IAMMETER WEM3080T

IAMMETER WEM3080T Three Phase Energy Meter User Manual

Model: WEM3080T

1. Introduction

The IAMMETER WEM3080T is a bi-directional three-phase energy meter designed for monitoring electricity usage and solar PV system performance. It provides real-time data on energy consumption, solar production, and grid interaction. This device supports integration with various home automation platforms and offers an open API for custom monitoring solutions. It is suitable for both residential and industrial applications requiring precise energy measurement.

2. Product Overview

2.1. Key Features

- Monitors both exported and imported energy in real-time.
- Tracks home energy usage and calculates billing information hourly, daily, and monthly.
- Compares electricity bills with solar PV system income, providing detailed reports.
- Bi-directional energy flow monitoring with a single meter.
- Open API for integration with custom servers or home automation platforms such as Home Assistant, openHAB, Node-RED, ioBroker, and PVoutput.

2.2. Package Contents

The package typically includes the IAMMETER WEM3080T energy meter, three current transformers (CT clamps), and a WiFi antenna.

Figure 2.2.1: IAMMETER WEM3080T Three Phase Energy Meter with included accessories.

This image displays the main components: the central meter unit, three split-core current transformers for measuring current on each phase, and a detachable WiFi antenna for network connectivity.

3. Specifications

Attribute	Value
Model Number	WEM3080T
Product Dimensions	3.55 x 2.8 x 2.26 inches (90.2 x 71 x 57.5 mm)
Weight	1.59 Pounds
Manufacturer	Beijing Lewei IOT Technologies Co. Ltd.
Connectivity	WiFi, Modbus TCP/RTU

Attribute	Value
Current Rating	150A (with included CT clamps)

Figure 3.1: Physical dimensions of the WEM3080T meter.

This image provides a visual representation of the meter's dimensions, indicating its compact size suitable for DIN rail mounting.

4. Setup & Installation

4.1. Safety Information

WARNING: Installation should only be performed by qualified personnel. Ensure all power is disconnected at the main breaker before attempting any wiring. Failure to follow these instructions may result in electrical shock, fire, or serious injury.

4.2. Wiring Diagram

The WEM3080T is designed for three-phase systems. The current transformers (CTs) must be installed correctly around the live wires of each phase (L1, L2, L3) and connected to the corresponding CT inputs on the meter. Voltage inputs (UA, UB, UC, UN) must also be connected to the respective phases and neutral.

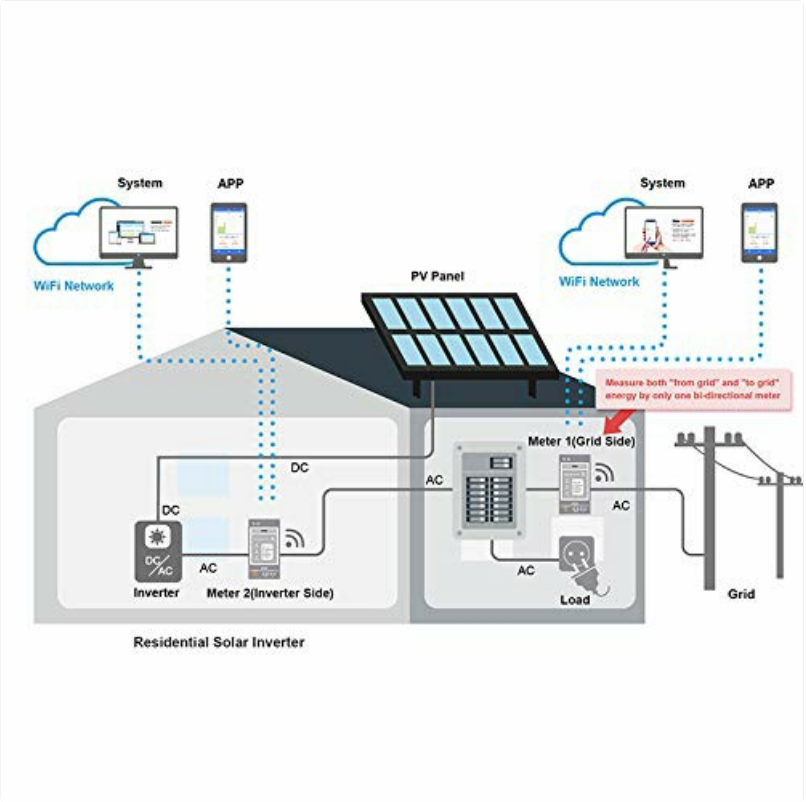

Figure 4.2.1: Example wiring for a residential solar inverter system.

This diagram illustrates how the meter can be integrated into a residential solar setup to monitor both grid interaction and solar inverter output. Meter 1 monitors the grid side, while Meter 2 monitors the inverter side. The system measures both energy exported to and imported from the grid.

Figure 4.2.2: Detailed system integration diagram for the WEM3080T.

This diagram provides a comprehensive view of the wiring, showing connections for the grid, load, and PV system, along with the network connection via WLAN to the internet and the IAMMETER-Cloud or a private server.

4.3. Network Configuration (WiFi)

After physical installation, connect the device to your WiFi network. Refer to the IAMMETER official documentation for detailed steps on connecting the device to your local network and the IAMMETER cloud service. This typically involves using a mobile application or a web interface to configure the WiFi settings.

5. Operation

5.1. Monitoring Data

The WEM3080T allows you to monitor energy data through a dedicated mobile application (Android/iOS) and a web-based monitoring system.

5.2. Mobile Application

The mobile app provides real-time and historical data, including solar PV system overview, energy yield, and detailed billing and income statistics. It allows you to monitor your electricity usage or solar PV system anytime, anywhere.

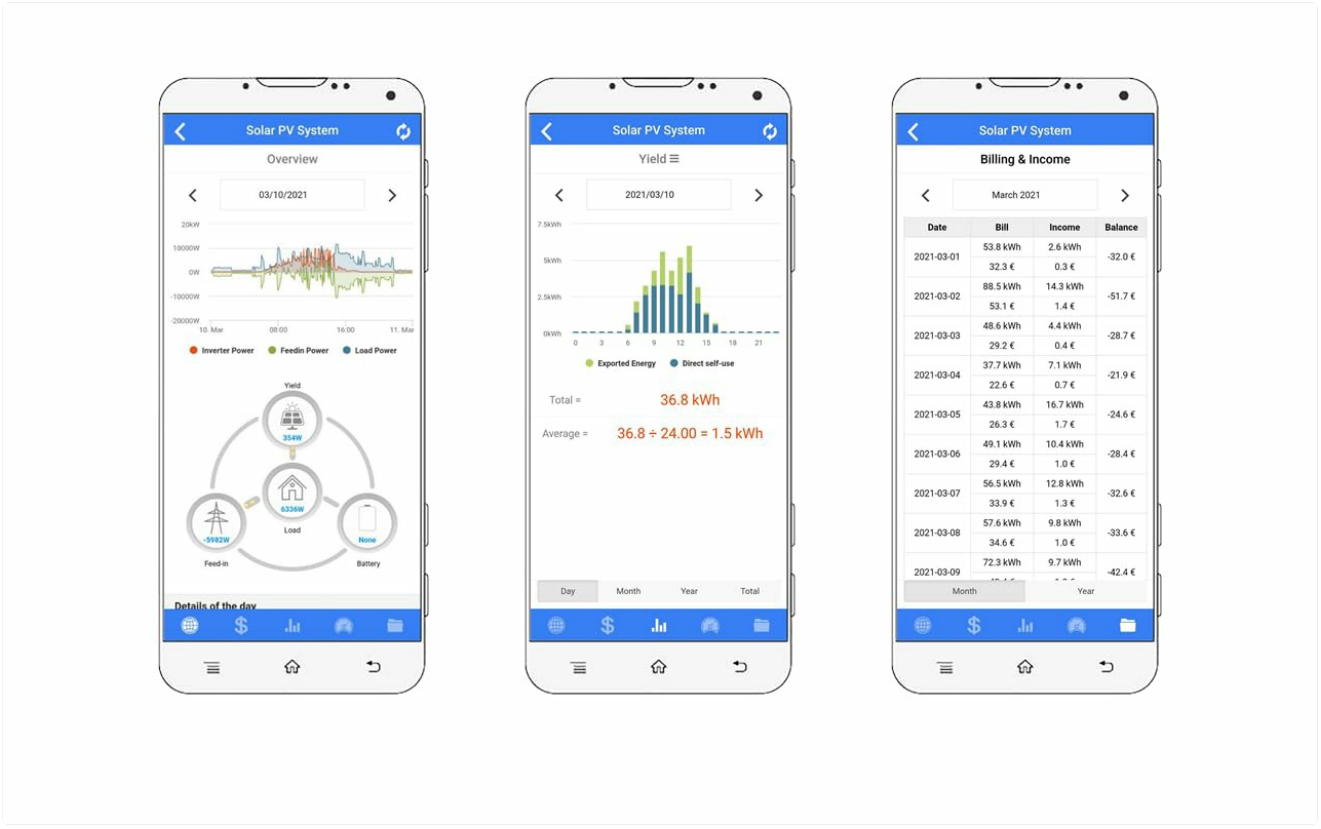

Figure 5.2.1: Mobile application interface for solar PV system monitoring.

These screenshots display the mobile app's capabilities, showing an overview of solar production, energy yield graphs, and a breakdown of billing and income from the solar system.

5.3. Web Portal

The web portal offers a comprehensive dashboard for detailed analysis of your energy data. It presents information in graphs and tables, allowing for in-depth review of energy consumption, solar generation, and financial aspects.

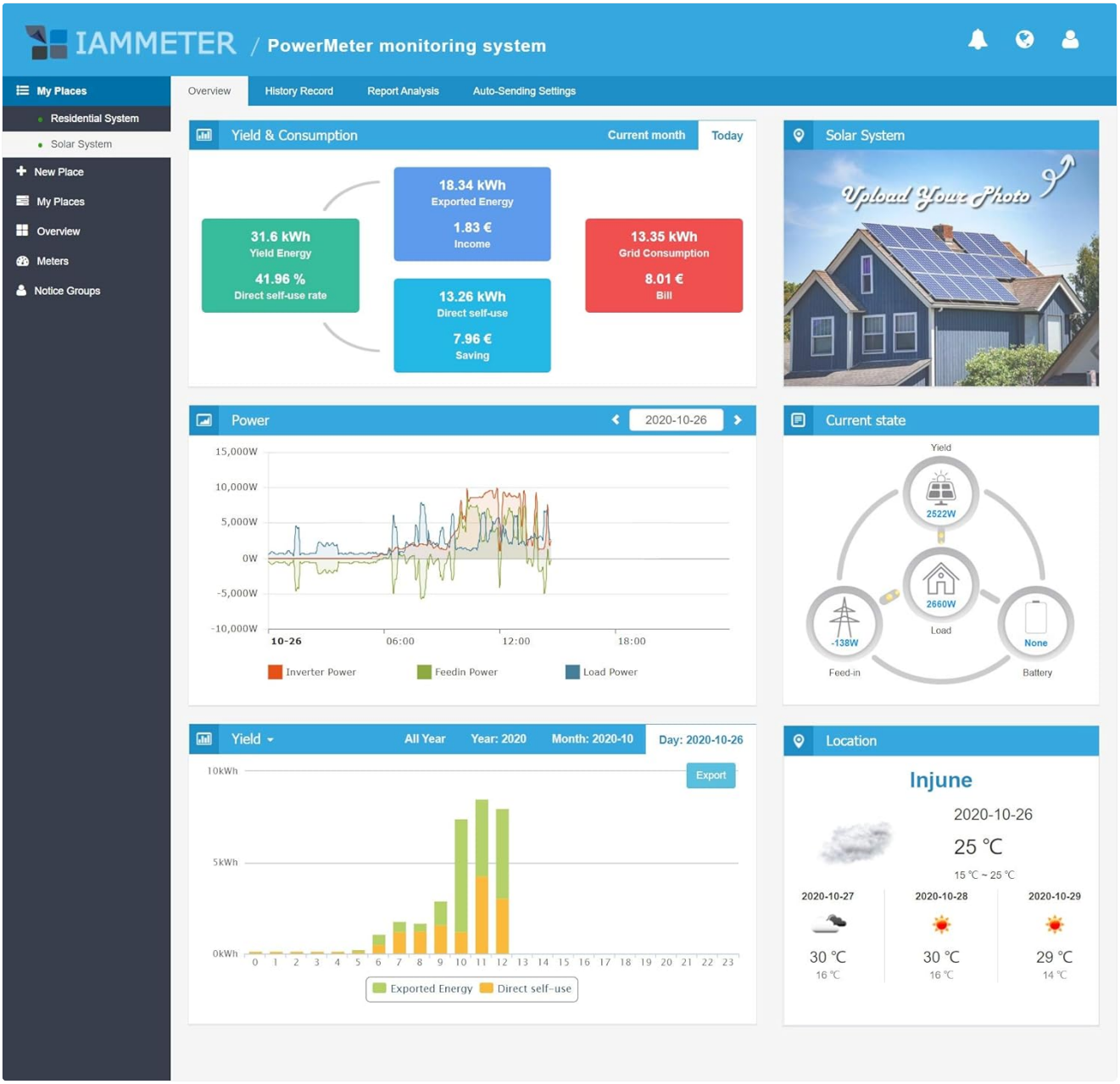

Figure 5.3.1: Web monitoring system dashboard for solar PV systems.

This image shows the web interface, providing a detailed overview of a solar PV system's performance, including yield, consumption, and power flow diagrams.

5.4. Demo Access

You can explore a live demo of the IAMMETER monitoring system to understand its functionalities before full setup.

Figure 5.4.1: Scan QR code for demo access.

Scan the QR code in the image or visitIAMMETER Demo to access the online demonstration.

6. Integration

The IAMMETER WEM3080T offers extensive integration capabilities:

- **Home Automation Platforms:** Direct support for Home Assistant, openHAB, Node-RED, and ioBroker.
- **Modbus TCP/RTU:** Enables communication with industrial control systems and other Modbus-compatible devices.
- **Open API:** Provides flexibility for developers to integrate the meter's data into custom monitoring systems or applications.
- **PVoutput:** Compatible with PVoutput for solar performance monitoring.

These options allow users to leverage the meter's data within their existing smart home ecosystems or develop tailored solutions.

7. Maintenance

The WEM3080T is designed for minimal maintenance. Periodically check physical connections for security and ensure the device is free from dust and moisture. Firmware updates are released periodically to enhance features and improve performance. It is recommended to keep the device's firmware updated for optimal operation. Consult the IAMMETER support resources for instructions on firmware updates.

8. Troubleshooting

If you encounter issues with your WEM3080T, consider the following:

- **No Data/Incorrect Readings:** Verify all wiring connections, especially the CT clamps and voltage inputs. Ensure CT clamps are installed in the correct direction (indicated by arrows).
- **WiFi Connectivity Issues:** Check your router's signal strength at the meter's location. Ensure correct WiFi credentials are entered during setup. Restart the meter and your router if necessary.
- **Device Not Responding:** Power cycle the device by disconnecting and reconnecting its power supply.
- **Integration Problems:** Confirm network connectivity and correct API keys or Modbus addresses. Refer to the specific integration documentation for detailed setup instructions.

For further assistance, refer to the IAMMETER online support resources or contact their customer service.

9. Warranty & Support

For information regarding product warranty, technical support, and service, please visit the official IAMMETER website or contact their customer support team directly. Ensure you have your product model number (WEM3080T) and purchase details available when seeking support.