

# VeriSafe 2.0 AVT Network Module



**PANDUIT**<sup>®</sup>

# VeriSafe Portfolio

VeriSafe leverages innovation in electrical safety to engineer seamless protection that allows leading businesses and essential facilities to operate faster, smarter, and most importantly safer.

Safeguard your employees, your equipment and your bottom line with VeriSafe's groundbreaking electrical safety technology.



**AVT**

Simplifying Absence of Voltage Testing



**Network Module**

Modernizing Electrical Safety



**Insulation Piercing Connectors**

Quick, Secure Connections



**Access Control**  
Protecting People & Equipment



**Data Access Ports**  
Reducing Exposure to Electrical Hazards

# VeriSafe 2.0 AVT



All existing VeriSafe AVT features, plus...

- + **Network connectivity** ←
- + Battery-free option
- + Expanded ratings
- + Initiate the test from multiple locations



VS2-AVT-\_-\_-\_-\_-



Feature	 VeriSafe 1.0 AVT	 VeriSafe 2.0 AVT
MAXIMUM VOLTAGE (NOMINAL)	600 V	1000 V
OVERVOLTAGE CATEGORY	CAT III CAT IV	600 V 300 V
VOLTAGE PRESENCE INDICATORS (RED LEDS)	AC only	AC & DC
POWER FOR AVT TEST (YELLOW & GREEN LEDS)	3.6 V AA Battery	3.6 V AA Battery 12-24V DC <b>PoE*</b>
ABSENCE OF VOLTAGE THRESHOLD	1.5 – 2.9 V	2.7 - 2.8 V
CONNECTIVITY TEST	Open Lead Detection	Open Lead Detection + Matched Pair Technology
INTEGRATION	SOLID STATE CONTACTS Absence of Voltage (SIL 3)	SOLID STATE CONTACTS Absence of Voltage (SIL 3) <b>Voltage Presence*</b> <b>Network*</b>
VOLTAGE REPORTING	-	<b>Measured Values*</b>
DEDICATED DC/SINGLE-PHASE SKUS	-	✓
NUMBER OF INDICATORS	1	2
APPLICATIONS WITH HIGH-FREQUENCY NOISE	-	
OPERATING TEMPERATURE	0 – 60 C	-25 – 60 C
HAZARDOUS LOCATIONS	Class 1 Division II (Separate SKU)	Class 1 Division II Class 2 Division II ATEX Zone 2 and 22 / IECEx



# VeriSafe

## Absence of Voltage Testers

### What's Different?

The next-generation VeriSafe AVT has an enhanced set of features and will be compatible with additional applications.

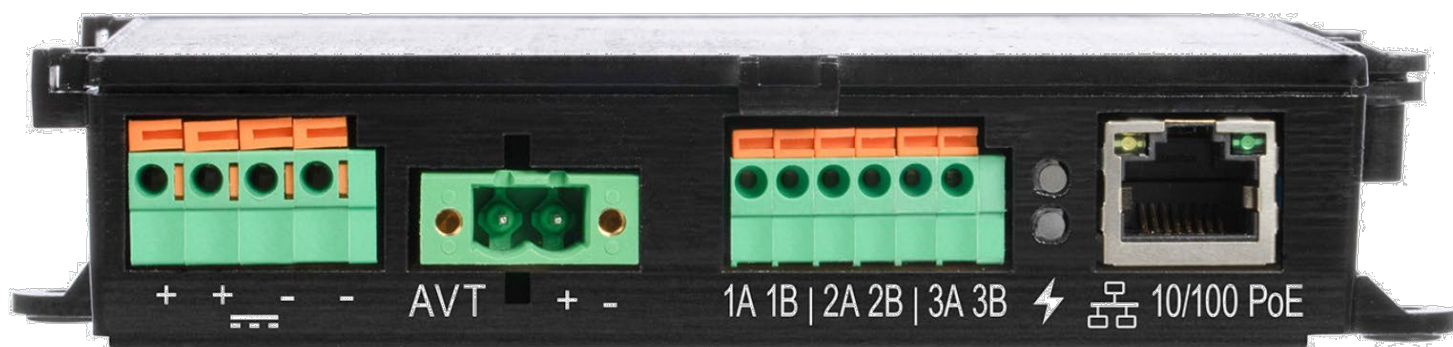
The 2.0 AVT uses new technology for the connectivity test and voltage threshold measurement, making it more robust for many applications.

\* Requires Network Module, **VS2-NET**

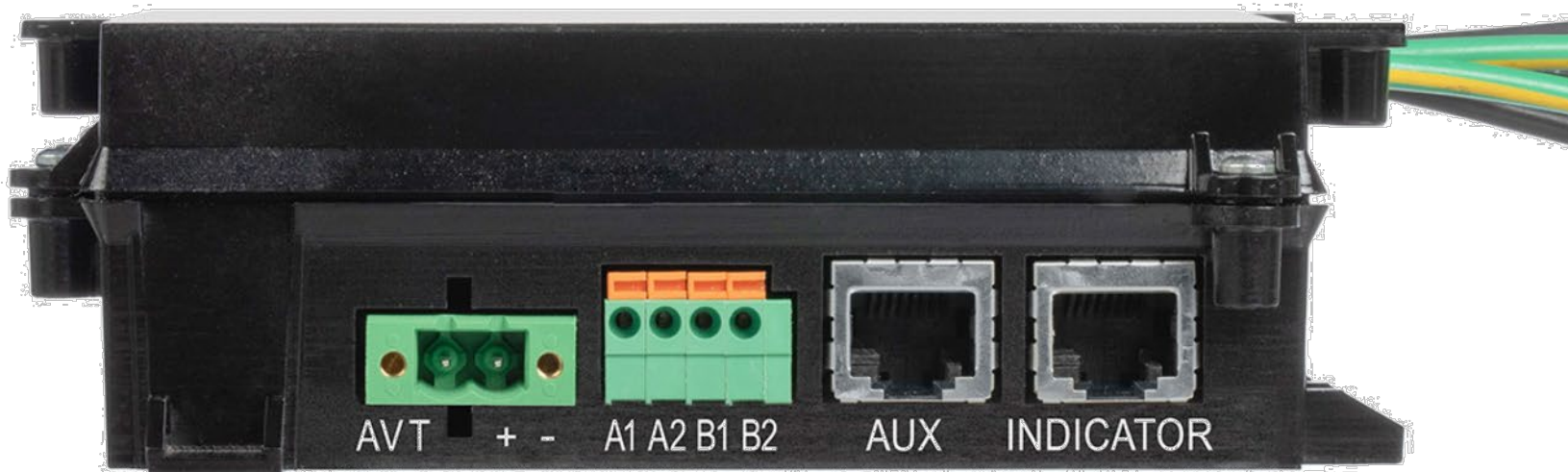
# Why would I use the Network Module?



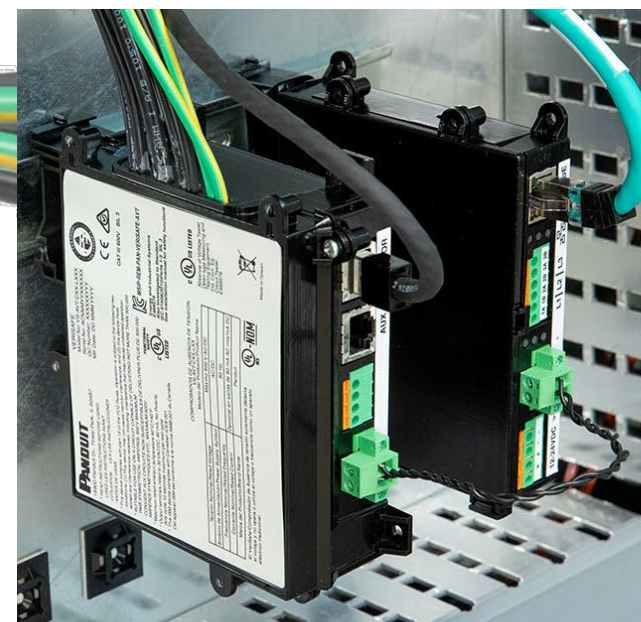
# VeriSafe 2.0 AVT with Network Module



**Network Module**



**2.0 AVT Isolation Module**



# VeriSafe Network Module



VS2-NET



Voltage Presence

Connection to AVT provides power & communication



DC Input



Network Module

2.0 AVT

## Designed for Flexibility

- **Power:** 12-24V DC or POE; directly powers AVT
- **Integration:** I/O contacts or network interface
- **Mounting:** DIN Rail or surface mount; attach to AVT or separate installation

# Monitoring & Troubleshooting



- Measure voltage without opening the enclosure
  - Over/under-voltage, single-phase conditions, loss of incoming power, phase imbalance
- Monitor AVT status
  - Battery, temperature, sensor leads
- Log AVT test results

## Onboard Web Application

**1** Data Logs

Settings

Documentation

Support

Logout

**2** name  
VeriSafe 2.0  
Date & Time: 8/31/21, 2:28 PM

**3** Updated 8/31/21, 2:25 PM  
Battery Voltage 3.2 V  
AVT Temperature 20° C (68°F)

**4** Updated 8/31/21, 2:26 PM  
Connection Status L1 YES  
Connection Status L2 YES  
Connection Status L3 YES  
Connection Status GND YES

**5** Test Result 1 Pass  
Test Result 2 Date 8/31/21, 2:28 PM  
Test Result 2 Connectivity Not Confirmed  
Test Result 2 Date 2/6/00, 10:07 AM

**6** Voltage Presence  
L1 L2 L3

**7** Voltage Measurements

Line To Ground	RMS	Peak
L1	480 Vrms	687 V
L2	479 Vrms	677 V
L3	480 Vrms	679 V

Line To Line	RMS	Peak
L1-L2	277 Vrms	392 V
L1-L3	277 Vrms	392 V
L1-L3	277 Vrms	392 V

**1** Access to historical data and test results

**2** Customizable name for easy identification and device management

**3** Monitor and trend temperature (AVT Isolation Module)

**4** Verify AVT sensor lead status

**5** AVT test results with diagnostic codes & timestamp

**6** Quickly identify voltage loss in any phase

**7** Voltage Measurement

- Troubleshoot remotely
- Views for three-phase and single-phase (AC or DC)



# Network Module & User Interface

## Three-Phase Systems



**PANDUIT**

**VeriSafe™ AVT**  
Network Module

**AVT Cabinet 1**

**VeriSafe AVT**

Data Logs

Settings !

Documentation

Logout

Module Name: AVT Cabinet 1 ! Updated 0 seconds ago

Date & Time: 11/19/20, 6:07 PM

---

Updated: 11/19/20, 5:43 PM

Battery Voltage: 2.5 V

Temperature: 85°C (185°F)

---

Updated: 11/19/20, 5:43 PM

Connection Status L1: YES

Connection Status L2: YES

Connection Status L3: YES

Connection Status GND: YES

---

Test Result 1: Pass

Test Result 1 Date: 11/19/20, 11:28 AM

Test Result 2: Pass

Test Result 2 Date: 11/19/20, 11:09 AM

Voltage Presence

L1      L2      L3

⚡      ⚡      ⚡

---

Voltage Measurements

Line To Ground	RMS	Peak
L1	480 Vrms	300 V
L2	481 Vrms	301 V
L3	482 Vrms	302 V

---

Line To Line	RMS	Peak
L1-L2	280 Vrms	270 V
L1-L3	281 Vrms	271 V

Module Name: AVT Cabinet 1 ! Updated 0 seconds ago

Date & Time: 11/19/20, 6:09 PM

---

Updated: 11/19/20, 5:43 PM

Battery Voltage: 2.5 V

Temperature: 85°C (185°F)

---

Updated: 11/19/20, 5:43 PM

Connection Status +: YES

Connection Status -: YES

---

Test Result 1: Pass

Test Result 1 Date: 11/19/20, 11:28 AM

Test Result 2: Pass

Test Result 2 Date: 11/19/20, 11:09 AM

Voltage Presence

+      -

⚡      ⚡

---

Voltage Measurements

Line To Ground	RMS	Peak
+	300 V	
-	0 V	

---

Line To Line	RMS	Peak
+ to -	300 V	

Module Name: AVT Cabinet 1 ! Updated 0 seconds ago

Date & Time: 11/19/20, 6:08 PM

---

Updated: 11/19/20, 5:43 PM

Battery Voltage: 2.5 V

Temperature: 85°C (185°F)

---

Updated: 11/19/20, 5:43 PM

Connection Status L1: YES

Connection Status N/L2: YES

---

Test Result 1: Pass

Test Result 1 Date: 11/19/20, 11:28 AM

Test Result 2: Pass

Test Result 2 Date: 11/19/20, 11:09 AM

Voltage Presence

L1      N/L2

⚡      ⚡

---

Voltage Measurements

Line To Ground	RMS	Peak
L1	480 Vrms	300 V
N/L2	481 Vrms	301 V

---

Line To Line	RMS	Peak
L1-N/L2	280 Vrms	270 V

## DC Systems

## Single-Phase Systems

# Using a Voltage Monitoring Relay?

- Voltage monitoring relays are common in conveyor and material handling applications
- They detect abnormal voltage conditions to protect a motor
  - Loss of incoming power
  - Loss of phase
  - Under/overvoltage conditions
- The Network Module performs similar functionality, but with the added AVT safety benefits

Feature	Voltage Monitoring Relay	VeriSafe 2.0 AVT + Network Module	
		Contacts Only	Ethernet
Detect Incoming Power Loss	✓	✓	✓
Detect Phase Loss	✓	✓	✓
Over/Under Voltage Monitoring	✓		✓
Voltage Measurements			✓
Record & Trend Measurements			✓
Detect Phase Reversal	✓		
External Voltage Presence Indication		✓	✓
Test for Absence of Voltage		✓	✓
Network Compatibility			EtherNet/IP Modbus TCP
Self Test & Diagnostics			✓
Connection Status			✓ Terminations are monitored as part of AVT safety function
Cost	\$\$		\$\$
Installation & Panel Space	DIN Rail	DIN Rail or Surface Mount Optional Connector Kit for Terminations	
Meets NFPA 70E & UL 1436 requirements for absence of voltage testing			✓ SIL 3

# Vendor Specific Integration



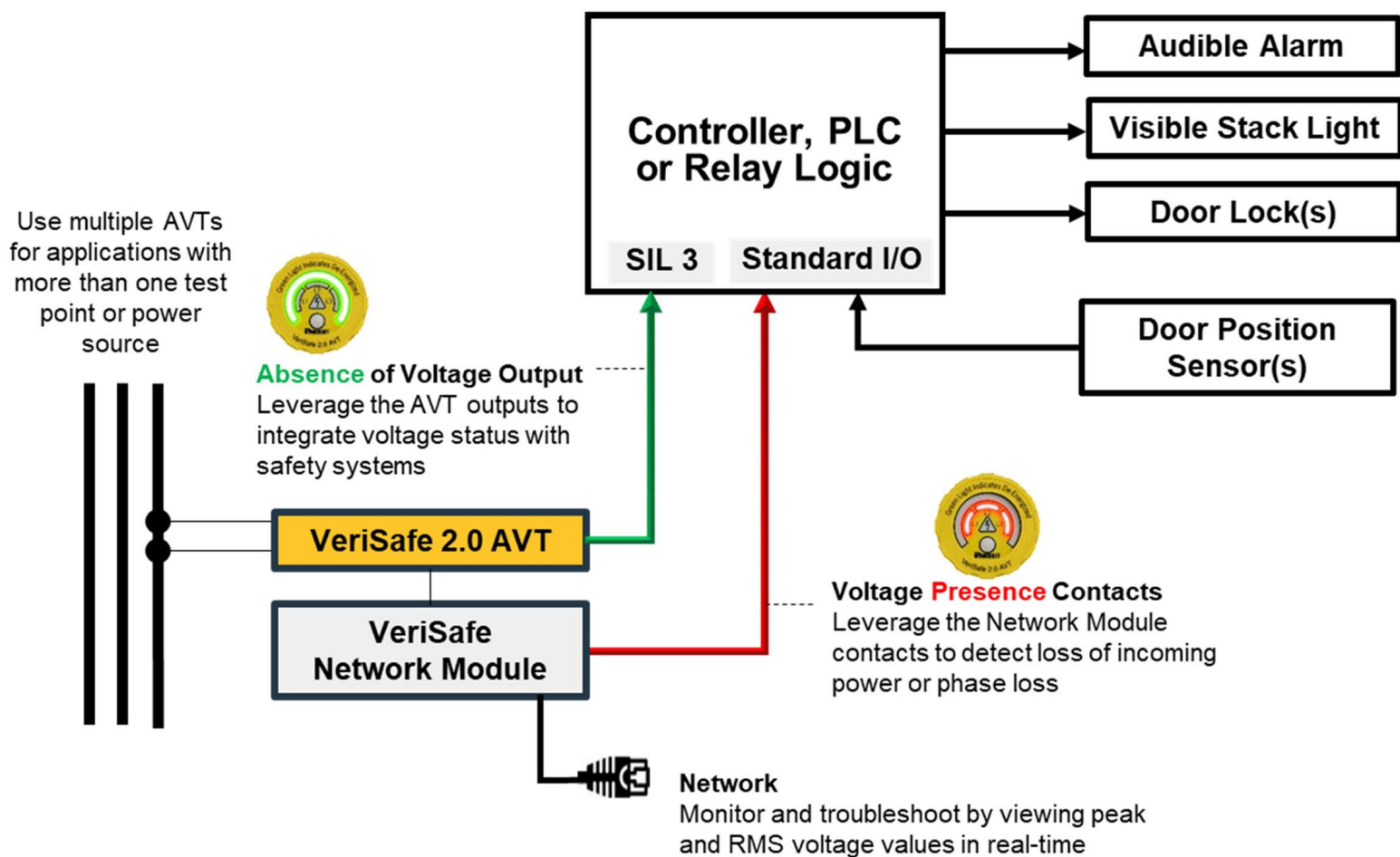
- Add On Profile (AOP)
  - The Ethernet/IP communication protocol is supplemented by a custom AOP
  - Includes onboard EDS file (Electronic Data Sheet)
  - Pre-loaded into Studio 5000 for easy integration with Rockwell Automation products
- Automatic Diagnostics
  - The VeriSafe Network Module AOP supports Rockwell's Automatic Diagnostic feature (reports device health)

# SIEMENS



- ProfiNet is not currently a supported protocol
  - Customers can utilize Modbus TCP or a converter bridge to access data from the AVT and Network Module
  - ProfiNet support is on the roadmap – let us know if customers request!

# e.g., 2.0 AVT + Network Module Functionality





# Thank You!



[www.panduit.com/verisafe](http://www.panduit.com/verisafe)

