VeriSafe™ 2.0 AVT

Product Bulletin

Simplify absence of voltage testing

PANDUIT®

The Safe Way to Protect Employees and Equipment

The VeriSafe 2.0 Absence of Voltage Tester simplifies the voltage testing process. With the push of a button, workers can quickly determine voltage status and see an active indication when the absence of voltage is confirmed. This provides a new and innovative way to safely, reliably, and efficiently test for the absence of voltage without exposure to electrical hazards.

Voltage PRESENCE Indication		ABSENCE of Voltage Testing	
Red LEDs indicate hazardous voltage present	Lack of red LEDs does not guarantee voltage absence	Push to initiate test and see progress	Green indicates absence of voltage is confirmed

What's Included

1 Indicator Module
3.6V Battery powered option shown
Battery free option available

2 System Cable

3 Isolation Module

4 Instruction Label

Features and Benefits

Improved Safety and Risk Reduction
- No exposure to electrical hazards while testing
- Reduces human factors

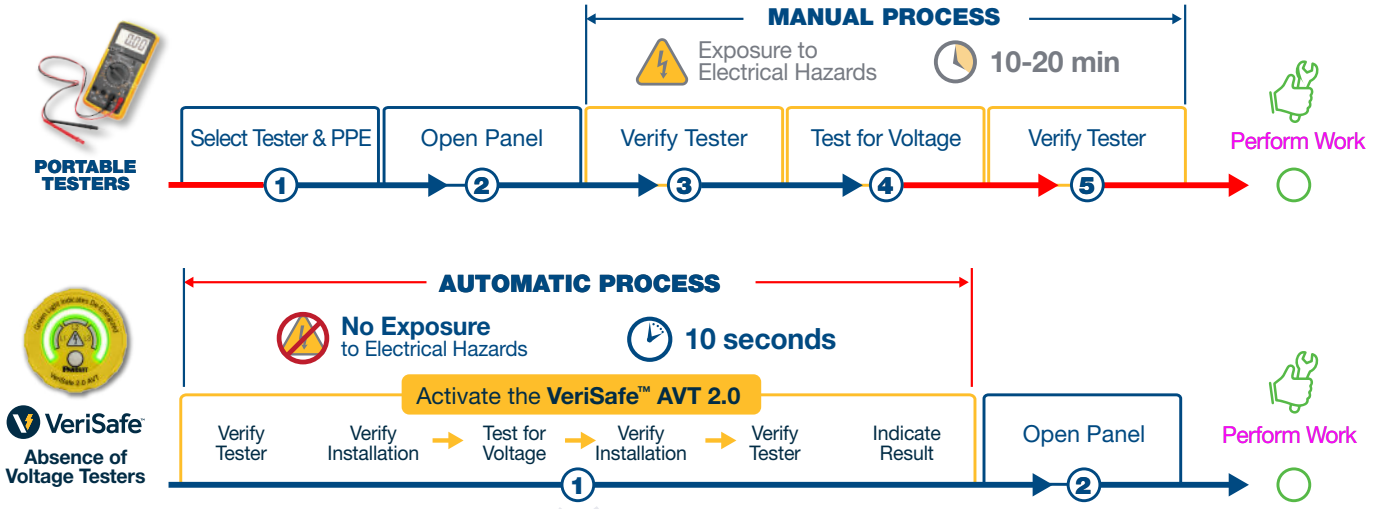
Simplified Process for Easier Compliance
- Satisfies criteria in NFPA 70E 120.5(7) Exception 1 & CSA Z462 4.2.5 (g) Exception 2
- UL 1436 listing

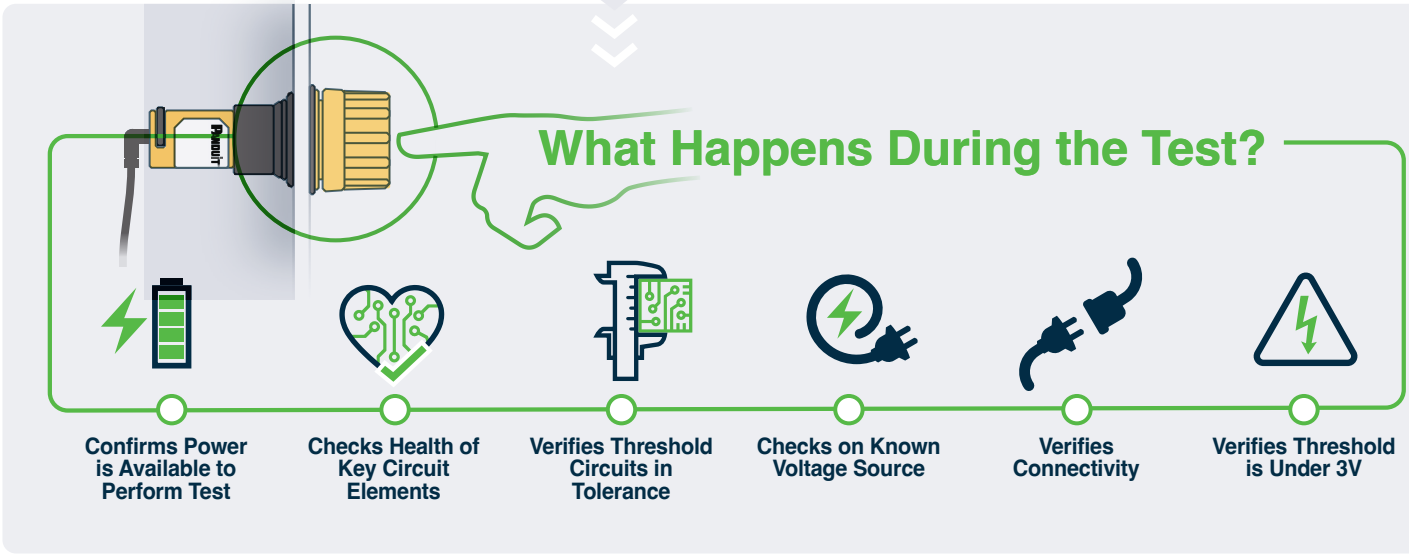
Reliable Results
- Fail-safe design with active indications
- Safety functions meet SIL 3 (IEC 61508-1)
- Redundant channels for measurement and detection

Increased Productivity
- Results within 10 seconds of button push
- Troubleshoot abnormal power conditions
- Utilize network module for remote monitoring

Flexible Applications
- Power distribution, motor control and automation
- Data centers, industrial and commercial facilities
- Suitable for indoor, outdoor use

Comparison of Test Methods





More than an Absence of Voltage Tester

2.0 Isolation Module

Absence of Voltage Outputs (SIL 3)

Primary Indicator Module

DC Power Input (optional)
Connection to VeriSafe Network Module

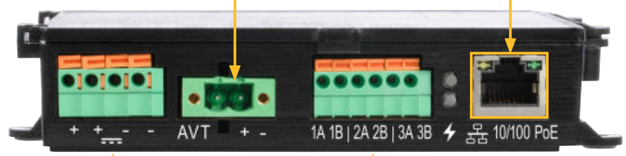
Second Indicator Module (optional)

Absence of Voltage Outputs
Redundant isolated transistor outputs (SIL 3) for optional integration with control systems. The contacts are normally open and close only when the green Absence of Voltage Indicator is illuminated.

Network Module

Network Connection

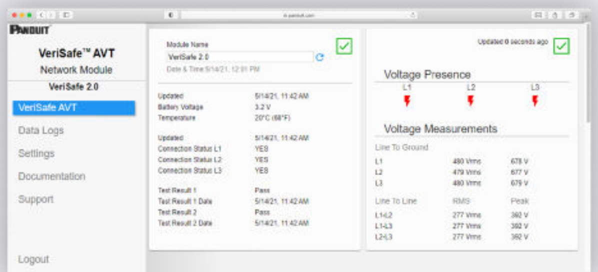
Connection to VeriSafe AVT

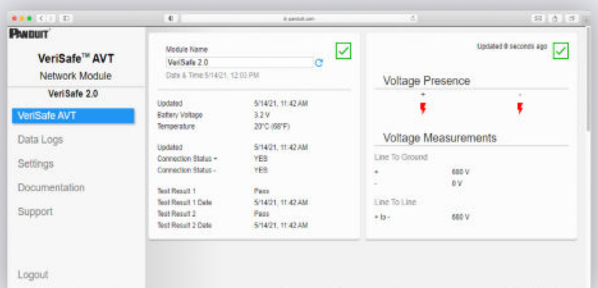


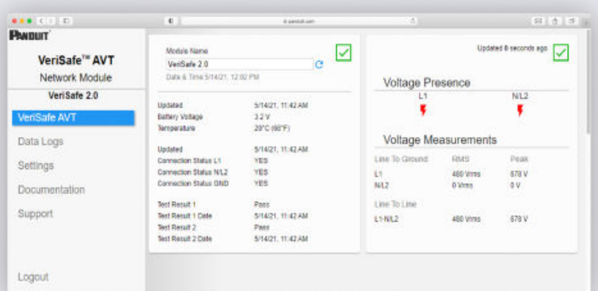
DC Power Input

Voltage Presence Outputs

Voltage Presence Outputs
Three solid-state relay output contacts that are normally open and close when a red voltage presence indicator is illuminated.







Network Connection

Real-Time Diagnostics and Performance Reporting

- **Record Test Results**
  Time stamp, result, diagnostic codes, data logs
- **Troubleshoot Remotely**
  – Detect voltage drops and outages
  – See voltage values in real time
- **View sensor lead status**
- **Monitor battery status**
- **Analyze temperature trends**
- **Power the AVT**
- **EtherNet/IP and Modbus TCP Connection**
  Easy integration or utilize onboard web server

Refer to VS2-NET specification sheet for more technical information.

Ordering Information

Step 1 Select Configuration

VS2-AVT - XYZ - ##

Choose your system — XY

3P 3-Phase 2.0 System
10’ (3.0 m) Black Sensor Leads

1P DC/Single-Phase 2.0 System
10’ (3.0 m) Black Sensor Leads

Choose your indicator — Z

F Battery Free Indicator

B Battery Powered Indicator
(battery included)

Choose your cable — ##

02 2’ (0.6m) System Cable

08 8’ (2.4m) System Cable

16 16’ (4.8m) System Cable

Step 2 Select Upgrades (optional)

VS2-NET
Network Module
for use with
VS2-AVT models.

Additional Indicator Options (system cable not included)

VS2-AVT-1IF
Battery Free Single-Phase Indicator

VS2-AVT-3IF
Battery Free 3-Phase Indicator

VS2-AVT-1IB
Battery Powered Single-Phase Indicator
No Battery Included

VS2-AVT-3IB
Battery Powered 3-Phase Indicator
No Battery Included

Replacement System Cable: For use with VeriSafe 2.0 Indicator Modules only

VS2-CABLE-02	VS2-CABLE-04	VS2-CABLE-08	VS2-CABLE-16	VS2-CABLE-20	VS2-CABLE-30
2’ Cable Length .6 m	4’ Cable Length 1.2 m	8’ Cable Length 2.4 m	16’ Cable Length 4.8m	20’ Cable Length 6.1 m	30’ Cable Length 9.1 m

Step 3 Select Connectors (optional)

VeriSafe Insulation Piercing Connection Kit
Kits includes 3 connectors and ferrules for installation of 1 AVT.

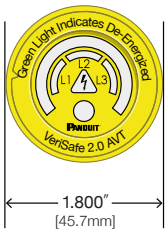
VS-CKP-14-6
Connection Kit
For Tapping 14 to 6 AWG conductors. Rated up to 600V

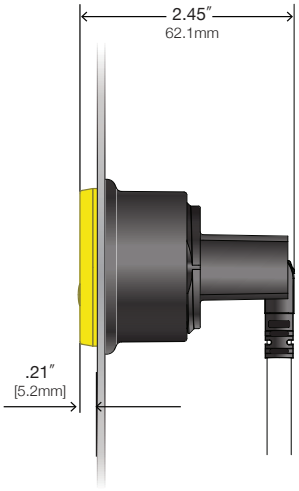
VS-CKP-4-000
Connection Kit
For Tapping 4 to 3/0 AWG conductors. Rated up to 600V.

VS-CKP-1K4/0-500
Connection Kit
For Tapping AWG 4/0 to 500 MCM conductors. Rated up to 1000V.

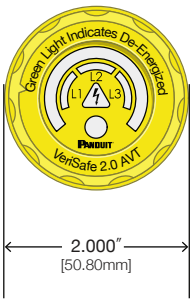
Dimensions

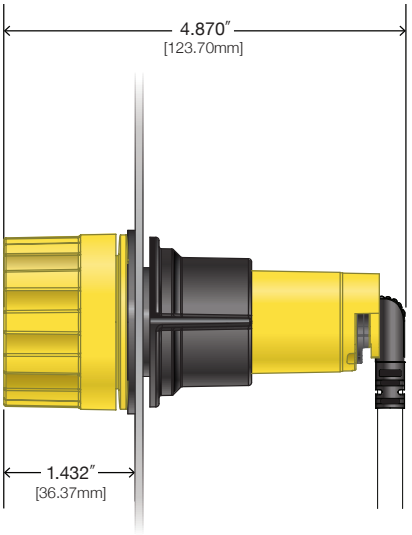
Battery Free Indicator Module



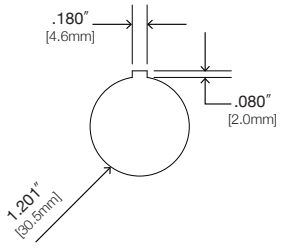


Battery Powered Indicator Module



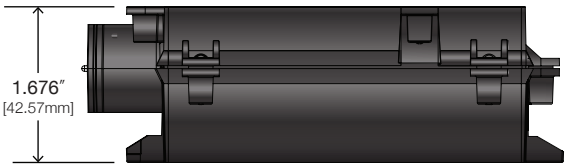


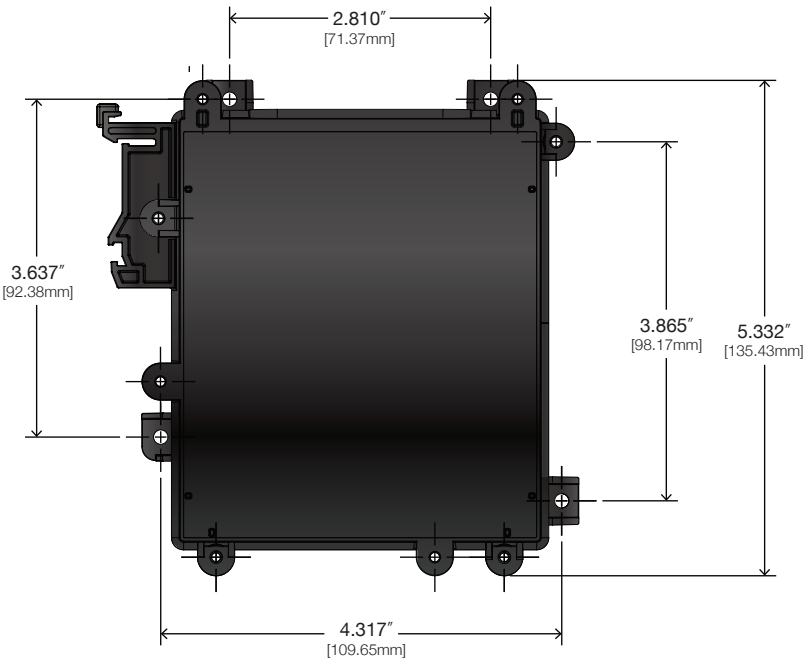
Panel Knockout



Isolation Module

Install on DIN rail or with optional mounting tabs





Dimensions in inches [millimeters]

Technical Specifications

Applications

Electrical System	For use in 3-phase AC systems, single-phase AC systems and DC systems
Voltage Detection Range	Up to 1000 VAC (50 or 60 Hz), 1000 VDC
Absence of Voltage Threshold	3 V (See the Installation Considerations section for additional information)
Overvoltage Category	III (1000 V), IV (600 V)
Degree of Protection	**Indicator Module:** for flat surface mounting in a TYPE (UL, NEMA and CSA) 1, 12, 13, 4, 4X, IP66, IP67 or IP69 enclosure. Verify that the seal, o-rings and gaskets are clean to ensure proper sealing. **Isolation Module:** Open Type, IP20.

Environment

Operating Temperature	-25°C to 60°C (-13°F to 140°F)
Storage Temperature	-45°C to 85°C (-49°F to 185°F)
Humidity	5 to 90% non-condensing; Rated 80% at 40°C (104°F), decreasing linearly to 50% at 60°C (140°F)
Pollution Degree	3
Altitude	Up to 5000 meters (16400 feet)

Hazardous Locations

Isolation Module (Hazardous Location Ratings)	**cULus:** Class I, Division 2, Groups A, B, C, D Class I Zone 2 AEx ec IIC T5 Gc; Ex ec IIC T5 Gc
Voltage Indicator Modules (Hazardous Location Ratings)	**cULus:** Class I, Division 2, Groups A, B, C, D Class II, Division 2, Groups F and G Class I Zone 2 AEx ic ec IIC T6 Gc; Ex ic ec IIC T6 Gc Zone 22 AEx tc IIIC T68°C Dc; Ex tc IIIC T68°C Dc

Power Requirements

Battery	Industrial 3.6 V Lithium. Refer to User Manual for list of approved batteries.
Auxiliary (DC) Power	35 mA max @ 12 VDC; 17 mA max @ 24 VDC
Power over EtherNet (PoE)*	PoE (10/100), 15 mA, IEEE 802.at (-af) Type 1 Class III PoE topology

*Requires optional VS2-NET to use PoE

Standards and Certifications

c UL us LISTED E489576 c UL us LISTED E495719 CE UKCA -NOM MX RoHS

UL 1436	Standard for outlet circuit testers and similar indicating devices
UL 508 & CSA-C22.2 No. 14	Industrial control equipment
CAN/CSA-C22.2 No. 160	Voltage and Polarity Testers
CAN/CSA-C22.2 No. 107.1	Power Conversion Equipment
IEC / UL / CSA C22.2 NO. 61010-1	Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General Requirements
IEC / UL / CSA C22.2 NO. 61010-2-030	Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 2-030: Particular requirements for testing and measuring circuits
IEC 61508-1, -2, and -3 {SIL 3 Rating}	Safety of Electrical/Electronic/programmable Electronic safety-related security systems – Part 1 General Requirements Part 2 Requirements for Electrical / Electronic / Programmable safety related systems Part 3 Software Requirements

Refer to Instruction Manual **(www.panduit.com/verisafe/VS2_AVT_Manual_EN)** for complete list of product specifications and standards

Ordering Information

Part Number	Part Description
VeriSafe 2.0 AVT Absence of Voltage Tester	
VS2-AVT-1PB-02	Single-phase VeriSafe 2.0 AVT isolation module, 2ft (0.6m) system cable, 10ft (3m) sensor leads, single-phase battery-powered indicator module and an industrial lithium battery
VS2-AVT-1PB-08	Single-phase VeriSafe 2.0 AVT isolation module, 8ft (2.4m) system cable, 10ft (3m) sensor leads, single-phase battery-powered indicator module and an industrial lithium battery
VS2-AVT-1PB-16	Single-phase VeriSafe 2.0 AVT isolation module, 16ft (4.8m) system cable, 10ft (3m) sensor leads, single-phase battery-powered indicator module and an industrial lithium battery
VS2-AVT-1PF-02	Single-phase VeriSafe 2.0 AVT isolation module, 2ft (0.6m) system cable, 10ft (3m) sensor leads and a single-phase battery-free indicator module
VS2-AVT-1PF-08	Single-phase VeriSafe 2.0 AVT isolation module, 8ft (2.4m) system cable, 10ft (3m) sensor leads and a single-phase battery-free indicator module
VS2-AVT-1PF-16	Single-phase VeriSafe 2.0 AVT isolation module, 16ft (4.8m) system cable, 10ft (3m) sensor leads and a single-phase battery-free indicator module
VS2-AVT-3PB-02	Three-phase VeriSafe 2.0 AVT isolation module, 2ft (0.6m) system cable, 10ft (3m) sensor leads, three-phase battery-powered indicator module and an industrial lithium battery
VS2-AVT-3PB-08	Three-phase VeriSafe 2.0 AVT isolation module, 8ft (2.4m) system cable, 10ft (3m) sensor leads, three-phase battery-powered indicator module and an industrial lithium battery
VS2-AVT-3PB-16	Three-phase VeriSafe 2.0 AVT isolation module, 16ft (4.8m) system cable, 10ft (3m) sensor leads, three-phase battery-powered indicator module and an industrial lithium battery
VS2-AVT-3PF-02	Three-phase VeriSafe 2.0 AVT isolation module, 2ft (0.6m) system cable, 10ft (3m) sensor leads and a three-phase battery-free indicator module
VS2-AVT-3PF-08	Three-phase VeriSafe 2.0 AVT isolation module, 8ft (2.4m) system cable, 10ft (3m) sensor leads and a three-phase battery-free indicator module
VS2-AVT-3PF-16	Three-phase VeriSafe 2.0 AVT isolation module, 16ft (4.8m) system cable, 10ft (3m) sensor leads and a three-phase battery-free indicator module
Sensor Lead Termination Kits	
VS-CKP14-6	Insulation Piercing Connection Kit for Tapping 14 to 6 AWG conductors. Rated for 600V installations. Kit includes 3 connectors for installation of a single AVT
VS-CKP4-000	Insulation Piercing Connection Kit for Tapping 4 to 3/0 AWG conductors. Rated for 600V installations. Kit includes 3 connectors for installation of a single AVT
VS-CKP1K4/0-500	Insulation Piercing Connection Kit for Tapping AWG 4/0 to 500MCM copper conductors. Rated for 1KV installations. Kit includes 3 connectors for installation of a single AVT
Accessories	
VS2-AVT-1IB	VeriSafe 2.0 AVT single-phase Battery Indicator Module
VS2-AVT-1IF	VeriSafe 2.0 AVT single-phase Battery Free Indicator Module
VS2-AVT-3IB	VeriSafe 2.0 AVT three-phase Battery Indicator Module
VS2-AVT-3IF	VeriSafe 2.0 AVT three-phase Battery Free Indicator Module
VS2-CABLE-02	VeriSafe 2.0 AVT Replacement Cable, 2ft (0.6m), for use with VeriSafe 2.0 AVTs only
VS2-CABLE-04	VeriSafe 2.0 AVT Replacement Cable, 4ft (1.2m), for use with VeriSafe 2.0 AVTs only
VS2-CABLE-08	VeriSafe 2.0 AVT Replacement Cable, 8ft (2.4m), for use with VeriSafe 2.0 AVTs only
VS2-CABLE-16	VeriSafe 2.0 AVT Replacement Cable, 16ft (4.8m), for use with VeriSafe 2.0 AVTs only
VS2-CABLE-20	VeriSafe 2.0 AVT Replacement Cable, 20ft (6.0m), for use with VeriSafe 2.0 AVTs only
VS2-CABLE-30	VeriSafe 2.0 AVT Replacement Cable, 30ft (9.1m), for use with VeriSafe 2.0 AVTs only
VS2-NET	VeriSafe 2.0 Network Module, Compatible with VeriSafe 2.0 AVT
VS2-AVT-RL	VeriSafe 2.0 Replacement Faceplate and Instruction labels in 8 languages. English, German, Mandarin, French Canadian, Italian, Korean, Spanish and French.
Replacement Parts	
VS2-AVT-1P-ISO	VeriSafe 2.0 AVT single-phase/DC Isolation Module replacement
VS2-AVT-3P-ISO	VeriSafe 2.0 AVT three-phase Isolation Module replacement
VS-AVT-BATTERY	Replacement Battery, compatible with VeriSafe 1.0 and 2.0, 3.6V lithium ion. AA form factor
VS2-AVT-RL	VeriSafe 2.0 Replacement Faceplate and Instruction labels in 8 languages. English, German, Mandarin, French Canadian, Italian, Korean, Spanish and French
VS2-AVT-NETCON	Replacement RS485 Connector for Network Module, one connector
VS2-AVT-GASKET	Replacement Gaskets for VeriSafe AVT Battery Free Indicator Module
VS-AVT-ROR	Replacement Gaskets for Battery Indicator Module, compatible with VeriSafe 1.0 and 2.0

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