Three Phase Multifunction Din Rail Meter
SDM530Y
User Manual V1.1

Statement

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Chapter One. Product Overview

1.1 Product Introduction

SDM530Y prepaid energy meter is a three phase electronic prepaid energy meter. It is in full compliance with technical requirements of IEC62053-22 standard for Class 0.5S energy meter.

It has a complete prepaid management system, which is convenient for power purchase. The system automatically deducts fees according to electricity consumption. Recharging can be done through network remotely, no need any medium, such as IC card. The meter has two-level balance alarm function and an emergency amount function. It will automatically cut off power supply when tenant in arrears or credit become zero or reaching the preset value and then through real-time monitoring to check whether there is any abnormal situation.

The meter is with excellent reliability that can display remaining capacity, available remaining, total power consumption/ purchase of electricity, credit line, overdraft consumption, pay model, voltage, current, active power, active energy, import energy, export energy, power factor and frequency. The reactive power, apparent power can be read by Modbus.

SDM530Y is easy to install. With battery installed inside, the value on the meter still can be read when grid power is off.

SDM530Y is suitable for real-time power monitoring system and has the characteristics of multi-function, multi-purpose, high stability and long life.

The meter has 1 pulse output, and the pulse constant, pulse width and output unit can be set.

It has RS485 communication interface, supporting high speed communication function of RS485 (upto 9600bps). It is an ideal choice for power energy monitoring.

1.2 Product Feature
● Max.100A Direct Connect
● Multifunction Measurement,
● Displays Scrollable Settings
● Support AMR, SCADA system
● Prepaid Function
● Energy Resettable
● White Backlit LCD Display
● Din Rail Mounting 35mm

1.3 Application Scenarios

SDM530Y is a multi-functional power meter designed to meet the needs of small and medium power users/commercial households with high mobility and tendency to owe fees. It can be applied to AC charging posts, solar PV, etc. Its complete communication function makes it suitable for various real-time power monitoring systems.

Chapter Two. Technical Specification Parameters
2.1 Technical Parameters

◆　　Input Voltage:
　　　Basic Value: 230V AC
　　　　Operating Voltage Range: 80-120% Basic Value
◆　　Input Current:
　　　　Basic Value: 5A
　　　Max.Current: 100A
　　　Over Current Withstand:　　20 Imax for 0.5s
◆　　Input Frequency:
　　　Basic Value:50/60Hz
　　　　Input Frequency Range:45-65 Hz
◆　　Insulation Capabilities:　　- AC voltage withstand　　4KV/1min
　　　　Impulse Voltage Withstand　　6kV – 1.2μS waveform
◆　　Power Consumption:　　≤ 2W/10VA
◆　　Pulse Port: 1 Pulse output
◆　　Pulse Output Rate: 1000imp/kWh(Default)
◆　　Display: LCD with White Backlit
◆　　Max reading: 999999.99 kWh

2.2 Measurement Accuracy

◆　　Voltage: 0.5%
◆　　Current: 0.5%
◆　　Frequency: 0.1
◆　　Power Factor: 0.01
◆　　Active Power: 0.5%
◆　　Reactive Power: 1%
◆　　Apparent power: 0.5%
◆　　Active Energy: Class 0.5s
◆　　Reactive Energy: Class 2

2.3 RS485 Communication

◆　　Bus Type: RS485
◆　　Protocol: Modbus RTU
◆　　Baud Rate: 1200/2400/4800/9600bps (Default)
◆　　Address Range: 1-247 (Default:1)
◆　　Max. Bus loading: 64pcs
◆　　Max. Bus loading: 1000m
◆　　Parity: EVEN /ODD/NONE (Default)
◆　　Data Bit: 8
◆　　Stop Bit: 1

2.4 performance standard

◆　Operating Humidity ： ≤90%
◆　Storage Humidity ： ≤95%
◆　Operating Temperature ： -25℃~+55℃
◆　Storage Temperature ： -40℃~+70℃
◆　International Standard ： GB-T 17215/ IEC62053-22/ EN50470-1/3
◆　Accuracy Class ： Class 0.5S
◆　Installation Category ： CATIII
◆　Protection against Penetration of Dust and Water : IP51 (Indoor)
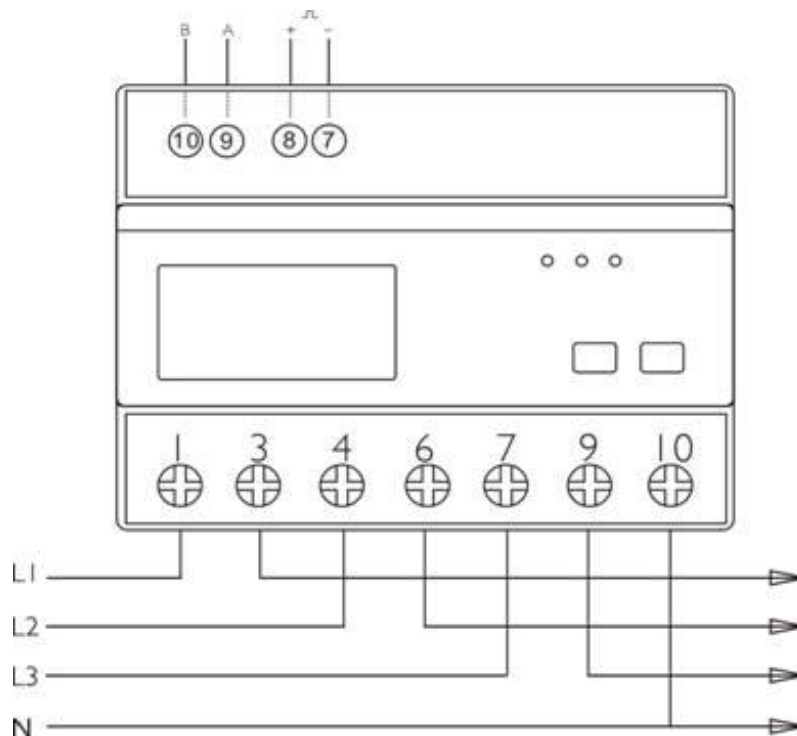◆　Insulating Encased Meter of Protective Class: II
◆　Altitude ： ≤2000m

2.5 Dimensions
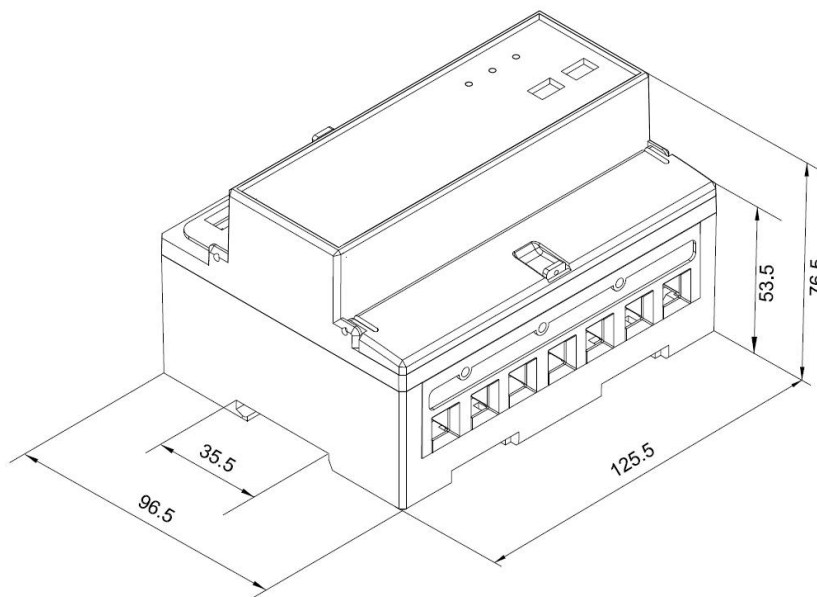
Height: 76.5 mm
Width: 96.5 mm
Length: 125.5mm

D I N Rail

2.6 Wiring diagram
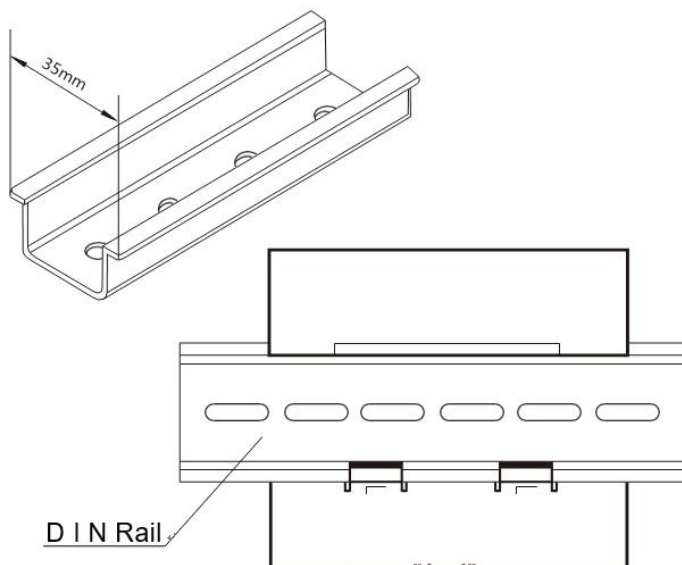
Chapter Three. Operating instructions

3.1 Panel Instructions and Key Operation Instructions

3.1.1 Panel Instructions
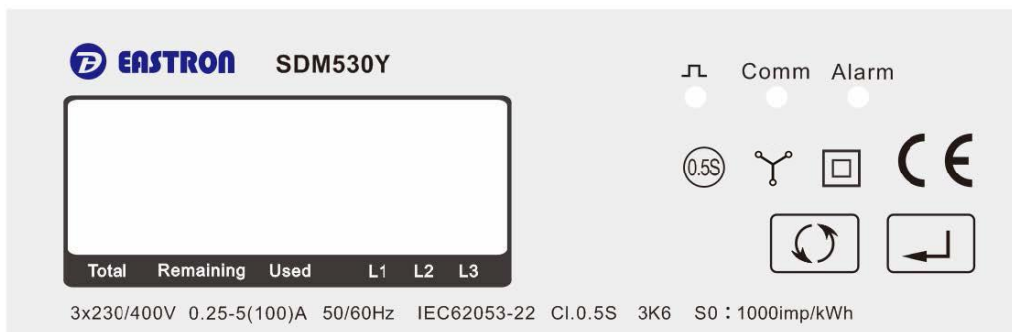
After the correct connection, it will enter the normal measurement state, and the screen is displayed as follows:

1st Screen	Start up Screens: All Display Segments
2nd Screen	Start up Screens: Software Version

Failure Interface	Display fault code: the display interface of fault code and normal display interface automatic scrolling display, with the switching time of 3s.Error-01 indicates that the relay cannot close.

3.1.2 key Definitions ：

	◆ Measurement mode, short press: switch the display ◆ Setting mode: short press: switch menu or single-digit increases at the same level; Long press: return to the previous menu.

↵	◆ Measurement mode, short press: invalid; Long press: enter the setting mode; ◆ Setting mode, short press: move the cursor (the cursor is flashing digital bit); Long press: menu item selection confirmation and parameter modification confirmation.

3.2 Prepaid Function Description

This function needs to be used in conjunction with the company's prepaid management system software (see the detailed software operation instructions of the prepaid management system software).

Description of alarm threshold and emergency amount:

The meter has a two-level balance alarm thresholds, called the first-level alarm threshold and second-level alarm thresholds, in which the first-level alarm threshold value is higher than the second-level alarm threshold value. That is, the first-level alarm value is triggered first when the balance is insufficient.

The meter has the function of setting emergency amount. When the emergency amount is set to a value higher than 0, the emergency function is activated, which means the user is allowed to overdraw a certain amount of expenses. If the user has reached the emergency amount, and when the user buy electricity, the used emergency amount will be deducted first, and the remaining electricity charge will be charged to the meter. Turn off this function when the emergency amount is set to 0.

3.2.1 Electricity Purchase:

The user goes to the administrative department of selling electricity to deal with the electricity purchase business.

3.2.2 Electricity Use:

When the remaining amount of the meter is less than the first alarm value, the buzzer is on and the alarm indicator starts flashing. If the user presses any button, the buzzer is turned off, but the alarm indicator remains flashing. If the user does not press any button, the buzzer alarm will automatically shut down after 10 minutes. The function reminds users that the amount is insufficient and needs to be topped up.

If the value is not charged at this time, when the remaining amount of the meter is less than the second-level alarm value, the relay will open and the buzzer will be turned on at the same time. In the mean while, the alarm indicator light becomes normally on; If the user presses any button, the relay is switched on and the buzzer is turned off. The alarm indicator remains on. If the user does not press any key, the buzzer alarm will automatically shut down after 10 minutes, but the relay clock will remain open until the user presses any key. This function alerts the user that need to recharge immediately.

3.2.3 Meet an Emergency:

When the remaining amount of the meter goes to 0, the relay will be automatically disconnected and cut off. If the emergency amount function is not turned on, the relay is always disconnected. If the emergency amount function is turned on, the meter will be automatically connected to the relay after the user presses any key, and the relay will be
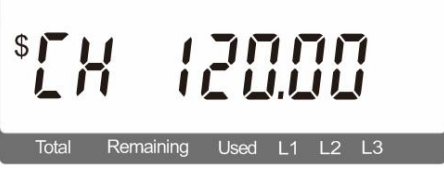
automatically disconnected after the user has consumed the
emergency amount.

3.3 Measurement Parameters

It can be viewed by pressing the button:
Balance → Accumulated Used Amount → Accumulated Used Electricity → Total
Active Power → Recharge amount → Communication Address →
Communication Baud Rate → Communication Parity Bit → Pulse Constant →
Software Version

Page	Display	Description
1	$00006O.00 Total Remaining Used L1 L2 L3	Balance Example:60.00$
2	$00008O.00 Total Remaining Used L1 L2 L3	Accumulated Used Amount Example: 80.00$
3	000120.00 kWh Total Remaining Used L1 L2 L3	Accumulated Used Electricity Example: 120.00kWh
4	000120.00 kWh Total Remaining Used L1 L2 L3	Total Active Power Example: 120.00kWh
5	$CH 120.00 Total Remaining Used L1 L2 L3	Recharge amount Example: 120.00$
6	Addr 001 Total Remaining Used L1 L2 L3	Communication Address Example: 001

7	bd 9600 Total　Remaining　Used　L1　L2　L3	Communication Baud Rate Example: 9600
8	PrtY N Total　Remaining　Used　L1　L2　L3	Communication Parity Bit Example: None Explanation: Parity Bit "N"= none; "E" = even; "O" = odd
9	C 1000 Total　Remaining　Used　L1　L2　L3	Pulse Constant Example: 1000
10	12 01.00 Total　Remaining　Used　L1　L2　L3	Software Version Example: 12 01.00
11	Err-01 Total　Remaining　Used　L1　L2　L3	**Fault code** Example: Err-01
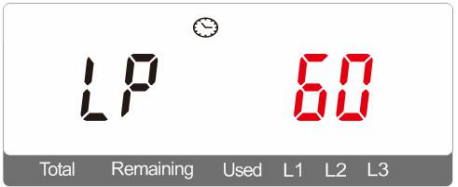
3.4 Basic Setting

Long press " ↵ " for three seconds to enter the setting mode (It will exit the setting interface if there is no operation in the next minute and return the remaining amount interface) :

Page	Display	Description
1	GOOd Total　Remaining　Used　L1　L2　L3	Set successful, display: good

2	Err Total　Remaining　Used　L1　L2　L3	Setting failed, display: err
3	PAS 0000 Total　Remaining　Used　L1　L2　L3	**Password** Enter password into the settings screen Default password: 1000 Press 〇 select number, press ↵ to select shift. Long press to enter the setup system.
4	Addr 001 Total　Remaining　Used　L1　L2　L3	**Communication Address** Default communication address: 001 Communication address range: 001~247
4-1	Addr 001 Total　Remaining　Used　L1　L2　L3	Long press ↵ into the communication address setting interface, and the current character will flash. The 〇 ess to select new communication address. Long press ↵ to confirm settings.
5	bd 9600 Total　Remaining　Used　L1　L2　L3	**Baud Rate** Default baud rate: 9600bps Baud rate range: 1200, 2400, 4800, 9600.
5-1	bd 9600 Total　Remaining　Used　L1　L2　L3	Long press ↵ enter baud rate setting interface, and the current character flashing. Then press 〇 select the new baud rate. Long press ↵ to confirm settings.
6	PrtY E Total　Remaining　Used　L1　L2　L3	**Parity Bit** Default: None Optional: None, Even, Odd

6-1	*PrtY E*	Long press ⏎ to enter the parity bit setting interface, and the current character will flash. Then press ⟳ to select the new parity bit. Long press ⏎ to confirm settings.
	Total Remaining Used L1 L2 L3	
7	*PLS CSt*	**Pulse Constant** Default: 1000imp/kWh Optional: 1000, 100,10,1.
	Total Remaining Used L1 L2 L3	
7-1	*CSt 1000*	Long press ⏎ into the constant setting interface, and the current character will flash. Then, press ⟳ select the new constant. Finally, long press ⏎ to confirm settings.
	Total Remaining Used L1 L2 L3	
8	*PLS tiME*	**Pulse width** Default: 35ms Optional:200, 100,60. If the pulse constant is equal to 1000imp/kWh, the setting interface is not provided to the user, and the pulse width is fixed 35ms.
	Total Remaining Used L1 L2 L3	
8-1	*tiME 100*	Long press ⏎ to enter pulse width setting interface, the current character will flash. Then press ⟳ to select the new pulse width. Long press ⏎ to confirm settings.
	Total Remaining Used L1 L2 L3	
9	🕐 *SCrL 30*	**The time of scrolling display** Default : 0s (no scrolling display) The time range of scrolling display: 0 ~ 30s.
	Total Remaining Used L1 L2 L3	

9-1	SCrL **30** Total　Remaining　Used　L1　L2　L3	Long press 　↵ 　 to enter auto-scrolling display time setting interface, and the current character will flash. Then press 　◯ 　to select the new auto-scrolling display time. Finally, long press 　↵ 　 to confirm settings.
10	LP 　**60** Total　Remaining　Used　L1　L2　L3	**Backlight lighting time** Default : 60 min Optional : off,on,5,10,20,30,60,120. Off stands that the backlight is always off. On stands for backlight on.
10-1	LP 　**60** Total　Remaining　Used　L1　L2　L3	Long press 　↵ 　 to set backlit time, the current character flashing. Then press 　◯ 　to select the new backlight lighting time. Long press 　↵ 　 to confirm settings.
11	PAS　**1000** Total　Remaining　Used　L1　L2　L3	**User Password** Default :1000 Optional : 0～9999
11-1	PAS　**1000** Total　Remaining　Used　L1　L2　L3	Long press 　↵ 　 to enter the user password setting interface, and the current character will flash. Then press 　◯ 　to select a new user password. Long press 　↵ 　 to confirm settings.

IF you have any question, please feel free to contact our sales team.