

VerifEye® Series 8000 PT Module

Cat. No. S480V

Installation Guide



WEB VERSION

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WARNING:

- **HIGH VOLTAGE: RISK OF ELECTROCUTION, SHOCK, EXPLOSION, OR ARC FLASH.**
- This equipment **MUST** be installed and serviced by qualified electrical personnel with the requisite knowledge, training and experience related to the installation and operation of this equipment.
- **TO AVOID FIRE, SHOCK OR DEATH**, turn off all power supplying equipment before working on or inside the equipment. Use a properly rated voltage sensing device to confirm power is off.
- Follow safe electrical work practices. See NFPA 70E in the USA, or applicable local codes.
- Product may use multiple voltage/power sources. Be sure all sources of power have been disconnected before servicing.
- Do not depend on this product for voltage indication.
- Only install this product on insulated conductors.
- If the meter appears damaged or defective, first disconnect all power to the meter. Then call or email technical support for assistance.
- The equipment must be accessible to authorized personnel only. Equipment must be installed in areas where access can be restricted.
- **DO NOT** work alone.
- Before closing all covers and doors, carefully inspect the work area for tools and objects that may have been left inside the equipment.
- **DO NOT** bypass external fusing.
- **DO NOT** short the secondary of a Voltage Transformer (VT).
- Always short the secondary of a current transformer prior to disconnecting current input loads.

CAUTION:

- Use the unit only in accordance with the electrical power rating
- Initial installation of the unit must be inspected by the local electrical Inspection Authority
- Install the unit in compliance with the following local and national electrical codes:
 - Canada: Canadian Electrical Code, Part I, CSA C22.1
 - United States: National Fire Protection Association (NFPA) 70; US National Electrical Code
 - Elsewhere: International Electrotechnical Commission (IEC) 364, Part 1-7
- Ensure that the unit is properly earthed
- If the equipment is installed or used in a manner other than that specified in this document, it may void your warranty or impair the protection of the equipment.

1 Introduction

This guide provides a description of the VerifEye Series 8000 PT (potential transformer) module and procedures for installing and maintaining the module.

This documentation is intended for those responsible for installing and maintaining the VerifEye PT (potential transformer) module. Installers must be qualified electricians with knowledge of local and national code requirements. See Warnings and Cautions.

1.1 Description and specifications

The VerifEye Series 8000 PT module provides step-down voltage connections to VerifEye Series 8000 meters for metering single-phase to three-phase voltages of 600V, 347V, or 400V, while meeting all regulatory electrical safety and ANSI 0.5 Accuracy Class standards. The VerifEye Series 8000 PT module provides both the per-phase input metering sense voltages and the auxiliary input power required by VerifEye Series 8000 energy meters.

There are two variants of the VerifEye Series 8000 PT module that support the following source voltages and wiring configurations:

1. The 347V Wye / 600V Delta variant supports:

- 347V, three-phase, 4-wire wye
- 600V, three-phase, 3-wire delta

2. The 480V Delta variant supports:

- 480V, three-phase, 3-wire delta

The 347V/600V PT module variant has three sense voltage potential transformers for metering. The configuration of the transformers (347V wye or 600V delta) is selected by using the jumper provided.

The 480V PT module has two sense voltage potential transformers for metering.

There is a separate auxiliary power transformer in both variants to operate the meter. All voltage inputs are fused.

One VerifEye Series 8000 PT module can be used to provide sense voltages and auxiliary power to a maximum of two meters.

Table 1 lists the specifications of the VerifEye PT module.

1 Introduction

Table 1: VerifEye PT module specifications

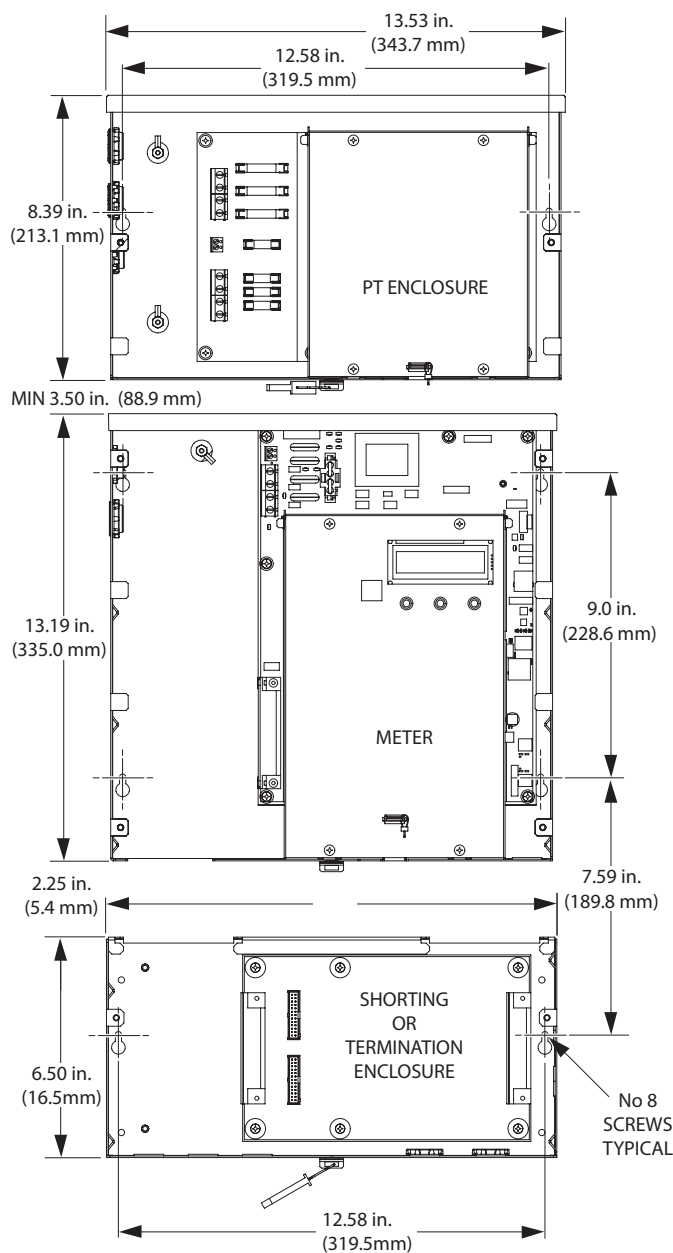
Specification		Value
Dimensions		
Height		8.39 in. (21.31 cm)
Width		13.53 in. (34.37 cm)
Depth		2.125 in. (5.4 cm)
Weight		12.5 lb (5.67 kg)
Fuse Ratings		
High voltage inputs	F1	T315 mA, 1000V
	F2	
	F3	
Voltage outputs	F4	T250 mA, 250V
	F5	
	F6	
	F7	
Transformer specifications		
Input voltage	600V	Voltage tolerance: +/-10%
	480V	
	347V	
Output voltage	120V	Accuracy: 0.3%
Environmental		
Operating temperature		-40 to158°F (-40 to 70°C)
Operating humidity		5% to 90% non-condensing
Usage environment		Indoor or enclosed outdoor environment
Maximum altitude		9843 ft (3000 m)
Pollution degree		2

2 Installation

The installation site must be supplied with access to the main electrical panel and any sub-panels. Portable or permanent lighting must be available to provide the installers with a clear view of the equipment and of the installation environment. Each installation may vary depending on physical site restrictions.

Figure 1 shows the recommended spacing for mounting the equipment at the installation site.

Figure 1: Recommended equipment spacing and dimensions



2 Installation

List of tools and equipment

The installer must have the following tools and equipment before proceeding with the installation:

- an appropriate 15-Amp maximum circuit breaker or a disconnect device
- current/voltage meter
- 4-wire 14 AWG (1.63 mm²) 194°F (90°C) cable
- 3-wire, 14 AWG (1.63 mm²), 194°F (90°C) cable
- small flat-head screwdriver
- #2 Phillips screwdriver
- crimping tool
- wire strippers
- four 1-inch (25 mm) #8 mounting screws suitable for selected mounting surface

2.1 Mounting the VerifEye Series 8000 PT module

WARNING:

- **HIGH VOLTAGE: RISK OF ELECTROCUTION, SHOCK, EXPLOSION, OR ARC FLASH.**

To be installed by electrician or other qualified personnel only.

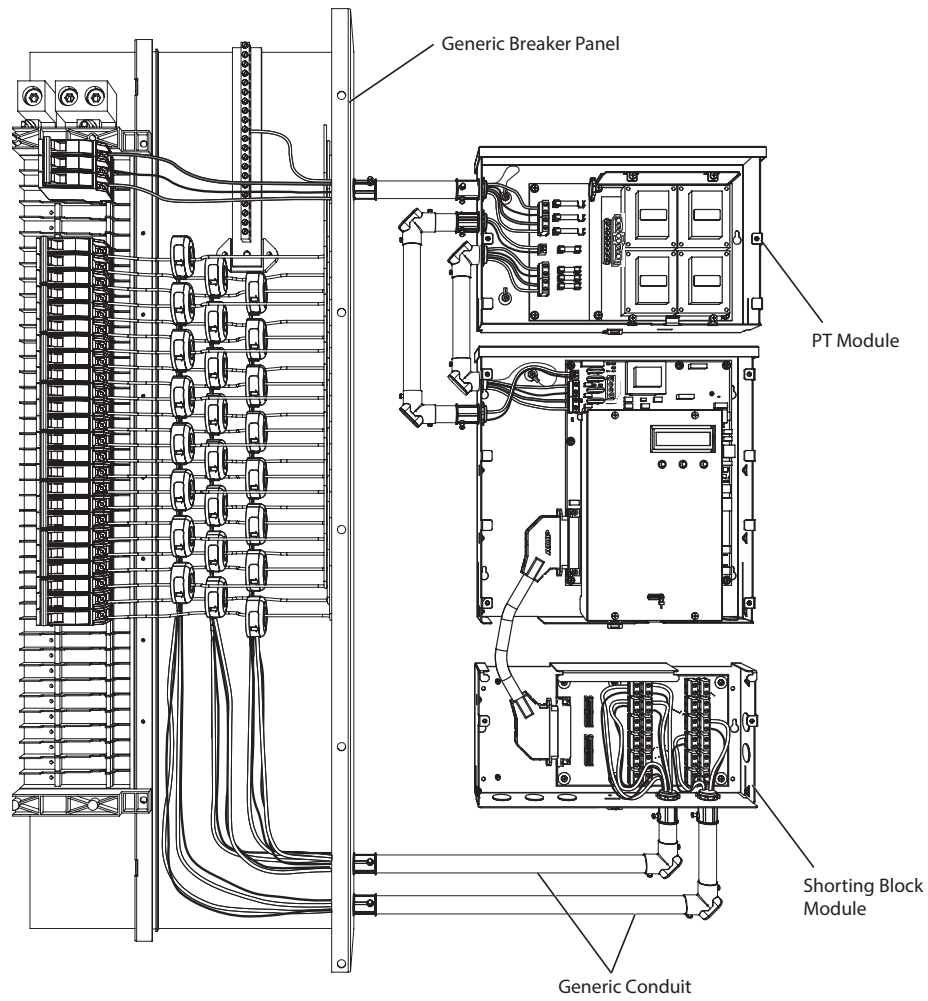
- **TO AVOID FIRE, SHOCK OR DEATH,** turn off all power supplying equipment before working on or inside the equipment. Use a properly rated voltage sensing device to confirm power is off.
- Follow safe electrical work practices. See NFPA 70E in the USA, or applicable local codes.

In all installations, the VerifEye Series 8000 PT Module must be connected to the source panel voltage through a 15A maximum disconnect or breaker that disconnects all line and neutral wires, so that the PT module can be powered down. The disconnect or breaker must be located within easy reach of the meter operator, and must be labeled to indicate the VerifEye Series 8000 PT module and meter that it is connected to. The disconnect or breaker device must meet IEC 60947-1, IEC 60947-3 and/or comply with the local electrical code.

Figure 2 shows a typical system installation for a three-phase 4-wire 347V wye configuration with the VerifEye Series 8000 PT module mounted adjacent to the electrical panel and the VerifEye meter.

2 Installation

Figure 2: Typical three-phase 4-wire 347V wye system installation



2 Installation

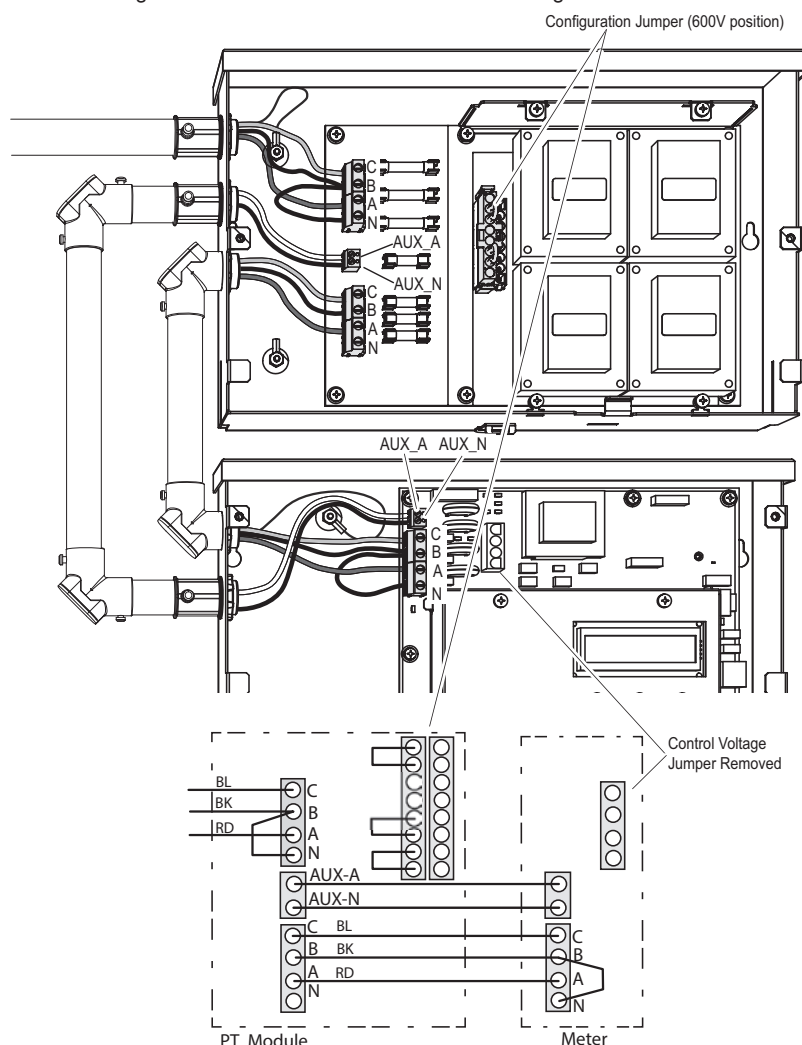
2.2 Install 347V Wye/600V Delta PT module in 600V three-phase 3-wire system

WARNING:

- **HIGH VOLTAGE: RISK OF ELECTROCUTION, SHOCK, EXPLOSION, OR ARC FLASH.**
To be installed by electrician or other qualified personnel only.
- **TO AVOID FIRE, SHOCK OR DEATH,** turn off all power supplying equipment before working on or inside the equipment. Use a properly rated voltage sensing device to confirm power is off.
- Follow safe electrical work practices. See NFPA 70E in the USA, or applicable local codes.

1. Install the configuration jumper on the PT module in the 600V delta position (default), as shown in Figure 3, and as indicated on the printed circuit board.
2. Remove the control voltage jumper on the VerifEye meter as shown in Figure 3.
3. Connect the source panel disconnecter breaker to the VerifEye Series 8000 PT module in accordance with local and national electrical codes.
4. Connect the VerifEye Series 8000 PT module to the VerifEye Series 8000 meter using a 3-wire (red, black, blue), 14 AWG (1.63 mm²), 194°F (90°C) cable. The maximum cable length between the 120V outputs of the PT module and the meter sense voltage

Figure 3: 600V delta PT module to meter wiring connections



2 Installation

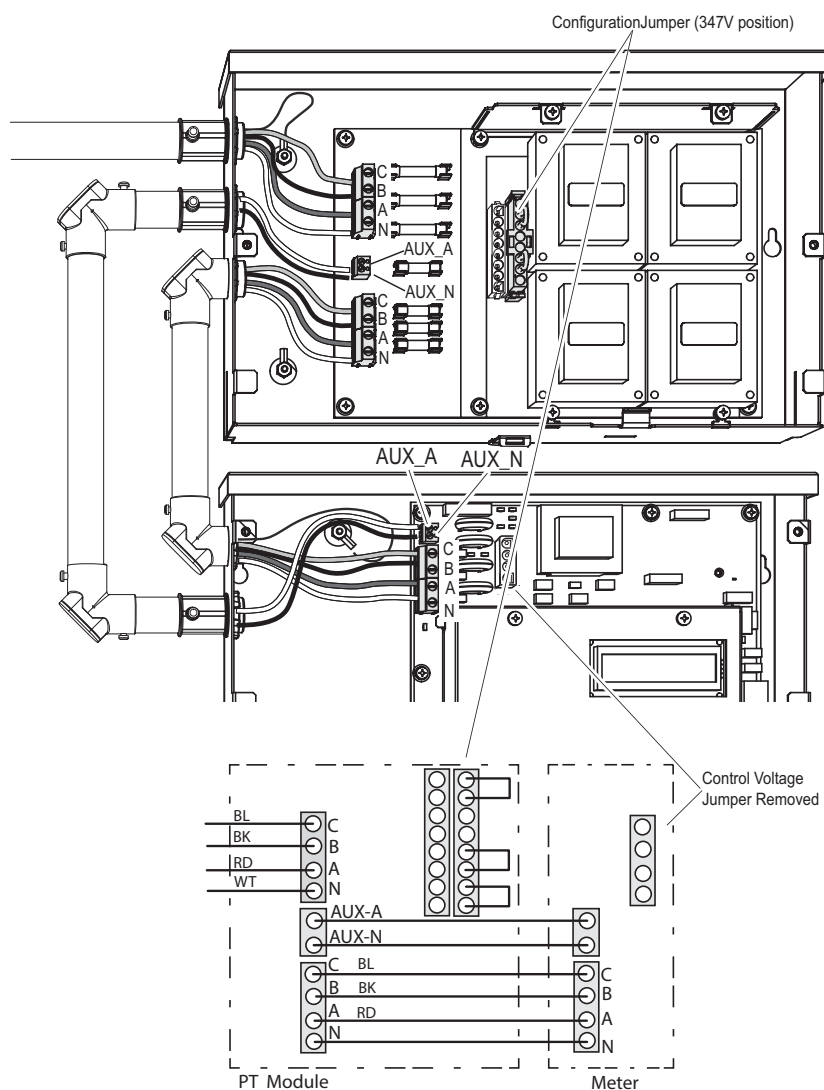
2.3 Install 347V Wye/600V Delta PT module in 347V three-phase 4-wire system

WARNING:

- **HIGH VOLTAGE: RISK OF ELECTROCUTION, SHOCK, EXPLOSION, OR ARC FLASH.**
To be installed by electrician or other qualified personnel only.
- **TO AVOID FIRE, SHOCK OR DEATH,** turn off all power supplying equipment before working on or inside the equipment. Use a properly rated voltage sensing device to confirm power is off.
- Follow safe electrical work practices. See NFPA 70E in the USA, or applicable local codes.

1. Install the configuration jumper on the PT module in the 347V wye position as shown in Figure 4, and as indicated on the printed circuit board.
2. Remove the control voltage jumper on the VerifEye Series 8000 meter as shown in Figure 4.
3. Connect the source panel disconnect or breaker to the VerifEye Series 8000 PT module in accordance with local and national electrical codes.
4. Connect the VerifEye Series 8000 PT module to the VerifEye Series 8000 meter using a 4-wire (red, black, blue, white), 14 AWG (1.63 mm²), 194°F (90°C) cable. The maximum cable length between the 120V outputs of the PT module and the meter sense voltage inputs is 108 ft (33 m).

Figure 4: 347V Wye PT module to meter wiring connections



2 Installation

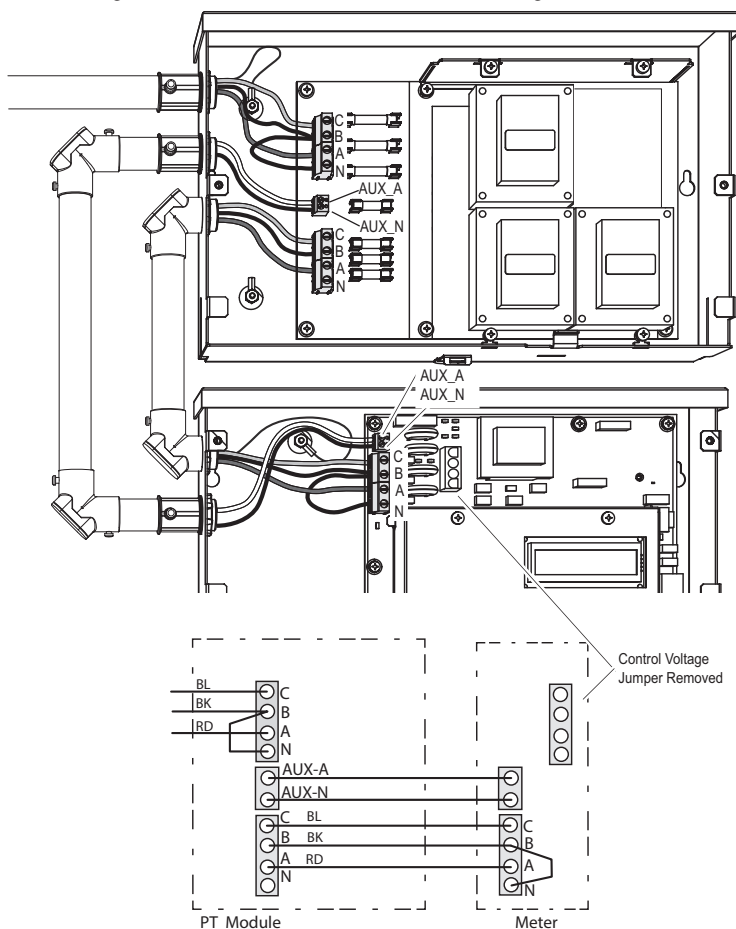
2.4 Install 480V Delta PT module in 480V three-phase 3-wire system

WARNING:

- **HIGH VOLTAGE: RISK OF ELECTROCUTION, SHOCK, EXPLOSION, OR ARC FLASH.**
To be installed by electrician or other qualified personnel only.
- **TO AVOID FIRE, SHOCK OR DEATH,** turn off all power supplying equipment before working on or inside the equipment. Use a properly rated voltage sensing device to confirm power is off.
- Follow safe electrical work practices. See NFPA 70E in the USA, or applicable local codes.

1. Connect the source panel disconnect or breaker to the VerifEye Series 8000 PT module in accordance with local and national electrical codes.
2. Remove the control voltage jumper on the VerifEye Series 8000 meter as shown in Figure 5.
3. Connect the VerifEye Series 8000 PT module to the VerifEye Series 8000 meter using a 3-wire (red, black, blue), 14 AWG (1.63 mm²), 194°F (90°C) cable, as shown in Figure 5. The maximum cable length between the 120V outputs of the PT module and the meter sense voltage inputs is 108 ft (33 m).

Figure 5: 480V Delta PT module to meter wiring connections



3 Maintenance

Do not perform any operation or maintenance procedures that are not described in this product documentation. No preventive maintenance is required on any of the equipment. Visually inspect the equipment yearly and ensure it is free of dust or other particles. If necessary, wipe with a clean cloth. Individual components are not user-serviceable and must be returned to Leviton for repair.

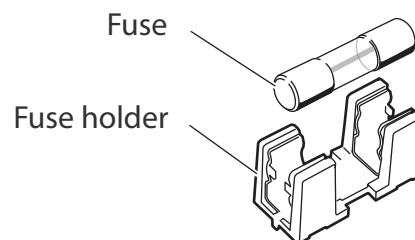
3.1 Fuse Replacement

CAUTION:

- **HIGH VOLTAGE: RISK OF ELECTROCUTION, SHOCK, EXPLOSION, OR ARC FLASH.**
To be installed by electrician or other qualified personnel only.
- **TO AVOID FIRE, SHOCK OR DEATH,** turn off all power supplying equipment before working on or inside the equipment. Use a properly rated voltage sensing device to confirm power is off.
- Follow safe electrical work practices. See NFPA 70E in the USA, or applicable local codes.
- Replace all devices, doors and covers before turning on power to this equipment.

1. Remove the outer cover from the unit.
2. Locate the fuse to be replaced inside the unit.
3. Remove the fuse from the holder as shown in Figure 6.
4. Replace the fuse with a fuse that meets the same specifications as printed on the metalwork (refer to fuse rating specifications listed in Table 1 on page 1).
5. Re-install the outer cover on the unit and turn on the power source.

Figure 6: Replacing the fuse



4 Regulatory Compliance

The VerifEye PT module must be installed by a certified electrician with knowledge of local safety regulations. Initial installation of the unit, and any subsequent modification to the unit, must be inspected by the local electrical safety authority.

The VerifEye Series 8000 PT module complies with the standards listed in Table 2.

Table 2: Regulatory Compliance

Discipline	Regulatory and industry standard
Safety	UL certified to IEC/EA/UL/CSA 61010-1 3 rd Edition CSA-C22.2 No. 61010-1-04

4.1 Equipment servicing and access

The information in this section must be considered as a mandatory requirement, and must be strictly adhered to when installing and operating VerifEye PT (potential transformer) module.

Access to equipment

The equipment must be accessible to authorized personnel only. Equipment must be installed in areas where access can be restricted.

Servicing the equipment

No preventive maintenance is required on any of the equipment. Visually inspect the equipment yearly and ensure it is free of dust or other particles. If necessary, wipe with a clean cloth.

Component servicing



Individual components are not user-serviceable, and must be returned to Leviton for repair. If an equipment fault occurs, do not attempt to repair the faulty component.

All maintenance activities should be performed by qualified personnel only. Do not perform any operating or maintenance procedures that are not described in the product documentation provided by Leviton.

Graphical symbols

Table 3 shows the graphical symbols that appear on the equipment.

Table 3: Graphical symbols that appear on equipment

Symbol	Description
	Indicates the supply wire protective earth, also known as chassis ground, for the primary ground.
	This symbol indicates a replaceable fuse.

5 Warranty and Contact Information

The Leviton name, Leviton logo and VerifEye brand used in this guide are trademarks or registered trademarks of Leviton. Other trademarks used are the property of their respective owners.

This product must be installed, connected and used in compliance with prevailing standards and/or installation regulations. As standards, specifications and designs change from time to time, always ask for confirmation of the information given in this publication.

LIMITED 5 YEAR WARRANTY AND EXCLUSIONS

Leviton warrants to the original consumer purchaser and not for the benefit of anyone else that this product at the time of its sale by Leviton is free of defects in materials and workmanship under normal and proper use for five years from the purchase date. Leviton's only obligation is to correct such defects by repair or replacement, at its option. **For details visit www.leviton.com or call 1-800-824-3005.** This warranty excludes and there is disclaimed liability for labor for removal of this product or reinstallation. This warranty is void if this product is installed improperly or in an improper environment, overloaded, misused, opened, abused, or altered in any manner, or is not used under normal operating conditions or not in accordance with any labels or instructions. **There are no other or implied warranties of any kind, including merchantability and fitness for a particular purpose**, but if any implied warranty is required by the applicable jurisdiction, the duration of any such implied warranty, including merchantability and fitness for a particular purpose, is limited to five years. **Leviton is not liable for incidental, indirect, special, or consequential damages, including without limitation, damage to, or loss of use of, any equipment, lost sales or profits or delay or failure to perform this warranty obligation.** The remedies provided herein are the exclusive remedies under this warranty, whether based on contract, tort or otherwise.

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FOR TECHNICAL ASSISTANCE CALL:

1-800-824-3005 (USA Only)

1 800 405-5320 (Canada Only)

Leviton Manufacturing Co., Inc.

201 North Service Road, Melville, NY 11747

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