avoltik DTSU666-H

Avoltik Huawei Smart Power Sensor DTSU666-H User Manual

Model: DTSU666-H 250A/50mA | Brand: Avoltik

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of the Avoltik Huawei Smart Power Sensor DTSU666-H. This high-quality, three-phase current sensor is designed for use in photovoltaic (PV) systems, offering precise energy measurement and reliable communication capabilities.
Please read this manual thoroughly before installation and operation to ensure safe and efficient use of the device.

2. Product Features

- **Three-Phase Current Sensor:** Specifically designed for solar power systems.
- **Wide Voltage Range:** Operates efficiently within a voltage range of 176 to 288 Volts.
- **Low Self-Consumption:** Features very low power consumption, less than one Watt.
- **Easy Installation:** Designed for straightforward and effortless setup.
- **Integrated LCD Screen:** Displays performance data and allows for easy operation directly on the device.
- **RS485 Communication:** Supports data communication via RS485, enabling remote data reading.
- **Modbus-RTU Protocol:** Utilizes the Modbus-RTU communication protocol for seamless integration.

Image: The Smart Power Sensor DTSU666-H with visual callouts for its main features, including its three-phase capability, easy installation, LCD screen, RS485 communication, and low power consumption.

3. Technical Specifications

Category	Specification
Model	DTSU666-H 250/50 mA
Dimensions (H x W x D)	100 x 65.5 x 72 mm
Weight (incl. cable)	1.5 kg
Mounting Type	DIN35 Rail
Current Type	3P4W (3-Phase)

Category	Specification
Input Voltage	176-288 VAC (Phase/N)
Power Consumption	≤ 1 W
Communication Interface	RS485
Baud Rate	9,600 bps
Communication Protocol	Modbus-RTU
Measurement Accuracy (Voltage)	±0.5 %
Measurement Accuracy (Current/Power/Energy)	±1 %
Measurement Accuracy (Frequency)	±0.01 Hz
Measurement Range (Phase-Phase Voltage)	304 - 499 Vac
Measurement Range (Phase Voltage)	176 - 288 Vac
Measurement Range (Current)	0 - 250 A
Operating Temperature Range	-25°C to +60°C
Storage Temperature Range	-40°C to +70°C
Relative Humidity	5 % RH - 95 % RH

Technische Daten	
Modell	DTSU666-H 250 A/50 mA
Abmessungen (B x H x T)	100 x 65,5 x 72 mm
Gewicht (inklusive Kabel)	1,5kg
Montageart	DIN35 Hutschiene
Stromnetztyp	3P4W (3- Phasig)
Eingangsspannung	176~288 VAC (Phase/N)
Energieverbrauch	≤ 1 W
Kommunikation	RS485
Kommunikation	
Schnittstelle	RS485
Baudrate	9.600 bps
Kommunikationsprotokoll	Modbus-RTU
Messgenauigkeit	
Spannung	±0.5 %
Strom/ Leistung/ Energie	±1 %
Frequenz	±0.01 Hz
Messbereich	
Netzspannung Phase-Phase	304 ~ 499 Vac
Phasenspannung	176 Vac ~ 288 Vac
Strom	0 ~ 250 A
Umwelt	
Betriebstemperaturbereich	-25°C ~ +60 °C
Lagerungstemperatur	-40°C ~ +70°C
Relative Luftfeuchtigkeit	5 % RH~ 95 % RH

Image: A detailed table outlining the technical specifications of the DTSU666-H Smart Power Sensor, including dimensions, weight, electrical parameters, and environmental conditions.

4. Package Contents

Upon opening the package, please verify that all components are present and undamaged:

- 1x DTSU666-H Smart Power Sensor
- Current Transformers (250A/50mA)
- Necessary connection cables

Image: The complete package contents, showing the DTSU666-H Smart Power Sensor alongside its current transformers and connection cables.

5. Setup and Installation

The DTSU666-H Smart Power Sensor is designed for easy installation, typically on a DIN35 rail. Ensure all safety precautions are followed during installation, especially when dealing with electrical systems.

5.1 Safety Instructions

- Installation must be performed by qualified personnel only.
- Disconnect all power sources before beginning installation.
- Wear appropriate personal protective equipment (PPE).
- Ensure proper grounding.

5.2 Mounting the Device

1. Locate a suitable DIN35 rail within your electrical panel or enclosure.
2. Snap the DTSU666-H sensor onto the DIN rail until it clicks securely into place.

5.3 Electrical Connections

Connect the sensor according to the wiring diagram provided with your PV system documentation. Key connections include:

- **Voltage Inputs:** Connect the three-phase voltage lines (L1, L2, L3) and neutral (N) to the corresponding terminals on the sensor.
- **Current Transformer (CT) Connections:** Connect the supplied current transformers to the main current lines of your PV system. Ensure correct polarity and connect the CT secondary wires to the sensor's current input terminals.
- **RS485 Communication:** Connect the RS485 A and B terminals to your communication network (e.g., inverter, data logger) for Modbus-RTU communication.

Image: The DTSU666-H Smart Power Sensor shown in an installed context, emphasizing its role in a solar power system.

6. Operation

Once installed and powered on, the DTSU666-H will begin measuring electrical parameters. The integrated LCD screen allows for direct monitoring and basic configuration.

6.1 LCD Display and Navigation

The LCD screen displays various real-time data such as voltage, current, power, and energy consumption. Use the buttons below the screen to navigate through the display menus:

- **SET Button:** Enters configuration mode or confirms a selection.
- **ESC Button:** Exits a menu or cancels an operation.
- **Arrow Buttons (Left/Right):** Navigates between different display screens or adjusts values in configuration mode.

6.2 Data Monitoring

Regularly check the LCD display for key operational data. For detailed analysis and historical data, connect the sensor to a compatible monitoring system via the RS485 interface and Modbus-RTU protocol.

7. Maintenance

The Avoltik Huawei Smart Power Sensor DTSU666-H requires minimal maintenance. Regular checks can help ensure its longevity and accurate performance.

- **Cleaning:** Keep the device clean and free from dust. Use a soft, dry cloth for cleaning. Do not use abrasive cleaners or solvents.
- **Connection Checks:** Periodically inspect all electrical connections to ensure they are secure and free from corrosion.
- **Environmental Conditions:** Ensure the operating environment remains within the specified temperature and humidity ranges to prevent damage.

No user-serviceable parts are inside the device. Do not attempt to open or repair the sensor yourself.

8. Troubleshooting

This section provides solutions to common issues you might encounter with your DTSU666-H Smart Power Sensor.

Problem	Possible Cause	Solution
Device not powering on / LCD blank	No power supply; Loose connections; Faulty device.	Check power input connections. Ensure circuit breaker is on. Verify voltage supply. If problem persists, contact support.
Incorrect readings on LCD	Incorrect CT wiring; Incorrect CT polarity; Sensor not calibrated.	Verify CT connections and polarity according to the wiring diagram. Ensure CTs are correctly sized for the application.

Problem	Possible Cause	Solution
No communication via RS485	Incorrect wiring (A/B reversed); Incorrect baud rate; Termination resistor missing/incorrect; Software configuration issue.	Check RS485 wiring (A to A, B to B). Verify baud rate and protocol (Modbus-RTU) settings on both sensor and master device. Ensure proper termination.
Device overheating	Poor ventilation; Overload; High ambient temperature.	Ensure adequate ventilation around the device. Check if the current load exceeds the sensor's rating. Relocate to a cooler environment if necessary.

If you encounter issues not listed here or if the suggested solutions do not resolve the problem, please contact Avoltik customer support.

9. Warranty and Support

Avoltik products are manufactured to the highest quality standards. For warranty information, please refer to the warranty card included with your product or visit the official Avoltik website.
For technical support, troubleshooting assistance, or spare parts, please contact Avoltik customer service:

Website: Avoltik Official Store

Email: [Refer to product packaging or website for specific email]

Phone: [Refer to product packaging or website for specific phone number]

Please have your product model (DTSU666-H) and purchase date ready when contacting support.

10. Versatile Applications

The Avoltik Huawei Smart Power Sensor DTSU666-H is a versatile and reliable solution suitable for various solar energy applications, ensuring optimal performance and monitoring.

Image: An illustration showing the versatility of solar power systems, indicating their applicability for roofs, open fields, boats, and balconies, all of which can benefit from the DTSU666-H sensor.