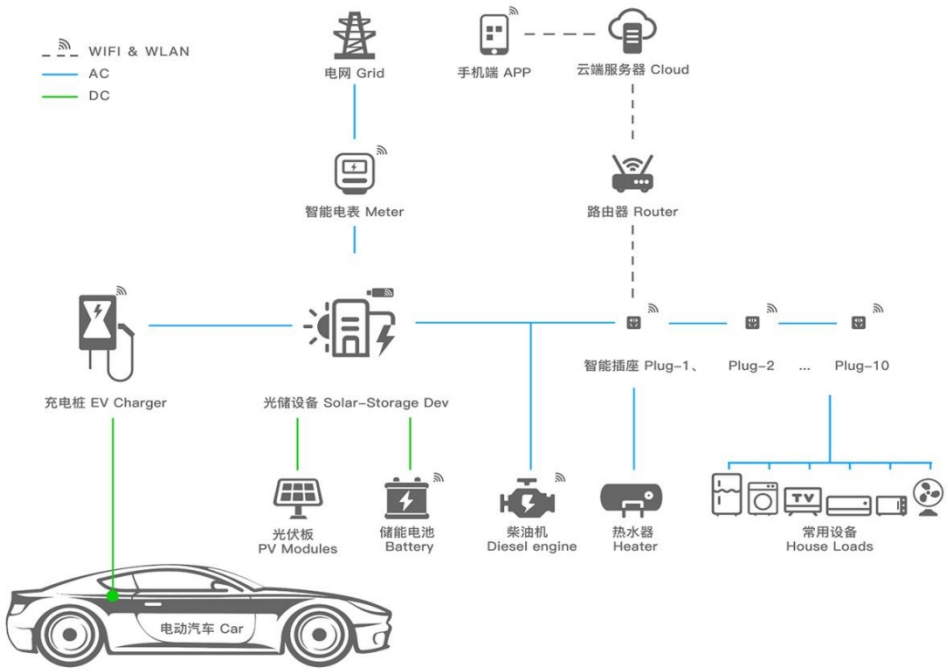
SMeter-RS07

1. Product Overview

SMeter-RS07 is a new generation of rail-mounted CT AC energy meter specifically developed for photovoltaic storage devices (single-phase two-wire, three-phase three-wire, three-phase four-wire, and split-phase). It supports up to dual-channel 6 CT connections. The device features expandable WiFi and LoRa wireless networks, RS485 data communication, phase sequence misalignment and CT current reverse calibration functions. By connecting to a router and accessing the cloud IoT platform, it supports remote data monitoring, remote control, remote upgrades, remote maintenance, edge-side energy interconnection, local debugging, and other functions. It supports wireless or wired networking and parallel anti-backflow control for multiple photovoltaic storage devices. It is an important control hub for residential energy management and monitoring systems, with data response speeds of up to 500ms (wireless) / 50ms (wired) per record. Application scenarios: home energy data monitoring, photovoltaic storage device anti-backflow applications, AC coupling multi-channel monitoring, etc.



Model Selection Table:

Model	Wireless	CT
SMeter-RS071	WiFi	Single Phase - 1 Channel
SMeter-RS072	WiFi	Three Phase - 2 Channels
SMeter-RS073	WiFi	Three Phase - 1 Channel
SMeter-RS074	WiFi & LoRa	Single Phase - 1 Channel
SMeter-RS075	WiFi & LoRa	Three Phase - 1 Channel
SMeter-RS076	WiFi & LoRa	Three Phase - 2 Channels

2. Product Features

2.1 Ease of Use

1. Simple Installation: Rail-mounted installation;
2. Simple Configuration: Local settings (APP), remote settings;
3. Simple Maintenance: Remote maintenance, remote firmware OTA upgrades;
4. Simple Operation: Power on, connect to network, register and bind.

2.2 Versatility

5. Component Selection: High-quality components, suitable for long-term operation at -20°C to +65°C;
6. Stable Communication: Real-time command monitoring, network disconnection detection, long-term operation detection;
7. Data Security: TLS-TCP connection, private protocol, data verification, data retransmission (data saved when network disconnected, retransmitted when network restored).

2.3 Flexibility

8. Protocol Compatibility: Supports multiple communication protocols;
9. Local and Remote: Works with APP for simultaneous local monitoring and remote implementation;
10. Local Parameter Configuration: Works with APP for on-site reading and parameter setting.

3.Product Specifications

Category	Item	Parameters
General Parameters	Dimensions (L/W/H)	96×19×69mm
	Weight	72g
	Input Voltage	100-270V Phase Voltage, 208-480V Line Voltage
	Frequency Range	50/60Hz
	Standard Input Current	CT-37.5mA
	Current Capacity	CT 50~600A
	Power Consumption	<3W
	Sampling Accuracy	Frequency: ±0.2%
		Power Factor: ±1
		Current: ±1%
		Voltage: ±1%
		Power: ±1%
		Energy: ±1%
	Data Update Rate	RS485-50ms/WiFi-500ms
	Operating Temperature	-20°C ~ +65°C
General Parameters	Storage Temperature	-30°C ~ +85°C
	Protection Rating	IP20
	Humidity Rating	≤95% RH, non-condensing
	Pollution Degree	2
	Altitude	<2000m
	Vibration	10Hz~50Hz
	Installation Method	DIN Rail
	Certification	CE/RoHS/UK-CA
Interface	AC	L1/L2/L3/N
	CT	RJ12 × 2 (Optional)
	RS485	1

Category	Item	Parameters
	Key	1
Display	LED	3
Device Management	Managed Devices	1
	Communication Method	RS485/LoRa (Optional)
	Networking Method	WiFi/LoRa (Optional)
	Internet Connection	Dual-band WiFi 2.4G+5G
	Energy Interconnection	Supported
Wireless Parameters (Standard & Frequency)	WiFi Operating Frequency	2412~2484MHz, 5180~5885MHz
	WiFi Wireless Standard	802.11b/g/n/ax
	WiFi Speed	Up to 150 Mbps
	BLE	BLE4.2 and above, 2.4G MHz
	WiFi & BLE Range	50M & 10M
	LoRa Operating Frequency	433~915MHz (Optional)
	LoRa Max Range	200M (Optional)
Application Parameters	RS485 Baud Rate	2400/4800/9600 (Default)/19200/38400/115200bps
	RS485 Address	1~254
	Supported Server	SmartServer
	User Configuration	APP
	Data Upload Interval	1~60S
	Smart Home System	Home Assistant

Risk Information

Information for Your Safety

This manual does not cover all possible conditions and requirements for operating the equipment (modules, devices). However, it does contain information you need to know for your own safety and to avoid losses. This information is highlighted in the form of warnings. The triangle indicates the potential degree of hazard.

WARNING

This indicates that failure to follow instructions may result in death, serious injury, or significant property damage.

WARNING
This indicates the presence of electrical hazard. Failure to take necessary safety precautions will result in death, serious injury, or significant property damage.

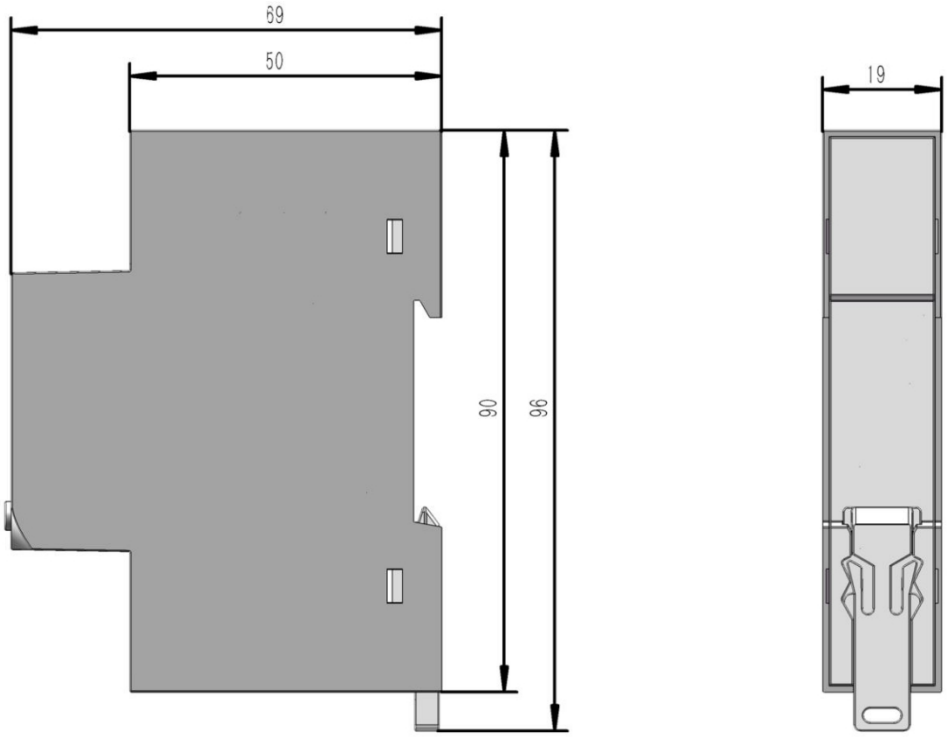
Qualified Personnel
The operation of the equipment described in this manual (modules, devices) may only be performed by qualified personnel. "Qualified personnel" in this manual refers to persons authorized to commission, start up, ground, and label devices, systems, and circuits in accordance with safety and regulatory standards.

Proper Handling
The prerequisites for ensuring perfect and reliable operation of the product are: proper transportation, appropriate storage, correct installation, and proper operation and maintenance. When operating electrical equipment, certain parts of such equipment are automatically energized with dangerous voltages. Therefore, improper handling may result in serious personal injury or property damage.

- Use only insulated tools.
- Do not connect while the circuit is energized.
- Place the meter only in a dry environment.
- Do not install the meter in explosive environments or expose it to dust, mold, and insects.
- Ensure that the wires are suitable for the maximum current of the meter.
- Before applying current/voltage to the meter, ensure that the AC wires are properly connected.
- Do not touch the meter connection clips directly with metal, bare wires, or your bare hands to avoid electric shock.
- After installation, ensure that the protective cover is in place.
- Installation, maintenance, and repair should only be performed by qualified personnel.
- Do not break the seal or open the front panel, as this may affect meter functionality and void the warranty.
- Do not drop or subject the meter to strong physical impact, as internal precision components may be damaged.
- Designed for installation in DIN rails within switchgear or cabinets.
- The device must be equipped with a circuit breaker of appropriate size to power the multifunction energy meter, ensuring it does not exceed the maximum rated current.
- The power supply line for this device should use cables of a size matching the installed circuit breaker.
- The disconnecting device (circuit breaker) should be installed near the multifunction energy meter.
- The disconnecting device should be marked as the disconnecting device for the multifunction energy meter.

Disclaimer
We have checked the contents of this publication and have made every effort to ensure that the descriptions are as accurate as possible. However, we cannot completely exclude the possibility of deviations from the descriptions, and therefore we cannot accept any liability for any errors contained in the information provided. The data in this manual is checked regularly, and necessary corrections are incorporated into subsequent versions. We welcome any suggestions for improvement.

4. Dimensions



4.1 Installation

Step 1: Select a 35mm wide DIN rail, pull down the buckle on the back of the meter to unlock the installation mechanism.

Step 2: Align the upper slot with the DIN rail. Align the upper slot on the DIN rail groove of the meter with the DIN rail, ensuring full contact (see Figure 1).

Step 3: Following the direction shown in Figure 1, snap the lower slot of the DIN rail groove onto the DIN rail until a click is heard (Figure 2).

Step 4: Push up the rear buckle to firmly lock the meter onto the DIN rail (see Figure 3).

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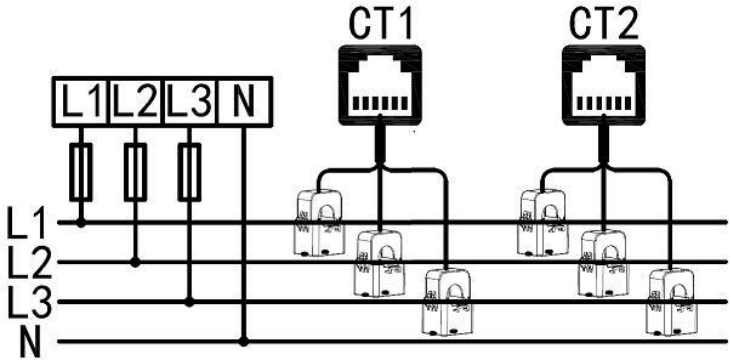
4.2 Wiring Diagram



Notes:

① L1 and N of the meter are power supply terminals.

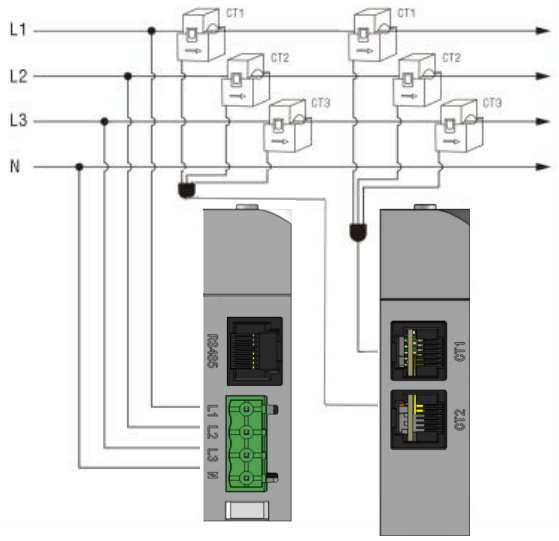
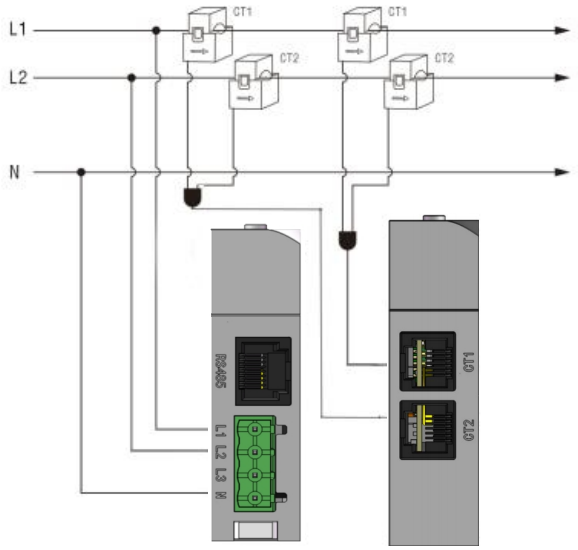
② Single-phase meters only need to connect Phase A (L1).

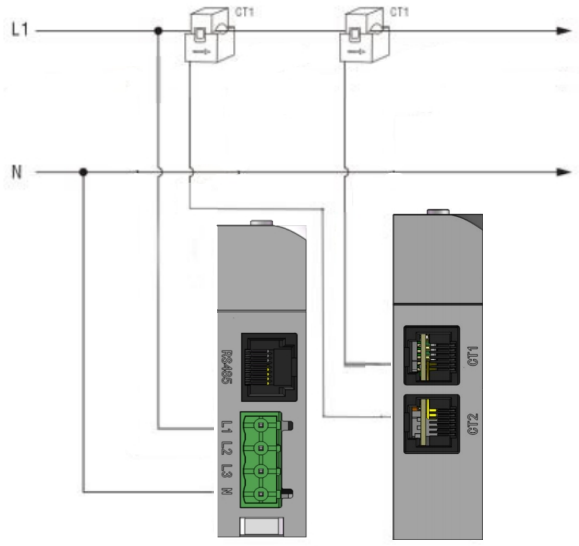
③ When connecting only one phase for three-phase, connect L1 first to ensure device power supply.

④ SMeter-RS07 single-phase meter only has one CT1 interface, default connection starts from CT1.

⑤ For safety reasons, a 5A rated fuse should be connected at the voltage input terminal.

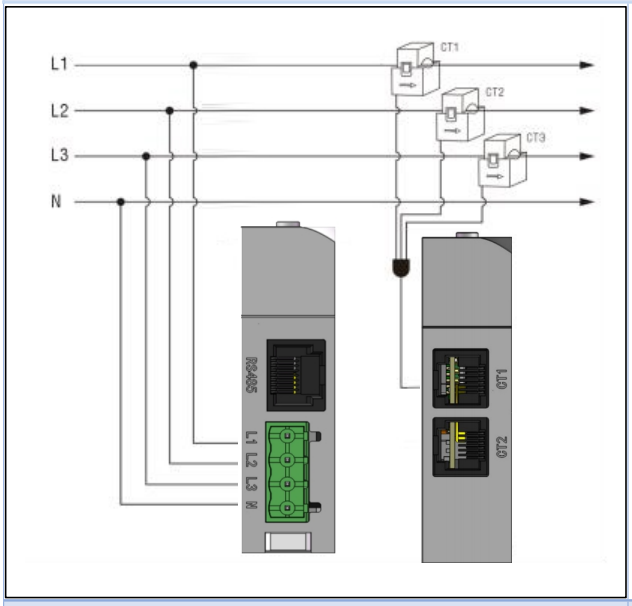
⑥The arrow direction of the CT shall beconsistent with the current direction

Dual CT Configuration	
	
3P4W 6 CTs	**1P3W(L+L+N) 4 CTs**

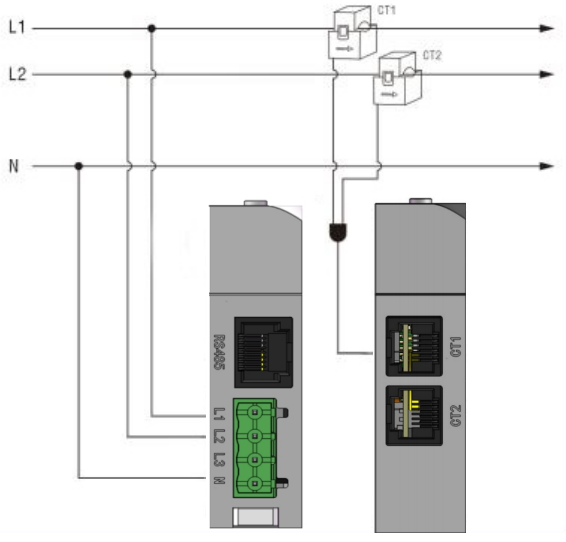


1P2W(L+N) 2 CT

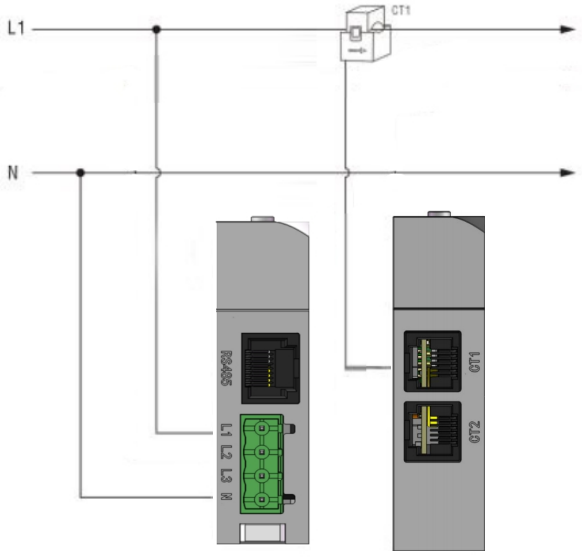
Single CT Connection



3P4W 3CTs

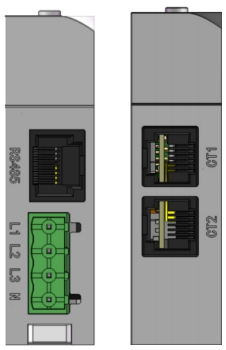


1P2W(L+L+N) 2 CT



1P2W(L+N) 1 CT

5. Product Interface



No.	Label	Description
1	RS485	RJ45 Interface: RS485 Communication Port
2	L1	Connect to Grid Phase A
3	L2	Connect to Grid Phase B
4	L3	Connect to Grid Phase C
5	N	Connect to Grid Neutral
6	CT1	RJ12 Interface: Meter Side Current Sensor
7	CT2	RJ12 Interface: Inverter Side Current Sensor