

VerifEye™ Series 4100

Compact Power and Energy Meter

Modbus and BACnet

Quick Install Guide



PK-A3130-10-00-0A

Page 2

INSTALLATION

WARNING: TO AVOID FIRE, SHOCK, OR DEATH, disconnect power prior to installation.

Reinstall any covers that are displaced during the installation before powering the unit.

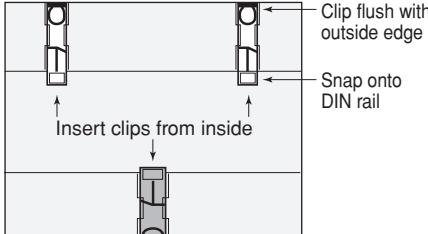
Mount the meter in an appropriate electrical enclosure near equipment to be monitored.

Do not install on the load side of a Variable Frequency Drive (VFD). For all S4100 Series (bidirectional) models, observe correct CT orientation.

The meter can be mounted in two ways: on standard 35 mm DIN rail or screw-mounted to the back of the enclosure.

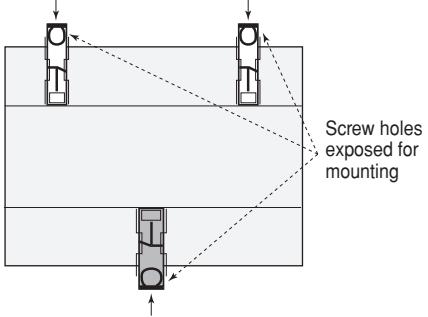
A. DIN Rail Mounting

1. Attach mounting clips to the underside of the housing by sliding them into the slots from the inside. The stopping pegs must face the housing, and the outside edge of the clip must be flush with the outside edge of the housing.
2. Snap the clips onto the DIN rail. See diagram of the underside of the meter.
3. To reduce horizontal shifting across the DIN rail, use two end stop clips.

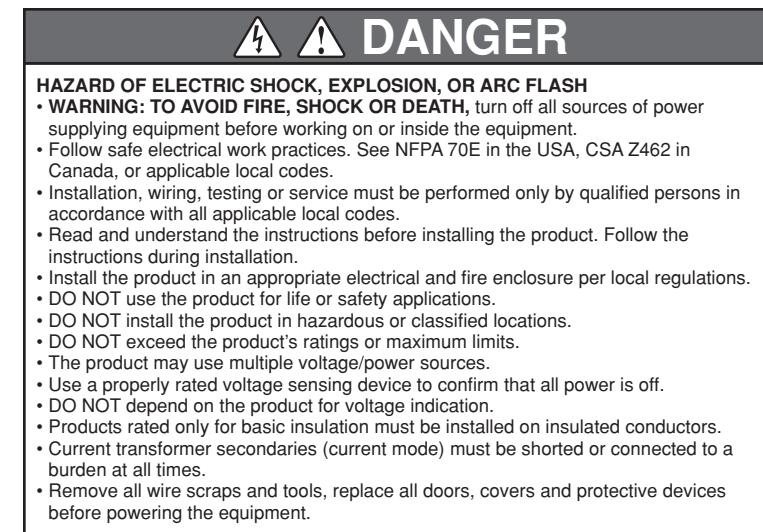


B. Screw Mounting

1. Attach the mounting clips to the underside of the housing by sliding them into the slots from the outside. The stopping pegs must face the housing, and the screw hole must be exposed on the outside of the housing.
2. Use three #8 screws (not supplied) to mount the meter to the back of the enclosure. See diagram of the underside of the meter.



Page 5



A qualified person is one who has skills and knowledge related to the construction and operation of this electrical equipment and installations, and has received safety training to recognize and avoid the hazards involved (NEC Article 100).

If this product is used in a manner not specified by the manufacturer, the protection provided by the product may be impaired. No responsibility is assumed by the manufacturer for any consequences arising out of the use of this material.

WARNING: LOSS OF CONTROL. Networked devices can interfere with critical control functions. Refer to NEMA ICS 1.1 (latest edition). Safety Guidelines for the Application, Installation, and Maintenance of Solid-State Controls or its equivalent in your country, language, and/or location.

Provide a device to disconnect this product from the supply. Place it in close, easy reach of the product, and mark it as the disconnecting device. The device shall meet IEC 60947-1 and IEC 60947-3 and be suitable for the application. In the US and Canada, disconnecting fuse holders can be used. Provide overcurrent protection for supply conductors with approved current limiting devices suitable to protect the wiring.

For use in an Installation Category III or II, Pollution Degree 2 or better environment only. See full installation guide for definitions - www.leviton.com

SPECIFICATIONS

Measurement Accuracy:

Real Power and Energy

IEC 62053-22 Class 0.2S, ANSI C12.20 0.2%

Input Voltage Characteristics:

Measured AC Voltage

Minimum 90 V L-N (156 V L-L) for stated accuracy; UL Maximums: 600 V_{L-N} (347 V_{L-N}); CE Maximum: 300 V_{L-N}

Impedance

2.5 MΩ_{L-N} / 5 MΩ_{L-L}

Frequency Range

45 to 65 Hz

Input Current Characteristics:

Measurement Input Range

0 to 0.333 Vac or 0 to 1.0 Vac (+20% over-range)

Impedance

10.6 kΩ (1/3 V mode) or 32.1 kΩ (1 V mode)

Control Power:

AC

5 VA max.; 90 V min.

UL Maximums: 600 V_{L-L} (347 V_{L-N})

CE Maximum: 300 V_{L-N}

3 W max.; UL and CE: 125 to 300 Vdc

100 msec at 120 Vac

Mechanical Characteristics:

IP Degree of Protection (IEC 60529)

IP40 front display; IP20 Meter

Terminal Block Screw Torque

0.37 ft-lb (0.5 N-m) nominal/0.44 ft-lb (0.6 N-m) max.

Terminal Block Wire Size

24 to 14 AWG (0.2 to 2.1 mm²)

Rail

T35 (35 mm) DIN Rail per EN50022

Environmental Conditions:

Operating Temperature

-30 to 70 °C (-22 to 158 °F)

Storage Temperature

-40 to 85 °C (-40 to 185 °F)

Humidity Range

<95% RH (non-condensing)

Altitude of Operation

3 km max.

Metering Category:

North America

CAT III; for distribution systems up to 347 V_{L-N} / 600 Vac_{L-L}

CE

CAT III; for distribution systems up to 300 V_{L-N}

Dielectric Withstand

Per UL 508, EN61010

Conducted and Radiated Emissions

FCC part 15 Class B, EN55011/EN61000 Class B (residential and light industrial)

Conducted and Radiated Immunity

EN61000 Class A (heavy industrial)

Agency Approvals:

US and Canada (cULus)

UL508 (open type device)/CSA 22.2 No. 14-05

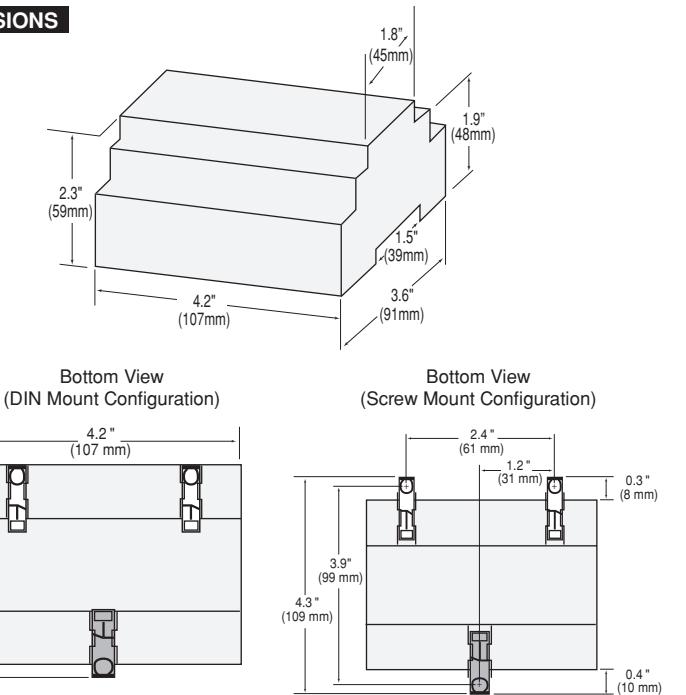
Europe (CE)

EN61010-1

* External DC current limiting is required, see fuse recommendations.

Page 3

DIMENSIONS



PRODUCT IDENTIFICATION

Series 4100-K

Bidirectional metering, Modbus full data set, pulse and alarm outputs.

Series 4100-S

Bidirectional metering, BACnet full data set, pulse input and alarm outputs.

Page 4

SUPPORTED SYSTEM TYPES

The meter has a number of different possible system wiring configurations (see Wiring Diagrams, page 9-10). To configure the meter, set the System Type via the User Interface, Modbus register 130. The System Type tells the meter which of its current and voltage inputs are valid, which are to be ignored, and if neutral is connected. Setting the correct System Type prevents unwanted energy accumulation on unused inputs, selects the formula to calculate the Theoretical Maximum System Power, and determines which phase loss algorithm is to be used. The phase loss algorithm is configured as a percent of the Line-to-Line System Voltage (except when in System Type 10) and also calculates the expected Line to Neutral voltages for system types that have Neutral (12 & 40).

Values that are not valid in a particular System Type will display as "----" on the User Interface or as QNAN in the Modbus registers.

To avoid distortion, use parallel wires for control power and voltage inputs.

The following symbols are used in the wiring diagrams on the following pages:

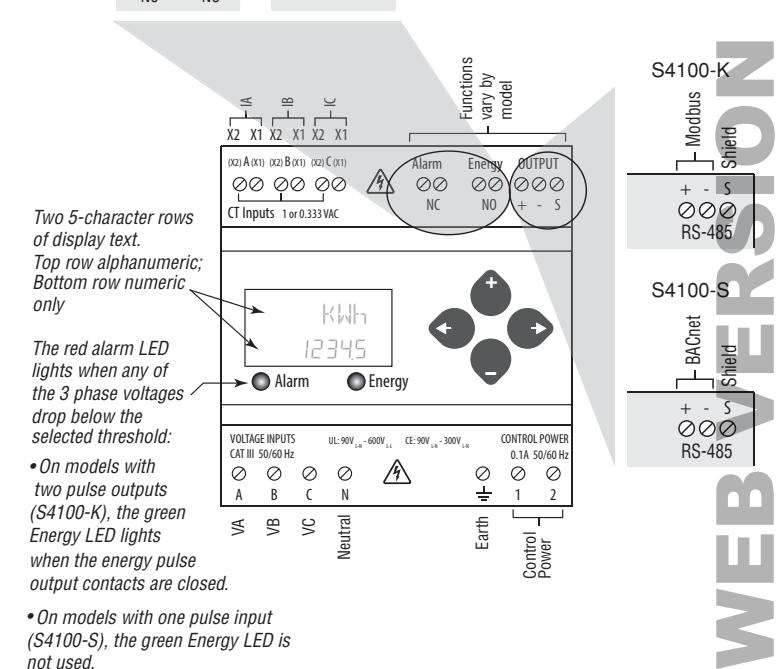
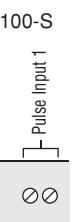
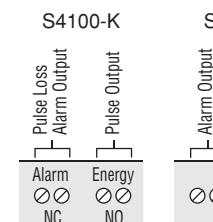
Symbol	Description
	Voltage Disconnect Switch
	Fuse (Installer is responsible for ensuring compliance with local requirements. No fuses are included with the meter).
	Earth Ground
	Current Transducer
	Potential Transformer
	Protection containing a voltage disconnect switch with a fuse or disconnect circuit breaker. The protection device must be rated for the available short-circuit current at the connection point.

NOTICE

RISK OF EQUIPMENT DAMAGE

- This product is designed only for use with 1V or 0.333V current transducers (CTs).
- DO NOT USE CURRENT OUTPUT (e.g. 5A) CTs ON THIS PRODUCT.
- Failure to follow these instructions can result in overheating and permanent equipment damage.

PRODUCT DIAGRAM



Page 5

Page 6

Page 7

WEB VERSION

