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# PANDUIT VS2-NET VeriSafe Network Module Instruction Manual

**Contents**

**PANDUIT VS2-NET VeriSafe Network Module**

## Product Information

The VeriSafe Network Module is a device that provides network connectivity and control for the VeriSafe AVT system. It allows users to monitor and manage the AVT system through a web interface and provides data logging and reporting capabilities.

The VeriSafe Network Module is designed to ensure safe operation of the AVT system and is equipped with various safety features to prevent product failure, electrical shock, and injuries.

### Technical Specifications

- Model No: VS2-NET
- Power Inputs: DC Input
- AVT Connection: 10/100 P0E
- Voltage Presence Outputs: 1A, 1B, 2A, 2B, 3A, 3B
- Environmental Ratings: IP 54 (in accordance with IEC 60079-0)

**Contact Information:**If you need technical support or have any inquiries, you can contact PanduitTM through the following channels:

- North America Tech Support: Email – **techsupport@panduit.com**, Tel – 866.405.6654
- EU Tech Support: Email – **techsupportemea@panduit.com**, Tel – 31.546.580.452, Fax – 31.546.580.441
- Asia Pacific Tech Support: Email – **techsupportap@panduit.com**, Tel – Singapore: 1-800-Panduit (7263848), Australia: 1-800-Panduit (7263848), Korea: 02.21827300

For more information about the VeriSafe Network Module, you can visit the official website at **www.panduit.com/verisafe**.

## Product Usage Instructions

To ensure safe and proper usage of the VeriSafe Network Module, please follow the instructions below:

### Safety Precautions:

- Read and comply with all the safety information and warnings provided in the user manual to prevent product failure, electrical shock, severe injury, or death.
- Install the equipment in an enclosure that provides a degree of protection not less than IP 54 in accordance

with IEC 60079-0.

- Ensure that the enclosure can only be accessed with the use of a tool.
- Use surge protection for the power supply, or install external surge protection at the input to the supply.

**Installation Requirements:** The VeriSafe Network Module requires a DC power input and an AVT connection. Follow the steps below for installation:

1. Ensure that the power supply is surge protected or install external surge protection at the input to the supply.
2. Connect the DC power input to the appropriate power source.
3. Connect the AVT connection to the AVT isolation module or other compatible devices using a 10/100 P0E network connection.
4. Verify that the termination resistor switch below the AVT connection ports on the network module and AVT isolation module is positioned to the right (factory default) when facing the port.
5. Check that the system status and power status indicators are functioning properly.
6. If necessary, refer to document B21176 (VS2-Net User Guide) for instructions on utilizing VS2-NET functions, accessing the web interface, and logging/reporting data from the connected 2.0 AVT system.
7. Regularly check for updates to the network module firmware and user guide on the official website (**www.panduit.com**).

For any additional information or inquiries, refer to the user manual or contact PanduitTM technical support.

The network module is designed to be an optional accessory that enables network capabilities for the VeriSafe 2.0 Absence of Voltage Tester (AVT). The network module provides an integrated web application that is delivered by an on board web server. The web application monitors data from the AVT and provides integration, configuration and firmware update capabilities. The network module supports AVT data over EtherNet/IP and Modbus TCP protocols. The voltage presence discrete outputs may be used as an indication of voltage presence with or without a network connection. The network module provides the ability to log various pieces of data based on built intriggers (see VeriSafe Network Module User Guide, document no. B21176, for more information).

**TO REDUCE THE RISK OF INJURY, USER MUST READ INSTRUCTION MANUAL**

- **NOTE:** In the interest of higher quality and value, Panduit™ products are continually being improved and updated. Consequently, pictures may vary from the enclosed product.
- **NOTE:** Updates to this Instruction Manual may be available. Check **www.panduit.com** for the latest version of this manual.

## Safety Information

This manual contains information and warnings which must be followed to ensure safe operation of the Network Module. Failure to comply with the warnings and information in this manual could result in product failure, electrical shock, severe injury or death.

**Special Conditions of Use**

**Hazardous Locations**

- The equipment shall be installed in an enclosure that provides a degree of protection not less than IP 54 in accordance with IEC 60079-0.
- Ambient Temperature Range: -25°C ≤ Tamb ≤ 60°C
- The enclosure must only be accessible with use of a tool.

**WARNING:**

- Always de-energize power before accessing an electrical enclosure

- Always follow safety and lockout/tagout procedures when working on or near electrical systems and equipment

- Do not use this product outside of the specified performance and environmental limits

- Always comply with local installation codes and standards

- The data from the network module does not carry a functional safety rating. It should be used for monitoring only. If integrating with a safety-rated system, use the SIL 3 outputs on the AVT isolation module.

  The network module contains electronic circuit boards and can be disposed of at an electronics recycling facility.

**Important** This instruction manual is only for the physical installation requirements. Refer to document B21176 (VS2-Net User Guide) for instructions how to utilize VS2-NET functions, the web interface and logging / reporting data from connected 2.0 AVT system.

Updates to the network module firmware and user guide may be available. Visit www.panduit.com to access the latest versions.
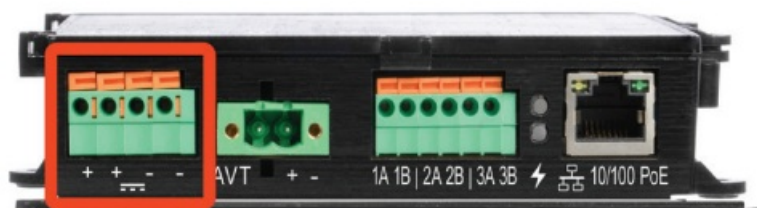
## System Overview
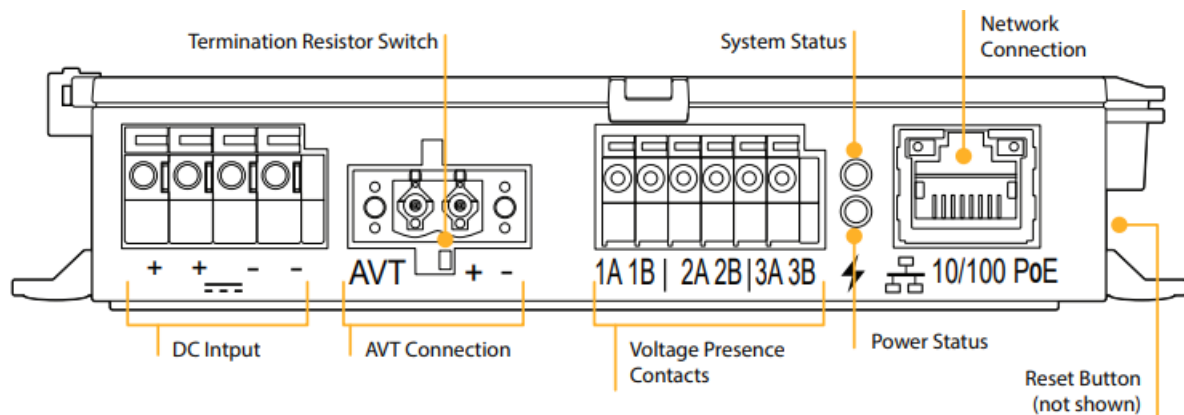


- The termination resistor switch below the AVT connection ports on the network module and AVT isolation module shall be positioned to the right (factory default) when facing the port

## POWER INPUTS

**DC Input**



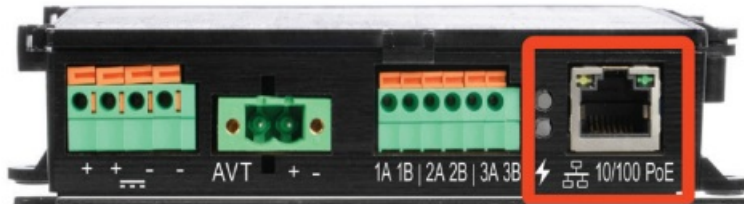**Important** The power supply must be surge protected, otherwise external surge protection is required at the input to the supply.

- IEC Class I regulated power supply Min. Output: 12 VDC @ 100mA, 24 VDC @ 50mA

- Connector / Wiring Requirements

  Wire Range: AWG #24 – 14 SOL / STR (1 wire only)

  Wire strip length: 9.0mm (min) / 10.0mm (max)

**Network Connection (PoE)**

- 10/100 PoE
- IEEE 802.3af Type 1 Class III PoE topology.

**Important** When using the network module with the 2.0 AVT isolation module, the network module "AVT Connection" supplies power from the network module to the isolation module. Therefore DO NOT apply an external power source to the 2.0 AVT isolation module when used with the network module.
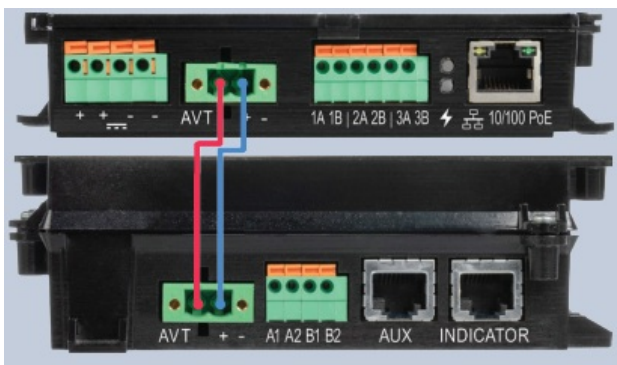
## AVT CONNECTION

| AVT CONNECTION |
|---|
| Provides power and communications to the AVT isolation module . The connection features a pluggable screw terminal connector .<br><br>Only install the network module in the same electrical enclosure as the VeriSafe 2 .0 AVT isolation module . |

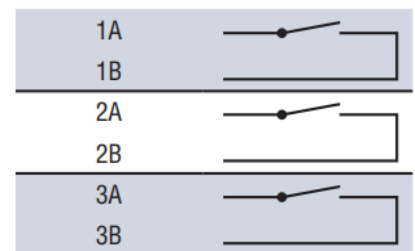| Recommended Wiring | Connector Specifications |
|---|---|
| <br><br>**1 Network Module**<br><br><br>**2 Isolation Module** | ■ Connector / Wiring Requirements;<br><br>Wire Range: (1 wire): AWG #24 – 12 [2 .5mm2] SOL / STR (2 wire): AWG #18 [1 .0mm2] SOL<br><br>AWG #18 [1 .5mm2] STR<br><br>Wire strip length: 7 .0mm (min) / 8 .0mm (max) Screw Drive Size: M3x0 .5<br><br>Screw Torque Required: 5 .0 in-lb [0 .57 N-m] +/- 10% |

## VOLTAGE PRESENCE OUTPUTS

## VOLTAGE PRESENCE OUTPUTS

Reflects status of Voltage presence LEDs on the AVT indicator module . These outputs are updated every 2 seconds based on the state

reported from the AVT isolation module . These outputs are not an indication of absence of voltage .

| | Output Specification | |
|---|---|---|
| 3 Solid-state Relay | Normally open, relays close when red AVT indicators are | Output schematic |
| Output Contacts | illuminated (see AVT manual for red indicator voltage thresholds) | |
| Wire Size | AWG #26-16 AWG (0 .13 – 1 .3mm2) Solid/Stranded (1 wire only) | |
| Isolation | 5000 Vrms Input/Output | |
| Voltage Rating | 30V AC/DC | |
| Current Rating | 80 mA (max) | |
| On-resistance | 30 W | |

Output schematic:
1A
1B
2A
2B
3A
3B

## Technical Specifications

**WARNING:** Do not use this product outside of the specified performance and environmental limits. Failure to comply with these specifications could result in product failure, personal injury, or death.

| Environmental Ratings | |
|---|---|
| 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) |
| Degree of Protection | Open Type, IP20 |

| Hazardous Locations | |
|---|---|
| Special Conditions of Use ⚠️ | ■ The equipment shall be installed in an enclosure that provides a degree of protection not less than IP 54 in accordance with IEC 60079-0.<br>■ Ambient Temperature Range:  -25°C ≤ Tamb ≤ 60°C<br>■ The enclosure must only be accessible with use of a tool. |
| Network Module (Hazardous Location Ratings) | cULus:  Class I, Division 2, Groups A, B, C, D<br>Class I Zone 2 AEx ec IIC T5 Gc; Ex ec IIC T5 Gc |

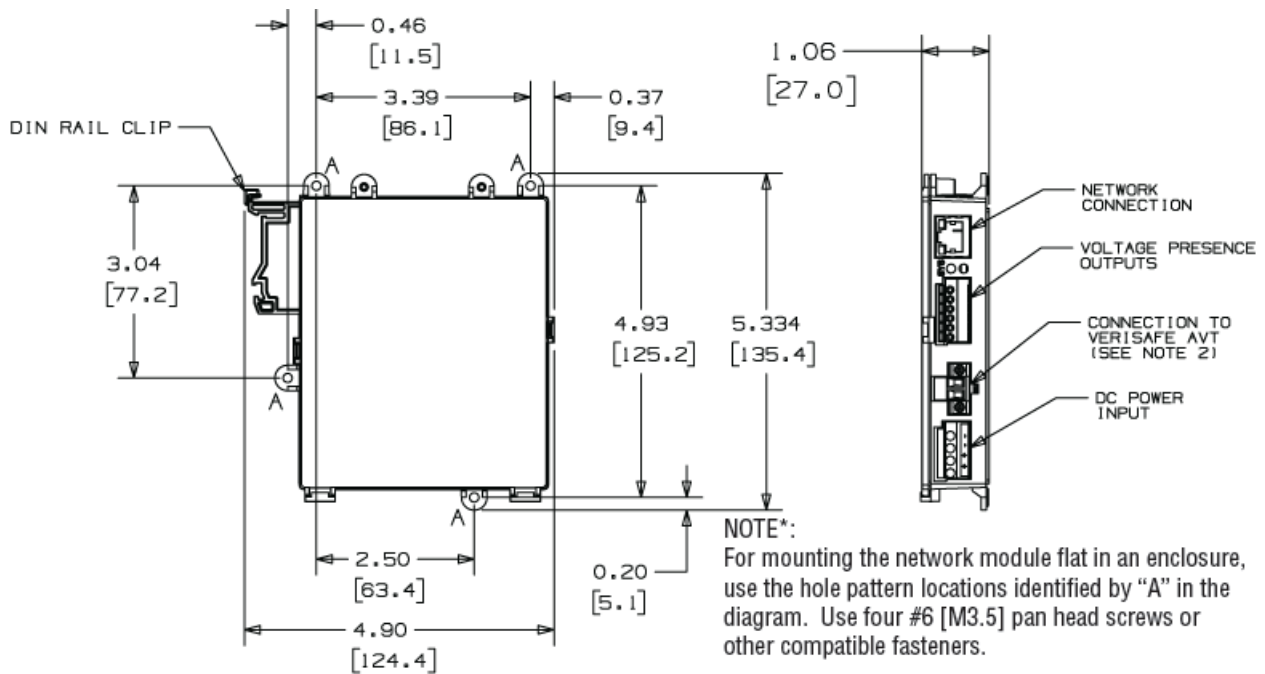| Power Requirements | |
|---|---|
| DC Input | IMPORTANT The power supply must be surge protected, otherwise external surge protection is required at the input to the supply.<br>12-24 VDC (IEC Class I regulated power supply) Min. Output: 12 VDC @ 100 mA, 24 VDC @ 50 mA<br>Power Draw:  84 mA max @ 12 VDC; 42 mA max @ 24 VDC (Network Module + AVT) |
| Power over EtherNet (PoE) | PoE (10/100), 15 mA, IEEE 802.at (-af) Type 1 Class III PoE topology |

| Standards and Certifications | |
|---|---|
| IEC / UL / CSA C22 .2 NO . 610 10-1<br><br>IEC / UL / CSA C22 .2 NO . 610 10-2-030 | Safety requirements for electrical equipment for measurement, control, and laboratory use |
| UL 508 & CSA-C22 .2 No . 14 | Industrial control equipment |
| FCC – CFR 47 Part 15 Subpart B | Radio frequency devices |
| CAN ICES-001 | Industrial, scientific and medical (ISM) radio frequency generators |
| EN 55011, CISPR 11,<br><br>AS/NZS CISPR 11 | Radio frequency disturbance characteristics |
| IEC 61326-1<br><br>EN 61326-1 | EMC and immunity requirements |
| IEC / EN 61000-3-2, -3-3, -6-2 | Electromagnetic compatibility (EMC) |
| CE UKCA | Conformity Marking for European Economic Area Conformity Marking for United Kingdom |
| RoHS | Restriction of hazardous substances |

## Dimensions

Dimensions 135 x 112 x 28 mm (5.3 x 4.4 x 1.1 inches), when network connetion is installed

DIN RAIL CLIP

0.46 [11.5]
3.39 [86.1]
0.37 [9.4]
1.06 [27.0]
3.04 [77.2]
4.93 [125.2]
5.334 [135.4]
2.50 [63.4]
4.90 [124.4]
0.20 [5.1]

NETWORK CONNECTION
VOLTAGE PRESENCE OUTPUTS
CONNECTION TO VERISAFE AVT (SEE NOTE 2)
DC POWER INPUT

NOTE*:
For mounting the network module flat in an enclosure, use the hole pattern locations identified by "A" in the diagram. Use four #6 [M3.5] pan head screws or other compatible fasteners.

## Installation Instructions

### Special Conditions of Use

### Hazardous Locations

- The equipment shall be installed in an enclosure that provides a degree of protection not less than IP 54 in accordance with IEC 60079-0.
- Ambient Temperature Range: -25°C ≤ Tamb ≤ 60°C
- The enclosure must only be accessible with use of a tool.

### WARNING:

- Always de-energize power before accessing an electrical enclosure
- Always follow safety and lockout/tagout procedures when working on or near electrical systems and equipment
- Do not use this product outside of the specified performance and environmental limits
- Always comply with local installation codes and standards
- The data from the network module does not carry a functional safety rating. It should be used for monitoring only. If integrating with a safety-rated system, use the SIL 3 outputs on the AVT isolation module instead of the network module outputs.

### STEP 1: INSTALL NETWORK MODULE INTO ENCLOSURE

- Mount network module flat in enclosure (see *NOTE in dimensional diagram above), or
- Snap the network module onto the DIN rail, or
- Mount the network module to the 2.0 AVT isolation module. See image to the right.

### STEP 2: CONNECT POWER TO NETWORK MODULE (DC POWER SUPPY, OR POWER OVER ETHERNET)

- Connect power supply to DC Input, or connect PoE network cable to PoE connection

## STEP 3: CONNECT THE DATA/POWER OUTPUT FROM NETWORK MODULE TO 2.0 AVT ISOLATION MODULE

- Connect wires into pluggable screw terminal connectors on network module and the 2.0 AVT isolation module. The connector ports are labeled "AVT".

## STEP 4: CONNECT NETWORK CONNECTION TO RJ-45 PORT

- if using the DC Input connector for power, and not using PoE, connect RJ-45 network cable,
- if using PoE, connect the PoE network cable to RJ-45 port

## STEP 5: BEFORE POWER-UP, READ DOCUMENT B21110 (2.0 AVT INSTRUCTION MANUAL) AND DOCUMENT B21176
(NETWORK MODULE USER GUIDE) FOR USER AND WEB-INTERFACE INSTRUCTIONS. POWER UP THE SYSTEM.

**IF DESIRED,** ATTACH NETWORK MODULE TO THE 2.0 AVT ISOLATION MODULE USING SCREWS PROVIDED WITH THE NETWORK MODULE
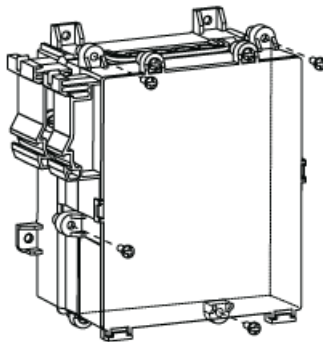


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1. **Limited Product Warranty.** For purposes of this Limited Product Warranty, "Panduit products" mean all Panduit-branded products that Pan-duit sells. Unless a different time period is set forth in the Panduit product manual, user guide or other product documentation, Panduit war-rants that the Panduit product, and each part or component of the Panduit product, will comply with Panduit's published specifications and will be free from defects in material and workmanship for a period of 1 year from the date of invoice from Panduit or its authorized distributor, not to exceed 18 months from the original date of shipment from Panduit's facility.

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requirements and are registered with Panduit in accordance with the terms of the Panduit Certification Plus System Warranty.

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**Australia:** 1-800-Panduit (7263848)
**Korea:** 02.21827300

For a copy of Panduit product warranties, log on to **www.panduit.com/warranty**
For more information
Visit us at **www.panduit.com/verisafe**
1006772, B21148_EN_rev1

## Documents / Resources

| | |
|---|---|
|  | **PANDUIT VS2-NET VeriSafe Network Module** [pdf] Instruction Manual<br>VS2-NET, VS2-NET VeriSafe Network Module, VeriSafe Network Module, Network Module, Module |

## References

- **m** **Manual.to - Instant Know How**
- **P** **Panduit | Network Infrastructure and Industrial Electrical Wiring**