

## SPM-CT-E(SDM 120CT) Single-phase CT Meter Quick Guide

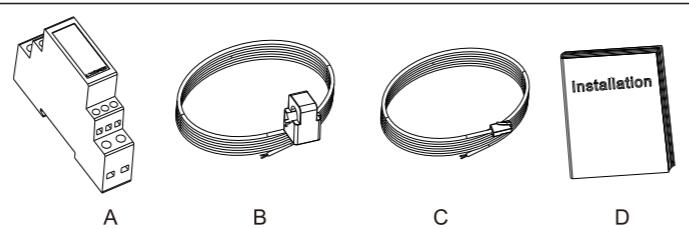
### 1. Overview

The meter is a transformer-connected multi-function rail meter, with a white backlit LCD screen, which can be read perfectly. It is used in single-phase two-wire power grids and solar photovoltaic applications. It can accurately measure various important electrical Power parameters, and can realize remote communication and settings. Its complete communication function makes it very suitable for various real-time power monitoring systems. It is an ideal choice for power energy monitoring.

### 2. Technical Parameters

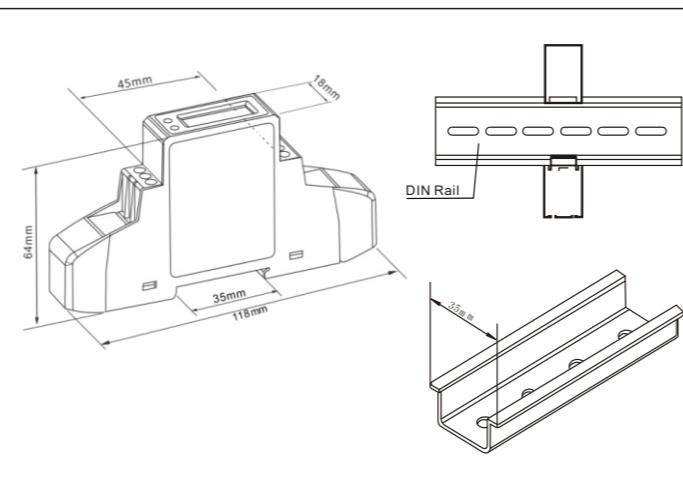
General Specifications	
Rated voltage	230Vac
Voltage range	184~276Vac
Secondary input current	40mA
Current range	0.5~100A
Power consumption	<2W/10VA
Frequency	50/60Hz(±10%)
AC voltage withstand	4KV /1 minute
Max. Reading	999999.9kWh
Accuracy	
Active power	1% of range maximum
Reactive power	2% of range maximum
Enviroment	
Operating temperature	-25°C to +55°C
Storage and transportation temperature	-40°C to +70°C
Relative humidity	0 to 95%, non-condensing
Altitude	2000m
Installation category	CAT II
Degree of pollution	2
Communication	
Communication	RS485 output for Modbus RTU
Baud rate	9600
Mechanics	
Din rail dimensions	118 mm x 18 mm x 64 mm (LxWxH)
Mounting	DIN rail 35mm
Sealing	IP51 (indoor)

### 3. Unpacking



Item	Quantity	Description
A	1	Single-phase CT Meter
B	1	CT (with CT cable 5 m)
C	1	RS485 cable (15m)
D	1	User Manual

### 4. Dimension(Unit:mm)



### 5. Installation

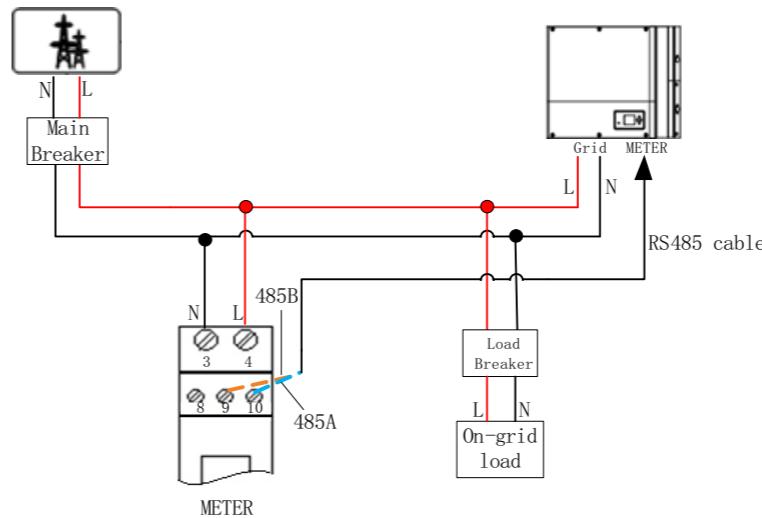


Meter terminal diagram

Meter Pin NO.	Description	Meter Connection
1	CT signal-in	CT-White wire
2	CT signal-out	CT-Black/Blue wire
3	N-in	Grid N
4	L-in	Grid L
9	RS485 B-	RS485B of RS485 cable
10	RS485 A+	RS485A of RS485 cable

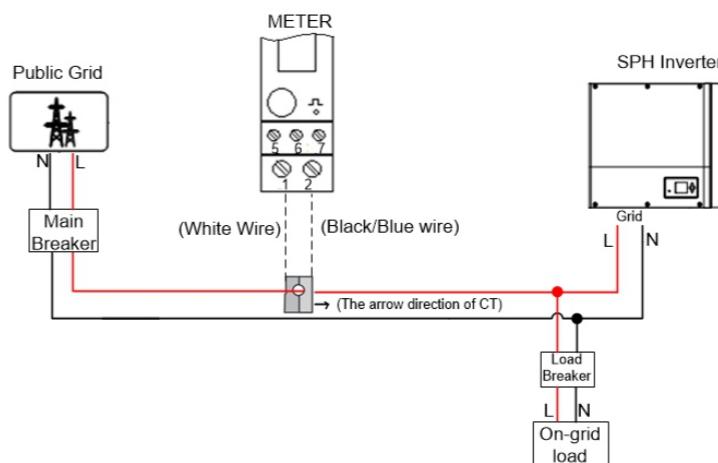
The Ingress Protection rate is IP51 and the pollution degree is PD2, so meter must be install in door. The installation diagrams show as below:

Diagrams A



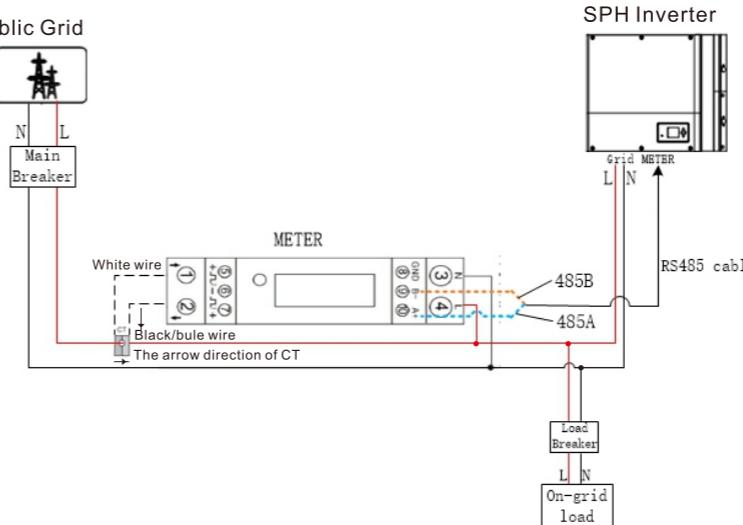
The power supply and communication wiring diagram of the meter.

Diagrams B



The meter CT wiring diagram.

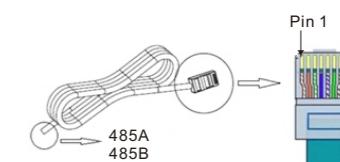
Diagrams C



The whole meter installation diagram.

#### ⚠ Note:

- Make sure meter Live (L) and Neutral (N) wire connection is correct, otherwise, it may damage the meter.
- Connect the RS485 A to Pin 10 and RS485 B to Pin 9, there are corresponding line marks on the network cable in the attachment:485A,485B.
- Confirm that the RJ45 terminal of the RS485 cable is connected to the METER port.
- RJ45 terminal PIN assignment as below:



RS485	RJ45 terminal
RS485 A	Pin5(White Blue)
RS485 B	Pin1(White Orange)

#### ⚠ Note:

- Make sure the CT position, after the main breaker and before load, the arrow on the CT points from grid to load.
- Make sure the CT across the live wire.
- The standard CT cable length is 5m.

#### ⚠ Note:

- The standard communication cable between meter and inverter is 15m, if it is not enough, also can use network cable to extend, the maximum communication distance is 100m.
- Make sure the CT position is correct, on the main line and before home consumption. If CT position is wrong, the whole system can't work correctly.
- If use the meter with Growatt solar inverter, please refer to inverter user manual of the meter RS485 communication connection.

## 6. Button Definition And Display

### 6.1 Panel instructions

After correct wiring, the normal measurement state will be entered when the power is turned on, and the screen will display as right.

First screen	Power-on full screen display
Second screen	Show software version
Third screen	Show total active power

### 6.2 Button operation

There is one button on the panel: 

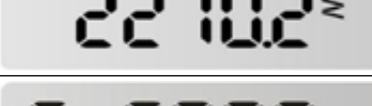
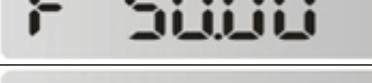
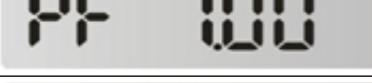
Button operation is divided into long press and short press:

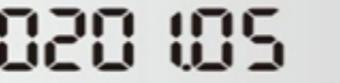
1.Long press: Press the button for more than three seconds. Long press visible "SET" to enter the setting mode(normal users do not need to enter this mode).



2.Short press: Release within one second after pressing the button, it is a short press. Short press can turn the screen to display power parameters.

You can view by pressing the button:

No.	LCD display	Description
1		Total active power Display mode: 0000.00→9999.99→10000.0 →99999.9→100000→999999→0000.00
2		Positive active power Display mode: 0000.00→9999.99→10000.0 →99999.9→100000→999999→0000.00
3		Reverse active power Display mode: 0000.00→9999.99→10000.0 →99999.9→100000→999999→0000.00
4		Voltage
5		Current
6		Active power
7		Frequency
8		Power factor
9		Meter address Default: 001
10		Baud rate( the baud rate on the left is for reference only)
11		Parity: optional none/even/odd Default: none

No.	LCD display	Description
12		Ratio Default setting: 100
13		Version number (the version number on the left is for reference only)

## 7. Trouble Shooting

Fault phenomenon	Reason analysis	Solution
Big deviation between electric energy measurement and actual value.	1.Wiring error, voltage and the corresponding phase sequence is wrong. 2.If the output line of the current transformers is reversed. 3.The transformer ratio is not set ,the meter displays the secondary data.	1.Refer to the wiring diagram to check the wiring. 2.If the transformer ratio setting is wrong, please set the voltage ratio and current ratio correctly. 3.If the issue still exists, please contact your local supplier.
RS485 communication error(Inverter error 401)	1.RS485 cable is open circuit, short circuit or reversely. 2.The address, baud rate and data parity of the meter do not match the SPH.	1.If there is a problem with the communication cable, please replace the communication cable. 2.Set the correct address, baud rate, and data bit check digit of the meter by the button. 3.If the issue still exists, please contact your local supplier.



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