

Panduit VeriSafe Absence of Voltage Tester Guide Specification

v.080222

xx.x Product Specifications

xx.x.1 Absence of Voltage Tester

ABSENCE OF VOLTAGE TESTER (AVT) is a permanently mounted tester that is used to verify that a circuit is de-energized prior to opening an electrical enclosure that may contain energized electrical conductors and circuit parts. An AVT is provided with a test circuit with active indications to verify the absence of phase-to-phase and phase-to-ground voltage. AVTs are designed with a test circuit and visual indicators to confirm that the tester is functioning properly before and after the process of determining that voltage is absent.

The Absence of Voltage Tester (AVT) shall be listed to UL 1436 for the purpose of verifying the absence of voltage. The safety functions of the AVT shall comply with IEC 61508-1, SIL 3.

The AVT shall include a set of redundant dry contact signal outputs for optional use with control systems. The outputs shall be normally open, and close only when the green Absence of Voltage Indicator is illuminated.

The AVT shall incorporate a built-in test circuit to verify operation on a known voltage source before and after the absence of voltage test.

The AVT shall incorporate a built-in test circuit to verify installation of hardwired sensor leads before and after the absence of voltage test.

The AVT shall be permanently mounted, and the sensor leads are connected directly to the phase conductors or circuit parts to be tested. It is critical that the leads in each set are both properly terminated. Sensor leads for each phase and ground must *not* be mechanically terminated at the same point for the AVT to function properly. The AVT shall be installed in accordance with manufacturer's instructions and test the conductors and circuit parts at the point of work.

No substitution allowed without written approval from the owner. All other manufacturers must submit substitution request in accordance with Substitution Procedures.

xx.x.2 Sensor Lead Terminations

Refer to www.panduit.com to access the current revision of the user manual. Follow the installation instructions of the user manual including the following:

- Note to specifier – identify the test point where the AVT sensor lead are to be installed e.g. line or load side.
- Note to installer – document on the device label where the AVT is installed e.g. line or load side.
- Sensor leads for each phase and ground must not be mechanically terminated at the same point for the AVT to function properly.
- Use ferrules for relevant termination methods – see www.panduit.com for common best practices of terminating the AVT sensor leads

- There is no maximum or minimum separation distance requirement between the sensor leads in a set, however there should not be any circuit elements (ex. circuit breaker, fuse, VFD, switch or similar control devices etc.) installed between each pair of sensor leads.
- The maximum sensor lead length is 10 feet. Extending the sensor leads with a splice beyond this distance may not comply with local installation codes. (NEC Article 240.21(B)(1)(b) Exception allows taps up to 10 feet on a feeder circuit without the need for overcurrent protection.)

xx.x.3 VeriSafe 1.0 Absence of Voltage Tester Specifications

Manufacturer: Panduit Corporation, 18900 Panduit Drive, Tinley Park, IL 60487

Type: VeriSafe 1.0 Absence of Voltage Tester

Part/Model No: VeriSafe 1.0: VS-AVT-xxx where “xxx” are combination of letters and numbers corresponding to individual configurations e.g., VS-AVT-C08-L10; VS-AVT-C02-L03;

The 1.0 AVT shall be designed to provide voltage presence indicators for AC voltage, compatible with 3 phase and single-phase systems. It shall detect voltages up to 600V, both AC and DC. It shall test each phase conductor or circuit part phase-to-phase and phase-to-ground for absence of voltage.

The absence of voltage tester shall consist of a user interface (indicator module) that provides a means to initiate and see the results of the AVT test. The AVT shall provide three red indicators to indicate the presence of AC voltage, one for each phase. The indicator module shall also provide a green visual indicator to confirm the absence of voltage after the AVT test, in accordance with UL 1436.

xx.x.4 VeriSafe 2.0 Absence of Voltage Tester Specifications

Manufacturer: Panduit Corporation, 18900 Panduit Drive, Tinley Park, IL 60487

Type: VeriSafe 2.0 Absence of Voltage Tester

Part/Model No: VeriSafe 2.0: VS-AVT2-xxx where “xxx” are combination of letters and numbers corresponding to individual configurations e.g., VS2-AVT-1PB-08; VS2-AVT-3PF-08

The 2.0 AVT shall be designed to provide voltage presence indicators for AC and DC voltage, compatible with 3 phase and single-phase systems. It shall detect voltages up to 1000V, both AC and DC. It shall test each phase conductor or circuit part phase-to-phase and phase-to-ground for absence of voltage.

The absence of voltage tester shall consist of a user interface (indicator module) that provides a means to initiate and see the results of the AVT test. The AVT shall provide three red indicators for the 3-phase indicator module (one for each phase) and two red indicators for the single-phase indicator module to indicate the presence of AC or DC voltage. The indicator module shall also provide a green visual indicator to confirm the absence of voltage after the AVT test, in accordance with UL 1436. Each 2.0 AVT will support up to two indicator modules.

The 2.0 AVT is capable of powering the absence of voltage test with either a battery or an external 12-24VDC power source.

The 2.0 AVT shall have the following hazardous location certifications:

- cULus: Class I, Division 2, Groups A, B, C, D T3
- Class II, Division 2, Groups F and G T3
- Class I Zone 2 AEx ic ec T3 Gc; Ex ic ec T3 Gc Zone

22 AEx tc IIIC T200°C Dc; Ex tc IIIC T200°C Dc

An optional accessory, the network module, enables automatic measuring/reporting voltages (peak and RMS), monitoring AVT results/sensor lead status, time-date stamp, and diagnostics including the ability to upgrade firmware of both the AVT and network module. The network module shall also include a set of dry contact signal outputs for optional use. The outputs shall be normally open, and close only when the red voltage presence indicators are illuminated (a separate contact signal for each red indicator).