



新开普电子股份有限公司
NEWCAPEC ELECTRONICS CO., LTD.

DDSU1351

**DIN Rail Single-Phase Electronic
Energy Meter
User Manual**

Newcapec Electronics Co., Ltd.

Declaration

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Document Revision History

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1. Product Overview

The model DDSU1351 DIN rail-mounted single-phase electronic energy meter meets the requirements of standard IEC 62053-21. It integrates multiple independent metering channels (measurement units). Each measurement unit can operate at the rated maximum current and provides a corresponding energy pulse output. All measurement units can also operate continuously at the rated maximum current, facilitating sub-metering and consolidated calculation. The meter features accurate measurement, reliable load disconnection, a clear LCD for electricity-use information, and responsive button-based queries. It is widely applicable to apartments, dormitories, shopping malls, and other locations for energy metering and electricity-use control and management.

2. Technical Specifications

2.1. Electrical Specifications

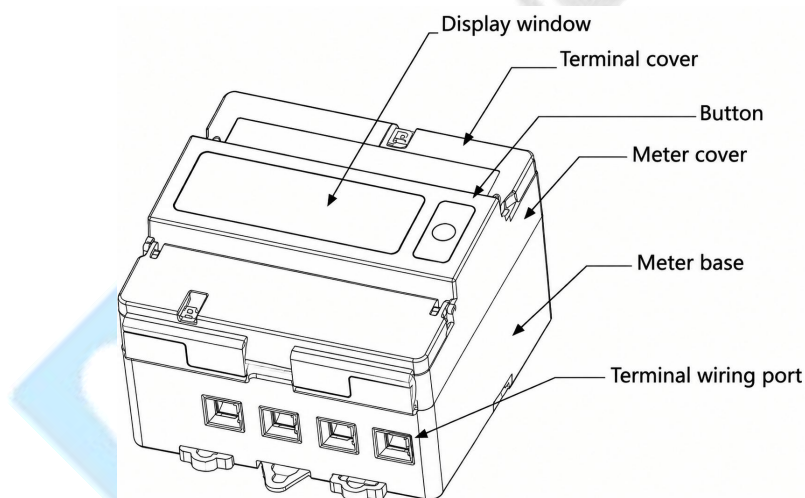
Item	Specification
Accuracy Class	Class B, IEC 62053-21
Insulation Protection Category	Class II protective-insulated enclosed meter
Rated Operating Ambient Temperature	-25°C to +55°C
Storage and Transport Temperature Range	-40°C to +70°C
Voltage Range (AC)	176 V to 264 V
Current Rating	0.1-0.5 (60) A
Power Consumption	≤ 2 W (10 VA)
Serial Communication Baud Rate	4800 bps
Pulse Constant	1600 imp/kWh
LCD Digits	8 digits
Data Retention After Power Failure	≥ 30 years
Electrical Life of Built-in Relay	≥ 10,000 operations
Maximum Fault Current Withstand of Current Circuit	2500 A/10 ms
Maximum Short-Circuit Current Withstand of Current Circuit	4500 A/10 ms
Maximum Permitted Conductor Size	Maximum permitted conductor size of current circuit: 25 mm ²
Current Circuit Terminal Torque (N • m)	2.0 (standard), 2.5 (rated), 4.5 (limit)
Overall Dimensions	130 mm (L) × 130 mm (W) × 90 mm (D)

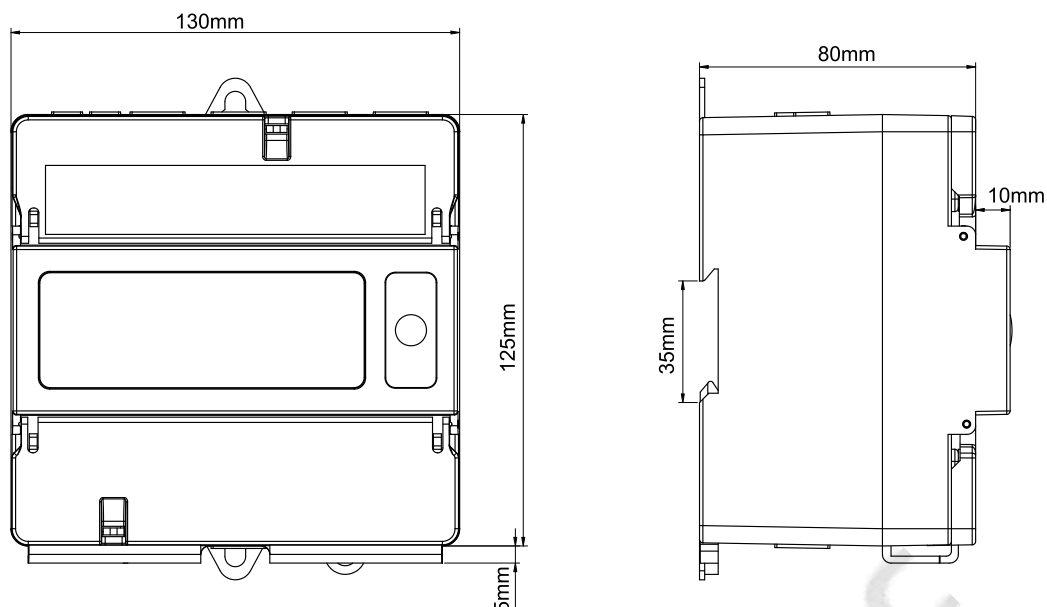
2.2. EMC Specifications

Item	Specification
Electrostatic Discharge Immunity	8 kV contact, 15 kV air
Radiated RF Electromagnetic Field Immunity (current flowing in current circuit)	10 V/m
Radiated RF Electromagnetic Field Immunity (no current flowing in current circuit)	30 V/m
Conducted RF Field Immunity	10 V/m
Electrical Fast Transient/Burst Immunity	4 kV
Surge Immunity	4 kV

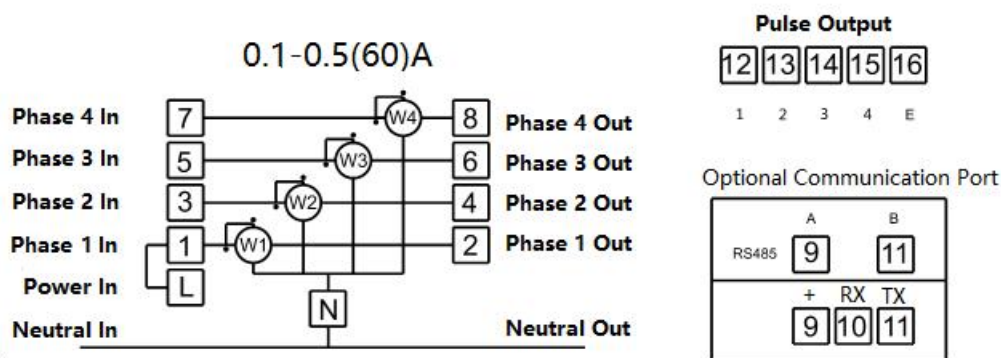
3. Appearance, Dimensions and Installation

3.1. Appearance and Dimensions



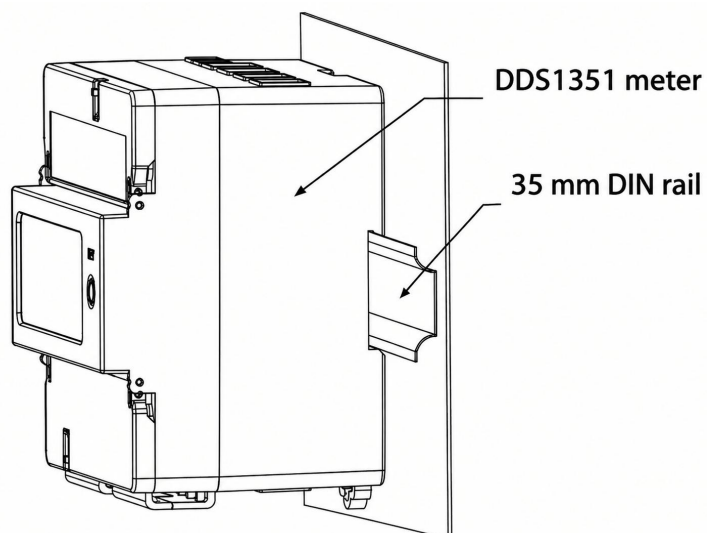


3.2. Terminal Wiring Logic Diagram

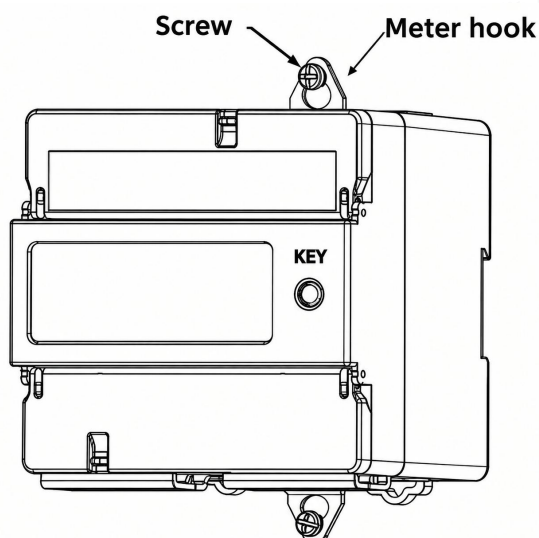


3.3. Mechanical Installation

The DDSU1351 energy meter shall be installed indoors in a dry, well-ventilated area shielded from direct sunlight. A meter box must be equipped to block ingress of harmful dust and moisture. The meter housing supports two mounting methods:



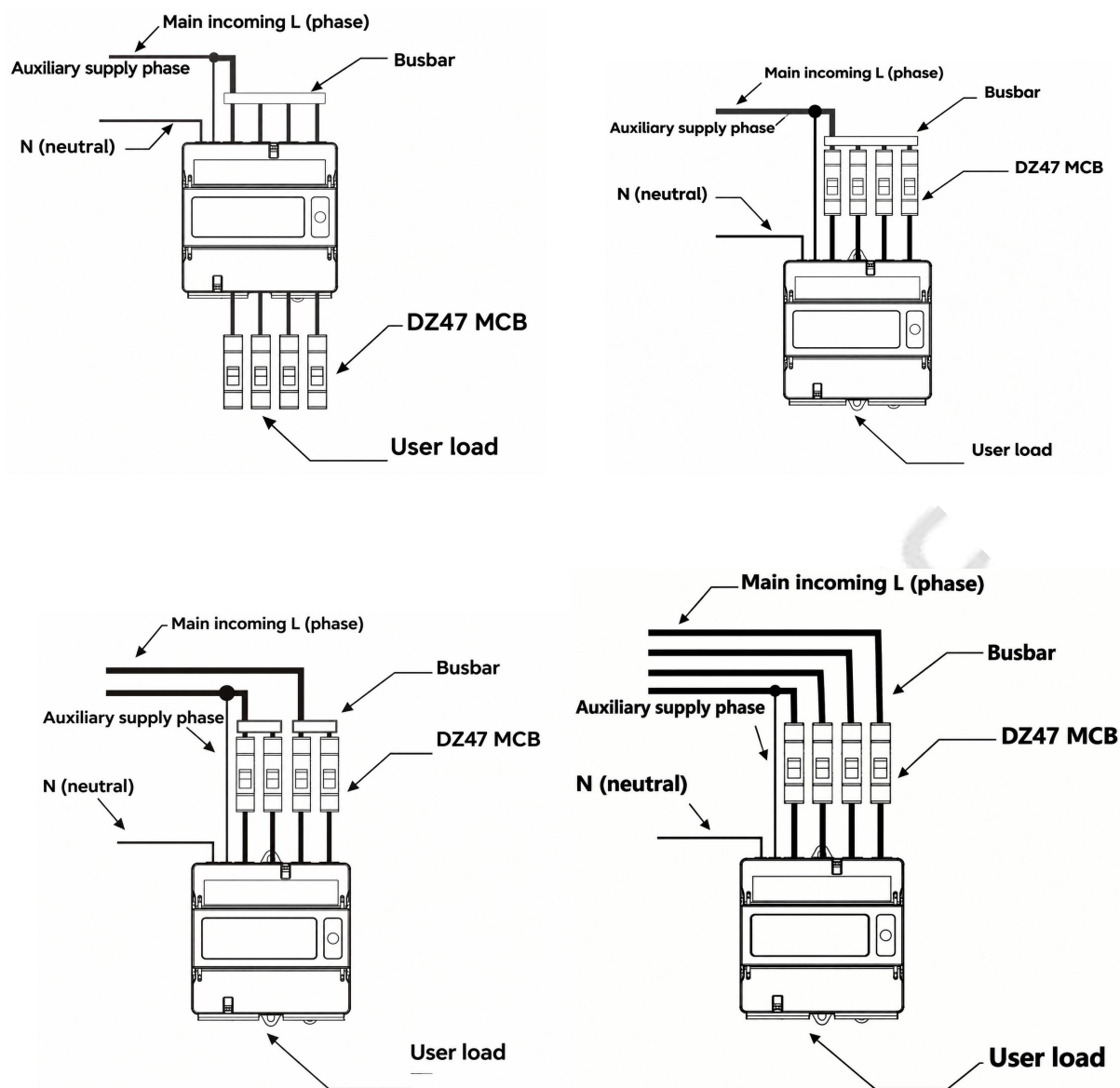
35 mm standard DIN rail mounting



Meter hook mounting

3.4. Electrical Installation

The DDSU1351 energy meter integrates multiple metering/load channels and an auxiliary power supply. For installation, wiring shall be carried out by adopting one of the four schemes shown below:



4. Features

- The standard configuration provides four independent metering and load-control channels and supports up to four different rooms.
- The LCD displays the current meter operating status, accumulated energy consumption, and remaining energy.
- A current-loop serial communication interface (optional RS485) is provided for connection to a host computer for parameter downloading, remote load control, and other functions.
- Four meter-calibration pulse output interfaces are provided, corresponding to the four independent metering channels.
- Internal operating-temperature detection: when used with a host computer, it supports temperature data collection, warning, and over-temperature protection.

- Load type identification: different load types can be distinguished, and permission or blocking control can be implemented according to load characteristics.
- General scheduled power-on/off: power-on/off times can be flexibly configured for each day of the week., with up to eight time entries per day.
- Holiday load power-on/off control: In addition to scheduled power-on/off, holiday operation can be enabled or disabled. When enabled, scheduled power-on/off is suspended during holidays.
- Time-of-use power limitation: power limits can be flexibly configured for each day of the week, with up to four limit entries per day.

4.1. Operating Modes

The meter can be configured for single-control, dual-control, or four-control operation:

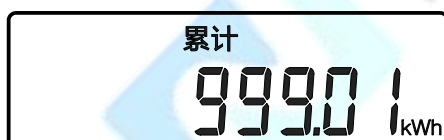
Single-control mode: one household with one circuit can be configured, equivalent to four 60 A single-circuit meters; the four metering/control circuits correspond to four separate accounts.

Dual-control mode: one household with two circuits can be configured, equivalent to two 60 A dual-circuit meters. Metering circuits 1 and 2 share one account, while circuits 3 and 4 share another account.

Four-control mode: one household with four circuits can be configured; the four metering circuits share one account.

4.2. LCD Display Information

Accumulated Energy



Remaining Energy



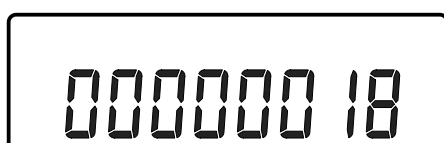
Current Load Power



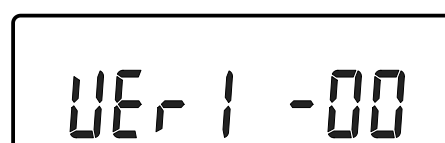
Current Operating Temperature



Device MAC Address



Device Version

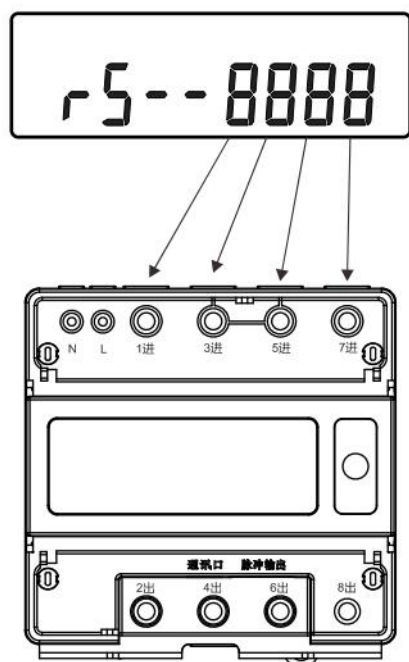


LCD Display Text Description

Displayed Content	Description
累计	Accumulate, for display accumulated energy
剩余	Remaining, for displaying the balance of purchased energy

4.3. Power-On/Off Status Display

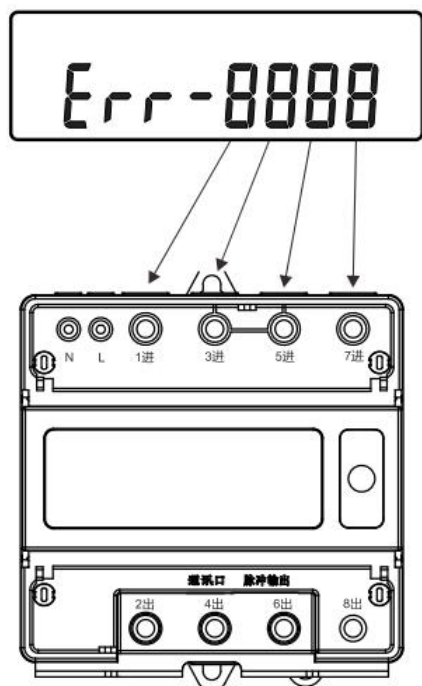
The power supply on/off identifier is "r5". After the separator "——", there are 4 power supply on/off symbols, which respectively point to the corresponding load channels. The states represented by the power supply on/off symbols are shown in the table below.



Status Code	Status Description
0	Over-temperature power-off protection
1	Overcurrent power-off protection
2	Forced power on
3	Forced power off
4	Power off after energy is used up
5	Scheduled power off
6	Manual power off (general power off)
7	Illegal load detected (malicious-load suspension)
8	Illegal load power-off (malicious load power-off)
9	Overload suspension
A	Overload power off
B	Scheduled power on
C	Manual power on (general power on)
D	Water/electricity linkage power off (power off when water is depleted)
E	Overvoltage power off
F	L/N reverse connection power off

4.4. Operating Status Error Display

The device data error identifier is "Err". After the separator "—", there are 4-digit error codes, which respectively point to the corresponding load channels. The meter will only display the error prompt with the highest priority. The priority ranges from highest to lowest from top to bottom, as shown in the table below.



Operating Status Code	Status Description
0	Normal
1	MAC address checksum error
2	System or module parameter checksum error
3	Meter calibration parameter checksum error
4	Purchased energy data checksum error
5	Accumulated energy data checksum error
6	Relay information checksum error
7	Room setting information checksum error

5. Installation and Operation

- The meter has been inspected and sealed with a lead stamp before shipment and may be installed and used. If the seal is missing or the meter has been stored for an extended period, it shall be reverified and resealed by the relevant authority before installation and use.
- The meter shall first be installed in a meter box that meets applicable national standards. The box shall be mounted vertically and securely, without tilting, in a dry, well-ventilated indoor location protected from direct sunlight. The base of the box shall be fixed to a solid, fire-resistant, low-vibration wall. The recommended installation height is approximately 1.8 m. The air shall be free of corrosive gases and dust.
- Wire the meter according to the terminal wiring diagram. Insert the conductors into the

terminal holes and tighten the terminal screws.

d. In areas with frequent thunderstorms, lightning protection measures shall be provided for the power lines.

e. Operating display: during operation, the LCD cycles through accumulated energy, remaining energy, and other information. Other display items can also be selected using the buttons.

6. FAQ

(1) Q: The LCD does not display after power-on

A: Check whether the power supply to terminals N and L is correct.

(2) Q: Power is displayed as a negative value

A: The load current circuit is connected in reverse and must be corrected.

(3) Q: The LCD displays normally after power-on, but there is no current output

A: Connect the meter communication line and inspect it using the dedicated tool.