



# VeriSafe Insulation-Piercing Connection Kits

T-PMPI-322EN  
Rev. 03 [12-2019]

Insulation-Piercing Connectors for  
VeriSafe AVT Sensor Lead Tapping on Copper Conductors

## INSTALLATION INSTRUCTIONS

Models: VS-CKP14-6, VS-CKP4-000

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**Connection Kit Contents:** contains connectors and ferrules for installation of VeriSafe AVT

Panduit VSC Series  
Insulation-Piercing  
Connectors



+

Panduit  
F80-12  
Ferrules



CONNECTION KIT CATALOG PART NUMBER	"RUN" Wire (CODE WIRE)		"TAP" Wire AWG (Terminated w/ Ferrule)	CONNECTOR		FERRULE	
	MIN. AWG [METRIC, mm <sup>2</sup> ]	MAX. AWG [METRIC, mm <sup>2</sup> ]		Catalog P/N	Quantity	Catalog P/N	Quantity
VS-CKP14-6	14 AWG [2.1, r]	6 AWG [13.3, r]	14 AWG STR Class K (Terminated w/ Ferrule)	VSC6	3	F80-12	12
VS-CKP4-000	4 AWG [21.2, r]	3/0 AWG STR [85, r]		VSC3/0	3	F80-12	12

**IMPORTANT:**

- **Must install Ferrules on Tap Wires before terminating Tap Wires into Panduit VSC Connector.**
- **Terminate Tap Wires into Panduit VSC Connector before installing Connector on a Phase Wire.**
- **Read Page 2; contains Safety Information and operating limits for Connector per product listing.**



**TO REDUCE THE RISK OF INJURY, USER  
MUST READ INSTALLATION INSTRUCTIONS  
BEFORE ATTEMPTING TO INSTALL**



**NOTE:** *In the interest of higher quality and value, Panduit products are continually being improved and updated. Consequently, pictures may vary from the enclosed product.*

**NOTE:** *Updates to this Installation Instructions may be available. Check [www.panduit.com](http://www.panduit.com) for the latest version of this manual.*

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**Safety Information**

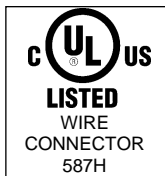
This installation instructions contains information and warnings which must be followed to ensure safe termination and operation of the Insulation-piercing Connectors and an AVT Device.

- **Always de-energize panel and verify absence of voltage in the panel before attempting to install connector. Do not install connector on an energized conductor.**
- **Installer must also follow all AVT safety, installation, commissioning and operating steps from the AVT Device Manual.**
- **Connector is intended for one-time installation and use. Do not reuse nor re-install connector.**

**Connector Ratings Information**

(1) Panduit VSC Series Insulation-Piercing Connectors are intended for simplifying installation and connection of PANDUIT VeriSafe AVT Absence of Voltage Testers to phase (run) conductors.

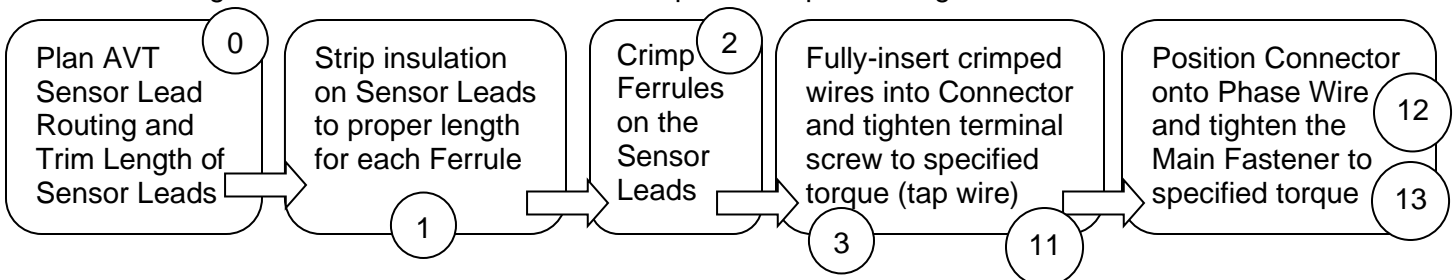
(2) Panduit VSC Series Insulation-Piercing Connectors must be used within the rated operating environment and installed according to the Listed product ratings in this Table



Panduit CATALOG P/N (VSC Connector)		VSC6	VSC3/0	
<b>MAX. Operating Temperature (°C)</b>		90°C		
<b>MAX. Operating Voltage (Volts)</b>		600V		
<b>RUN WIRE</b>	Torque-driver SAE Hex Size (Main Fastener)	5/16"	3/8"	
	Installation Torque (Required)	40 in-lb [4.52 N·m]	80 in-lb [9.04 N·m]	
	Minimum Rated Wire Size, AWG [Metric, mm <sup>2</sup> , rigid]	14 SOL 14 STR [2.1, r]	4 SOL 4 STR [21.2, r]	
	Maximum Rated Wire Size, AWG [Metric, mm <sup>2</sup> , rigid]	6 SOL 6 STR [13.3, r]	3/0 STR [85, r]	
<b>TAP WIRE</b>	Torque-driver Installation Bit Size		T10 Torx	
	Torque-driver Installation Tool (recommended)		Wiha P/N 28502	
	Installation Torque (Required)		7 in-lb [0.79 N·m]	
	Listed Tap Wire and Ferrule Combinations [Tap Wire Size/Type and Panduit Ferrule P/N]	#1	TAP Wire	14 AWG STR Class K
			Ferrule	F80-12 ferrule
		#2	TAP Wire	16 AWG STR Class K
			Ferrule	F78-12 ferrule
	#3	TAP Wire	18 AWG STR Class K	
		Ferrule	F76-12 ferrule	
Recommended Crimp Tool (Panduit P/N)		CT-1160		

**Overview of Installation Process (Connector)**

Before proceeding, refer to the simplified flow-chart below, which indicates the steps taken for each connector during installation. Understand these steps before proceeding further with illustrated details.

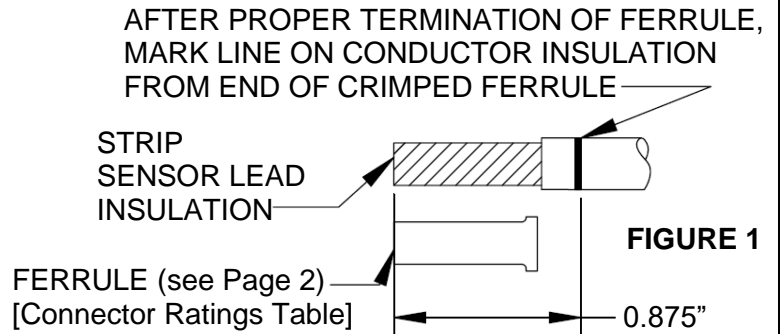


## Step-by-Step Installation Procedure

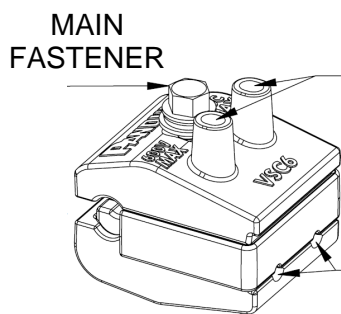
Step-by-step illustrated instructions for installation are as follows;

### STEPS 1 thru 3: Prepare Sensor Leads (see FIGURE 1)

1. Prepare (strip) AVT device sensor leads.
2. Crimp ferrules onto sensor leads.
3. Make locating mark on sensor leads.



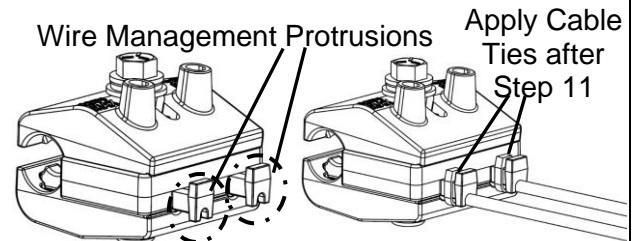
### STEP 4: Review Connector Features (see FIGURE 2 and FIGURE 2\*) STEP 5: Loosen factory-tightened MAIN FASTENER (see FIGURE 2)



**FIGURE 2**

TERMINAL SCREWS ARE ACCESSIBLE FROM THE TWO PORTS. TERMINAL SCREWS ADJUST THE CONNECTOR TERMINALS. CONNECTOR TERMINALS ARE USED TO TERMINATE TAP WIRES (AVT SENSOR LEADS) IN CONNECTOR TAP WIRE INSERTION PORTS ARE FOR INSERTING A PAIR OF COLOR-CODED, CRIMPED AND FULLY-INSERTED TAP WIRES (AVT SENSOR LEADS) INTO THE CONNECTOR TERMINALS

*\*Note: Connector may feature integrated Wire Management Protrusions for optional use. After Tap Wires are terminated into Connector, (after Installation Step 11) the Protrusions can be used to restrain Tap Wires near Connector using cable ties or other acceptable methods.*



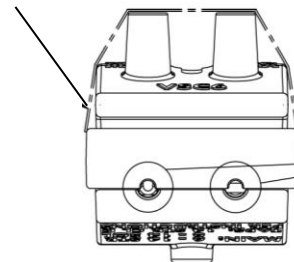
**FIGURE 2\***

### STEP 6(a): Review Connector Features (see FIGURES 3 and 4) STEP 6(b): Remove TAP TORQUE Reminder Label (see FIGURES 3 and 4)

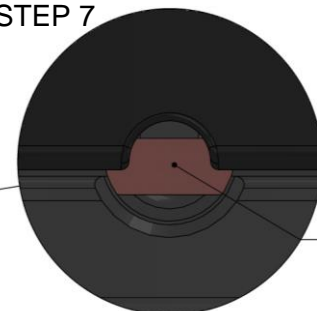
Inspect location of factory-tightened TERMINAL in each TAP WIRE port in connector.

- Each TERMINAL SCREW and TERMINAL was shipped in a factory-tightened state.
- In a factory-tightened state, the TERMINAL blocks access to and restricts insertion of TAP WIRE.
- Installer must loosen TERMINAL SCREW and push down to ensure TERMINAL position permits insertion of TAP WIRE.
- REMOVE TAP TORQUE reminder label before proceeding to STEP 7.

COMPLETELY REMOVE TAP TORQUE LABEL FROM CONNECTOR BEFORE STEP 7



**FIGURE 3 (TERMINAL Position)**



**FIGURE 4 (Detail View)**

TERMINAL POSITION RESTRICTS INSERTION OF TAP WIRE

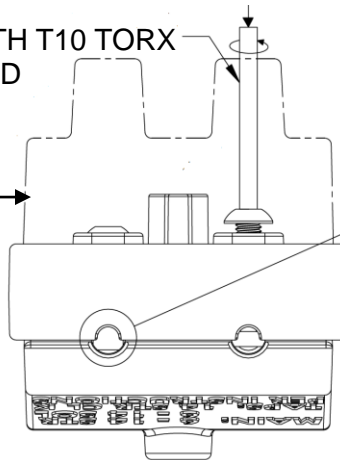
**Step-by-Step Installation Procedure (continued from page 3)**

**STEP 7: Loosen TERMINAL SCREWS and push TERMINAL into proper position (See FIGURE 5)**  
**STEP 8: Verify TERMINALS are in proper position and TAP WIRE can be fully-inserted (FIGURE 6)**

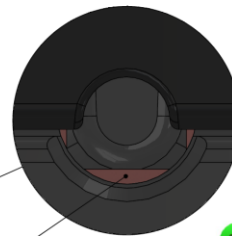
- Loosen TERMINAL SCREW two turns and push down on SCREW to move TERMINAL.
- Verify position of TERMINAL and repeat loosening two turns and repeat push down on the SCREW.
- Repeat until TERMINAL is in the position shown in FIGURE 6. DO NOT completely loosen screw.
- Verify that TERMINAL is positioned at the bottom of port, permitting full-insertion of TAP WIRE.
- TERMINAL must be positioned at bottom of port, permitting full-insertion of TAP WIRE (see FIGURE 6)

LOOSEN SCREW WITH T10 TORX TORQUE-DRIVER AND PUSH DOWN ON SCREW HEAD

*Top Housing outline shown for clarity of the Terminal position within the Connector*



**FIGURE 5**



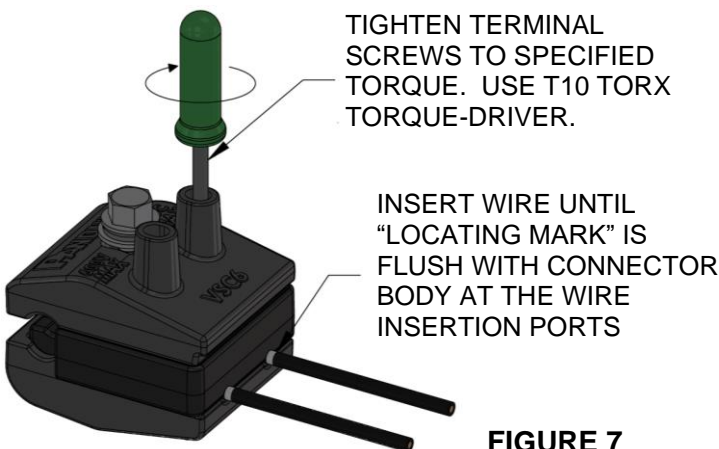
**FIGURE 6**

TERMINAL OPENING IS VISIBLE WHEN POSITIONED AT THE BOTTOM OF THE WIRE PORT AND PERMITS FULL-INSERTION OF THE TAP WIRE

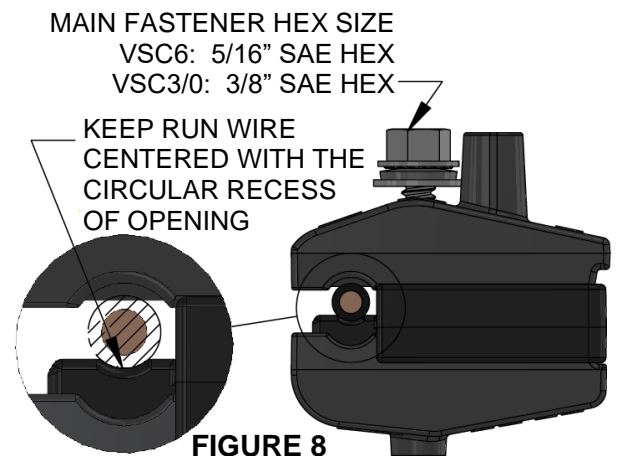
**STEPS 9 - 11: Insert Crimped Wires into TERMINALS and Tighten TERMINAL SCREWS (FIGURE 7)**  
**STEPS 12 - 13: Position Connector onto RUN WIRE and Tighten MAIN FASTENER (FIGURE 8)**

9. Insert a crimped, color-coded pair of AVT sensor leads into TAP WIRE terminals.
10. Verify fully-inserted AVT sensor leads by verifying that "location mark" (STEP 3) is flush with the connector body at wire insertion port.
11. Use torque-driver (T10 Torx drive) to tighten terminal screws to the specified TORQUE.

12. Properly position connector onto phase conductor (RUN WIRE). Keep RUN WIRE centered with circular recess during next step.
13. Use SAE Hex torque-driver to tighten MAIN FASTENER until the specified TORQUE value is achieved and maintained for 5 seconds.



**FIGURE 7**



**FIGURE 8**