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Marhynchus PC 321-W-80-TY

Marhynchus 3 Phase Smart Power Meter WiFi Home Energy Monitor PC 321-W-80-TY User Manual

1. INTRODUCTION

The Marhynchus PC 321-W-80-TY is a WiFi-enabled 3-phase smart power meter designed for real-time monitoring of electricity consumption in residential and commercial settings. This device allows users to track energy usage, optimize consumption, and manage costs effectively through a connected mobile application.



Image 1.1: Marhynchus 3 Phase Smart Power Meter with its components, including the main unit, three 80A current sensors, an external antenna, and connection cables.

2. SAFETY INFORMATION

WARNING: Installation of this device involves high voltage electricity. Installation should only be performed by a qualified electrician or a trained professional. Always disconnect power at the main circuit breaker before attempting any installation or wiring. Failure to follow these instructions may result in electric shock, fire, personal injury, or property damage.

- Ensure all local electrical codes and regulations are strictly followed during installation.
- Do not operate the device if it appears damaged.
- Keep the device away from water and excessive moisture.

3. PACKAGE CONTENTS

Verify that all items are present in the package:

- 1 x WiFi Smart Power Meter (Model: PC 321-W-80-TY)
- 1 x User Manual (this document)
- 1 x External Antenna
- 3 x 80A Current Transformers (CTs)
- 4 x Mounting Accessories (screws, wall plugs, etc.)

4. SPECIFICATIONS

Model	PC 321-W-80-TY
WiFi Standard	802.11 B/G/N20
Operating Frequency	2.4GHz (external antenna)
Output Power	+20dBm
Connection Voltage	100-240V AC
CT Current Rating	3 x 80A
Calibration Measurement Accuracy	≤ 100W: within ± 2W; > 100W: within ± 2%
Operating Temperature	-20°C ~ +55°C
Operating Humidity	≤ 90% non-condensing
Item Weight	1.37 pounds (approx. 0.62 kg)
Package Dimensions	8.27 x 5.51 x 2.36 inches (approx. 21 x 14 x 6 cm)

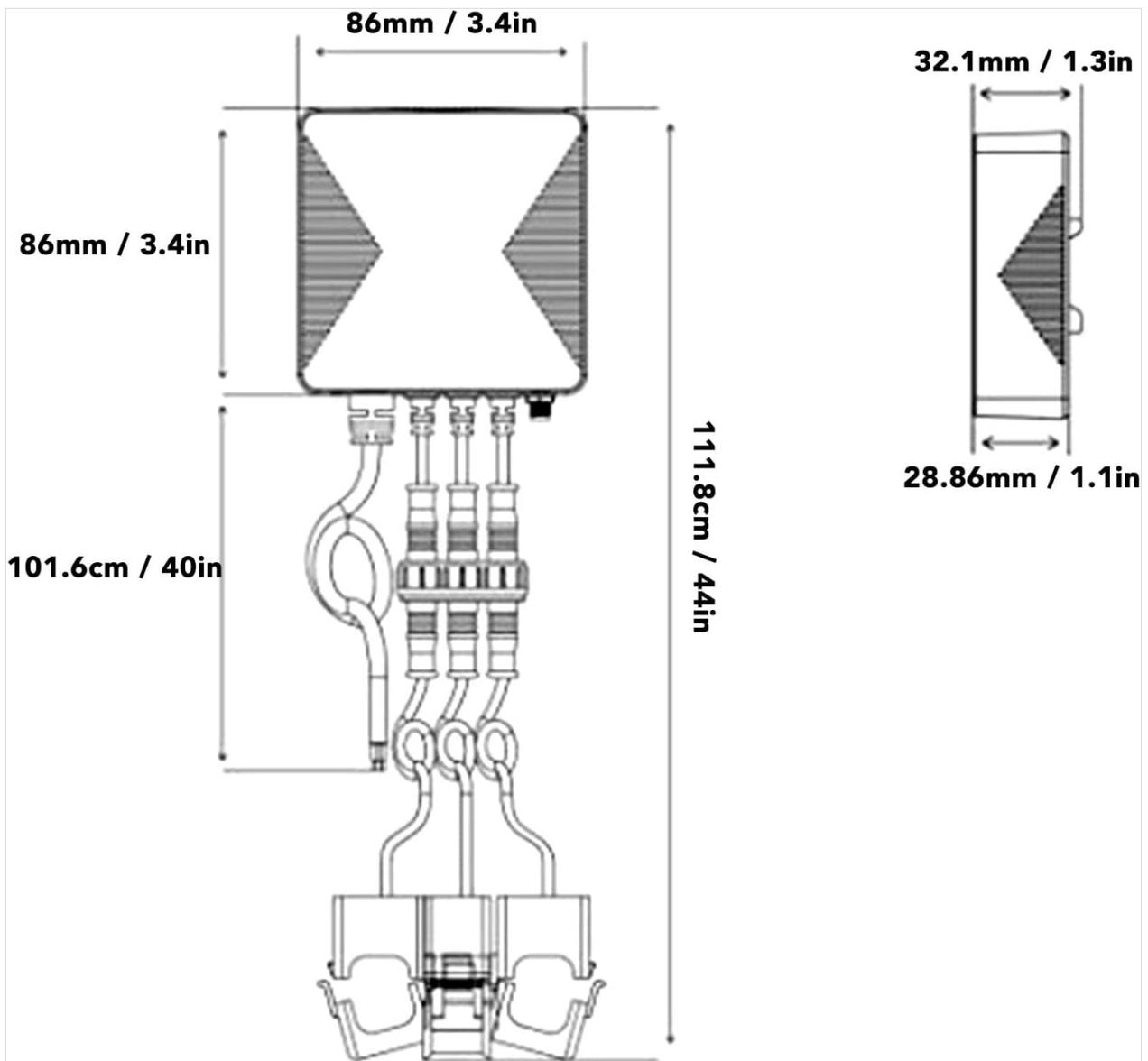


Image 4.1: Dimensional drawing of the smart power meter and its connected current transformers, showing overall length and main unit dimensions.

5. SETUP AND INSTALLATION

The installation of the Marhynchus PC 321-W-80-TY Smart Power Meter involves mounting the device, connecting the current transformers (CTs), wiring the power input, and configuring WiFi connectivity. Ensure power is disconnected before proceeding.

5.1. Component Identification

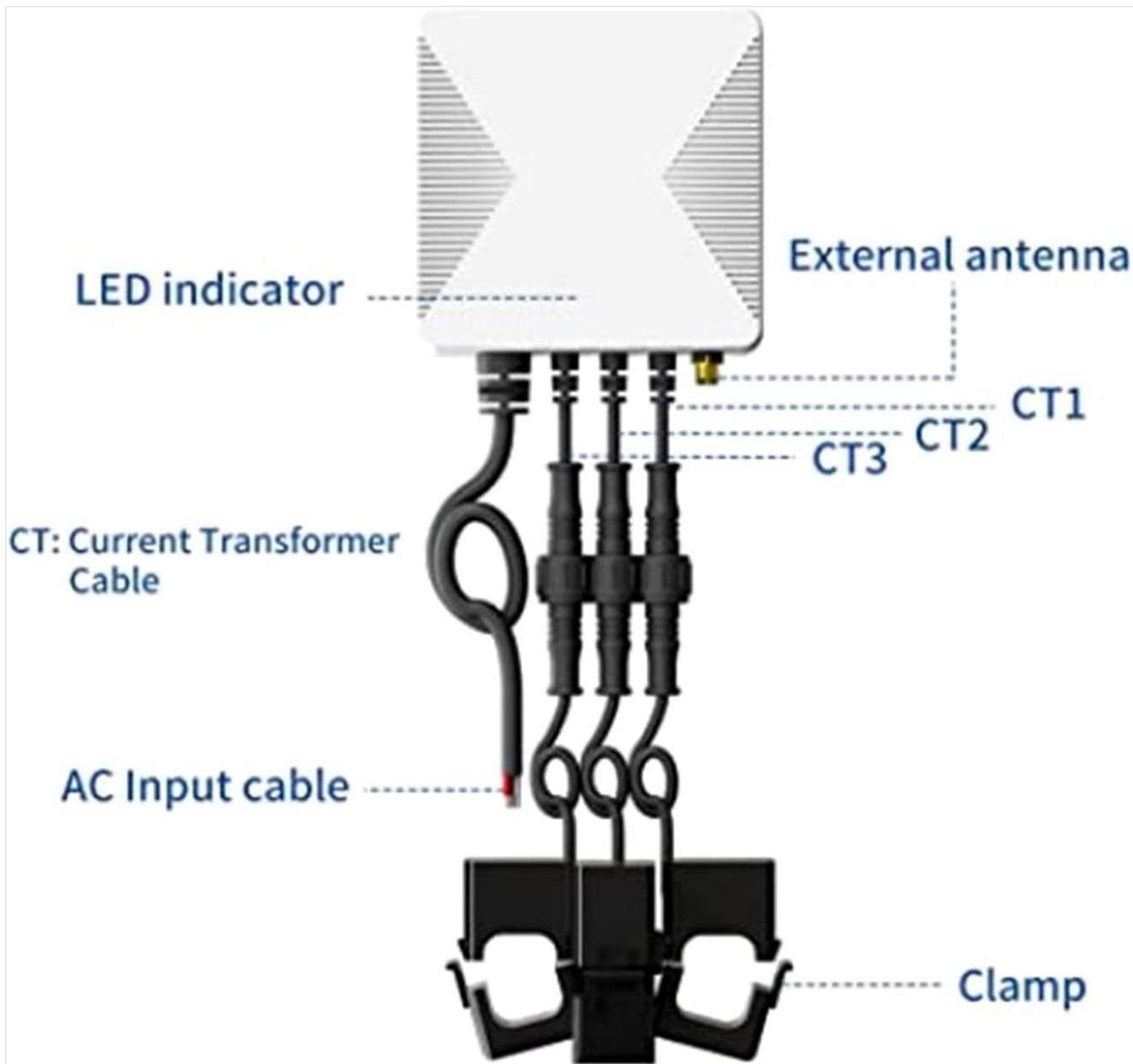


Image 5.1: Labeled diagram of the smart power meter showing the LED indicator, external antenna port, CT (Current Transformer) ports (CT1, CT2, CT3), AC input cable, and current clamps.

5.2. Mounting the Device

1. The power meter includes a mounting bracket. Use this bracket as a template to mark two holes on the desired wall or panel surface.
2. Screw the mounting bracket onto the wall at the marked locations. Install wall plugs if necessary for secure attachment.
3. Align the hooks of the mounting bracket with the mounting holes on the power meter unit and fit them into place until securely mounted.

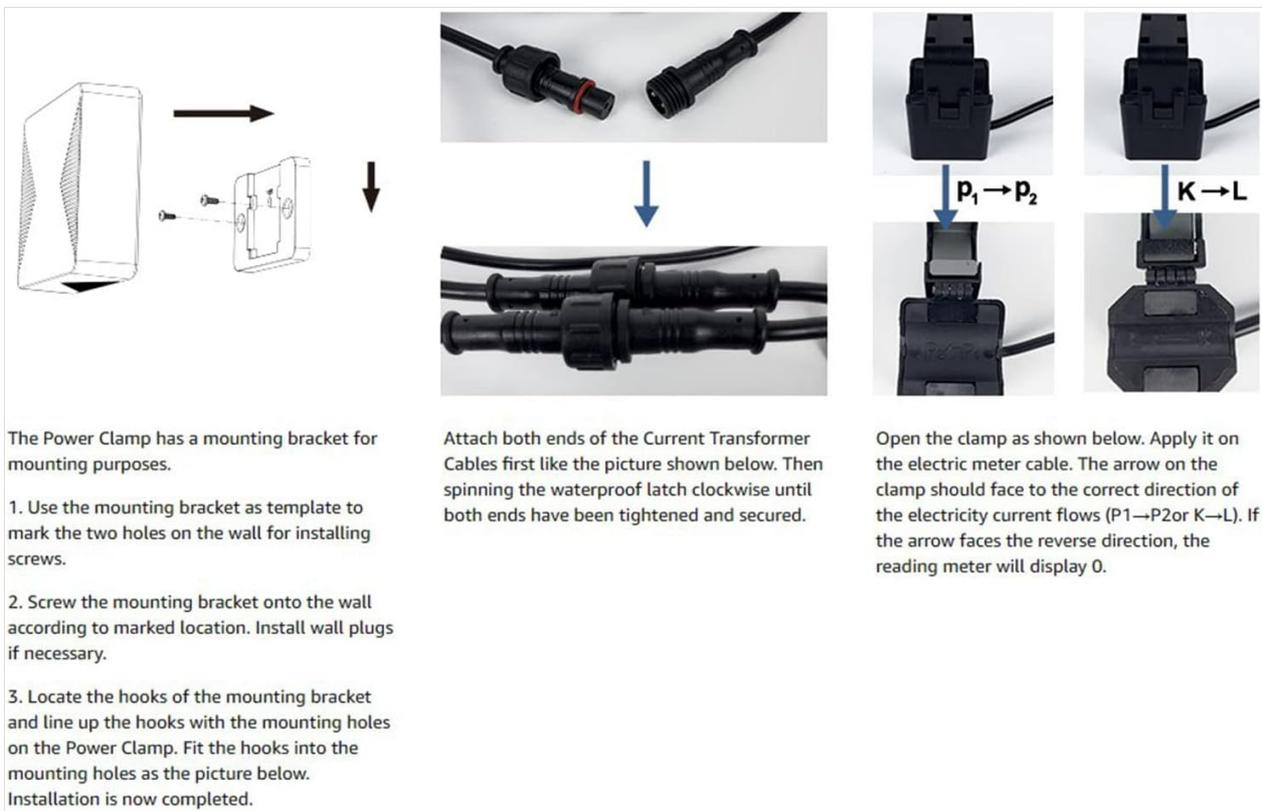


Image 5.2: Visual guide for mounting the power meter unit to a wall using the provided bracket.

5.3. Wiring and CT Clamp Installation

Refer to the wiring diagrams below for proper connection. Ensure all connections are tight and secure.

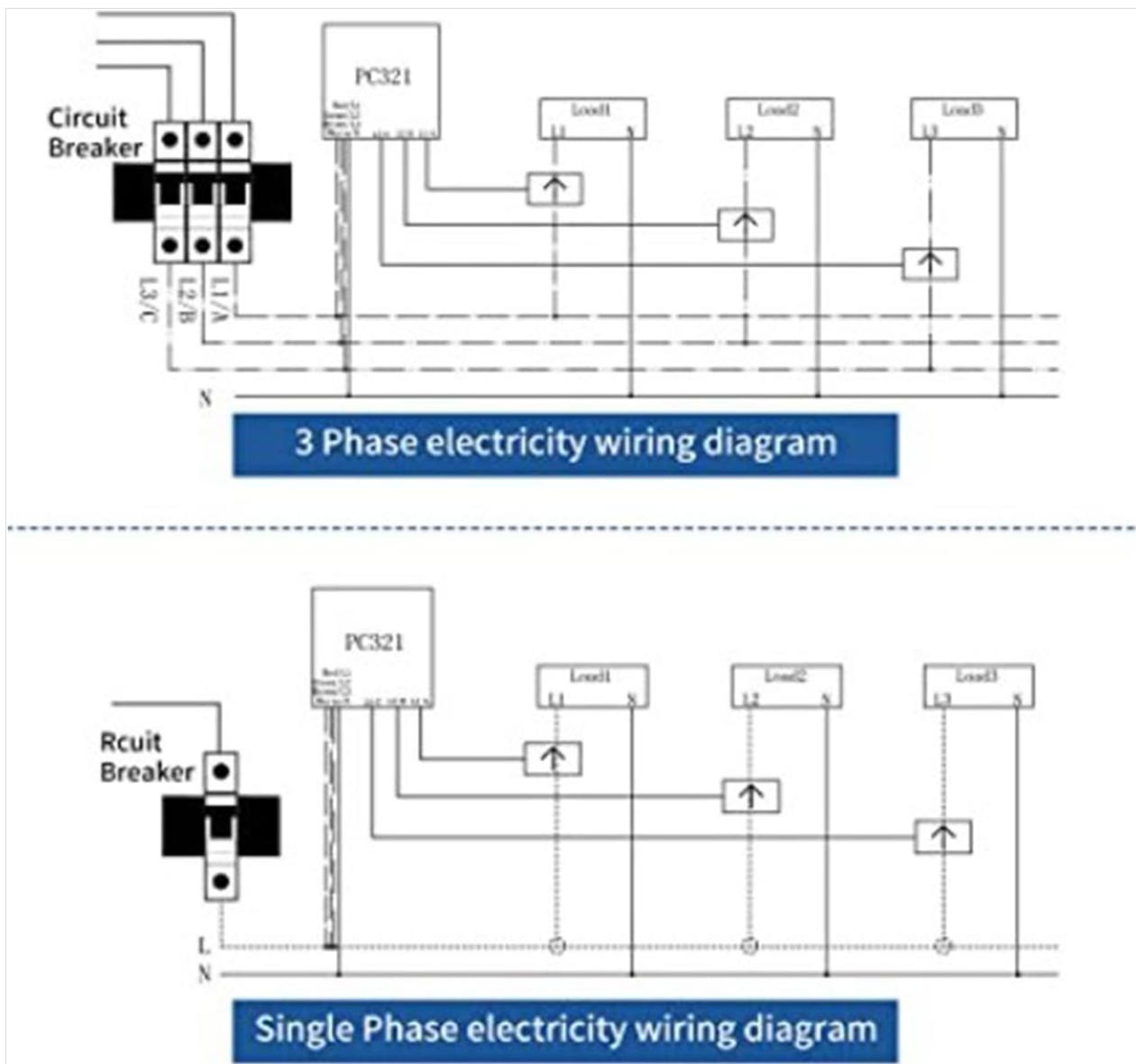


Image 5.3: Electrical wiring diagrams for both 3-phase and single-phase electricity systems, illustrating how to connect the PC321 meter to a circuit breaker and loads.

1. **AC Input Cable:** Connect the AC input cable to the appropriate power source (100-240V) as shown in the wiring diagram. Ensure proper connection of L1, L2, L3, and Neutral lines to the circuit breaker and the meter.
2. **Current Transformers (CTs):**
 - Connect both ends of the Current Transformer Cables. Ensure the waterproof latch is spun clockwise until tightened and secured.
 - Open each CT clamp. Apply it around the electric meter cable for the respective phase.
 - The arrow on the clamp (marked P1 → P2 or K → L) must face the correct direction of electricity current flow (from source to load). If the arrow faces the reverse direction, the meter will display 0 or incorrect readings.
 - Connect the three CT clamps to the CT1, CT2, and CT3 ports on the meter unit.

5.4. WiFi Connection

1. Connect the external antenna to the designated port on the meter.
2. Power on the device. The LED indicator will illuminate, indicating power status.
3. Download and install the companion mobile application (e.g., Smart Life app) on your smartphone.
4. Open the app and follow the in-app instructions to add a new device. Select the appropriate device type

(e.g., Energy Monitor).

5. Pair the device with your home WiFi network (802.11 B/G/N20, 2.4GHz frequency). Ensure your phone is connected to the same 2.4GHz network during pairing.
6. If pairing issues occur, a reset button may be located under the mounting plate. Press and hold it to re-enter pairing mode.

6. OPERATING INSTRUCTIONS

Once successfully installed and connected to WiFi, you can monitor your energy usage through the mobile application.

6.1. Real-time Energy Monitoring

1. Open the mobile application on your smartphone.
2. Navigate to the device interface for your Marhynchus Smart Power Meter.
3. The app will display real-time energy consumption data, including:
 - Total Active Power (W)
 - Total Current (A)
 - Frequency (Hz)
 - Voltage (V) for each phase (Phase A, B, C)
 - Current (A) for each phase
 - Active Power (W) for each phase
 - Power Factor for each phase
4. The overview section provides the total energy consumed in kilowatt-hours (kWh).

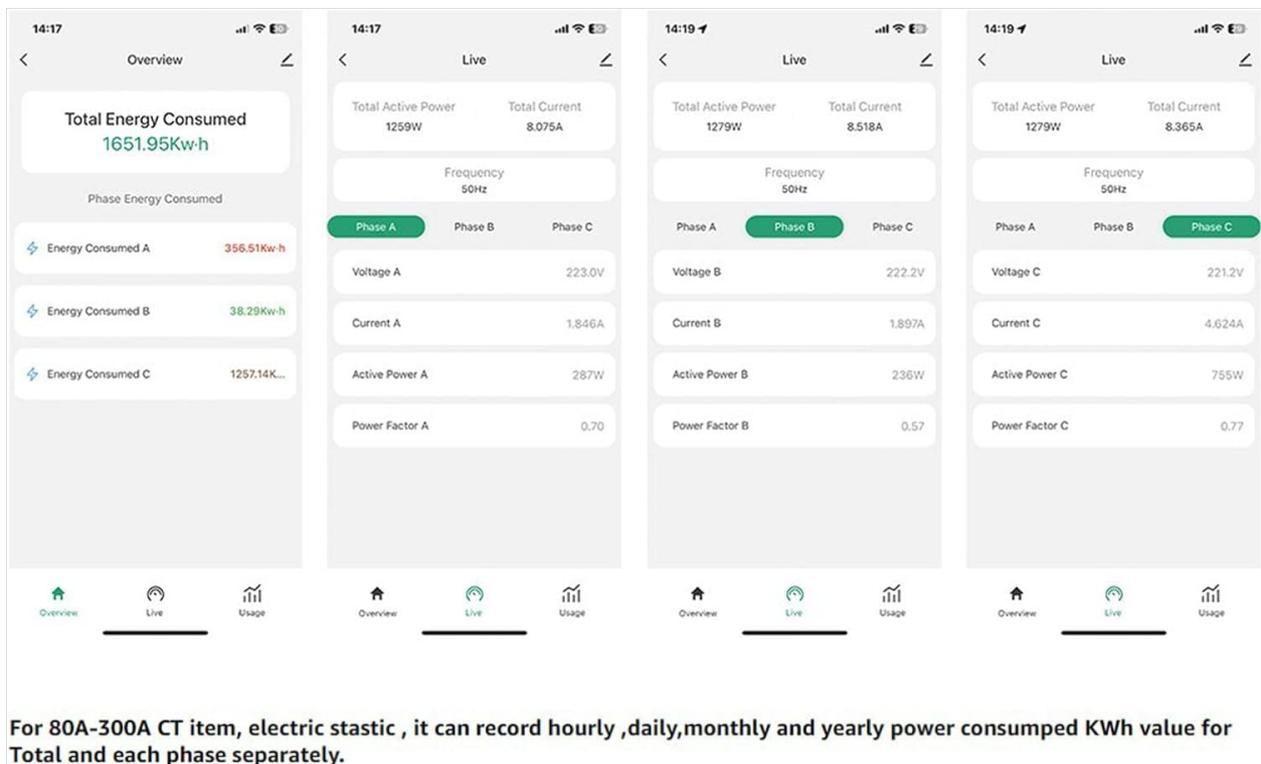


Image 6.1: Screenshots of the mobile application showing the overview of total energy consumed and live data for individual phases (Phase A, B, C), including voltage, current, active power, and power factor.

6.2. Data Logging and Analysis

The meter automatically records and stores energy consumption data. You can view historical data within the

application:

- Access hourly, daily, monthly, and yearly power consumption (kWh) for total usage.
- Review consumption data for each phase separately to identify specific load patterns.



Image 6.2: The PC321-TY meter is suitable for a wide range of applications, including monitoring power consumption in homes, markets, factories, research institutes, hotels, and schools.

7. MAINTENANCE

To ensure optimal performance and longevity of your smart power meter, follow these maintenance guidelines:

- **Cleaning:** Keep the device clean and free from dust. Use a soft, dry cloth for cleaning. Do not use liquid cleaners or solvents.
- **Environmental Conditions:** Do not expose the device to excessive moisture, direct sunlight, or extreme temperatures outside the specified operating range (-20°C to +55°C).
- **Connection Check:** Periodically inspect all wiring connections, including the AC input cable and CT clamps, to ensure they remain tight and secure. Loose connections can lead to inaccurate readings or safety hazards.
- **Antenna:** Ensure the external antenna is securely connected and positioned for optimal WiFi signal reception.

8. TROUBLESHOOTING

If you encounter issues with your Marhynchus Smart Power Meter, refer to the following troubleshooting steps:

- **No Power / LED Off:**
 - Check the AC input cable connection to the meter.
 - Verify that the power source is active and the circuit breaker is not tripped.
- **No Readings / 0 Display:**
 - Ensure the CT clamps are correctly installed on the electric meter cables.
 - Verify the direction of the CT clamps. The arrow (P1→P2 or K→L) on the clamp must point from the power source towards the load. Reverse the clamp if necessary.
 - Confirm that the CT clamps are fully closed around the cables and securely connected to the meter's CT ports.
- **WiFi Connection Issues:**
 - Ensure the external antenna is securely connected to the meter.
 - Confirm your home WiFi network is operating on the 2.4GHz frequency (802.11 B/G/N20). This device does not support 5GHz networks.

- Move the meter closer to your WiFi router to improve signal strength.
- If issues persist, locate and press the reset button (often found under the mounting plate) to re-enter pairing mode, then follow the in-app instructions for reconnection.
- **Inaccurate Readings:**
 - Double-check that the CT clamps are installed on the correct phases and are fully closed.
 - Ensure the wiring connections are correct according to the provided diagrams.
 - Verify that the device firmware is up to date via the mobile application.

9. WARRANTY AND SUPPORT

For detailed warranty information, terms, and conditions, please refer to the warranty card or documentation included with your product package. If you require technical assistance, troubleshooting beyond this manual, or have questions regarding your Marhynchus Smart Power Meter, please contact Marhynchus customer service through their official website or the contact information provided in your product documentation.