MObyat SDM Modbus 230V Multifunction Energy Meter

MOBYAT SDM Modbus 230V Multifunction Energy Meter User Manual

Model: TAC2100

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of the MOBYAT SDM Modbus 230V Multifunction Energy Meter. This device is designed for single-phase energy measurement and features a pulse output and RS485 communication for integration into monitoring systems. Please read this manual thoroughly before installation and use to ensure safe and correct operation.

2. Safety Information

- Installation must be performed by qualified personnel only.
- Ensure power is disconnected before installation or maintenance to prevent electric shock.
- Observe all local electrical codes and regulations.
- Do not operate the meter if it is damaged or shows signs of malfunction.
- This device is intended for indoor use in a dry environment.

3. Product Overview

The MOBYAT SDM Modbus Multifunction Energy Meter (Model TAC2100) is a single-phase energy meter capable of measuring various electrical parameters. It features a clear digital display, a pulse output for energy counting, and an RS485 interface for Modbus communication. The meter is designed for DIN rail mounting.

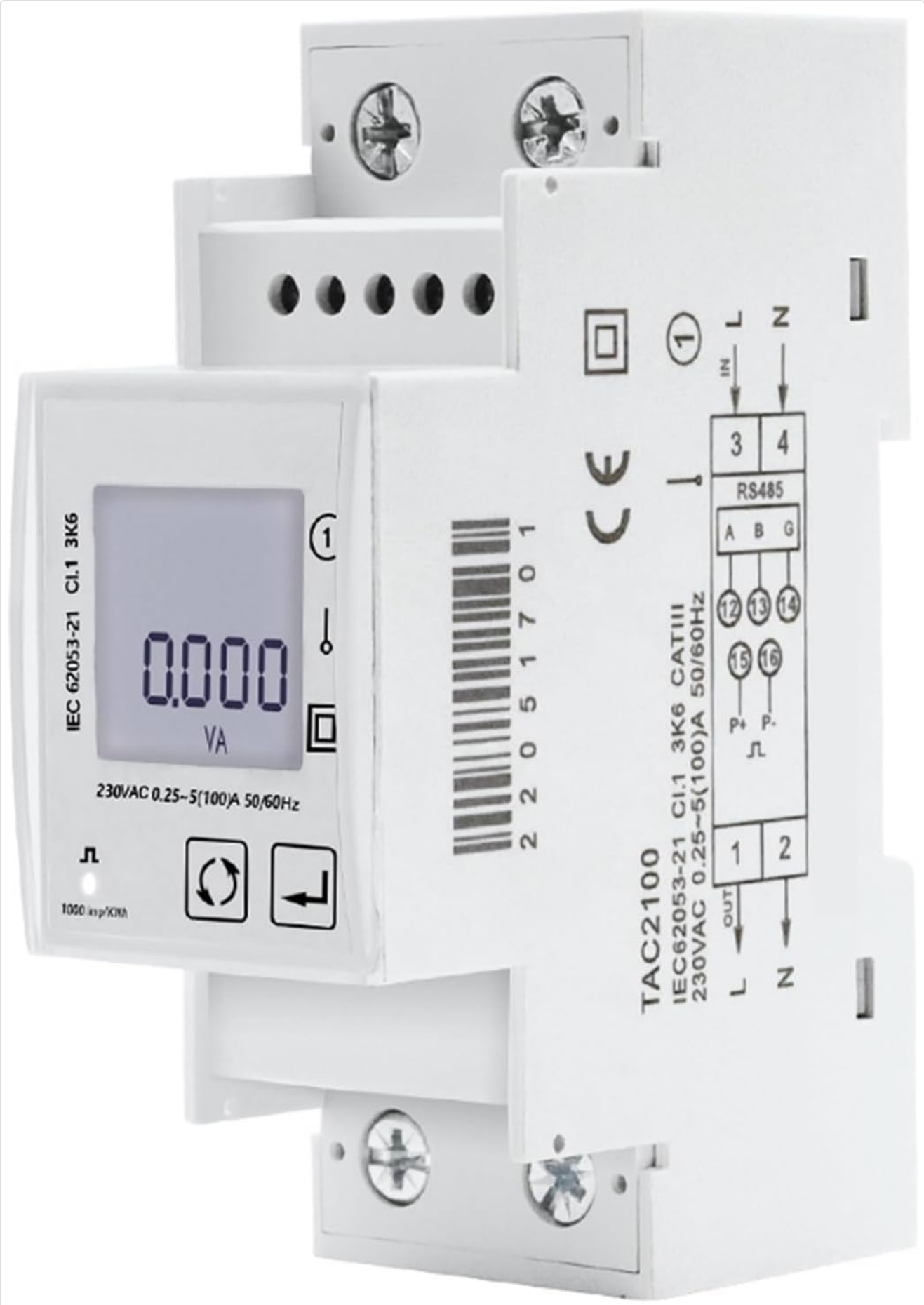


Figure 3.1: Front and side view of the MOBYAT SDM Modbus Multifunction Energy Meter, showing the display and connection terminals.

Key Features:

- Single-phase 230V AC measurement.

- Measures KWH, W, VA, A, V, KVAR, Hz, Power Factor.
- RS485 Modbus communication.
- One pulse output.
- DIN rail mounting.

4. Package Contents

- 1 x MOBYAT SDM Modbus 230V Multifunction Energy Meter (Model TAC2100)
- Terminal covers (as shown in Figure 4.1)



Figure 4.1: The energy meter shown with its included terminal covers.

5. Setup and Installation

5.1 Mounting

The meter is designed for standard 35mm DIN rail mounting. Ensure the DIN rail is securely installed in a suitable enclosure.





Figure 5.1: Rear view of the meter, illustrating the DIN rail mounting mechanism.

5.2 Wiring Diagram

Refer to the wiring diagram below for correct electrical connections. Ensure all connections are tight and secure.

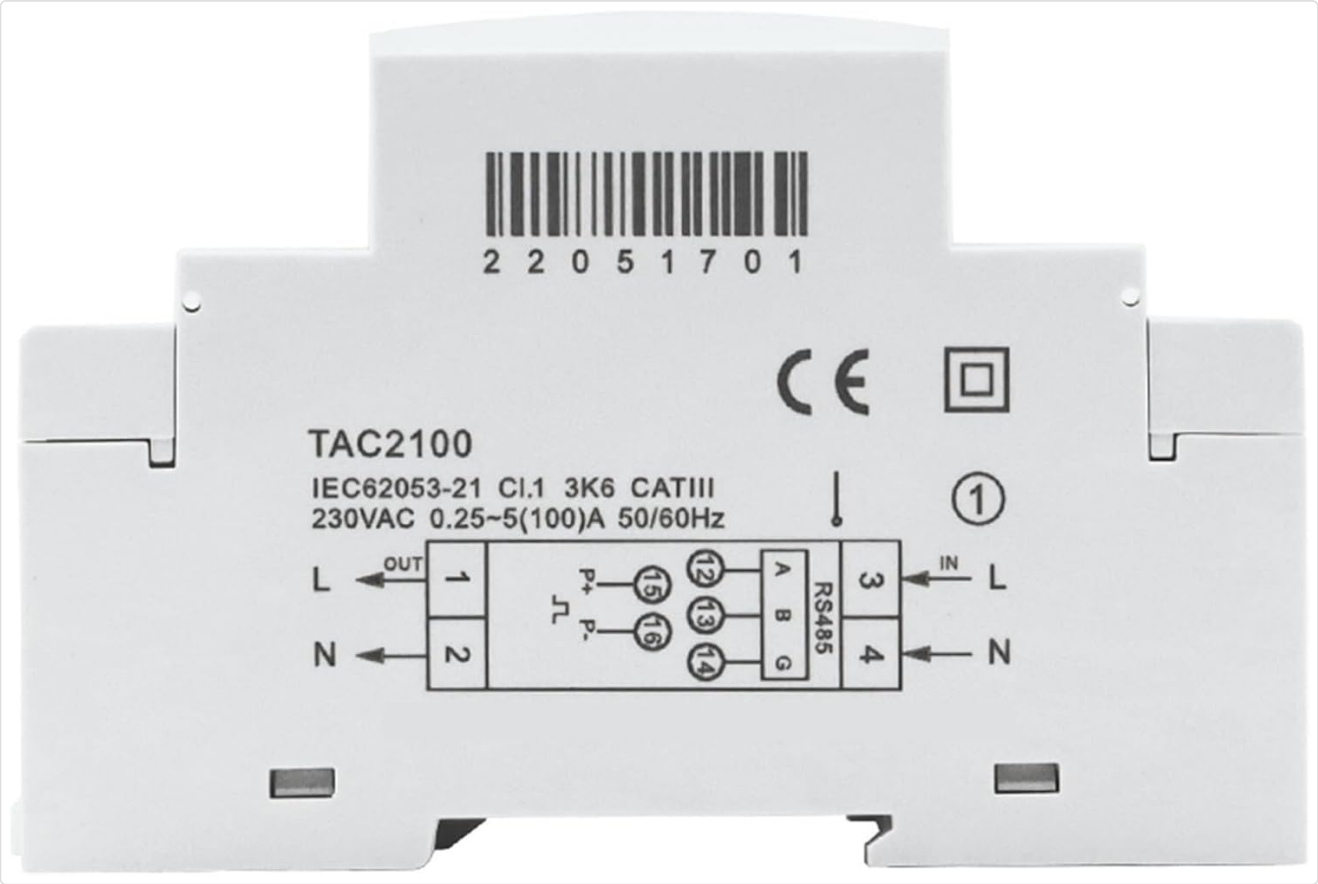


Figure 5.2: Top terminals for power input (L, N) and RS485 communication (A, B, G).

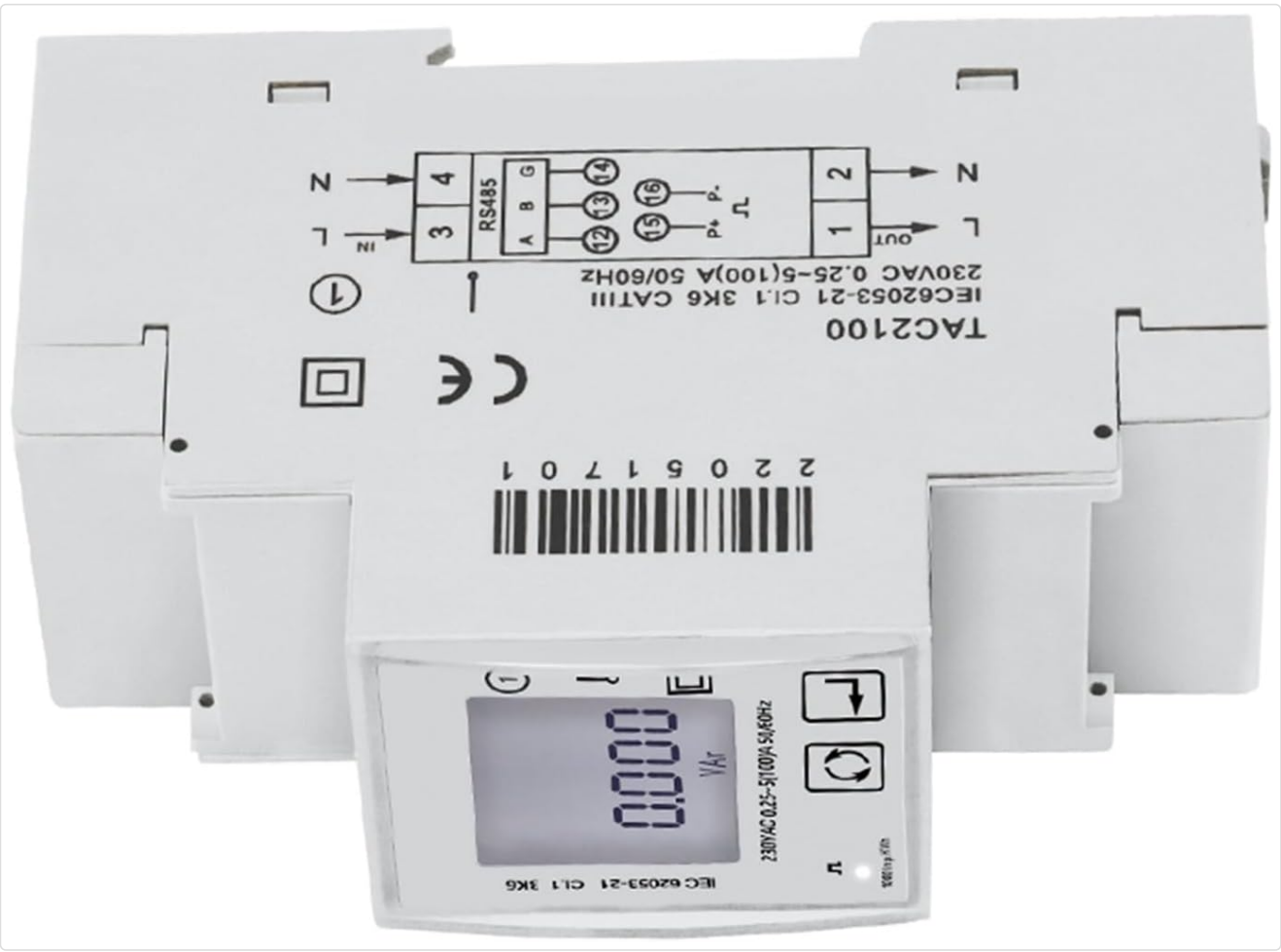


Figure 5.3: Bottom terminals for load output (L, N) and pulse output (P+, P-).

Input Power (IN):

- Terminal 3: Live (L) Input
- Terminal 4: Neutral (N) Input

Load Output (OUT):

- Terminal 1: Live (L) Output
- Terminal 2: Neutral (N) Output

RS485 Communication:

- Terminal A: RS485 Data A
- Terminal B: RS485 Data B
- Terminal G: Ground

Pulse Output:

- Terminal P+: Pulse Output Positive
- Terminal P-: Pulse Output Negative

After wiring, ensure terminal covers are securely placed to prevent accidental contact.

6. Operating Instructions

6.1 Display Navigation

The meter features a digital display that cycles through various measured parameters. Use the buttons on the front panel to navigate or view specific data.

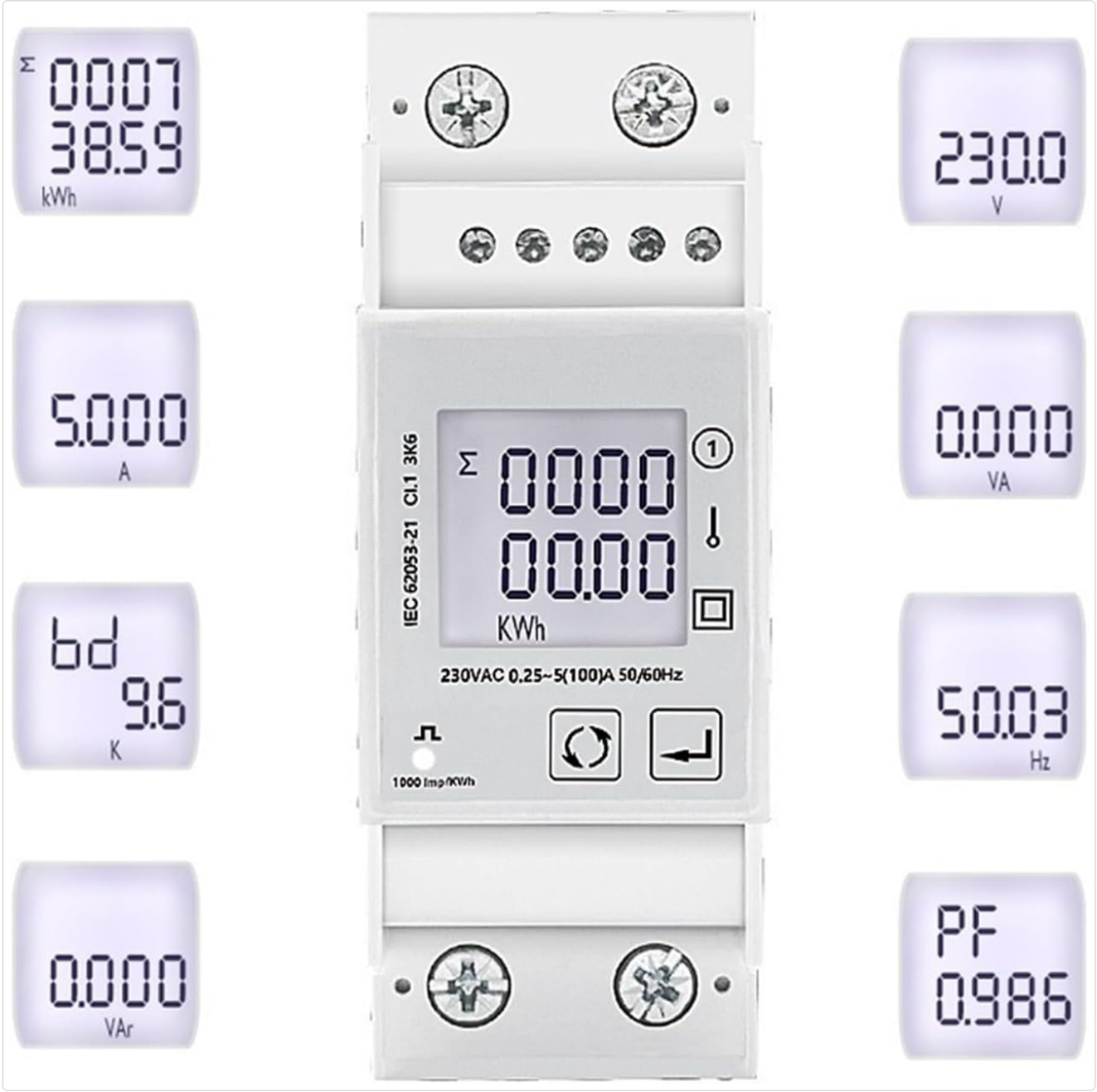


Figure 6.1: Examples of parameters displayed on the meter, including KWH, Voltage, Amperage, Frequency, and Power Factor.

The buttons typically allow for scrolling through parameters such as:

- Total Kilowatt-hours (KWH)
- Voltage (V)
- Current (A)
- Active Power (W)
- Apparent Power (VA)
- Reactive Power (VAR)
- Frequency (Hz)
- Power Factor (PF)

6.2 Modbus Communication

The RS485 interface supports Modbus RTU protocol for remote data acquisition. Refer to the specific Modbus register map (not included in this manual, typically provided separately by the manufacturer) for details on accessing measured parameters via Modbus.

6.3 Pulse Output

The pulse output provides a signal proportional to the measured energy consumption. The pulse rate is typically indicated on the meter (e.g., 1000 imp/KWh), meaning 1000 pulses represent 1 KWH of energy consumed.

7. Maintenance

- The meter requires no routine maintenance.
- Keep the meter clean and free from dust. Use a dry, soft cloth for cleaning.
- Do not use abrasive cleaners or solvents.
- Periodically check electrical connections for tightness, especially after initial installation.

8. Troubleshooting

Problem	Possible Cause	Solution
Meter display is blank	No power supply; incorrect wiring.	Check power connections (L and N inputs). Ensure power is supplied to the meter.
Incorrect readings	Incorrect wiring; faulty meter.	Verify wiring against the diagram. If wiring is correct, contact support.
RS485 communication failure	Incorrect wiring (A/B swapped); incorrect Modbus settings (address, baud rate); cable issues.	Check RS485 wiring. Verify Modbus settings in your master device. Ensure cable integrity.

9. Specifications

Parameter	Value
Model	TAC2100
Nominal Voltage	230VAC
Current Range	0.25-5(100)A
Frequency	45-65Hz
Accuracy Class	Cl.1 (IEC 62053-21)
Pulse Output	1000 imp/KWh
Communication	RS485 (Modbus RTU)
Installation	DIN Rail 35mm
ASIN	B0CGNL3B59
Product Code Reference	22051701

10. Warranty and Support

For warranty information and technical support, please refer to the documentation provided with your purchase or contact your retailer. Keep your purchase receipt for warranty claims.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

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Email

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After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. Privacy details.

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question