

# 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 indication when the absence of voltage is confirmed. This provides a new and innovative way to safely, reliably, and efficiently verify the absence of voltage before accessing potentially dangerous electrical equipment.

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

- Reduces the risk of exposure of electrical hazards for improved worker safety
- Reduces testing procedure time and complexity to improve productivity
- 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 compared to hand-held portable test instruments.

### Key Features

### Benefits

<b>Improved Safety &amp; Risk Reduction</b>	Determine voltage status BEFORE equipment is accessed Prevents direct exposure to electrical hazards
<b>Increased Productivity</b>	Easy to use, initiate test with the push of a button No additional tools required 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 Automated test helps reduce operator errors
<b>Reliable Results</b>	Fail-safe design with active indications Safety functions meet SIL 3 per IEC 61508-1
<b>Flexible Applications</b>	Designed for testing three-phase circuits up to 600V Install on line or load side of electrical disconnect Detects absence of AC and DC voltage

# 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.

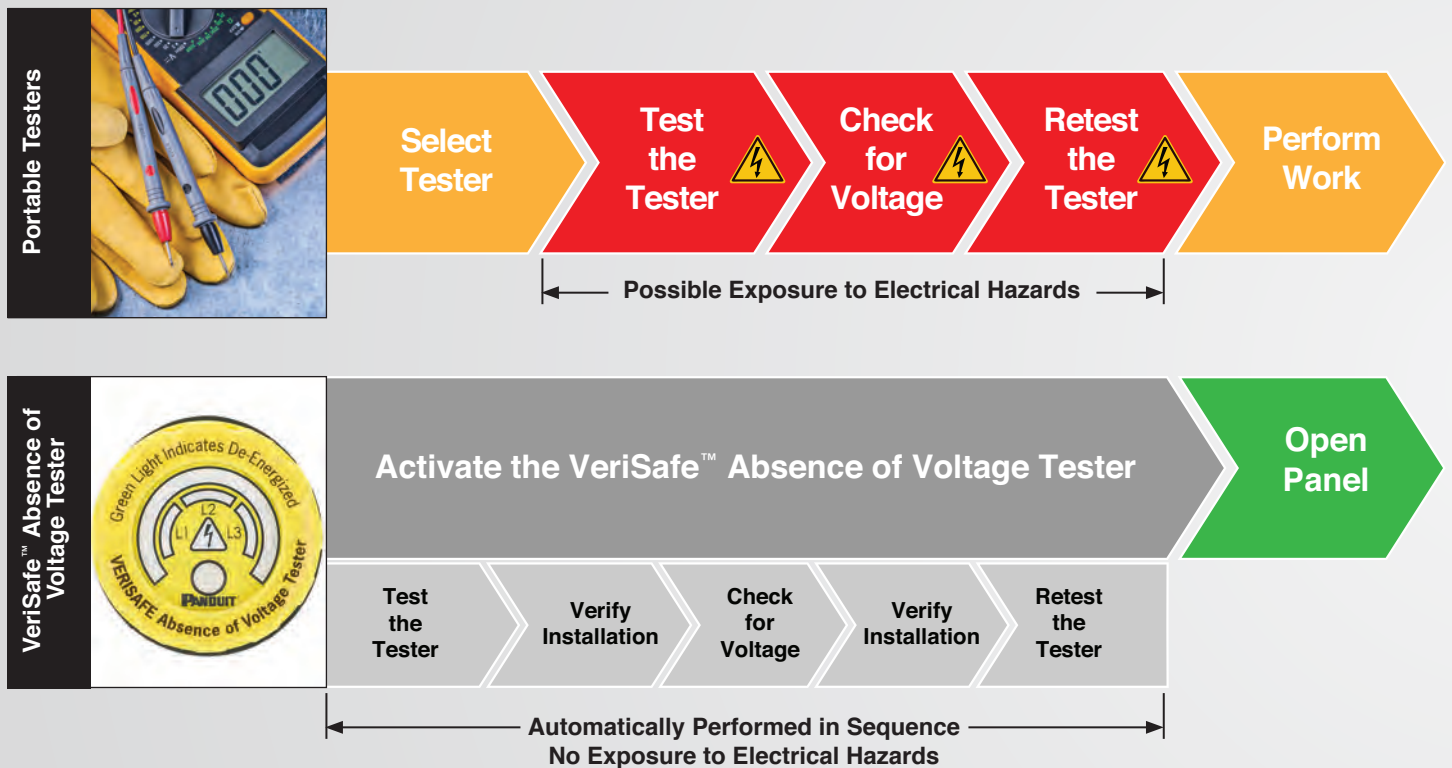
## Verifying the Absence of Voltage

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

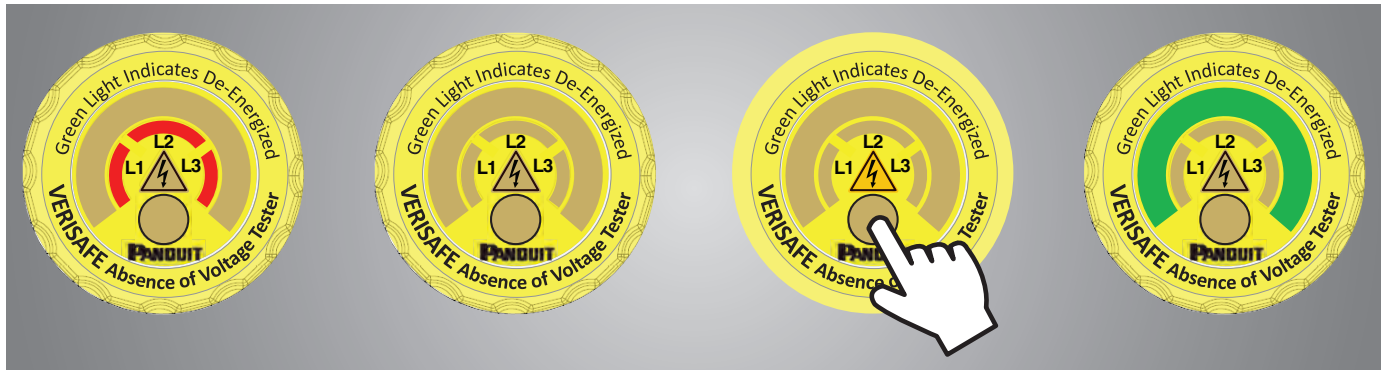
Voltage indicators warn of hazardous voltage, but cannot be used to confirm if equipment is de-energized. Absence of voltage testers are permanently-mounted test devices designed to verify that a circuit is de-energized prior to opening an electrical enclosure containing electrical conductors and circuit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

RED indicators illuminate when hazardous AC voltage is present.

When voltage is not detected, indicators are not illuminated.

Pressing the “TEST” button initiates the voltage test, indicated by the flashing yellow voltage 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 reduce 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
  - Instruction label with operating instructions
  
- 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
  
- 4 Sensor Leads**
  - Can be installed on line or load side of electrical disconnect
  - 2 leads per phase; must be physically separated from each other



### Simple Battery Replacement

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








# VeriSafe™ Absence of Voltage Tester



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## **PANDUIT** VERISAFE Absence of Voltage Tester

-  Push Button to Begin Test
-  Flashing - Test in Progress
-  Solid - Voltage may be Present
-  Equipment De-Energized, < 3V
-  Hazardous Voltage Present

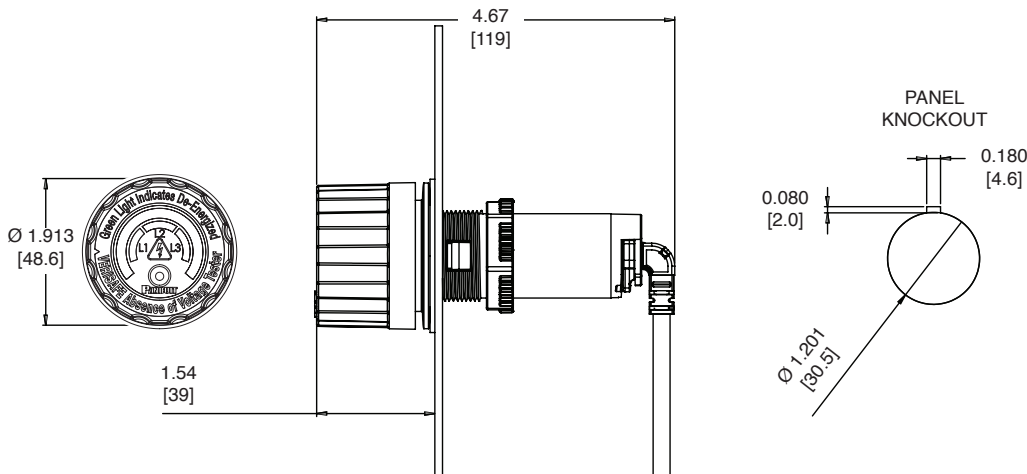
Tester location: Line Load Other\_\_\_\_\_



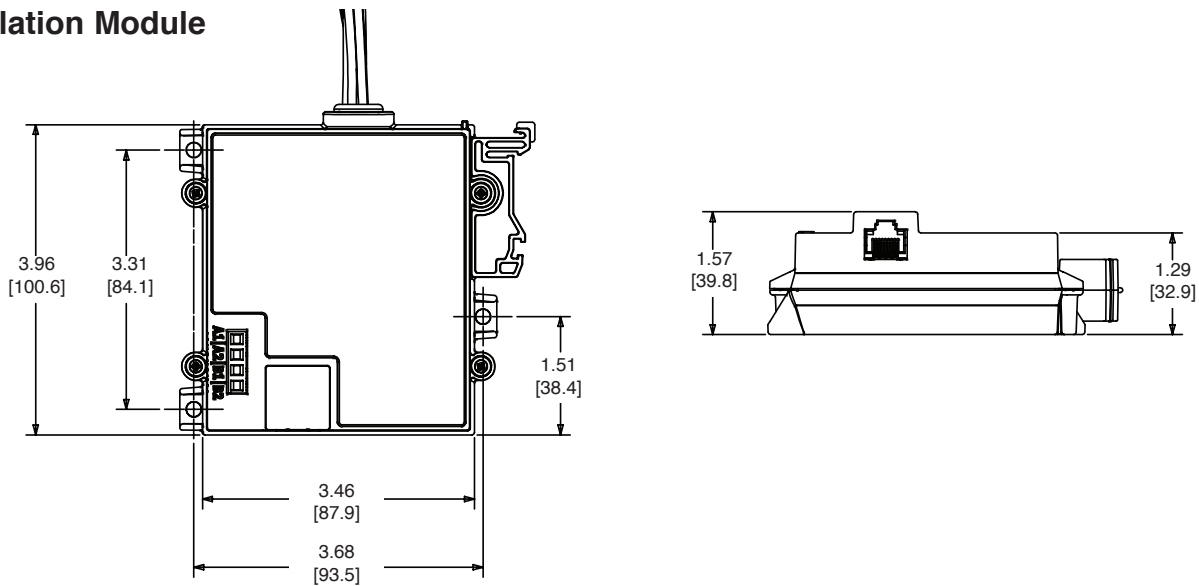
Instruction Label

# VeriSafe™ Absence of Voltage Tester

## Dimensions\* Indicator Module

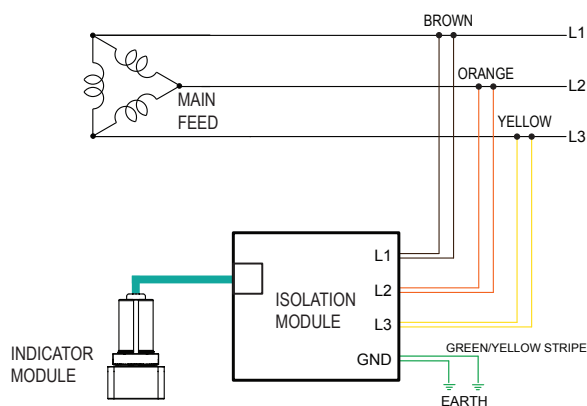


## Isolation Module

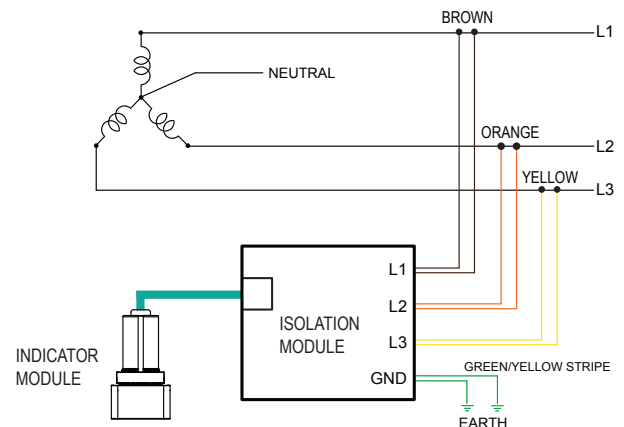


## Schematic

### Three-Phase Delta



### Three-Phase Wye



**Warning:** The AVT must be installed correctly and grounded as described in the installation instructions to provide proper indication of absence of voltage. Sensor leads, including ground, must not be mechanically connected to each other in order for the device to verify connection to the circuit.

## Voltage Verification System

### Ordering Information

Part Number	Part Description
<b>VeriSafe™ Absence of Voltage Testers</b>	
VS-AVT-C02-L10	VeriSafe™ Absence of Voltage Tester with 2 ft. system cable, 10 ft. sensor leads.
VS-AVT-C08-L10	VeriSafe™ Absence of Voltage Tester with 8 ft. system cable, 10 ft. sensor leads.
<b>Accessories</b>	
VS-AVT-CABLE-02	VeriSafe™ Replacement Cable, 2 ft.
VS-AVT-CABLE-08	VeriSafe™ Replacement Cable, 8 ft.
<b>Sensor Lead Connection Kits</b>	
VS-CK10-8	VeriSafe™ Connection Kit for Tapping 10 to 8 AWG conductors.
VS-CK8-6	VeriSafe™ Connection Kit for Tapping 8 to 6 AWG conductors.
VS-CK6-2	VeriSafe™ Connection Kit for Tapping 6 to 2 AWG conductors.
VS-CK1-00	VeriSafe™ Connection Kit for Tapping 1 to 2/0 AWG conductors.
<b>Equipment Retrofit Kits</b>	
VS-AVT-RK1	Complete kit to retrofit equipment with VeriSafe™ Absence of Voltage Tester. Includes AVT device with 10 ft. sensor leads, 2 ft. and 8 ft. system cable, connection kit 10 – 8 AWG power connectors, (3) cable ties, (3) cable ties mounts, (3) wire markers.
VS-AVT-RK2	Complete kit to retrofit equipment with VeriSafe™ Absence of Voltage Tester. Includes AVT device with 10 ft. sensor leads, 2 ft. and 8 ft. system cable, connection kit 8 – 6 AWG power connectors, (3) cable ties, (3) cable ties mounts, (3) wire markers.
VS-AVT-RK3	Complete kit to retrofit equipment with VeriSafe™ Absence of Voltage Tester. Includes AVT device with 10ft. sensor leads, 2 ft. and 8 ft. system cable, connection kit 6 – 2 AWG power connectors, (3) cable ties, (3) cable ties mounts, (3) wire markers.
VS-AVT-RK4	Complete kit to retrofit equipment with VeriSafe™ Absence of Voltage Tester. Includes AVT device with 10 ft. sensor leads, 2 ft. and 8 ft. system cable, connection kit 1 – 2/0 AWG power connectors, (3) cable ties, (3) cable ties mounts, (3) wire markers.

## Technical Specifications

### Applications

Electrical System	For use in 1, 2 or 3-phase AC systems
Voltage Detection Range	Up to 600V AC (50/60Hz), 600V DC
Absence of Voltage Threshold	3 V
Overvoltage Category	III (600 V)
Degree of Protection	NEMA 1, 12, 4, 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	Industrial 3.6V Lithium 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.
CERTIFICATIONS**	UL, cUL, CE, RoHS

\*Degree of protection specified is related to the Indicator Module only.

\*\* Pending.

## 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