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JUGJCKJL DTSD1352-C 80A RS485

JUGJCKJL Acrel DTSD1352 Three Phase Bidirectional Energy Meter Instruction Manual

Model: DTSD1352-C 80A RS485

1. INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of the JUGJCKJL Acrel DTSD1352 Three Phase Bidirectional Energy Meter. This device is designed for accurate measurement of three-phase energy consumption and generation in 220V/380V systems, featuring RS485 communication capabilities. Please read this manual thoroughly before installation and operation to ensure proper use and safety.

2. SAFETY INFORMATION

- **Electrical Hazard:** Installation and maintenance must be performed by qualified personnel only. Ensure all power is disconnected before working with the meter.
- **Proper Grounding:** Ensure the meter is properly grounded according to local electrical codes.
- **Voltage and Current Ratings:** Do not exceed the specified voltage and current ratings of the meter.
- **Environmental Conditions:** Operate the meter within the specified environmental conditions (temperature, humidity) to prevent damage.
- **Damage Inspection:** Do not install or operate a damaged meter. Inspect the device for any physical damage before installation.

3. PRODUCT OVERVIEW

The DTSD1352 is a three-phase multi-function energy meter capable of measuring active and reactive energy, voltage, current, power, and other electrical parameters. It features an LCD display for local readings and an RS485 interface for remote communication.



Figure 3.1: Front view of the DTSD1352 energy meter, showing the LCD display, control buttons (SET, arrow keys), and terminal block for connections.



Figure 3.2: Angled view of the DTSD1352 energy meter, highlighting the various terminal connections for power input, output, and communication.

4. INSTALLATION AND SETUP

The DTSD1352 meter is designed for DIN rail mounting. Ensure the mounting location is free from excessive vibration, moisture, and direct sunlight. Maintain adequate clearance around the meter for ventilation and wiring access.

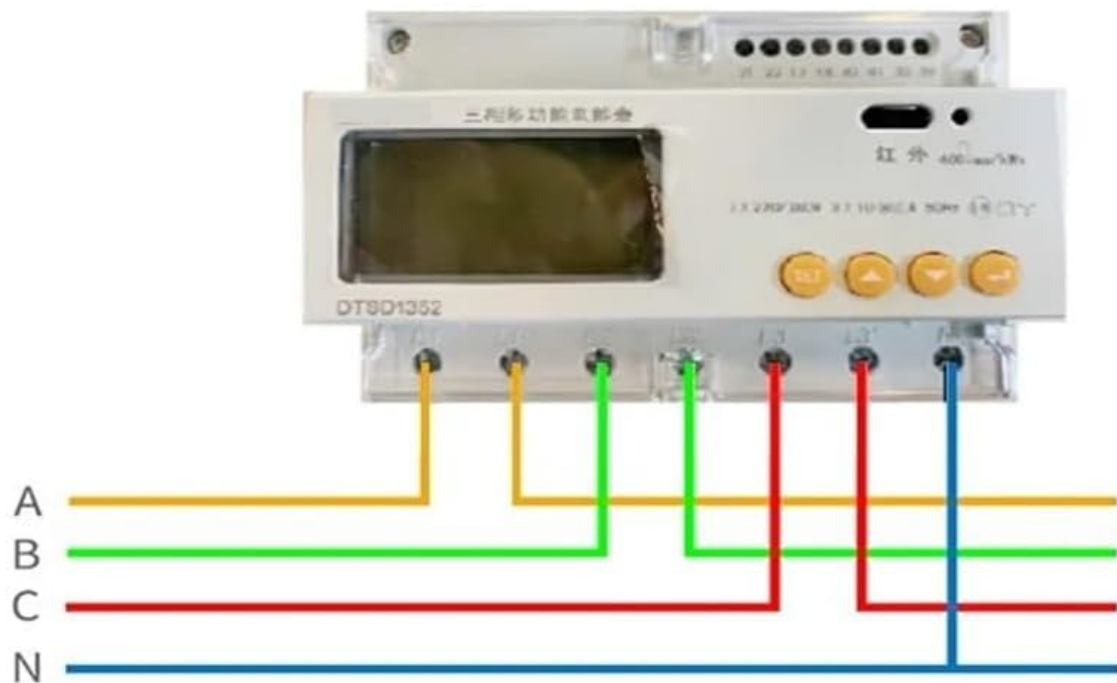
4.1 Mounting

1. Securely attach a standard 35mm DIN rail in the desired location.
2. Clip the DTSD1352 meter onto the DIN rail, ensuring it is firmly seated.

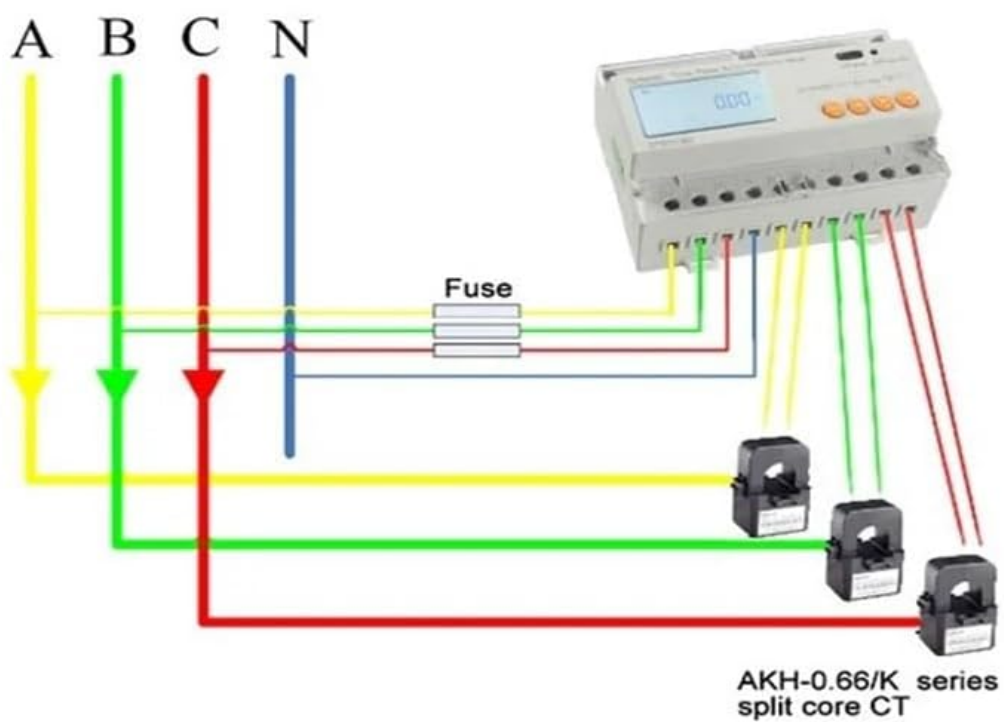
4.2 Wiring

Correct wiring is critical for accurate measurement and safe operation. Refer to the wiring diagrams below for guidance. The DTSD1352-C 80A RS485 model supports both direct connection and connection via Current Transformers (CTs) for higher current applications, though this specific model is rated for direct connection up to 80A.

WIRING



3P4W Directly connection
Down in&down out



Connection via CTs

Figure 4.1: Wiring diagrams for the DTSD1352 energy meter. The top diagram illustrates a 3-phase 4-wire direct connection (Down in & Down out). The bottom diagram shows connection via Current Transformers (CTs) for higher current applications, including a fuse for protection.

4.2.1 Direct Connection (3P4W)

For direct connection, connect the three phase lines (A, B, C) and the neutral line (N) to the corresponding input terminals. Connect the load to the output terminals. Ensure correct phase sequence and secure connections.

- **Ua, Ub, Uc:** Phase voltage inputs.
- **N:** Neutral input.
- **Ia, Ib, Ic:** Phase current inputs (for direct connection, these are integrated).
- **RS485:** Connect A and B terminals for RS485 communication.

4.2.2 Connection via Current Transformers (CTs)

While the DTSD1352-C 80A model is primarily for direct connection, other variants may use CTs. If using CTs, ensure the CTs are correctly oriented (P1 to source, P2 to load) and their secondary windings are connected to the meter's current input terminals (Ia*, Ib*, Ic*). A fuse should be installed for protection as shown in the diagram.

4.3 Initial Power-Up

After wiring, apply power to the meter. The LCD display should illuminate and show initial readings. Verify that the voltage and current readings are plausible for your system.

5. OPERATING INSTRUCTIONS

The DTSD1352 meter features an LCD display and four control buttons for navigation and parameter viewing.

5.1 Display Overview

The LCD display shows various electrical parameters. The default screen typically displays active power (kW) and phase voltage (Ua).

5.2 Button Functions

- **SET Button:** Used to enter parameter setting mode or confirm selections.
- **Arrow Buttons (Left, Right, Up, Down):** Used to navigate through different display screens, view various parameters (voltage, current, frequency, power factor, active energy, reactive energy, etc.), and adjust values in setting mode.

5.3 Viewing Parameters

Press the arrow buttons to cycle through the available measurement parameters on the LCD display. Common parameters include:

- Voltage (Ua, Ub, Uc, Uab, Ubc, Uca)
- Current (Ia, Ib, Ic)
- Active Power (P)
- Reactive Power (Q)
- Apparent Power (S)
- Power Factor (PF)
- Frequency (Hz)

- Total Active Energy (kWh)
- Total Reactive Energy (kVarh)

5.4 RS485 Communication

The meter supports RS485 communication using the MODBUS-RTU protocol. Refer to the detailed communication protocol document (not included in this manual) for information on addressing, baud rates, and register maps for remote data acquisition.

6. MAINTENANCE

The DTSD1352 energy meter is designed for long-term, maintenance-free operation. However, periodic checks are recommended.

- **Cleaning:** Clean the meter's exterior with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Connection Check:** Periodically inspect all wiring connections to ensure they are secure and free from corrosion.
- **Environmental Check:** Ensure the operating environment remains within specified temperature and humidity ranges.

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
No display/No power	No power supply; Loose wiring; Internal fault.	Check power supply to the meter. Verify all wiring connections are secure. If problem persists, contact support.
Incorrect readings	Incorrect wiring; Incorrect CT ratio setting (if applicable); Faulty meter.	Review wiring diagrams and ensure correct connections. Verify CT ratio settings. If readings are still incorrect, contact support.
RS485 communication failure	Incorrect wiring (A/B reversed); Incorrect communication parameters (baud rate, address); Software issue.	Check RS485 wiring (A to A, B to B). Verify communication parameters in the host system. Consult the communication protocol document.
Meter not accumulating energy	Incorrect current input; Reverse current flow (for unidirectional meters); Internal fault.	Verify current input connections and direction. Ensure the meter is suitable for bidirectional measurement if required.

8. TECHNICAL SPECIFICATIONS

The following table details the technical specifications for the DTSD1352 energy meter:

Category	Parameter	Value
Voltage	Reference voltage	3*57.7/100V, 3*220/380V, 3*100V, 3*380V
	Reference frequency	50Hz
	Consumption	<10VA (Single phase)

Category	Parameter	Value
Current	Maximum current	6A, 80A
	Starting current	Direct connect: 0.004Ib Connect via: 0.001In
	Consumption	<1VA (Single phase rated current)
Measurement performance	Accuracy of active kWh	Class 0.5S
	Standards compliant	IEC 62053-22:2003
Pulse	Pulse width	80+20ms
	Pulse constant	400imp/kWh 6400imp/kWh
	Interface	RS485
Communication	Protocol	MODBUS-RTU
	Outline L*W*H(mm)	127*88*70
Environment	Temperature	Operating: -25~55°C; Storage: -40~70°C
	Humidity	≤95% (No condensation)
	Altitude	<2000m

9. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation provided with your purchase or contact the manufacturer directly. Keep your purchase receipt as proof of purchase.