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AcuPanel-EASI-3

Installation Guide

3 Phase Subpanel
Energy Code Compliance Metering



C12.20 .2 CLASS

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Legal Notice

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This AcuPanel-EASI-3 Installation Guide provides informational and operational guidance regarding the use of the panel. While effort has been made to ensure the accuracy, reliability, and completeness of the information at the time of publication, Accuenergy assumes no responsibility for any errors, omissions, or misunderstandings in this document and reserves the right to modify its content at any time without prior notice.

Users should verify with Accuenergy or their authorized local representative that the document in use is the latest version and strictly adhere to the installation, operation, and maintenance procedures specified herein. Accuenergy shall not be held liable for any damages or consequences resulting from improper use or failure to comply with the provisions of this document.

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Safety Notice

Please read this document carefully before the installation, operation, or maintenance of the AcuPanel-EASI-3.

If the equipment is used in a manner not specified by Accuenergy, the protection provided by the equipment may be impaired.

All maintenance work must be performed by a qualified professional who has received formal training and has experience with high voltage and high current devices.

Ensure power is disconnected before wiring or servicing the panel.

De-energize and lock out all circuits before installation.

Do not install or disconnect CTs on energized conductors.

Follow all applicable electrical codes.

Disconnecting means and overcurrent protection may be required as per code requirements.

Ensure CT polarity and phase alignment are correct.

Accuenergy is not responsible or liable for any damages or injuries caused by improper meter installation and/or operation.

NOTE: THERE IS NO REQUIRED PREVENTIVE MAINTENANCE OR INSPECTION NECESSARY FOR SAFETY. HOWEVER, ANY REPAIR OR MAINTENANCE SHOULD BE PERFORMED BY THE FACTORY.

DISCONNECT DEVICE: A SWITCH OR CIRCUIT-BREAKER MUST BE INCLUDED IN THE INSTALLATION.

IT SERVES AS THE DESIGNATED DISCONNECT DEVICE FOR THIS EQUIPMENT.

THE SWITCH MUST BE LOCATED IN CLOSE PROXIMITY TO THE EQUIPMENT AND WITHIN EASY REACH OF THE OPERATOR. THE SWITCH SHALL BE MARKED AS THE DISCONNECTING DEVICE FOR THE EQUIPMENT.

Important Symbols

-  **ELECTRIC HAZARD SYMBOL:** Indicates the presence of electrical hazards and dangerous voltages that may result in electric shock, serious injury, or death if proper procedures are not followed.
-  **WARNING SYMBOL:** Indicates a hazardous circumstance, if not considered, may result in injury or death.
-  **INFO:** Provides additional information before an action shall be taken by the user.

1. Overview

The AcuPanel-EASI-3 is a factory-assembled, NEMA 4X-rated energy monitoring subpanel designed for feeder and equipment level metering. It includes an Acuvim CL multi-function power meter in a compact pre-wired enclosure, simplifying installation for electrical contractors and ensuring compliance with major energy codes.

Typical Applications

- Energy code compliance for ASHRAE 90.1, IECC C406.10, and California Title 24
- Feeder-level submetering
- Pumps and mechanical equipment
- Single load and small panel monitoring
- EV charging circuits

2. Product Components Included

- A** AcuPanel-EASI-3 Subpanel
- B** Acuvim-CL-D-MV-P1V4 Multi-Function Power Meter
- C** Four Wall Mount Lugs and Screws
- D** AK-03 Kit Includes Three Inline Fuses
- E** Quick Setup Guide (Not Pictured)



Figure 2-1 AcuPanel-EASI-3 Components

 **Current transformers are ordered separately. Verify the CT model, ratio, and cable length before installation.**

3. Appearance and Dimensions

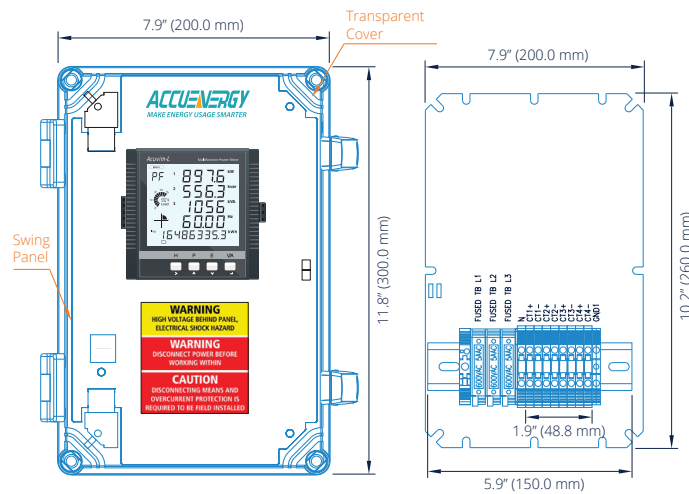


Figure 3-1 AcuPanel-EASI-3 Exterior Dimensions

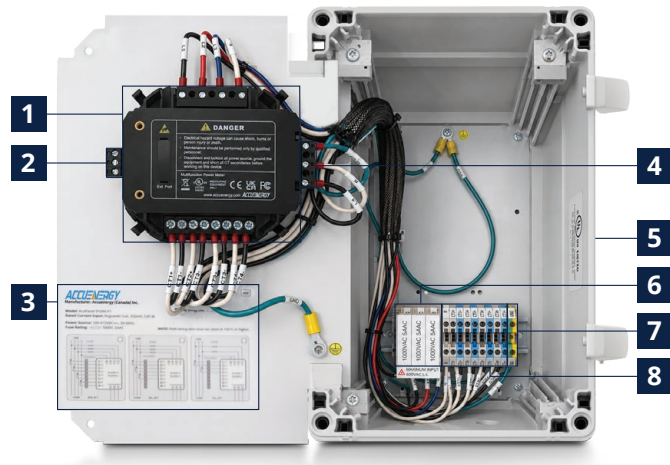


Figure 3-2 AcuPanel-EASI-3 Interior Mapping

- | | |
|-------------------------|---------------------------------|
| 1 Acuim CL Power Meter | 5 NEMA 4X Enclosure |
| 2 RS485 Port | 6 Voltage Terminals |
| 3 Wiring Diagram Label | 7 Ground Terminal |
| 4 Power Supply Terminal | 8 Current Transformer Terminals |

4. Installation

4.1 Mounting Tools

- | | |
|-------------------|---------------------------------|
| 1. Electric Drill | 5. Conduit Knockout Punch Tool |
| 2. Level | 6. Cable/Conduit Fittings |
| 3. Wire Cutter | 7. Grommets and Cable Retention |
| 4. Side Cutter | |

4.2 Mounting the Panel

Installation of a subpanel involves exposure to hazardous voltages. The process must be performed by a qualified or licensed electrician.



Before commencing wiring or servicing of the subpanel, ensure to de-energize and lock out all the circuits.

The AcuPanel-EASI-3 is designed for vertical surface mounting using the provided hardware. Select a structurally suitable mounting surface that can support the weight of the enclosure and wiring.

Typical mounting surfaces may include electrical distribution panels, rated equipment backboards, concrete or masonry walls, or other suitable surfaces, provided that the mounting surface complies with applicable electrical codes.

Surface Mounting

Step 1: Select an Optimal Mounting Location

The mounting location should be easily accessible, dry, and free from excessive vibration or heat. The panel is NEMA 4X/IP66 rated for indoor or outdoor use.

Step 2: Position the Enclosure

Place the AcuPanel EASI-3 against the mounting surface in the required orientation. Ensure sufficient clearance around the enclosure for conduit connection and panel door swing.

Step 3: Install the Mounting Lugs

Install the four wall-mount lugs into the four corner mounting holes at the rear of the enclosure. Mount the enclosure vertically by securing the screws through the lugs into the mounting surface.

Step 4: Verify the Installation

Confirm that the enclosure is stable, level, and firmly secured. Verify that the door opens and closes freely and that adequate space remains for conduit and cable connection.

Conduit and Cable Connections

All conduit and cable connections must enter the enclosure through the designated opening located on the bottom of the enclosure. If an additional opening is required, use a knockout punch tool to create it without compromising the enclosure rating.

Step 1: Install Conduit

Install conduit between the distribution panel and the AcuPanel-EASI-3. Route the voltage leads and CT secondary cable through the conduit using the designated opening. Install appropriate conduit fittings and grommets.

Step 2: Verify Cable Entry

Verify that all conduit and cable are securely inside the panel and that cable routing does not interfere with the enclosure door or internal components.



Unused openings must be sealed with appropriate fittings to maintain the NEMA 4X rating.

4.3 Voltage & Control Power Wiring



Verify with a meter that the source panel and conductors are fully de-energized before making any voltage connections.

Ensure proper protective earthing and compliance with electrical safety standards.

Factory-Wired and Field-Wired Connections

The meter control power, voltage reference, and current input terminals to the panel terminal connections are completed at the factory, as seen in Figure 3-2. No field wiring is required for the connections.

The installer needs to connect the load voltage reference, CT secondary leads, and RS485 communication cables to the respective panel terminal as described below.

Step 1: Connect Voltage Reference

Connect the load voltage reference wires to the panel terminal blocks labelled L1, L2, and L3. Connect the N to the neutral bus in the distribution panel. The voltage reference provides power to the entire enclosure, and an additional control power supply is not required.

Step 2: Install Inline Fuses

Install the inline fuses supplied with the voltage reference connection.

Step 3: Connect Ground

To complete the ground path, connect the common ground point of the AcuPanel-EASI-3 to the facility grounding system.

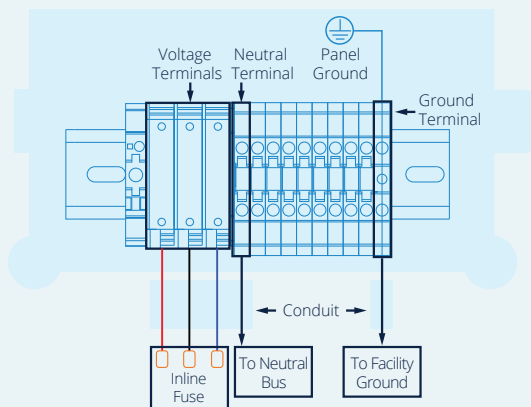


Figure 4-1 Voltage Connection

4.4 Current Transformers Wiring

Short-circuit the secondary of the CT before disconnecting. Do not leave the secondary of the CT open-circuited on an energized conductor.



Ensure the polarity of the CT aligns with the connected phase correctly.

To reduce the risk of electric shock, always open or disconnect the circuit from the building power distribution system before installing or servicing current transformers.

Step 1: Install and Orient the CT

Clamp or install selected CTs around each monitored conductor according to the Accuenergy current transformer or manufacturer's installation guide. Ensure the CT polarity arrow points towards the source.

Step 2: Route the CT Leads

Route CT secondary cables through the conduit into the panel and keep CT leads away from high-voltage conductors to avoid interference.

Step 3: Connect the Current Transformers

Connect the CT secondary leads to the three CT input terminals inside the panel. Terminal blocks are labelled CT1, CT2, and CT3 on the panel interior.

Step 4: Verify the CT Connection

Ensure that the CT leads are terminated at the correct polarity terminals on the panel.

The terminals are labelled CT1+/CT1-, CT2+/CT2-, and CT3+/CT3- on the panel interior.

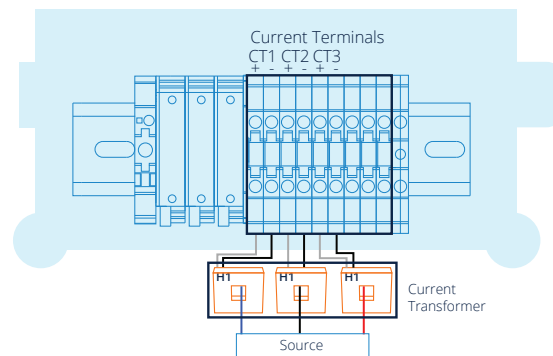


Figure 4-2 CT Connections

Step 5: Verify the Wiring Configuration

Confirm the wiring matches the actual circuit type. Refer to the wiring diagrams below for wiring configurations.

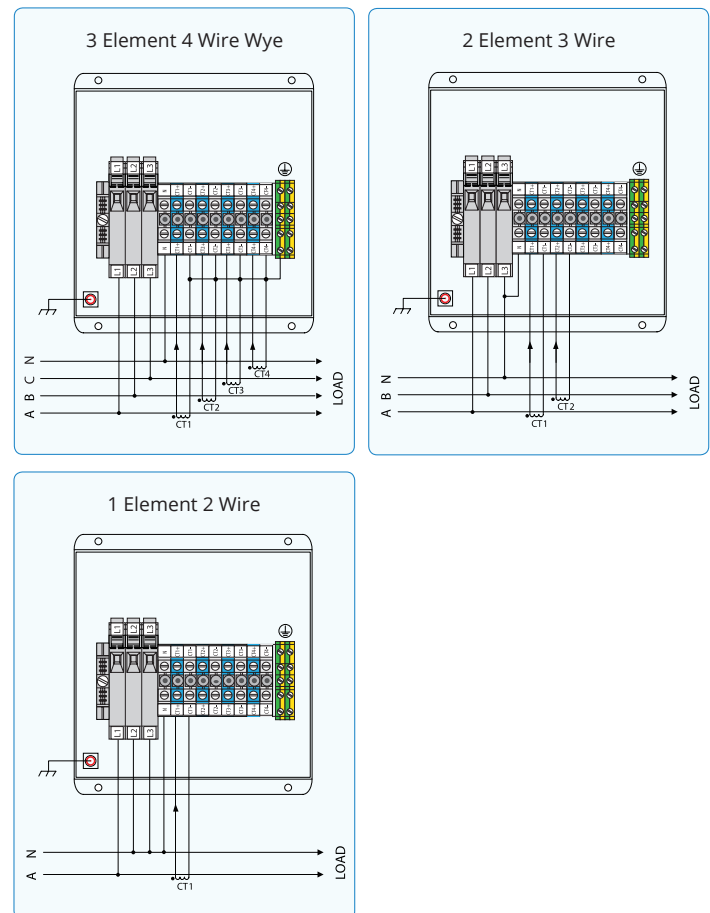


Figure 4-3 Wiring Configurations

4.5 RS485 Communication Wiring

Step 1: Setup Communication

Connect the A+, B-, and S (Shield) terminals on the Acuvim CL meter for Modbus RTU or BACnet MS/TP communication. Maintain the correct polarity.

Step 2: Terminate the Network

At the physical end of the cable run, terminate the RS485 bus with a 120 Ω resistor.

Connect the RS485 network to the PC or a monitoring system.

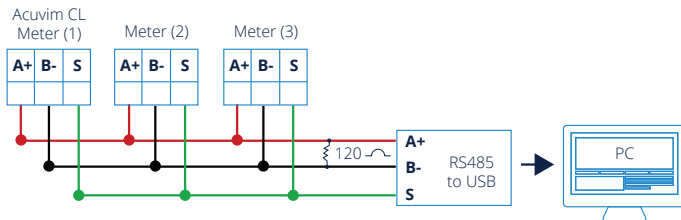


Figure 4-4 Daisy Chain Connection

5. Commissioning & Configuration

5.1 Pre-Energization Checklist

Before energizing the AcuPanel-EASI-3, verify that:

- CT connections are secure and installed in the correct phase.
- Voltage wiring connections are verified.
- No tools or debris are present inside the panel.
- All enclosure covers are installed.

5.2 Power-Up Verification

Step 1: Energize the Monitored Circuit

After completing the pre-energization checks, energize the monitored circuit. The LCD screen of the Acuvim CL meter should illuminate and display real-time electrical parameters within a few seconds.

Step 2: Verify the Meter Readings

Verify voltage and current measurements on the screen. If readings are zero or incorrect, check the voltage reference wiring and CT secondary wiring to ensure there are no open circuits.

5.3 Meter Configuration

Accuenergy Commissioning Service

Accuenergy provides on-site or remote commissioning for all AcuPanel-EASI systems. Complete the Accuenergy configuration form and submit it to your Accuenergy project contact. The configuration form must be submitted in digital format only. Scans or photos of handwritten printouts are not accepted. The Accuenergy technical team will remotely conduct channel mapping, virtual meter creation, and CT assignments. Email: codehelp@accuenergy.com or fieldservices@accuenergy.com. Call: 1-877-721-8908.

Independent Mode

For independent setup, the following settings must be configured on the Acuvim CL meter:

Wiring Mode	Set to match circuit type. Options include 1EL2W, 2EL3W, 3EL4W Y, or 3EL4W Network.
CT Ratio	Set to match primary rating of the CT, such as 100A for 100A:333mV CT.
Communication Address	Assign a unique Modbus address which is set to 1 by default.

5.4 Phase & CT Verification

Step 1: Verify Meter Readings

Verify that per-phase voltage, current, and power factor readings align with the expected values for the connected load.

Step 2: Rectify CT Polarity and Mapping

If a phase shows negative power or energy flowing in the wrong direction, use the CT polarity correction feature in the meter configuration of the AcuPanel-EASI-3 to rectify the CT orientation in software.

The Acuvim CL has a built-in phase verification and configurable CT mapping to rectify wiring or CT orientation errors through software. No physical rewiring is required in most cases.

5.5 Post Power-Up Troubleshooting

Observed Error	Possible Cause	Recommended Action
No Display	No Control Power	Check Voltage Wiring and Source Breaker.
Display Visible, but Readings are Zero	CT Leads Not Connected	Verify CT Secondary Leads are Connected to the CT Terminals.
Negative Power Reading	CT Installed Backwards or CT Installed on Wrong Phase	Swap CT Polarity or Make Correction using the CT Polarity Correction Feature in the Software. Swap the Phase or Reassign Phases in the Meter Configuration.
Zero Current Reading	Open CT Circuit or Incorrect Wiring, CT Ratio Not Programmed	Check CT Connections at Terminal Block; Ensure CT Secondary is Not Open-Circuited.
Voltage Mismatch	Wrong Phase Connection or Wiring Mode	Verify Wiring Configuration Matches Actual Circuit Type.
Incorrect Energy Readings	Wrong CT Ratio or Phase Mismatch	Reconfigure CT Ratio; Verify CT Phases Match Voltage Reference Phases.
Erratic or Fluctuating Readings	CT Leads Routed near High-Voltage Conductors	Reroute CT Cables Away from Power Conductors.
No RS485 Communication	Incorrect Wiring Polarity, Wrong Address or Baud Rate	Check RS485 A+/B- Wiring Polarity; Verify Modbus Device Address and Baud Rate Match the Master Device or AcuHMI Gateway.

6. Network Integration

The AcuPanel-EASI-3 can be integrated into a Building Management System (BMS), or Energy Management System (EMS), or connected to an AcuHMI gateway for centralized monitoring.

Integration Path	Details
BACnet MS/TP	Connect via RS485 to Configure Device Instance and Baud Rate.
Modbus RTU	Connect via RS485 to Set the Address and Baud Rate to Match the Master Device.
AcuHMI Gateway	Connect via RS485 to the AcuHMI for Local Data Storage, Touchscreen Display, and Web Interface Access.
AcuCloud / AWS IoT	Available via AcuHMI as an Upstream Data Path; Not Directly on AcuPanel-EASI-3.

7. Accessing Energy Data

The AcuPanel-EASI-3 provides access to measured electrical data through the Acuvim CL meter.

Step 1: Enter Metering Mode

Press H and V/A simultaneously, then press P or E to select Meter. Press V/A on the meter to enter metering mode.

Step 2: View Parameters

Press V/A to view voltage and current readings.

Press P to view active, reactive, and apparent power, power factor, and frequency.

Press E to view energy readings, including imported and exported active energy.

Refer to the Acuvim CL user manual for detailed instructions.

8. Product Specifications

Specification	AcuPanel-EASI-3
Enclosure	NEMA 4X Polycarbonate
Dimensions	11.8" (L) × 7.8" (W) × 7.3" (D)
Meter	Acuvim CL Multi-Function Meter
Current Inputs	3 (One, Two, or Three-Phase Circuits)
CT Input Types	80 mA, 100 mA, 333 mV, Rogowski Coil CTs
Nominal Voltage	10 - 480 VAC L - N (120/208 VAC or 277/480 VAC)
Wiring Configurations	1EL2W, 2EL3W, 3EL4W Y, 3EL4W Network
Control Power	100 - 415 VAC (L - N), 50/60 Hz, <6W
Accuracy	ANSI C12.20 Class 0.2 / IEC 62053-22 Class 0.2S
RS485 Port	1
Protocols	Modbus RTU, BACnet MS/TP
Display	LCD
Operating Temperature	- 25 °C to +70 °C (-13 °F to +158 °F)
Certifications	UL 508A, UL 61010-1, ANSI C12.20, CE

9. Support & Resources

Technical Support	1-877-721-8908 codehelp@accuenergy.com fieldservices@accuenergy.com
Website	https://easi.accuenergy.com
Datasheet	https://easi.accuenergy.com/easi-3-datasheet
Brochure	https://easi.accuenergy.com/easi-brochure
Acuvim CL User Manual	https://www.accuenergy.com/acuvim-l-manual

Code Metering Services

Commissioning	Jump-Start Care
Remote or On-Site Programming Available	12-Week Post-Sales Training and Remote Support Program Included with System Purchase

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Specs Subject To Change Without Notice.



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