

Fusion Energy SEM-Meter

Fusion Energy SEM-Meter Home Energy Monitor User Manual

Model: SEM-Meter

PRODUCT OVERVIEW

The Fusion Energy SEM-Meter is designed to monitor your home's energy usage in real-time. This device provides comprehensive data to help you understand and manage your electricity consumption, preventing costly repairs, conserving energy, and reducing costs. It supports various electrical configurations and offers detailed insights through a dedicated application.

Key Features:

- **Real-Time Monitoring:** Track your home's power usage anywhere, anytime.
- **Easy Installation:** Designed for straightforward installation in most home circuit panels with clamp-on sensors.
- **Versatile Compatibility:** Supports single-phase (up to 240VAC line-neutral), split-phase (120/240VAC), and three-phase (up to 415Y/240VAC, no Delta) systems.
- **Circuit-Level Sensors:** Includes two 200A sensors for monitoring major appliances like air conditioners, furnaces, water heaters, washers, dryers, and ranges. Expandable with up to eight additional sensors.
- **Data Accuracy:** Connects via 2.4GHz WiFi for energy usage monitoring with an accuracy range of $\pm 1\%$.
- **Detailed Statistics:** View power usage statistics in real-time, hourly (90-day validity for export), daily, weekly, monthly, and yearly formats (permanent export for day/month/year data).
- **Privacy Mode:** Supports operation without cloud services or the app, using your own MQTT server for LAN-only access without internet.



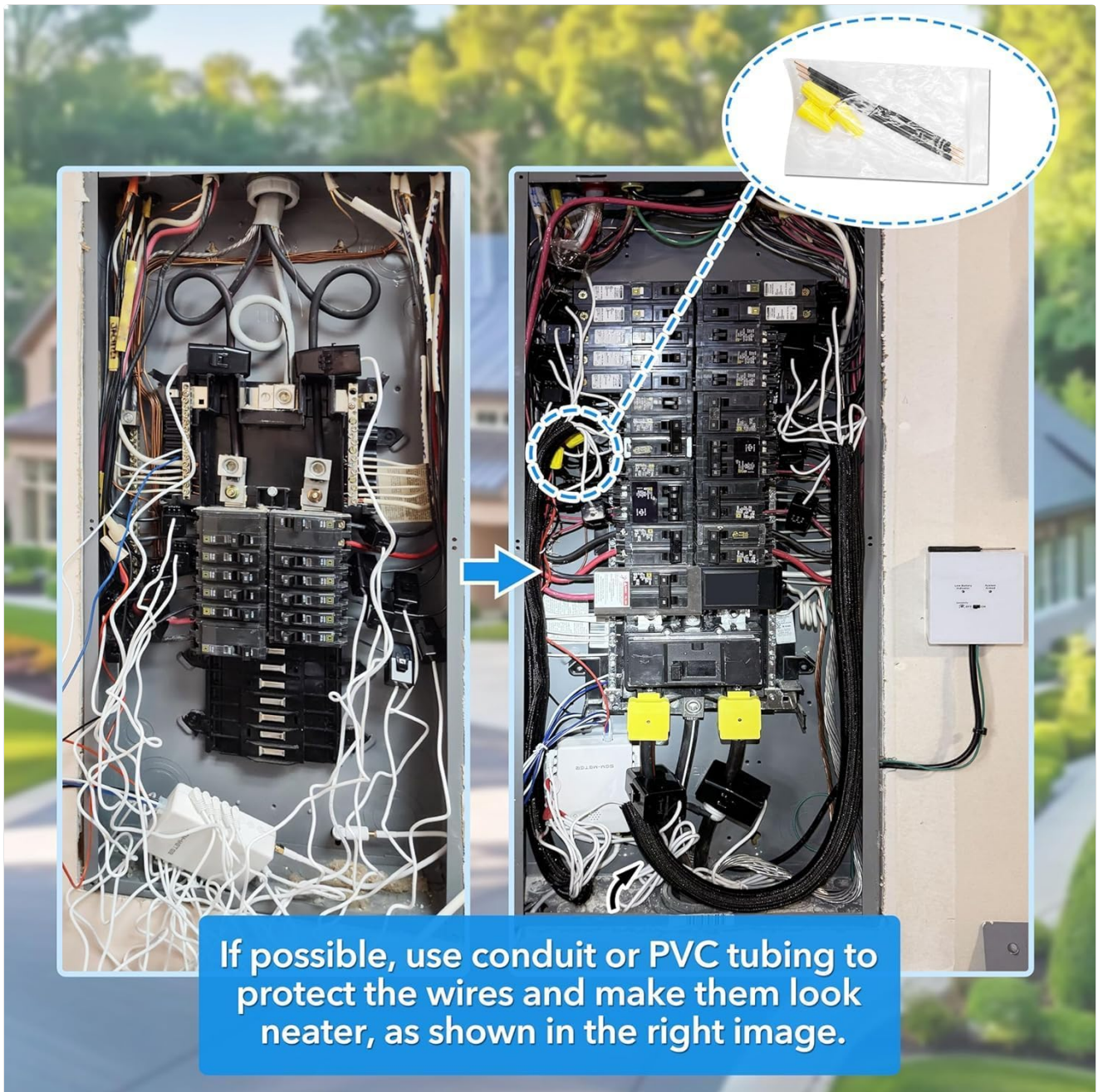
The SEM-Meter is suitable for residential homes, rental properties, and small businesses to optimize energy consumption.

SETUP AND INSTALLATION

The SEM-Meter is designed for easy installation within your home's circuit panel. Ensure all power is turned off at the main breaker before beginning installation. It is recommended that installation be performed by a qualified electrician.

Installation Steps:

1. **Prepare the Circuit Panel:** Turn off the main power to your home at the circuit breaker. Open the circuit panel cover.
2. **Mount the SEM-Meter:** Find a suitable location within the circuit panel to mount the SEM-Meter device.
3. **Connect Sensors:** Install the clamp-on 200A sensors around the main incoming power lines. For branch circuits, additional 50A sensors can be added. Panels with access only to busbars may require flexible sensors (available separately).
4. **Wire the Device:** Connect the white and blue wires from the wire harness to the neutral busbar. Connect the black and red wires from the harness to the hot leads from the breakers you wish to monitor. Refer to the wiring diagrams below for common configurations.
5. **Secure Wiring:** If possible, use conduit or PVC tubing to protect the wires and ensure a neat installation.
6. **Power On:** Once all connections are secure, replace the circuit panel cover and restore power.
7. **App Connection:** Connect the SEM-Meter device to your 2.4GHz WiFi network. Follow the instructions in the mobile application for initial setup and pairing.



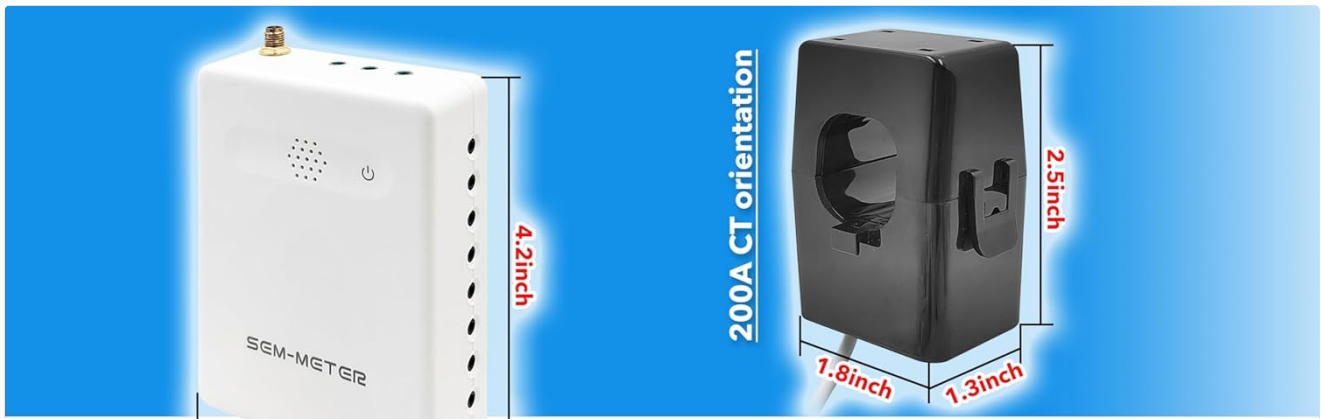
Example of SEM-Meter installation in a circuit panel. Using conduit or PVC tubing can protect wires and improve organization.

Directly installed on your home circuit panel. Install in circuit panel of most homes with clamp-on sensors. Supports single-phase up to 240VAC line-neutral; single, split-phase 120/240VAC; and three-phase up to 415Y/240VAC (no Delta). Panels with access only to busbars will need flexible sensors available from SEM-Meter.

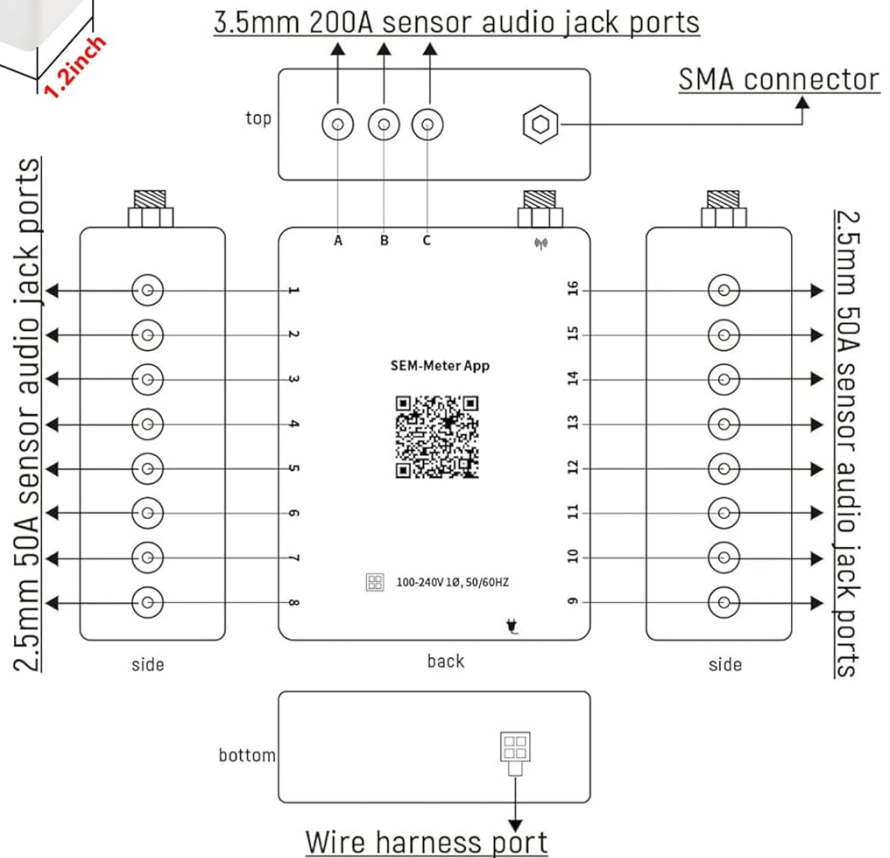


The SEM-Meter installs directly on your home circuit panel, supporting single-phase, split-phase, and three-phase systems.

Wiring Diagrams:



▲ TIP:
 Please check the product size details before purchase to ensure it fits the space of your electricity meter box.



Two common wiring modes for connecting the SEM-Meter to your circuit breakers.

Installation Video Guide:

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This video provides an electrician's perspective on the SEM-Meter, including installation considerations.

OPERATING INSTRUCTIONS

After successful installation and connection to your WiFi network, you can begin monitoring your energy usage through the dedicated mobile application.

Using the Mobile Application:

1. **Download the App:** Search for the SEM-Meter app on your Android or Apple device's app store.
2. **Create an Account:** Follow the in-app instructions to create a new user account or log in if you already have

one.

3. **Add Device:** Pair your SEM-Meter device with the app. This usually involves scanning a QR code on the device or following a guided discovery process.
4. **View Real-Time Data:** The app's main dashboard displays your current total energy usage. You can view data for individual circuits if additional sensors are installed.
5. **Access Historical Data:** Navigate through the app to view historical data by minute, hour, day, week, month, or year. Hourly data can be exported for 90 days, while daily, monthly, and yearly data exports are permanently available.
6. **Set Notifications:** Configure actionable notifications within the app to understand where energy savings can be made.



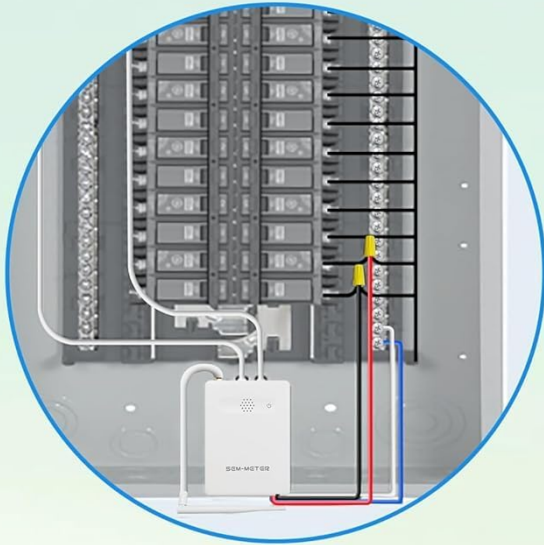
Monitor your home's real power anywhere, anytime to prevent costly repairs, conserve energy, and save costs. Monitor solar / net metering. Light commercial 3 phase option available as a separate bundle. SEM-Meter device via 2.4GHz WiFi to monitor energy usage, with an accuracy range of $\pm 1\%$.

SEM-MET...826BA9 (on) 9:41
Main circuit AC Furnace Heater Wat
Now Min Hour Day Week Month Year
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0.013
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Home Graphs Notification

SEM-METER-User (onlin) 9:41
Main circuit AC Furnace Heater Wat
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0.11
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11:20:43 11:22:25 14:20:43 14:22:14 14:23:54 14:25:06
Home Graphs Notification

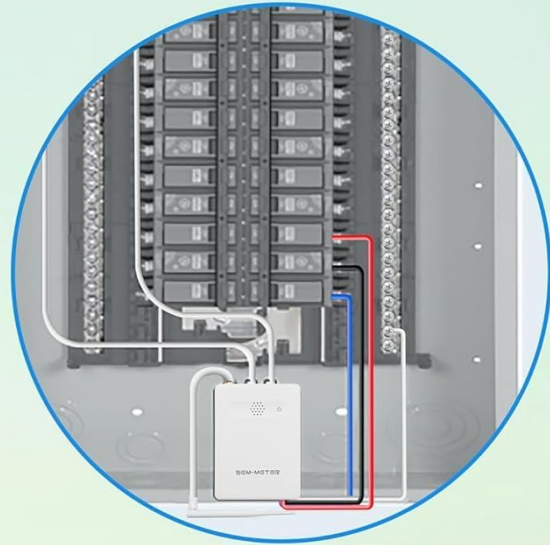
Monitor your home's energy usage in real-time and view detailed statistics through the mobile application.

Two common modes



1.

Secure the White and Blue wires from the wire harness to the neutral busbar. Turn off two vertically adjacent (stacked) single pole 15A breakers and secure the Black and Red wires from the harness to each of the hot leads from each breaker.



2.

Secure the White and Blue wires from the wire harness to the neutral busbar. Turn off two vertically adjacent (stacked) 15A single pole breakers and remove their wires. Connect one of the breaker wires to the Black harness wire and an extra wire with a wire nut. Next, connect the second breaker wire to the Red harness wire and an extra wire with a wire nut. Then secure each of the extra wires to the two breaker poles.

The app allows you to view electricity usage anytime, anywhere, providing comprehensive data.

Operation Videos:

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This video demonstrates how to monitor energy usage in real-time with the SEM-Meter.

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This video showcases real-time energy monitoring capabilities using the smart home sensors.

MAINTENANCE

The Fusion Energy SEM-Meter is designed for minimal maintenance. Regular checks can help ensure optimal performance:

- **Visual Inspection:** Periodically inspect the device and sensor connections within the circuit panel to ensure they are secure and free from damage.
- **Software Updates:** Keep the mobile application updated to the latest version to benefit from new features and performance improvements.
- **Cleaning:** If necessary, gently wipe the exterior of the SEM-Meter device with a dry, soft cloth. Do not use liquid cleaners or abrasive materials.

TROUBLESHOOTING

If you encounter issues with your SEM-Meter, refer to the following common troubleshooting steps:

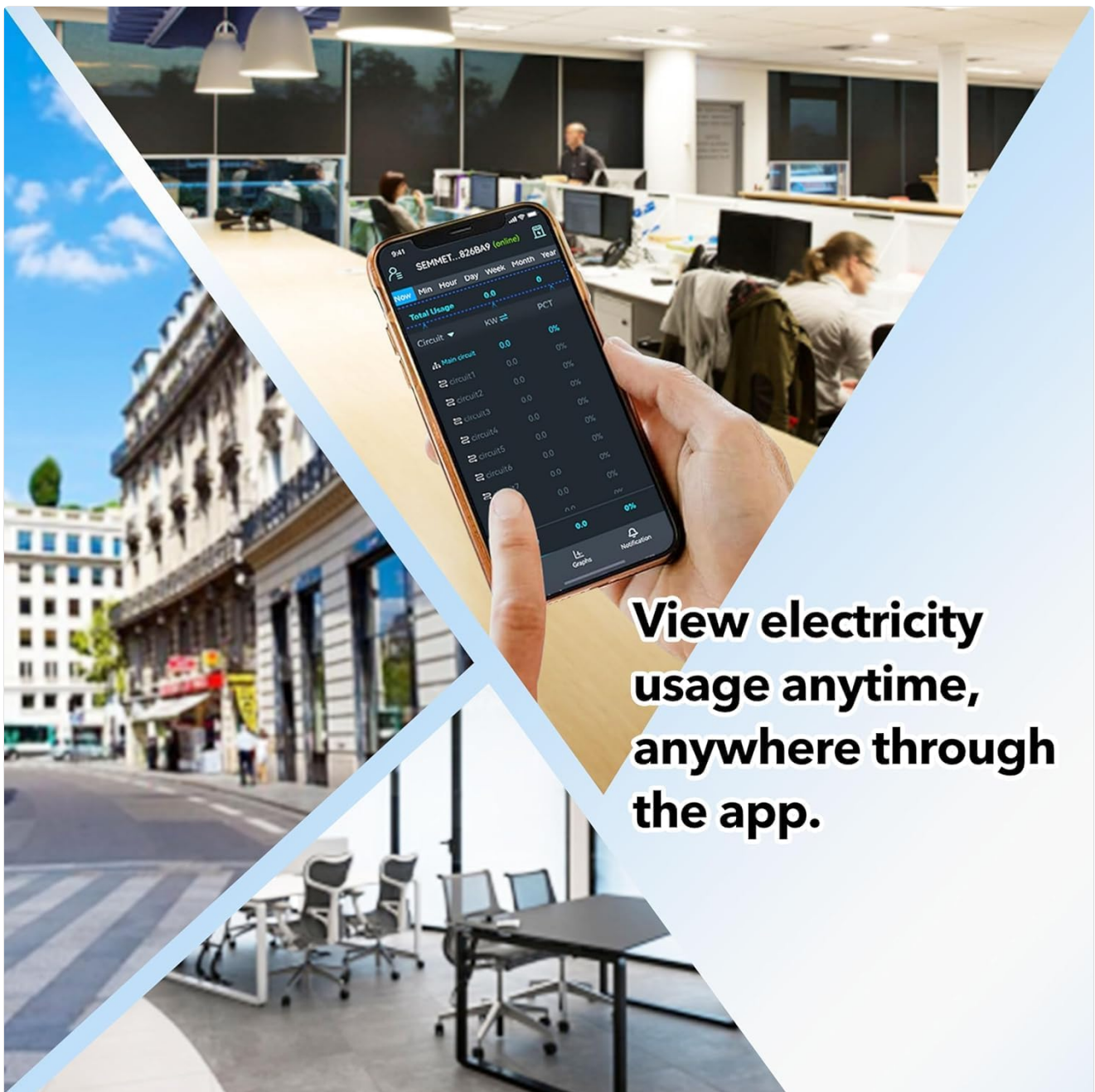
- **Device Not Connecting to Wi-Fi:**
 - Ensure your Wi-Fi network is operating on the 2.4GHz band. The SEM-Meter does not support 5.0GHz networks.
 - Verify that the Wi-Fi password entered during setup is correct.
 - Move the Wi-Fi router closer to the SEM-Meter or consider a Wi-Fi extender to improve signal strength.
 - Restart your Wi-Fi router and the SEM-Meter device.
- **No Data Displayed in App:**
 - Check if the SEM-Meter is properly connected to your Wi-Fi network (indicated by an LED on the device).
 - Ensure the current transformer (CT) sensors are correctly clamped around the wires and securely plugged into the SEM-Meter.
 - Verify that the main power to the circuit panel is on.
 - Refresh the app or restart it.
- **Inaccurate Readings:**
 - Confirm that the CT sensors are installed in the correct orientation and are fully closed.
 - Ensure the SEM-Meter is configured correctly for your electrical system (single-phase, split-phase, or three-phase) in the app settings.

If these steps do not resolve your issue, please contact customer support for further assistance.

PRODUCT SPECIFICATIONS

Feature	Specification
Model Number	SEM-Meter
Manufacturer	Fusion Energy
Dimensions	4.18 x 3.1 x 1.2 inches
Item Weight	1.54 pounds

Color	Black
Included Components	Energy monitor, 2 x 200A Circuit Level Sensors
Supported Phases	Single-phase (up to 240VAC line-neutral), Split-phase (120/240VAC), Three-phase (up to 415Y/240VAC, no Delta)
Wi-Fi Connectivity	2.4GHz
Accuracy Range	±1%
Batteries Required	No



View electricity usage anytime, anywhere through the app.

Detailed product dimensions and port layout for the SEM-Meter and its sensors. Please check these details to ensure compatibility with your electricity meter box.

Another view of the SEM-Meter's physical layout, including sensor audio jack ports and wire harness port.

WARRANTY AND PROTECTION

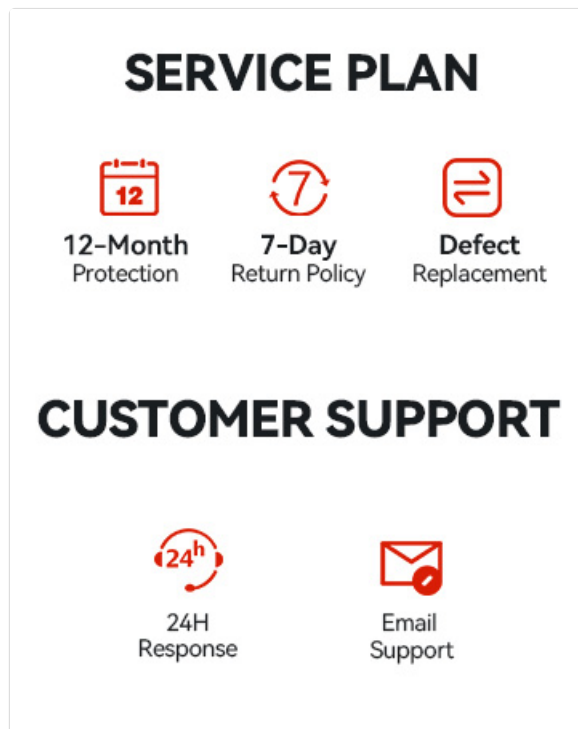
The Fusion Energy SEM-Meter is protected by a 1-year warranty from the date of purchase, covering manufacturing defects.

Additional Protection Plans:

Extended protection plans may be available for purchase to provide additional coverage beyond the standard warranty period:

- **3-Year Protection Plan:** Extends coverage for 36 months.
- **4-Year Protection Plan:** Extends coverage for 48 months.
- **Complete Protect:** A monthly subscription plan that covers eligible past and future purchases.

Please refer to the terms and conditions of specific protection plans for full details on coverage and claims.



Overview of service plan benefits including 12-month protection, 7-day return policy, and defect replacement.

CUSTOMER SUPPORT

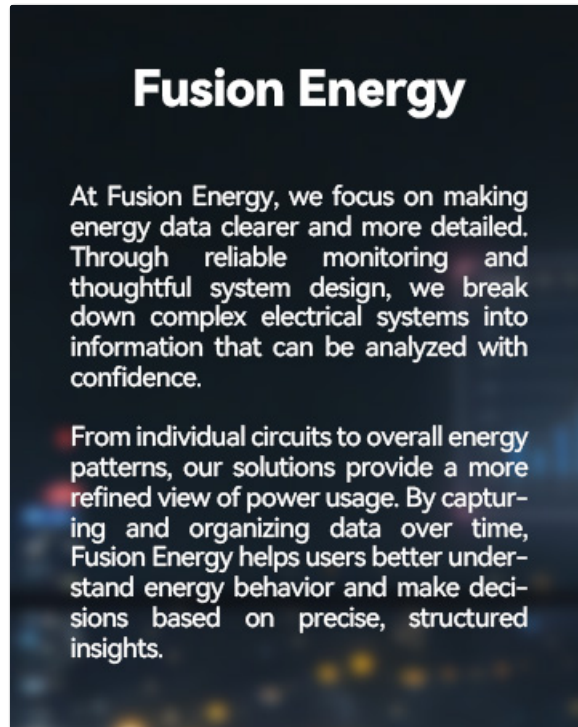
For any questions, technical assistance, or warranty claims, please contact Fusion Energy customer support.

Support Services:

- **24-Hour Response:** Our support team aims to respond to inquiries within 24 hours.

- **Email Support:** Contact us via email for detailed assistance.

Refer to the product packaging or the Fusion Energy website for the most current contact information.



Customer support options include 24-hour response and email assistance.