

# VeriSafe™ Absence of Voltage Tester

## The Safe Way to Verify the Absence of Voltage.

When servicing electrical equipment, workers must comply with safety regulations that require a voltage verification test to validate the absence of voltage. This process includes a number of stages that can be complex and time-consuming when using hand-held portable test instruments.

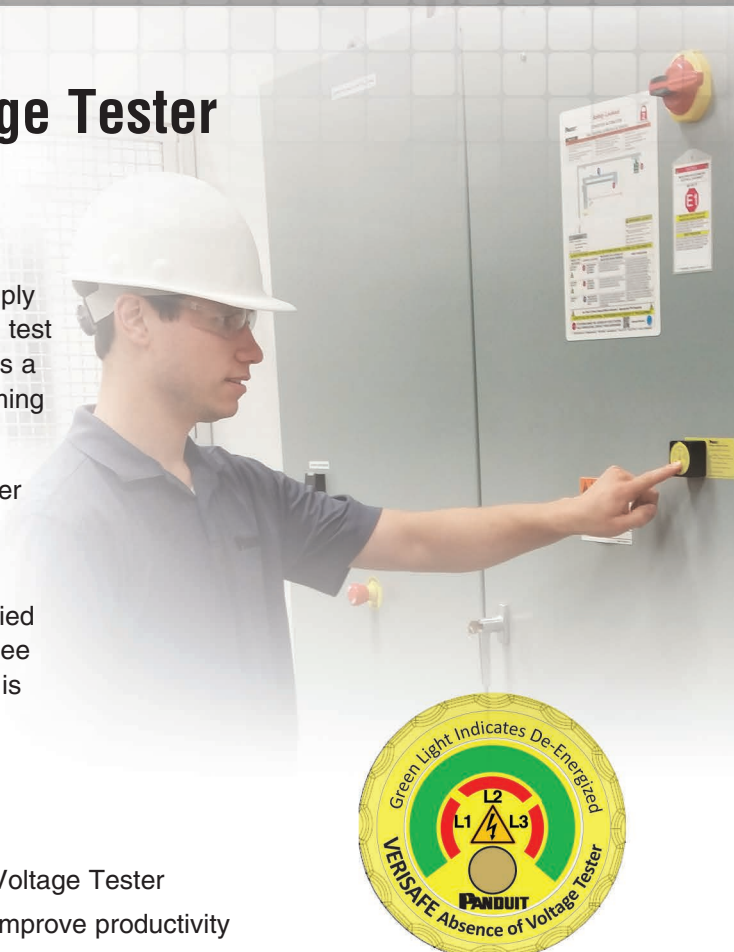
The patent-pending VeriSafe™ Absence of Voltage Tester from Panduit simplifies this process by automating the voltage verification process.

Once installed, a simple push of a button enables qualified electrical workers to verify the absence of voltage and see an active visual indication when the absence of voltage is confirmed. This provides a new and innovative way to efficiently, reliably, and safely verify the absence of voltage before accessing potentially dangerous electrical equipment.

By automating this process, the VeriSafe™ Absence of Voltage Tester

- Reduces testing procedure time and complexity to improve productivity
- Reduces the risk of exposure of electrical hazards for improved worker safety
- Supports compliance when used as part of the lockout/tagout process described in NFPA 70E

The VeriSafe™ Absence of Voltage Tester minimizes risk by verifying the absence of voltage before equipment is accessed, making it easier for qualified electrical workers to determine an electrically safe environment in a fraction of the time required by hand-held portable test instruments.



### Key Features

### Benefits

|                                                 |                                                                                                                                                                |
|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Improved Safety &amp; Risk Reduction</b>     | Determine voltage status BEFORE equipment is accessed<br>Prevents direct exposure to electrical hazards                                                        |
| <b>Increased Productivity</b>                   | Easy to use, initiate test with the push of a button<br>No additional tools required<br>Provides visual alert to abnormal power conditions                     |
| <b>Simplified Process for Easier Compliance</b> | Automated test sequence based on the steps in NFPA 70E for verification of an electrically safe work condition<br>Automated test helps reduces operator errors |
| <b>Reliable Results</b>                         | Fail-safe design with active indications<br>Safety functions meet SIL 3 per IEC 61508-1                                                                        |
| <b>Flexible Applications</b>                    | Designed for testing three-phase circuits up to 600V<br>Install on line or load side of electrical disconnect<br>Detects presence of AC and DC voltage         |

\*The Panduit® VeriSafe™ Absence of Voltage Tester is not yet available for sale.

# VeriSafe™ Absence of Voltage Tester

## Electrical Safety

Prior to performing de-energized work on electrical equipment, NFPA 70E requires that workers verify equipment is in an electrically safe state. Until proven otherwise, equipment must be treated as energized and necessary precautions must be observed.

One of the steps in the process of verifying that equipment is in an electrically safe state involves a test for the absence of voltage.

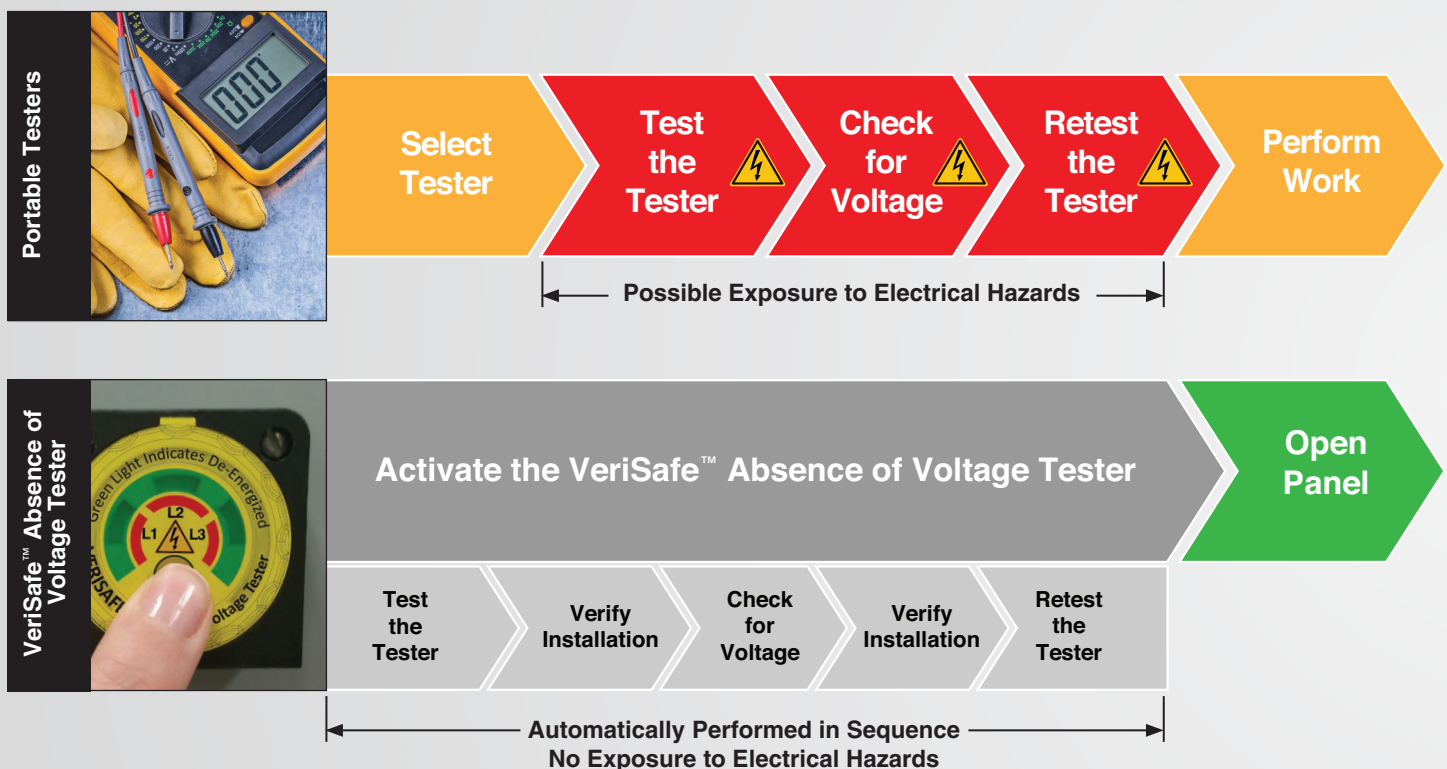
## Verifying the Absence of Voltage

Before and after testing, the functionality of the tester must be verified on a known source. When using a portable tester, this is a time-consuming process and may involve exposure to electrical hazards.

Using the VeriSafe™ Absence of Voltage Tester reduces risk and ensures the entire process is performed in the proper sequence – every time, every test.



## Comparison of VeriSafe™ Absence of Voltage Tester and Portable Device Testing Methods



## More than a Voltage Indicator

Voltage indicators warn of hazardous voltage, but cannot be used to confirm if equipment is de-energized. Absence of voltage testers are a new permanently-mounted test devices designed to verify that a circuit is de-energized prior to opening an electrical enclosure containing energized electrical conductors and circuit devices.

The VeriSafe™ Absence of Voltage Tester has visual indicators that convey the status of voltage inside electrical equipment before it is accessed, reducing exposure to electrical hazards and protecting workers.

**RED** indicators illuminate when hazardous voltage is present in the panel.

When voltage is not detected, indicators are not illuminated.

Pressing the “TEST” button initiates a the voltage test, indicated by the flashing yellow symbol

**GREEN** indicator illuminates only when the absence of voltage has been verified



Upstream Power: ON

Upstream Power: OFF

Upstream Power: OFF

Upstream Power: OFF

## Absence of Voltage Testers are Fail-Safe and Reliable

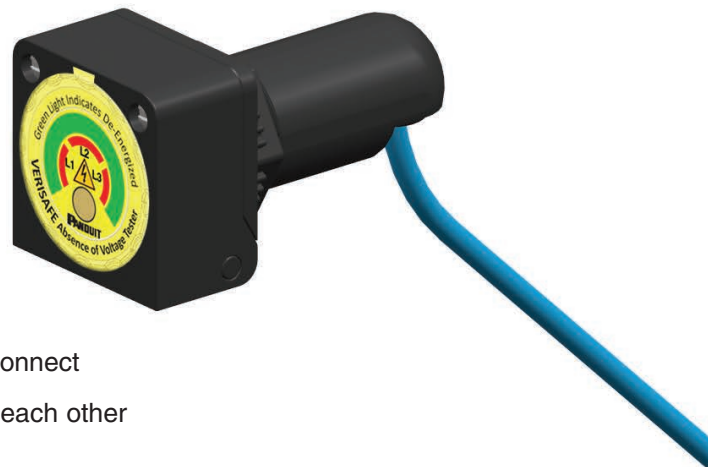
- Test each phase conductor or circuit part phase-to-phase and phase-to-ground for absence of voltage
- Built-in test circuit verifies operation on a known voltage source before and after absence of voltage test
- Verifies installation of hardwired test leads before and after absence of voltage test
- Functional safety principles ensure hardware and firmware are designed to prevent and control dangerous failures of safety functions
- Installed device ensures tester is rated for the application and is less susceptible to damage than portable testers
- Automated test sequence helps reduces operator errors

# VeriSafe™ Absence of Voltage Tester

## System Components

- 1 Indicator Module**
  - 30mm knockout, mount on exterior of enclosure
  - Operate and maintain without exposure to electrical hazards
- 2 AVT System Cable**
  - Connects Isolation Module to Indicator Module
  - 600V cable available in multiple lengths for easy installation
  - Replaceable with connectors on each end
- 3 Isolation Module**
  - Prevents hazardous voltage from reaching door
  - Universal mounting (DIN rail or surface tabs)
  - Output contacts provide ability to create alarms or communicate with other systems

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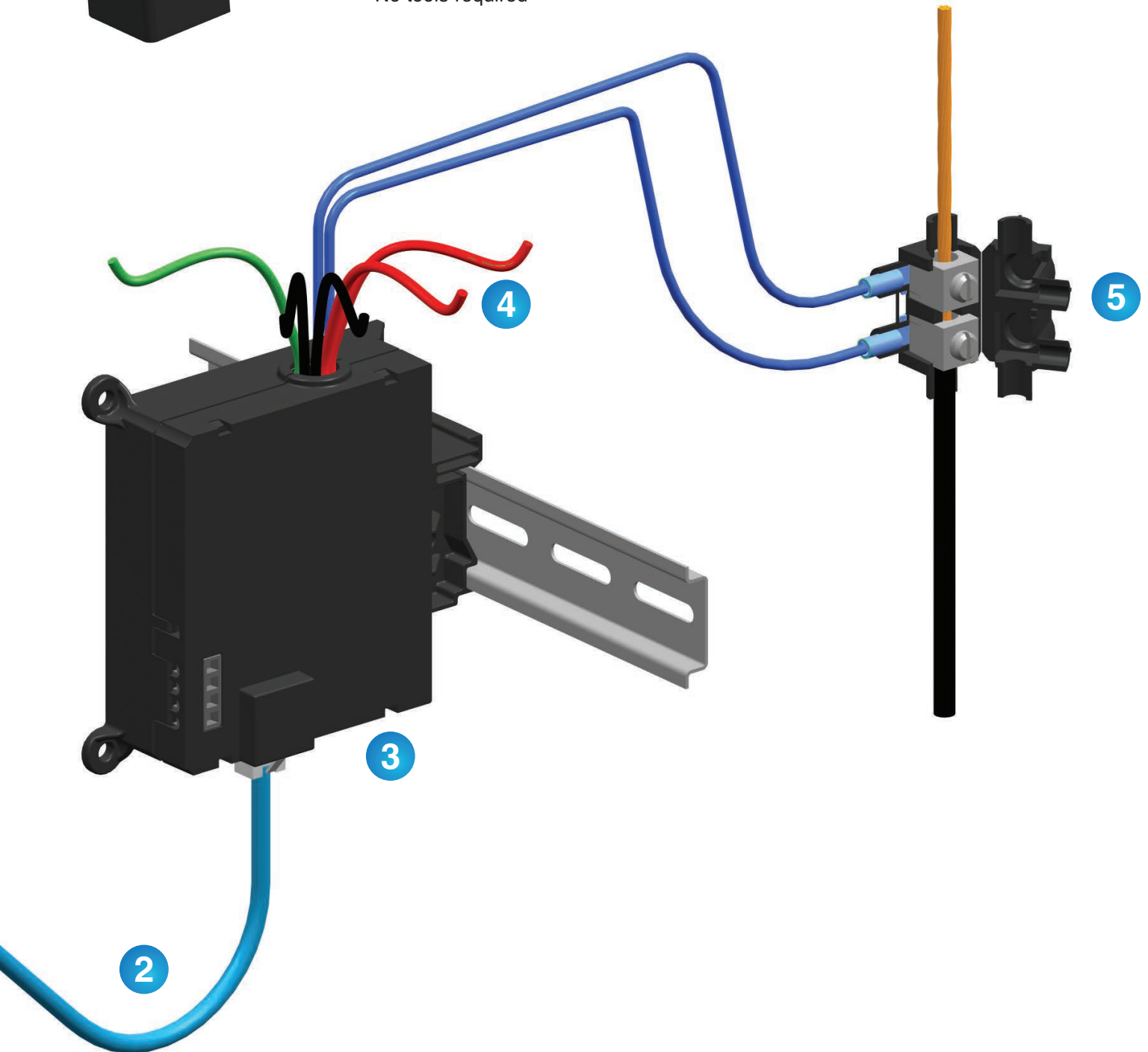
- 4 Sensor Leads**
  - Can be installed on line or load side of electrical disconnect
  - 2 leads per phase; must be electrically isolated from each other
- 5 Termination Kit**
  - Optional termination kit available for 2-14 AWG conductors
  - Includes ring terminals, lugs, and insulated housing for each phase

# VeriSafe™ Absence of Voltage Tester

## Simple Battery Replacement

To replace the battery, twist off the cap to remove and the battery shuttle will slide out, providing access to the battery. Once it is replaced, slide shuttle in and reapply cap.

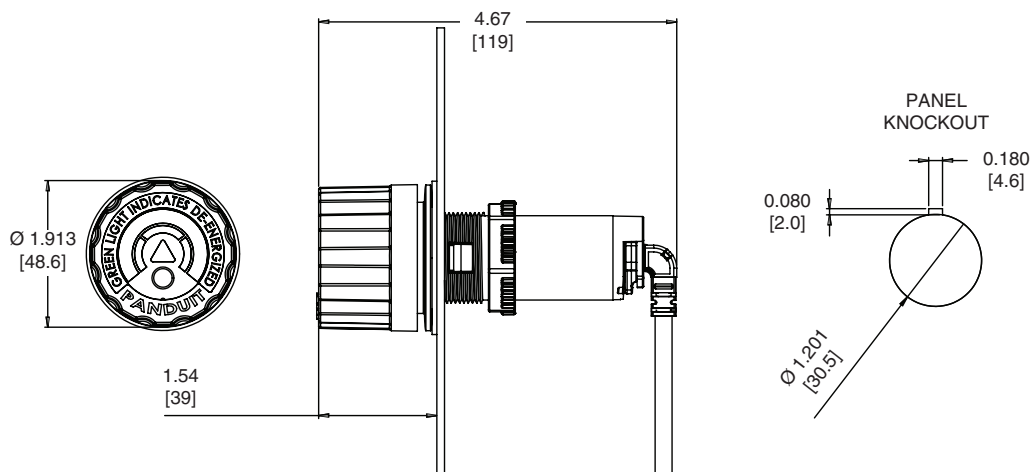
- Long-life industrial battery
- Replaceable from outside the enclosure
- No tools required



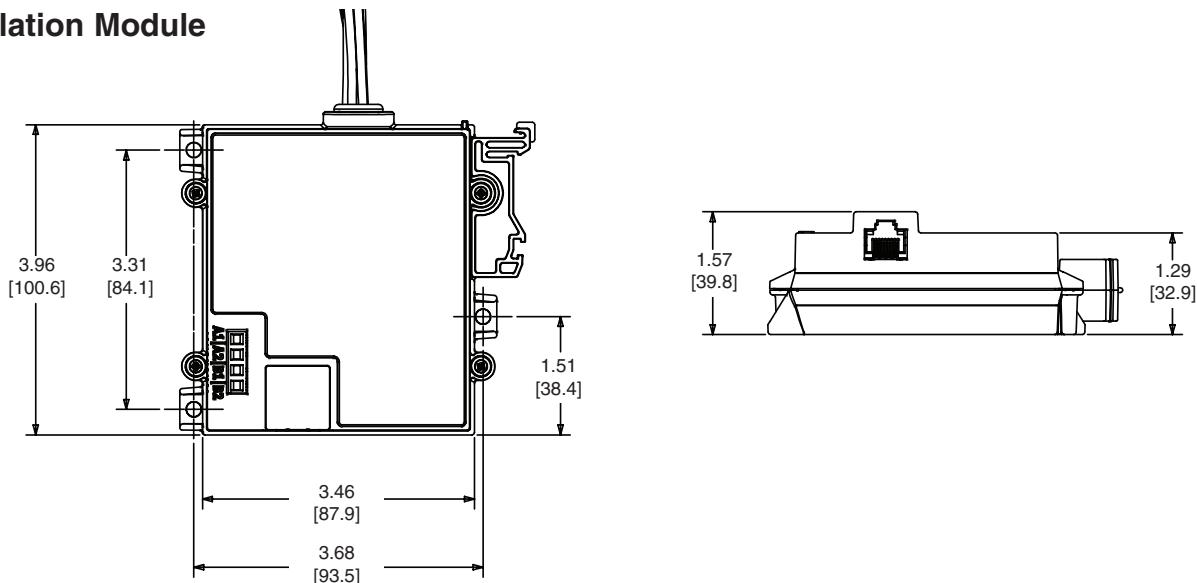
# VeriSafe™ Absence of Voltage Tester

## Dimensions\*

### Indicator Module



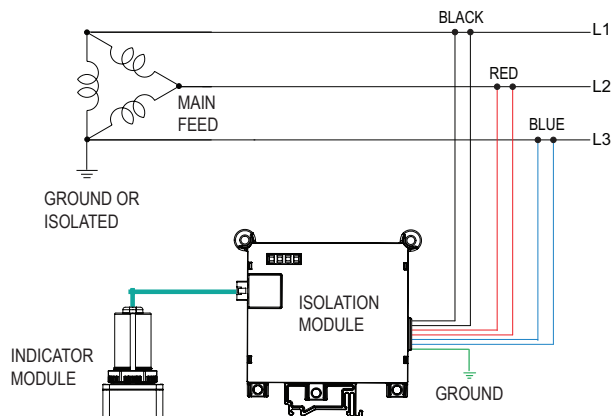
### Isolation Module



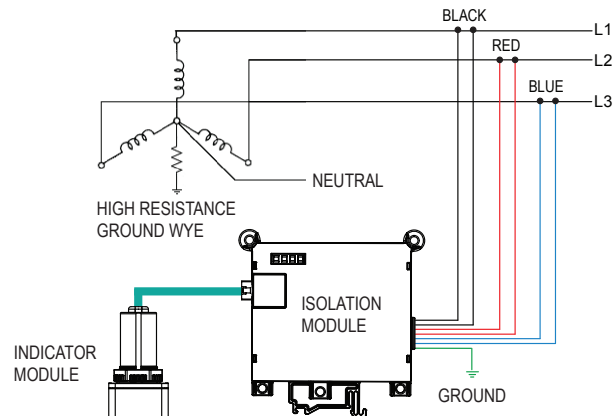
## Schematic

\*Dimensions in inches [millimeters].

### Three-Phase Delta



### Three-Phase Wye



Sensor leads must not be shorted together and must be connected to the power line at different points for a valid installation.

## Voltage Verification System

### Ordering Information

| Part Number                                 | Part Description                                                    |
|---------------------------------------------|---------------------------------------------------------------------|
| <b>VeriSafe™ Absence of Voltage Testers</b> |                                                                     |
| VS-AVT-C02-L03                              | VeriSafe™ Absence of Voltage Tester with 2 ft. cable, 3 ft. leads.  |
| VS-AVT-C02-L10                              | VeriSafe™ Absence of Voltage Tester with 2 ft. cable, 10 ft. leads. |
| VS-AVT-C08-L03                              | VeriSafe™ Absence of Voltage Tester with 8 ft. cable, 3 ft. leads.  |
| VS-AVT-C08-L10                              | VeriSafe™ Absence of Voltage Tester with 8 ft. cable, 10 ft. leads. |
| <b>Accessories</b>                          |                                                                     |
| VS-AVT-CONNECT14                            | VeriSafe™ Lead Connection Kit, 14 AWG to 1MCM.                      |
| VS-AVT-BATT-AA                              | VeriSafe™ Replacement Battery.                                      |
| VS-AVT-CABLE-02                             | VeriSafe™ Replacement Cable, 2 ft.                                  |
| VS-AVT-CABLE-08                             | VeriSafe™ Replacement Cable, 8 ft.                                  |

### Technical Specifications

#### Applications

|                              |                                |
|------------------------------|--------------------------------|
| Electrical System            | 3-Phase, up to 600Vac, 50/60Hz |
| Voltage Detection Range      | Upto 600V AC, 600V DC          |
| Absence of Voltage Threshold | 3 V                            |
| Overvoltage Category         | III (600 V)                    |
| Degree of Protection         | NEMA 4X/IP66                   |

#### Environment

|                       |                                   |
|-----------------------|-----------------------------------|
| Operating Temperature | 0°C to + 60°C (32°F to 140°F)     |
| Storage Temperature   | -45°C to + 85°C (-49°F to +185°F) |
| Humidity              | 5 to 95% non-condensing           |
| Pollution Degree      | 3                                 |

#### Battery

|                |                                                                       |
|----------------|-----------------------------------------------------------------------|
| Voltage        | 3.6 V AA                                                              |
| Estimated Life | User replaceable. Estimate 5+ years with normal operating conditions. |

#### Standards

|                              |                                                                                                                                                                     |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UL 1436                      | Standard for outlet circuit testers and similar indicating devices.                                                                                                 |
| EN/CSA/UL 61010-1            | Safety requirements for electrical equipment for measurement, control, and laboratory use.                                                                          |
| EN/CSA/UL 61010-2-030        | Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 2-030: Particular requirements for testing and measuring circuits. |
| UL 508 & CSA-C22.2 No. 14    | Industrial control equipment.                                                                                                                                       |
| IEC 61508                    | Functional safety, SIL 3.                                                                                                                                           |
| FCC CFR 47 Part 15           | Radio frequency devices.                                                                                                                                            |
| EN 61326 & EN 55011/CISPR 11 | EMC standards for industrial measurement products.                                                                                                                  |
| CAN ICES-1                   | Industrial, Scientific and Medical (ISM) radio frequency generators.                                                                                                |

# VeriSafe™ Absence of Voltage Tester

## Related Products and Services

### Safety Products



#### Devices

Panduit has a line of versatile and innovative Lockout/Tagout devices, tags, and safety padlocks to isolate and lockout energy sources.



#### Identification

Panduit has a broad array of identification products, including preprinted, custom preprinted and print-on-demand solutions. Solutions for identification of Lockout/Tagout areas, identification of Arc Flash hazards, and required personal protective equipment (PPE).

### Safety Services



#### Lockout/Tagout Safety Service

Panduit offers a turn-key service to develop machine-specific procedures for any industrial machine or facilities equipment. This service consists of three phases: on-site assessment, design and implementation of LOTO procedures.



#### Arc Flash Safety Service

Panduit offers a turn-key service to assess, calculate and implement specific electrical hazard labeling that is compliant with NFPA 70E and CSA-Z462.

### Safety Training



#### Professional Training

Panduit removes the guesswork and provides instructor-led, on-site safety training that is customized, concise, and understandable.

This includes:

- Lockout/Tagout Training
- Electrical Safe Work Practice One-Day Training



#### Training Resources

Panduit provides many training resources, including:

- A Life is on the Line DVD
- Lockout/Tagout Training Kit
- Electrical Safety Whitepaper

#### WORLDWIDE SUBSIDIARIES AND SALES OFFICES

PANDUIT CANADA  
Markham, Ontario  
cs-cdn@panduit.com  
Phone: 800.777.3300

PANDUIT EUROPE LTD.  
London, UK  
cs-emea@panduit.com  
Phone: 44.20.8601.7200

PANDUIT SINGAPORE PTE. LTD.  
Republic of Singapore  
cs-ap@panduit.com  
Phone: 65.6305.7575

PANDUIT JAPAN  
Tokyo, Japan  
cs-japan@panduit.com  
Phone: 81.3.6863.6000

PANDUIT LATIN AMERICA  
Guadalajara, Mexico  
cs-la@panduit.com  
Phone: 52.33.3777.6000

PANDUIT AUSTRALIA PTY. LTD.  
Victoria, Australia  
cs-aus@panduit.com  
Phone: 61.3.9794.9020

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For more information

Visit us at [www.panduit.com](http://www.panduit.com)

Contact Customer Service by email: [cs@panduit.com](mailto:cs@panduit.com)  
or by phone: 800-777-3300

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