 Plug Assembly

Rejoin the two parts of the plug enclosure paying careful attention to the orientation of the alignment tap and reinstall the three screws (1). Slide the grommet (6) into position in the receiving cavity of the plug housing, then place the friction washer against the grommet and turn on the compression collar until a good compression is achieved.

## 6. Maintenance

The only maintenance is a periodic inspection for damage and proper operation. The surface of the plug pins and the pin chamber should be kept clean. Keep cap (9) on plug when not in use. Any damaged equipment should be replaced promptly to ensure the electrical safety and explosion protection of the system.

## 7. Parts and Accessories

	Part Number
Plug Cap for 2-pole, 3-wire	YOST8570001140
Plug Cap for 3-pole, 4-wire	YOST8570002140
Plug Cap for 4-pole, 5-wire	YOST8570003140
Auxiliary Contact Block NC	VSIAUXNC
Auxiliary Contact Block NO	VSIAUXNO
Aux. Contact Block NC for I.S. Circuit	VSIAUXNCIS
Aux. Contact Block NO for I.S. Circuit	VSIAUXNOIS
Polymeric Close-up Plug 3/4" NPT	PD-E-4-0-30-00
Conduit Hub 3/4" NPT	8166/11-02-N
Locknut 3/4" NPT	KILLN2
Hub Mtg. Kit 3/4" for 3-wire receptacle	YOST8570801290
Hub Mtg. Kit 3/4" for 4 & 5-wire recept.	YOST8570802290

**Note:** The nature of these instructions is only informative and does not cover all of the details, variations or combinations in which this equipment may be used, stored, transported, installed, operated or maintained. Since conditions of use of the product are outside of the care, custody and control of the manufacturer, the purchaser should determine the suitability of the product for his intended use, and assumes all risk and liability whatsoever in connection therewith.