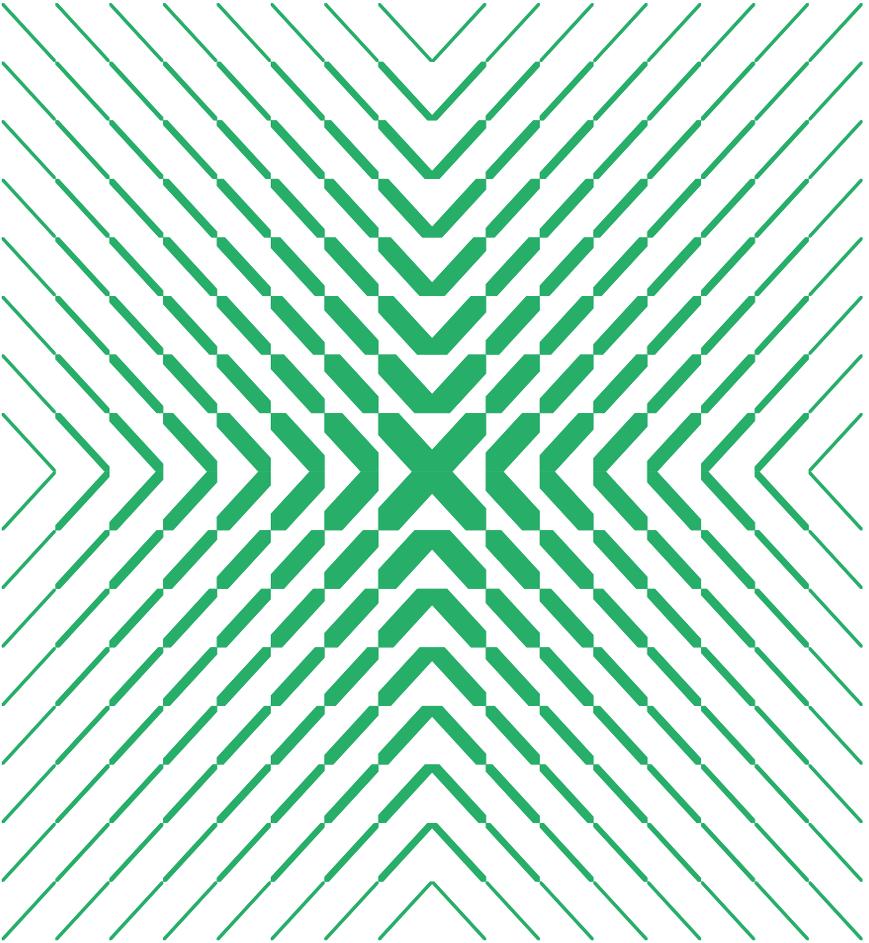




Farmblox



Energy Meter

Product Manual — v1.0

Energy Meter Installation Manual

This manual provides comprehensive instructions for installing the Farmblox energy meter. The energy meter uses voltage sense wires and current clamps to monitor three-phase electrical systems.

Safety Precautions

WARNING: Working with electrical systems can be hazardous. Always follow appropriate safety procedures:

- Turn off and lock out all power before installation
- Installation should only be performed by qualified electrical personnel
- Wear appropriate personal protective equipment (PPE)
- Follow all local electrical codes and regulations
- Verify absence of voltage before proceeding with installation
- Never work alone on electrical systems

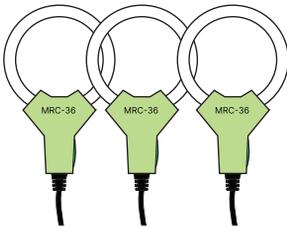
Product Overview

Our Energy Monitoring System consists of:

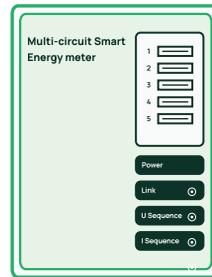
- Three-phase energy meter
- Current clamp sensors
- Universal Monitor Connection Cable (pre-attached to the energy meter)

The system measures voltage, current, power, energy consumption, and other electrical parameters in three-phase systems, transmitting this data to the Universal Monitor so you can view it from the Farmblox app.

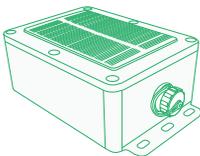
Package Contents



Current Clamp
Sensors x3



Three-phase
energy meter x1



Universal Monitor x1



Universal Monitor
Connection Cable x1

Technical Specifications

IMPORTANT NOTE: The energy meter is configured for 480v 3 Phase configuration by default. If another configuration is needed, please contact our technical support team for assistance.

support@farmblox.ag

Energy Meter:

- Voltage range: 90-520VAC
- Frequency: 50/60Hz
- Power supply: Self-powered from voltage sense wires
- Operating temperature: -10°C to 55°C
- Power configuration: 480v 3 Phase @ 60Hz

Current Clamps

- Technology: Rogowski Coil
- Sensitivity: 60mV/kA@60Hz
- Coil assembly with three individual clamps
- RJ12 connector for direct connection to the energy meter
- Directional arrows for proper installation

Pre-Installation Requirements

Parts Required:

- DIN rail
- Electrical enclosure if installing outside of main panel
- 16/18ga wires for voltage sense

Site Requirements:

- Adequate space for energy meter mounting
- Access to three-phase electrical system
- Clean, dry location for equipment installation
- Proximity to Farmblox monitor box location

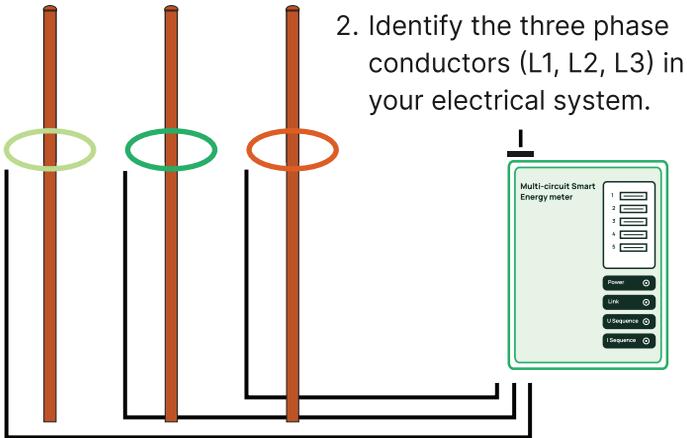
Installation Procedure

1. Mounting the Energy Meter

1. Select a suitable location for the energy meter that is:
 - Accessible for maintenance
 - Close to the electrical panel
 - Within cable reach of the Farmblox monitor box
2. Mount the DIN rail to secure the energy meter.
3. Hook the energy meter onto the DIN rail and secure the two clips on the bottom to lock it in place.

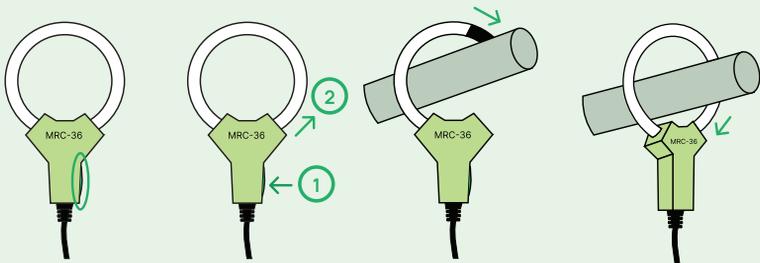
2. Installing Current Clamps

1. **IMPORTANT:** Ensure all power is turned off and locked out before proceeding.



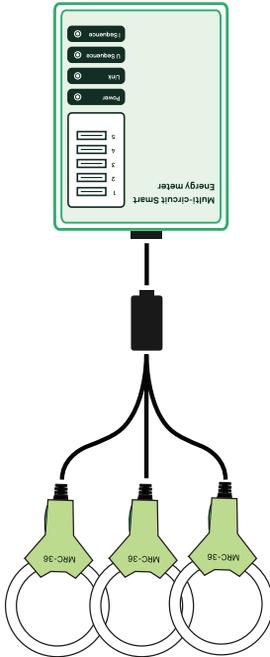
3. Wrap each current clamp around the corresponding phase conductor.

How to unlock the clamp



Installation

CRITICAL: Make sure the arrow on each coil points TOWARDS the load side.



4. Close the locking mechanism on the clamp and ensure it is properly locked by gently tugging on it.
5. Route the clamp cable to the energy meter, ensuring it is:
 - Protected from physical damage
 - Away from sources of electromagnetic interference
6. Connect the clamp cable to the energy meter by plugging the connector into the designated port on the meter.

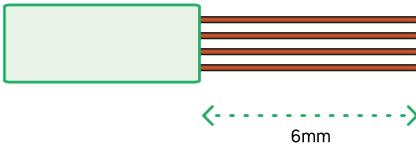
3. Connecting the Voltage Sense Wires

1. **IMPORTANT:** Ensure all power is turned off and locked out before proceeding.

Next steps are found on the next page →

2. Prepare four wires for connecting to the phase conductors and neutral (if applicable):

- Use appropriate gauge wire for your electrical system
- Cut wires to suitable length to reach from the electrical panel to the energy meter

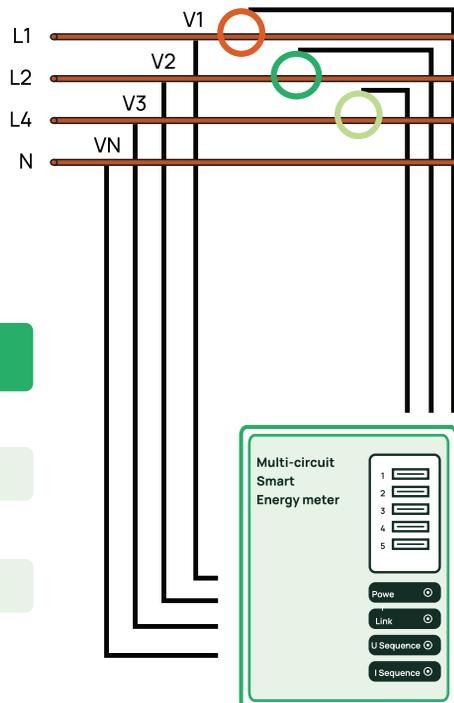


- Strip approximately 6mm of insulation from each end of the wires

3. Connect one end of each wire to the corresponding phase and neutral in your electrical system.

4. Connect the other end of each wire to the corresponding screw terminals on the energy meter:

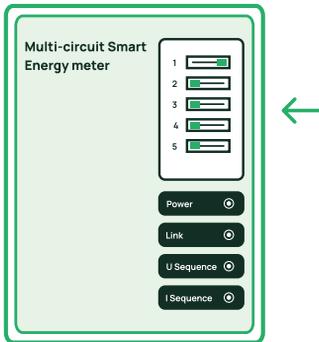
Wire	Connect to Terminal
L1 phase wire	V1
L2 phase wire	V2
L3 phase wire	V3
Neutral wire	VN



5. Ensure all connections are tight and secure by gently tugging on each wire.

4. Setting the Device ID Switches

1. Locate the Device ID switches on the energy meter.



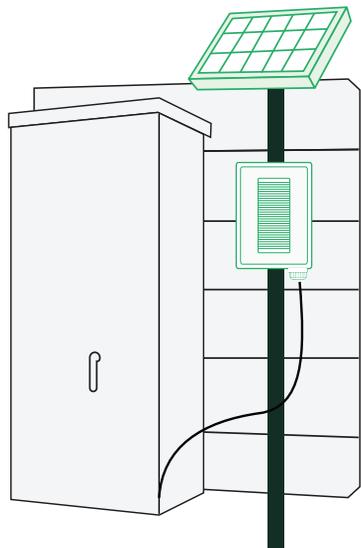
2. Set the switches configuration as follows:

- Switch #1: Set to the **RIGHT** position
- Switches #2-5: Set to the **LEFT** position

5. Mounting and connecting to the Monitor

a) Mounting the Monitor:

1. Position the Farmblox Monitor where the integrated solar panel has sun exposure for charging.
2. Avoid shaded areas or locations where the solar panel might be obstructed.
3. Secure the monitor box firmly to prevent movement.



b) Connecting the Monitor:

1. Locate the pre-attached plug and play cable on the energy meter.
2. Route the Universal Monitor Connection cable, ensuring it is:
 - Protected from physical damage
 - Away from sources of electromagnetic interference
3. Connect the cable to the Monitor, ensuring the white dot on the sensor connector lines up with the white dot on the Monitor and screw the blue ring tight.
4. Secure all cables with appropriate cable management solutions.
5. Download and install the Farmblox app on your mobile device.
6. Follow the steps in the Universal Monitor product manual to configure and add it to the app.
7. Ensure the monitor is online and reporting values.

Some values are reported infrequently, the Monitor sends the following stats:

Every reading:

- Instantaneous current for all phases
- Line to Neutral voltage for all phases

Switched readings:

- Instant power draw per phase
- Accumulated energy per phase
- Power factor per phase
- Line to Line volts

Verifying Installation

1. Restore power to the electrical system.
2. Verify the energy meter power LED is lit and blinking.
3. Using the Farmblox app, check that all phase voltages are present and within expected ranges.
4. Verify current readings on all phases when load is present.
5. Verify data is being properly received by the monitoring system.

Maintenance

- Inspect the installation annually for signs of damage or wear
- Check all connections for tightness
- Verify clamp positioning, and that clamps have not shifted
- Ensure that the Monitor solar panel is free of debris and has direct sunlight throughout the day

Troubleshooting

Problem	Possible Cause
Zero current reading	Load is not active
Zero current reading	Rogowski coil not properly connected
Negative current readings	Rogowski coils installed in wrong direction
No readings display in the app	Connection issue
The monitor LED is not blinking	Monitor battery has depleted



Installation

Solution

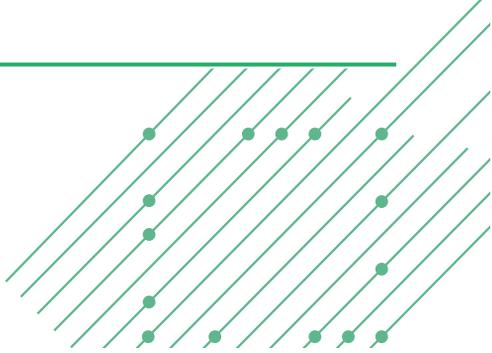
Turn on a load to read the current it is drawing

Verify RJ12 connection and coil placement

Verify arrows on coils point toward load side

- Check cable connections
- Ensure the Monitor can communicate with the Base Station
- Ensure the monitor is charged by forcing a reading and observing the green LED

Clean the solar panel and ensure it has direct sunlight. Once the situation has been corrected it will charge and resume sending readings





Need some help?

support@farmblox.ag