

KWS-AC300 AC Voltage Current Power Meter User Manual

High-precision digital display meter head for 220V 100A/20A systems.

1. INTRODUCTION

The YOURRYONG KWS-AC300 is a versatile AC voltage, current, power, frequency, and electric quantity detector designed for high-precision measurement in 220V electrical systems. This digital display meter head provides comprehensive real-time data, making it an essential tool for monitoring electrical parameters.

This manual provides detailed instructions for the safe installation, operation, and maintenance of your KWS-AC300 meter.

2. PRODUCT FEATURES

- Real-time measurement of AC Voltage (V), Current (A), Active Power (W), Frequency (Hz), and Energy (kWh).
- High-precision digital display for clear and accurate readings.
- Designed for 220V AC electrical systems.
- Supports current measurement up to 100A with the included closed current sensor.
- Compact and easy-to-integrate design.

3. PACKAGE CONTENTS

Please check the package contents upon receipt to ensure all items are present and undamaged.

- 1 x KWS-AC300 AC Voltage Current Power Meter
- 1 x 100A Closed Current Transformer (CT) Sensor



Image: The KWS-AC300 digital display meter head shown alongside its accompanying 100A closed current transformer sensor.

4. Safety Information

WARNING: Risk of Electric Shock!

- Installation and wiring should only be performed by qualified personnel.
- Ensure the main power supply is disconnected before any installation, wiring, or maintenance.
- Do not operate the device in wet or damp conditions.

- Do not exceed the specified voltage and current ratings (220V, 100A).
- Always use appropriate personal protective equipment (PPE) when working with electrical systems.
- Keep out of reach of children.

5. SETUP AND INSTALLATION

The KWS-AC300 meter is designed for panel mounting. Follow the steps below for safe and correct installation.

5.1 Panel Mounting

- Cut an opening in your panel according to the installation dimensions provided in the specifications (79mm x 41mm).
- Insert the meter into the opening and secure it using the integrated buckle design.

5.2 Wiring Instructions

Refer to the wiring diagram below for proper connection. Ensure all power is disconnected before wiring.

Figure 4: KWS-AC300-20A Wiring Diagram.

- **Terminals 1 & 2 (IN-AC):** Connect your AC power input (50-300V) to these terminals. Terminal 1 is typically for the Neutral (N) line, and Terminal 2 for the Live (L) line.
- **Terminals 3 & 4 (OUT LOAD):** Connect your load to these terminals. Terminal 3 is for Neutral (N) and Terminal 4 for Live (L).
- **Current Measurement (KWS-AC300-20A):** For the 20A model, current flows directly through the meter via the IN-AC and OUT LOAD terminals.
- **Current Measurement (KWS-AC300-100A):** For the 100A model, an external Current Transformer (CT) is required. The load's live wire must pass through the CT, and the CT's output wires connect to the meter's dedicated current input terminals (not explicitly shown in the 20A diagram).
- **Important: Double-check all wiring before applying power to prevent damage to the device or connected equipment.**



1. Current Transformer (CT) Connection:

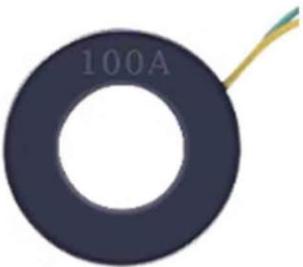


Figure 5: Example Current Transformer (CT) for 100A model

Image: Close-up view of the 100A closed current transformer sensor.

- Pass the live wire (L) of the circuit you wish to measure through the center hole of the 100A closed current transformer (CT) sensor. Ensure the direction of the current flow through the CT matches any arrow indicators on the CT itself for correct current reading.
- Connect the two wires from the CT sensor to the current input terminals on the KWS-AC300 meter. These are usually marked as "Current Input" or "CT In". The CT is non-polar, so the connection order of its two wires typically does not matter.

• 6. OPERATING INSTRUCTIONS

- Once properly installed and powered on, the meter will automatically display various parameters. Use the "MENU" button to interact with the device.
- **6.1 Display Modes**
- The meter cycles through different display screens showing Voltage, Current, Power, Electric Energy, Frequency, Power Factor, and Temperature. A short press of the "MENU" button will cycle through these display modes or highlight specific parameters.
 - but implied by the model difference). Ensure the CT is correctly oriented.

6.2 Resetting Data

To reset accumulated electric energy (Kwh) or timing (H) data:

- Navigate to the display screen showing the parameter you wish to reset (e.g., Kwh or H).
- Long press the "MENU" button for approximately 3-5 seconds until the value flashes.
- Short press the "MENU" button again to confirm the reset. The value will return to zero.

7. User Tips

- For accurate current readings on the 100A model, ensure the current transformer (CT) is installed correctly around the live wire of the load. Incorrect CT installation can lead to inaccurate measurements.
- Periodically check connections to ensure they remain tight and secure, especially in environments with vibration.
- If the display appears dim or flickers, verify the input voltage is within the specified AC 50-300V range.

7. MAINTENANCE

- **Cleaning:** Use a soft, dry cloth to clean the meter's display and casing. Do not use abrasive cleaners or solvents.
- **Inspection:** Periodically inspect the wiring connections to ensure they remain secure and free from corrosion.
- **Environment:** Ensure the meter is operated within its specified environmental conditions (temperature, humidity) to prolong its lifespan.
- **No User-Serviceable Parts:** Do not attempt to open or repair the meter. Refer all servicing to qualified personnel.
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8. TROUBLESHOOTING

| Problem | Possible Cause | Solution |
|--------------------------------------|--|---|
| Meter does not power on / No display | No power supply; Loose wiring; Faulty unit. | <ul style="list-style-type: none">◦ Check if the main power supply is connected and active.◦ Verify all voltage input wiring connections are secure.◦ If problem persists, contact customer support. |
| | | <ul style="list-style-type: none">◦ Ensure the CT sensor is properly connected to the meter.◦ Verify the live wire of the circuit is correctly passed through the CT's center.◦ Confirm there is an active load drawing current in the monitored circuit. |
| Inaccurate readings | Incorrect wiring; Overload; Environmental factors. | <ul style="list-style-type: none">◦ Review the wiring diagram and ensure all connections are correct.◦ Ensure the load does not exceed the meter's maximum current rating (100A).◦ Operate the meter within specified temperature and humidity ranges. |

9. SPECIFICATIONS

| Parameter | Value |
|---------------------------|--|
| Model | KWS-AC300 |
| Brand | YOURRYONG |
| Voltage Measurement Range | 220V AC (Nominal) |
| Current Measurement Range | 0-100A AC (with 100A CT) |
| Power Source | Line Powered (Internal battery for data retention) |

| Parameter | Value |
|----------------------|-------------------|
| Display Type | Digital |
| First Available Date | November 18, 2023 |
| UPC | 749771553260 |

Note: The "Battery Powered" specification likely refers to an internal battery for memory retention (e.g., kWh data) during power outages, as the device operates on 220V AC.