

# SDM72D-M

THREE PHASE MULTIFUNCTION ENERGY METER



User Manual V1.7

## 1. Introduction

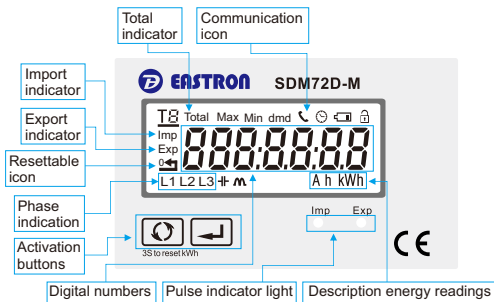
This document provides operating, maintenance and installation instructions of SDM72D-M series. The unit can measure most of the important electrical parameters, such as active energy, active power, etc.

This unit is Max.100A direction operated and does not need to connect with external current transformers(CT). Built-in pulse, RS485 Modbus outputs for remote reading. Configuration is password protected.

## 2. Selection Table

SDM72D-M-1-1	1: kWh+W, pulse output, RS485 Modbus RTU
	2: Multi-parameters, pulse output, RS485 Modbus RTU
	1: MID
	2: Non-MID

## 3. Keys and Displays



## 4. Button Functions

There are two buttons on the front panel.

	>Scroll the display for data-check >Change option at Set-up mode >Exit the Set-up mode
	>Set-up mode entry >Confirmation

## 5. Scroll Displays by Button

### SDM72D-M-1

Total active energy → Total active energy → Export energy → Resettable active energy → Resetable import energy → Resettable export energy → L1 active power → L2 active power → L3 active power → Total active power → Import active power → export energy power → Modbus address → Baudrate → Parity → Pulse constant → software version

### SDM72D-M-2

Total active energy → Resettable active energy → Import energy → Export energy → Total reactive energy → Resettable reactive energy → L1-N voltage → L2-N voltage → L3-N voltage → L1 current → L2 current → L3 current → L1 active power → L2 active power → L3 active power → Total active power → L1 reactive power → L2 reactive power → L3 reactive power → Total reactive power → L1 power factor → L2 power factor → L3 power factor → Total power factor → Frequency → Pulse output type → Modbus address → Baudrate → Parity → Software version

## 6. Set-up Entry Methods

Some menu items, such as password, require a four-digits number entry while others, such as supply system, require selection from a number of menu options.

## 7. Menu Option Selection

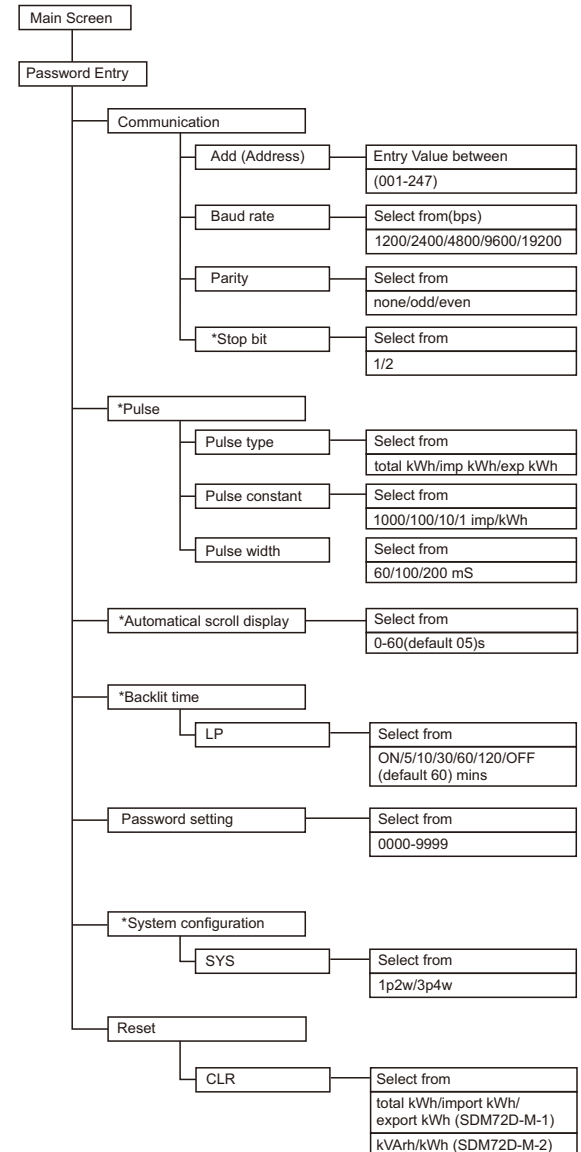
- Use button to scroll through the different options of the set-up menu.
- Press button to confirm your selection.
- If an item flashes, then it can be adjusted by button.
- Having selected an option from the current layer, press button for 3 seconds to confirm your selection.
- Having completed a parameter setting, press button to scroll to other parameter settings.
- On completion of all setting, wait for several seconds to return to measurement display.

## 8. Number Entry Procedure

When setting up the unit, password must be entered. Digits are set individually, from left to right.

- The current digit to be set flashes and is set by using button.
- Press button for 3 seconds to confirm each digit setting.

## 9. Setting up



Note: The items marked with "\*"are not available with SDM72D-M-1.

## 10. RS485 Modbus for Modbus RTU

For Modbus RTU, the following RS485 communication parameters can be configured from the set-up menu:

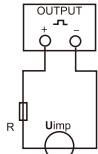
Band rate: 1200, 2400, 4800, 9600, 19200  
Parity: 1 or 2

RS485 network address nnn - 3-digit number, 001 to 247

**Note: For Modbus protocol, please contact EASTRON sales representative for assistance or go to [www.eastrongroup.com](http://www.eastrongroup.com).**

## 11. Pulse Output

The meter is equipped with a pulse output, which is fully isolated from the inside circuit. That generates pulses in proportion to the measured energy. The pulse output is polarity dependent , passive transistor output requiring an external voltage source for correct operation. For this external voltage source, the voltage shall be 5-27V DC, and the maximum input current shall be 27mA DC.



**ATTENTION:** Pulse output must be fed as shown in the wiring diagram on the left. Scrupulously respect polarities and the connection mode. Opto-coupler with potential-free SPST-NO Contact.

Contact range: 5~27VDC  
Max. current Input: 27mA DC

The unit provides pulse output for active kWh. The Pulse output is passive type.

Pulse constant:  
1000imp/kWh  
100imp/kWh  
10imp/kWh  
1 imp/kWh

Pulse width: 60, 100, 200ms

**Note:** when the pulse constant is set to 1000imp/kWh, the pulse width should be 35ms and cannot be adjusted.

Pulse output type can be set to : total kWh, import kWh, export kWh.

**Note:** For SDM72D-M-1, the pulse constant is fixed at 1000imp/kWh.

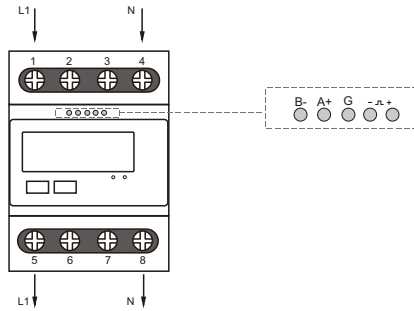
## 12. Specifications

Voltage AC (Un)	3x230(400)V
Voltage Range	80~120% Un
Base Current (Ib)	10AAC
Max. Current (Imax)	100AAC
Mini Current (Imin)	5% of Ib AC (0.5A)
Starting current	0.4% of Ib
Power consumption	≤ 2W/10VA for the voltage measuring circuit ≤ 4VA for the current measuring circuit
Frequency	50Hz(MID); 50/60Hz(non-MID)
AC voltage withstand	4KV for 1 minute
Impulse voltage withstand	6KV-1.2 / 50 μs
Overcurrent withstand	30 Imax for 0.01s
Power supply	Self-power supply
Display	LCD with backlight
Max. Reading	999999.9kWh
Active energy	Class 1 IEC62053-21 Class B EN50470-1/3
Reactive energy	Class 2 IEC62053-23

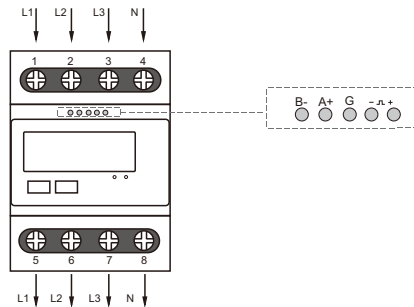
Operating humidity	≤90%
Storage humidity	≤95%, non-condensing
Operating temperature	-25°C ~ +55°C
Storage temperature	-40°C ~ +70°C
Ingress protection	IP51(indoor)
Insulating encased meter of protective class	II
Warm up time	5s
Mechanical environment	M1
Electromagnetic environment	E2
Degree of pollution	2
Altitude	Up to 2000m

## 13. Wiring Diagrams



Single phase two wires



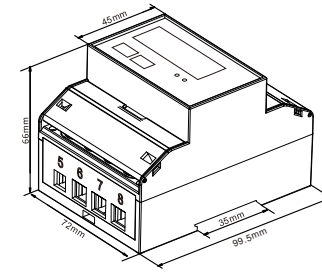
Three phase four wires



## 14. Terminal

Terminals		
COMM/Pulse	0.5~1.5mm <sup>2</sup>	0.2Nm
Load	4~25mm <sup>2</sup>	2.5Nm

## 15. Dimension



Height 99.5mm  
Width 72mm  
Depth 66mm  
Error: ±0.5mm

## 16. Declaration of Conformity (for the MID approval version meter only)

We Zhejiang Eastron Electronic Co.,Ltd.

Declare under our sole responsibility as the manufacturer that the poly phase multi-funton electrical meter "SDM72D-M" correspond to the production mode described in the EU-type examination certificate and to the requirements of the Directive 2014/32/EU type examination Certificate NO. 0120/SGS0213 Identification Number of the NB0598.

## Safety Instruction

The Installation instructions do not include a complete list of all safety measures necessary for operating the device. Special operating conditions may require additional measures. The installation instructions contain notes that must be observed for your personal safety to prevent property damage. Safety instructions in this document are highlighted with a warning triangle and are presented as follows depending on the level of risk.



The General warning symbol calls attention to possible risks of injury. Observe all the instructions listed under the symbol to prevent injuries or even death



This additional symbol indicates any electrical danger that can result in serious injuries or death

## Attention

Warns of an imminently dangerous situation that can result in property damage or environmental damage in the event of noncompliance

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