SDM72CT-M
Three Phase Energy Meter (CT Connect)

Pulse Outputs

The meter provides two pulse outputs. Both pulse outputs are passive type.
Pulse output 1 can be set to generate pulses to represent total / import/export kWh or kVarh.
The pulse constant can be set to generate 1 pulse per: 0.001/0.01/0.1/1kWh/kVarh (default is 0.001 export kWh).
Pulse width: 200/100/60ms
Pulse output 2 is non-configurable. It is fixed up with active kwh (Imp). The constant is 1000imp/kWh.

RS485 Output for Modbus RTU

The meter provides a RS485 port for remote communication. Modbus RTU is the protocol applied. For Modbus RTU, the following RS485 communication parameters can be configured from the Set-up menu:
- **Baud rate** 1200,2400, 4800, 9600
- **Parity** none (default)/odd/even
- **Stop bits** 1 or 2
- **RS485 network address** nnn – 3-digit number, 001 to 247
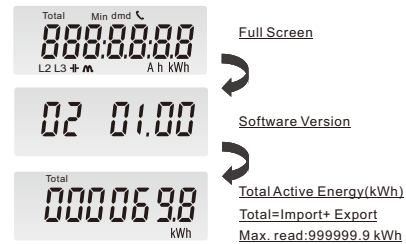- **Modbus™ Word order** Hi/Lo byte order is set automatically to normal or reverse. It cannot be configured from the set-up menu.

Note: For Modbus protocol, please contact EASTRON sales team for assistance or go to www.eastrongroup.com

Warnings

Important Safety Information is contained in the Maintenance section. Familiarize yourself with this information before attempting installation or other procedures. Symbols used in this document:

⚠️ Risk of Danger: These instructions contain important safety information. Read them before starting installation or servicing of the equipment.

⚡ Caution: Risk of Electric Shock

Operation

● **Initialization display**
When the meter is powered on, it will initialize and do self-checking:

Full Screen

Software Version

Total Active Energy(kWh)
Total=Import+ Export
Max. read:999999.9 kWh

After the self-checking program, the meter display will show the total active energy (kWh)
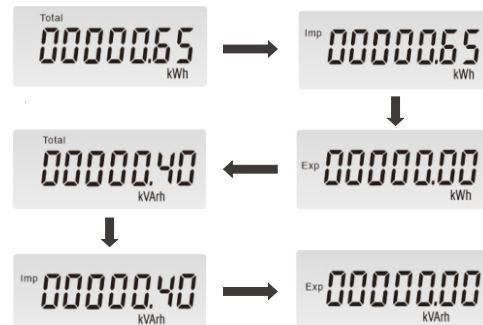
● **Scroll display**
Scroll Display by Button
There are two buttons on the front panel.

| ⟳ | >Scroll the display for data checking. >Changing option at Set-up mode >Exit the Set-up mode |
| ↵ | >Set-up mode entry >Confirmation |

After initialization and selfchecking program, the meter display the measured values. The default page is total kWh. If the user wants to check other information, please press the scroll button ⟳ on the front panel.

Technical Data

● **Specifications**

Nominal voltage(Un)	230V/400V AC(3~)
Operational voltage	80%~120% Un
Insulation capabilities	
- AC voltage withstand	4KV for 1 minute
- Impulse voltage withstand	6KV-1.2/50µS
Nominal current (In)	1A/5A
Maximum rated current (Imax)	6A
Operational current range	0.4% In~Imax
Over current withstand	20Imax for 0.01s
Operational frequency range	50Hz/60Hz
Internal power consumption	≤ 2W/10VA/phase
Pulse output 1	1000imp/kWh
Pulse output 2	1000imp/kWh
Display	LCD with backlit
Max. Reading	999999.9kWh

● **Performance criteria**

Operating humidity	≤ 90%
Storage humidity	≤ 95%
Operating temperature	-25°C - +55°C
Storage temperature	-40°C - +70°C
Active energy accuracy	Class 1 IEC 62053-21
Protection against penetration of dust and water	IP51
Insulating encased meter of protective class	II
Warm up time	6S
Mechanical environment	M1
Electromagnetic environment	E2
Degree of pollution	2

Introduction

This document provides operating, maintenance and installation instructions. This unit measures and displays the characteristics of single phase two wires(1p2w) and three phase four wires(3p4w) networks. The measuring parameters include voltage(V), import, export and total energy(kWh/kvArh), frequency(Hz), current(A), power(kW/Kva/Kvar).

SDM72CTM can be configured to work with a wide range of CTs. Built-in interfaces provide pulse and RS485 Modbus RTU outputs. Configuration is password protected.

Unit Characteristics

Multifunction measurements
Bi-directional measurement IMP & EXP
Two pulse outputs
RS485 Modbus RTU
Password protected set-up
Backlighted LCD

Operation

```
2170          2170
L1  V         L2  V

0.000         0.0
L1  A         L3  V

0.000         0.000
L2  A         L3  A

0.0           0.0
L1  W         Total W

0.0           0.0
L2  W         L3  W

0.0           0.0
L1  VAr       Total VAr

0.0           0.0
L2  VAr       L3  VAr

0.0           0.0
L1  VA        Total VA

0.0           0.0
L2  VA        L3  VA

PF  1.000     PF  0.000
L1            Total

PF  1.000     PF  1.000
L2            L3

Ct  0001      49.97
                     Hz

C  1000       Add  001

Ptry  n       bd G 9.6
                     k
```

Set-up Mode

To get into Set-up Mode, the user needs to press the "Enter" button ⏎ for 3s.

Page	Display	Descriptions
1	PAS0000	**Password** To get into Set-up mode, it asks a password confirmation. Default password: 1000 Use ⏎ and ⟳ to enter correct password.
1-1	Err	"Err" means the password is incorrect or the operation fails.
2	Add 001	Press ⏎ for 3s, the setting will flash. Use ⟳ and ⏎ to change the Modbus address. Options: 1~247 Long press ⏎ for confirmation.
3	bd G 9.6 k	Press ⏎ for 3s, the setting will flash. Use ⟳ and ⏎ to change the baud rate. Options: 1200, 2400,4800, 9600 (default) Long press ⏎ for confirmation.
4	Ptry n	Press ⏎ for 3s, the setting will flash. Use ⟳ and ⏎ to change the parity. Options: EVEN,ODD,NONE (default) Long press ⏎ for confirmation.
5	SEt Ct	Use ⟳ to enter the CT ratio option. Press ⏎ for 3s, the setting will flash. Use ⟳ and ⏎ to enter the CT Ratio.
5-1	Ct 0001	The range is from 0001 to 2000. e.g. to set 100A/5A, please input "0020". Long press ⏎ for confirmation.
6	PAS0000	Use ⟳ to change the password. Press ⏎ for 3s, the setting will flash. Use ⟳ and ⏎ to enter the new password. The range is from 0001 to 9999.
7	PAS0000	Long press ⏎ for confirmation.

Wiring Diagram

```
         1 ⊓ 2   RS485
      9 10 11 12 13 14
      +  −  +  G  B  A

                              P2    P1   L1
                        P2  P1 S2  S1    L2    3 PHASE 4 WIRE
                     P2 P1 S2 S1         L3
                     S2 S1                N

      1 2 3 4   15 16 17 18 19 20
   MEASURED VOLTAGE  CURRENT INPUTS
```
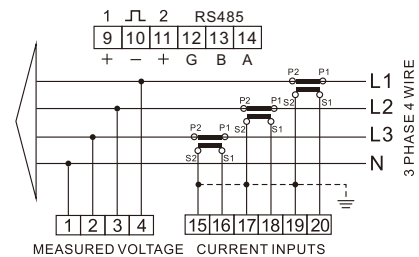
Dimensions
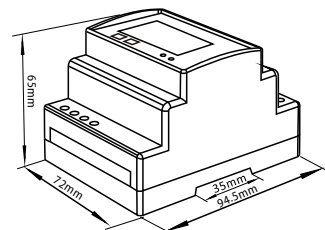
Height	94.5mm
Width	72mm
Depth	65mm

65mm
72mm
35mm
94.5mm