

Single Phase Power Meter,with external CT

Description

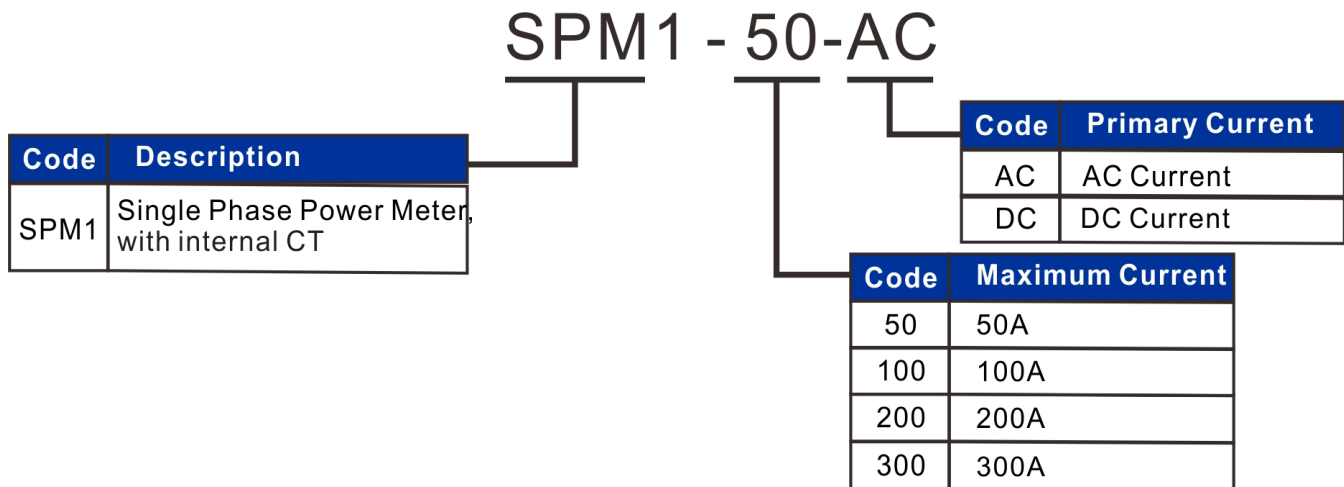
The Single Phase Power Meter with internal CT are solid state transducers for measuring the current and voltage in fans, pumps, and other HVAC equipment. The current sensors exists in two different types:SPM1-AC, SPM1-DC.The connections are by Modbus.



Specifications

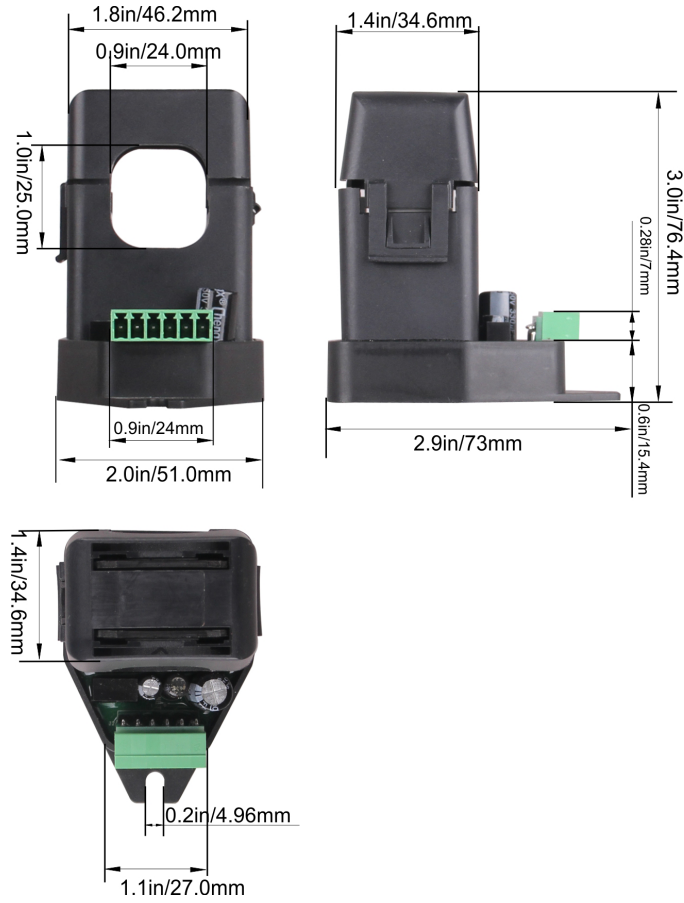
| | SPM1-AC | SPM1-DC |
|----------------------|--------------|-------------|
| Power supply voltage | 1 2V-24V AC | 1 2V-24V AC |
| Power Consumption | 20mA@24Vdc | |
| Voltage Range | 0-260V | 0-380V |
| Current Range | 0-300A | 0-100A |
| Frequency | 50hz/60hz | |
| Net | Modbus RS485 | |
| Operating Temp | -1 5°C-60°C | |

Part Number Scheme

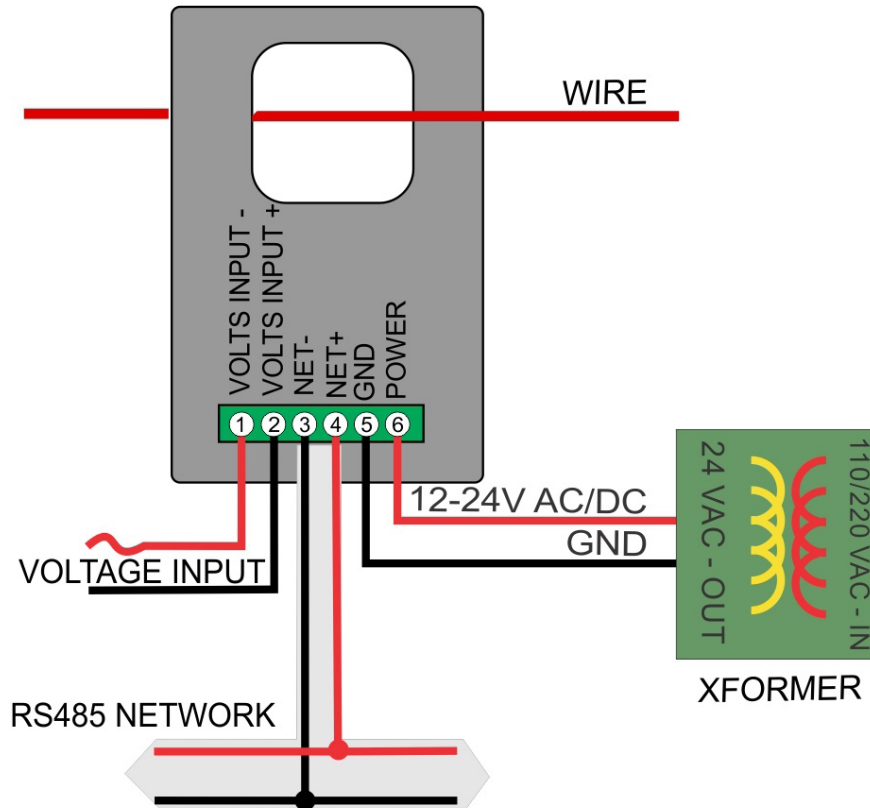


Single Phase Power Meter,with external CT

Dimension

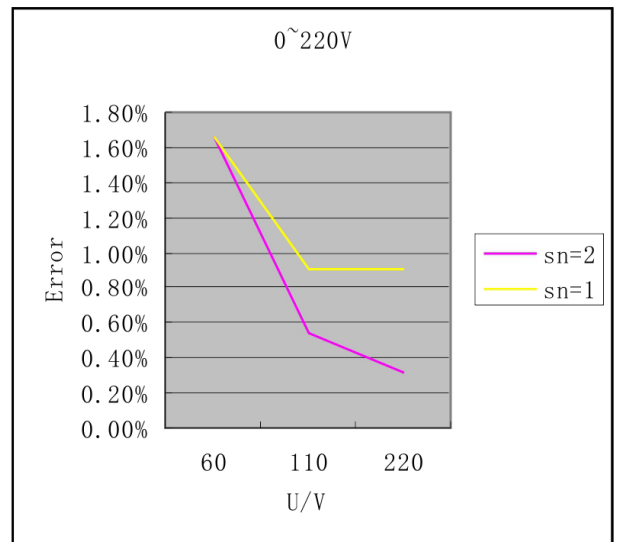
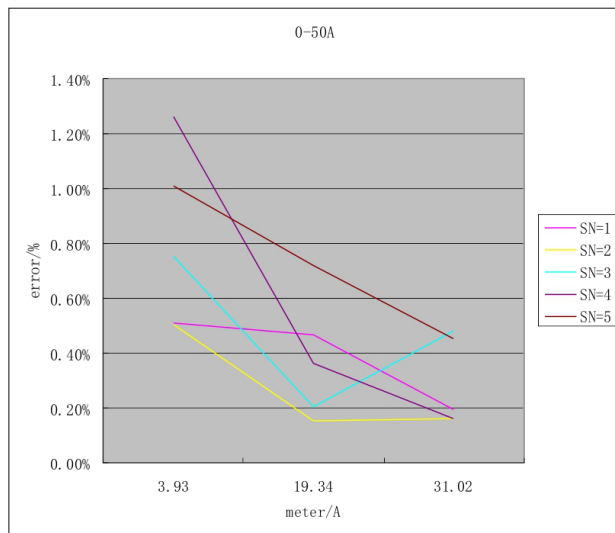
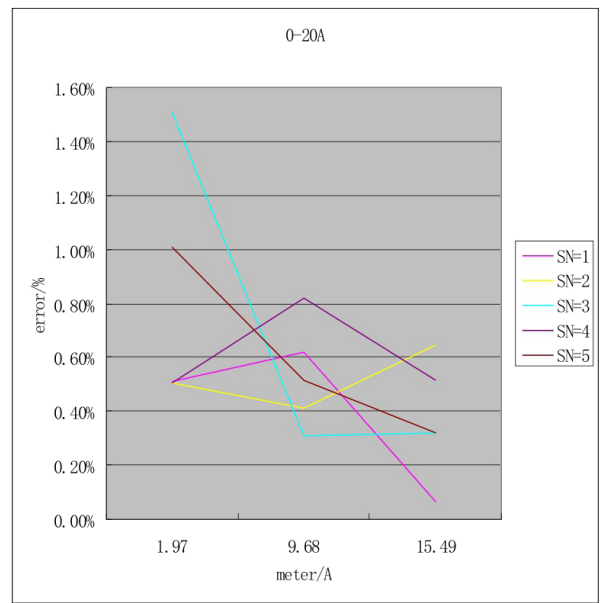
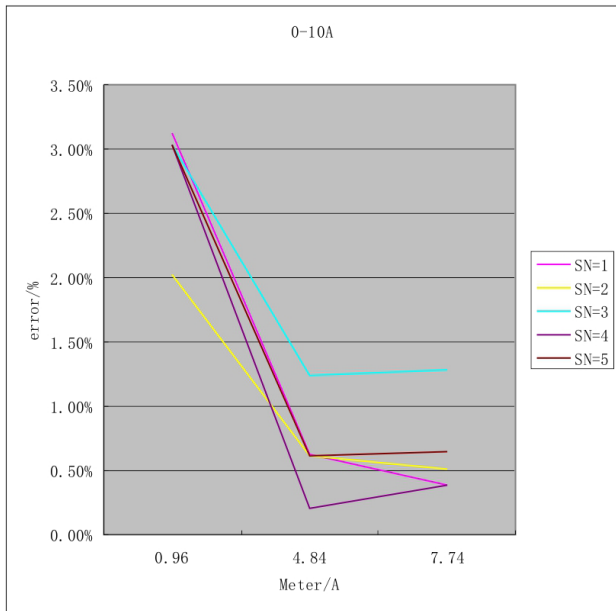


Wiring Diagram



Single Phase Power Meter,with external CT

AC Current/Voltage Test



Calibration

Calibrate current:

Write the real value to register 1 00.

Calibrate the voltage:

Write the real value to register 1 01 .

Set Analog Output

1 . Set the output mode (auto mode):

Write 0 to register 1 43.

2. Select current or voltage value for the analog output.

Set register 1 42(0: current. 1 : voltage)

3. Use register 1 45 to set the current range or register 1 46 to set the voltage range

4. I f you set 0 to register 1 42,

The analog output value = current value (reg1 00)/1 00 / current range (reg1 45)*5V (AC)

e. g. : Range = 1 00A, Current Value = 1 0A, DA = 1 0/1 00*5 = 0. 5V

The analog output value = current value (reg1 00)/1 0 / current range (reg1 45)*5V (DC)

I f set 1 to register 1 42 then.

Analog output value = voltage value (reg1 01)/1 0 / current range (reg1 46)*5V

e. g. : Range = 1 000V, Voltage Value = 200V, DA = 200/1 000*5 = 1 V

Single Phase Power Meter,with external CT

Register List

| Address | Bytes | Range | Operation info | Register and Description | Note |
|------------------------------------|-------|------------------------|----------------|--|---|
| 0 ~ 3 | 4 | - | W/R | Serial Number -4 byte value. | |
| 4 ~ 5 | 2 | - | R | Software Version -2 byte value. | |
| 6 | 1 | 0-255 | R/W | ADDRESS. Modbus device address | |
| 7 | 1 | 0-255 | W/R | Product Model. | |
| 8 | 1 | 0-255 | W/R | Hardware Revision. | |
| | | | | | |
| 100 | 2 | AC:0-50A DC:0-100A | W/R | The value of current and calibrate. | AC:eg.102 is 1.02A(0.01A) DC:eg.102 is 10.2A(0.1A) |
| 101 | 2 | AC:0-260V DC:0-380V | W/R | The value of voltage and calibrate. | eg.1102 is 110.2V(0.1V) |
| 103 | 1 | 0-1 | R/W | Output BUS Selected | 0:RS485. 1:one wire |
| 104 | 1 | 0-10 | R/W | the range of current | |
| calibrate the DC current of sensor | | | | | |
| 111 | 2 | 0~1000 | R/W | 1st calibration current target value | when calibrate,need to set R139=11 and R140=22. |
| 112 | 2 | | R | 1st calibration current original value | |
| 113 | 2 | 0~1000 | R/W | 2nd calibration current target value | |
| 114 | 2 | | R | 2nd calibration current original value | |
| 115 | 2 | 0~1000 | R/W | 3rd calibration current target value | |
| 116 | 2 | | R | 3rd calibration current original value | |
| 117 | 2 | 0~1000 | R/W | 4th calibration current target value | |
| 118 | 2 | | R | 4th calibration current original value | |
| 119 | 2 | 0~1000 | R/W | 5th calibration current target value | |
| 120 | 2 | | R | 5th calibration current original value | |

Single Phase Power Meter,with external CT

| calibrate the voltage of sensor | | | | | |
|------------------------------------|---|---------|-----|---|---|
| 121 | 2 | 0~3800 | R/W | 1st calibration voltage target value | when calibrate,need to set R139=11 and R140=22. |
| 122 | 2 | | R | 1st calibration voltage original value | |
| 123 | 2 | 0~3800 | R/W | 2nd calibration voltage target value | |
| 124 | 2 | | R | 2nd calibration voltage original value | |
| 125 | 2 | 0~3800 | R/W | 3rd calibration voltage target value | |
| 126 | 2 | | R | 3rd calibration voltage original value | |
| 127 | 2 | 0~3800 | R/W | 4th calibration voltage target value | |
| 128 | 2 | | R | 4th calibration voltage original value | |
| 129 | 2 | 0~3800 | R/W | 5th calibration voltage target value | |
| 130 | 2 | | R | 5th calibration voltage original value | |
| calibrate the AC current of sensor | | | | | |
| 131 | 2 | 0~5000 | R | the rate of calibrate(0-10A) | you can write the real value to Register100 to calibrate the AC current |
| 132 | 2 | 0~5000 | R | the rate of calibrate(0-20A) | |
| 133 | 2 | 0~5000 | R | the rate of calibrate(0-50A) | |
| Offset set | | | | | |
| 134 | 2 | | R/W | the offset of current(DC) | |
| 135 | 2 | | R/W | the offset of voltage | |
| filter set | | | | | |
| 136 | 1 | 0~10 | R/W | the filter of current | |
| 137 | 1 | 0~10 | R/W | the filter of voltage | |
| lock set | | | | | |
| 139 | 1 | 0-255 | R/W | lock_x,when lockx =11 and lock_y=22,we can calibrate sensor | |
| 140 | 1 | 0-255 | R/W | lock_y | |
| Baud Rate set | | | | | |
| 141 | 1 | 0-1 | R/W | Baud Rate set | 0:19200.1:9600 |
| Analog Output set | | | | | |
| 142 | 1 | 0-1 | R/W | current or voltage output set | 0:current.1:voltage |
| 143 | 1 | 0-1 | R/W | OutMode set | 0:auto.1>manual |
| 144 | 2 | 0-65535 | R/W | the manual input value | |
| 145 | 2 | 0-65535 | R/W | the range of current set for analog output | A |
| 146 | 2 | 0-65535 | R/W | the range of voltage set for analog output | V |
| 147 | 2 | 0-65535 | R/W | calibrate analog output(5V) | when calibrate,need to set R139=11 and R140=22. |