

SINGLE-PHASE MULTIFUNCTION ENERGY METER

with Wi-Fi connection

2 DIN modules

App: Perry Smart



The 1SDSD05CEM2WIFI digital energy meter records energy consumption in single-phase systems. In the presence of a Wi-Fi network, it can be connected to the Internet and consulted via the Perry Smart App installed on a smartphone or tablet. This useful feature allows you to view user consumption even remotely with an easy-to-interpret interface. The relay on the device allows you to disconnect the connected load when a freely settable consumption threshold is reached.

EU SIMPLIFIED CONFORMITY DECLARATION

The manufacturer declares that the type of radio equipment listed below complies with Directive 2014/53/EU (RED).

The full text of the EU Declaration of Conformity is available at the following Internet address:

Manufacturer, Fabricat, Fabrikant, Fabricante, Fabricante:

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Type, Typen, Tipo: Series, Serie:

1SDSD05CEM2WIFI V001



COMPLETE MANUAL

for installation, commissioning and use



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SAFETY INSTRUCTIONS!



Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service or maintain it. The following special messages may appear throughout this bulletin or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of either symbol to a "Danger" or "Warning" safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by the manufacturer for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

● Use for the intended purpose

The equipment (device, module) may only be used for the application specified in the catalogue and the user manual.

● Proper handling

The prerequisites for perfect, reliable operation of the product are proper transport, proper storage, installation and assembly, as well as proper operation and maintenance. When operating electrical equipment, certain parts of this equipment automatically carry dangerous voltages. Improper handling can therefore result in serious injuries or material damage.

- ♦ Use only insulating tools
- ♦ Make sure that the 230V mains power supply is disconnected before proceeding with installation or maintenance.
- ♦ Place the meter only in dry surroundings.
- ♦ Do not mount the meter in an explosive area or expose the meter to dust, mildew and insects.
- ♦ Make sure the used wires are suitable for the maximum current of this meter.
- ♦ Make sure the AC wires are connected correctly before activating the current/voltage to the meter.
- ♦ Do not touch the meter connecting clamps directly with your bare hands, with metal, blank wire or other material as you may get an electrical shock.
- ♦ Make sure the protection cover is placed after installation.
- ♦ Installation, maintenance and reparation should only be done by qualified personnel.

♦ Never break the seals and open the front cover as this might influence the functionality of the meter, and will avoid any warranty.

♦ Do not drop, or allow physical impact to the meter as there are high precision components inside that may break.



Radio frequency waves emitted by the wireless programmable thermostat are not a risk to human or animal health.



Important: the manufacturer shall not, under any circumstances, be liable if the products fail to operate due to the interruption of the internet network or unavailability of these resources: Cloud, Server, Portal.



Important: internet access costs are charged to users according to the rates of their mobile phone provider.



Important: the manufacturer reserves the right to introduce any technical and/or constructive changes deemed necessary, with no prior notice.

1 - OVERVIEW

1.1 - Introduction

1SDSD05CEM2WIFI products are the single phase multi-function meter for collection, analysis and remote control of electric parameters. This series products can support wireless communication way like WIFI. Carrying **PERRY SMART** platform can realize the remote access of mobile APP terminal and operation for relay.

This series products can provide a variety of analytical parameters, such as voltage, current, power, power factor ect. Meanwhile it also can provide variety of electric energy parameter measurement, such as two-way active energy, reactive energy, monthly and daily electricity consumption statistics. This series products can support in the 1P2W grid environment analysis of electric power parameter measurement, as well as the inbuilt-relay can support remote control, prepay management control and other functions, suitable for school management, shopping mall charge management, real time power monitoring system and many other application environment, have the multi-function, many applications, high stability and long life characteristics. This series products adopt the design of large-screen LCD and press button, which can easily carry out the local view and set operation of various parameters. The product has the function of password protection, which ensures the data security of the product.

1.2 - Characteristics

- Maximum current 80A direct access
- By carrying PERRY SMART platform, the meter can connect the internet automatically and remote data collection, control relay.
- Multi-function parameter measurement, providing voltage, current, active power, reactive power, apparent power, power factor, phase Angle, etc
- Providing a variety of statistical data and local storage functions. Provide monthly electricity consumption statistics for the last 12 months and daily electricity consumption statistics for the last 31 days.
- Support electricity parameter monitoring alarm function.
- In-built relay, support relay remote control and prepay management control.
- Support one pulse optocoupler outlet interface, can set pulse output parameter.
- Support WIFI wireless communication.
- DIN rail mounting.
- Big LCD screen with backlit, backlight lighting time adjustable.
- LCD refresh time is 1 second, support manual or automatic scroll display (configurable).

1.3 - Parameters

1. The Unit can measure and display	
Instantaneous RMS Values	
Current	Phase current
Voltage	L-N
Frequency	45 to 65 Hz
Power	Active power
Power factor	Power factor
Energy Value	
Total active energy	0 to 999999,99 kWh (LCD display number of digits: 6+2)

2. The Unit can measure and communication read	
Instantaneous RMS Values	
Power	Active power
Maximum Demand Values	
Max. Demand of current	Phase current
Mx. Demand of Voltage	L-N
Energy Values	
Active energy	Da 0 a 999999,99 kWh
Monthly energy consumption for the last 12 months	Total active energy Interval: 0 to 999999,99 kWh
Daily energy consumption for the last 31 days	Total active energy Interval: 0 to 999999,99 kWh

3. The Unit can settable	
System configuration class	User password, Reset monthly and daily energy consumption
Pulse output class	Pulse output type, Pulse output width, Pulse output rate
Time class	Automatic scroll display time, Backlit time, System time (RTC).
Alarm class	Alarm object, alarm threshold value, Automatic reconnect time of relay, alarm status view.

2 - TECHNICAL PARAMETERS SPECIFICATION

2.1 - Specification

Electrical Characteristics		
Type of measurement		RMS including harmonics on AC system, support Single Phase Two Wire
Measurement accuracy	Voltage, Current	Class 0,5 according IEC 61557-12
	Active power	Class 1 according IEC 61557-12
	Active energy	Class 1 according IEC 62053-21 IEC 61557-12
	Power factor	Class 1, according IEC 61557-12
	Frequency	Class 0.2, according IEC 61557-12
Data update rate		1 second
Input-Voltage	Rate voltage (Un)	230 Vca
	Direct connection	Measured range: 85 to 270 Vca
	Frequency range	45 to 65 Hz
	Overload capacity	2 x Un for 1 second
Input-Current	Measured range	0,005 to 80 A, basic current (Ib) is 5A
	Overload capacity	30 x Imax for 0,01 second
Pulse output	Interface type	Open collector optocoupler
	Pulse constant	1000 / 100 / 10 / 1 imp/kWh (Configurable)
	Pulse width	60/100/200 milliseconds (Configurable), default is 100milliseconds
	Pulse output type	Import/export/total active energy, Import/export/total reactive energy (Configurable)
	Class	Class A, according IEC 62053-31
	Input voltage	5 ÷ 27 Vcc
Pulse indicator light on the panel		Pulse constant is 1000imp/kWh
Real-time clock accuracy		0,5 s/d
Mechanical Characteristics		
IP Degree of Protection (IEC 60529)		Designed to IP51 front display, IP30 meter body
Dimensions (L x A x P)		36 x 100 x 65 mm
Mounting Position		DIN Rail mounting
Material of meter case		UL 94 V-0

Environmental Characteristics

Operating Temperature	-25 to +55°C
Storage Temperature	-40 to +80°C
Humidity	< 90%, non-condensing
Pollution Degree	2
Altitude	Up to 2000 m
Vibration	10 Hz to 150 Hz, IEC 60068-2-6

Electromagnetic Characteristics

Electrostatic Discharge	Level 4, according IEC 61000-4-2(*)
Immunity to Radiated Fields	Level 3, according IEC 61000-4-3(*)
Immunity to Electrical Fast Transients	Level 4, according IEC 61000-4-4(*)
Immunity to Surges	Level 4, according IEC 61000-4-5(*)
Immunity to Conducted Disturbances	Level 3, according IEC 61000-4-6(*)
Immunity to Magnetic Fields	IEC 61000-4-8 (*)
Immunity to Voltage Dips	IEC 61000-4-11 (*)
Radiated Emissions	Class B, according EN 55011
Conducted Emissions	Class B, according EN 55011
Harmonics	IEC 61000-3-2 (*)

(*): The experimental test is carried out according to the grade requirements of industrial grade products in IEC61326-1

Safety

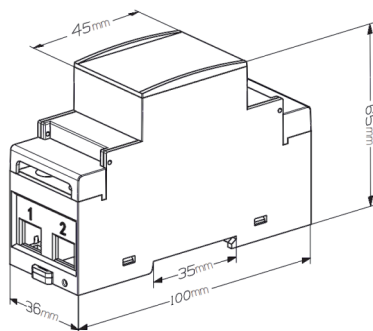
Measurement Category	CAT III, according IEC 61010-1
Overvoltage Category	CAT III, according IEC 61010-1
Insulation	AC Voltage Test: 4kV for 1 minute
	Impulse Voltage Test: 6kV - 1.2/50 μ S waveform
Protective Class	II, according IEC61010-1

Wireless communication

Supported wireless types	WI-FI 2.4 Ghz
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2.2 - Device dimensions

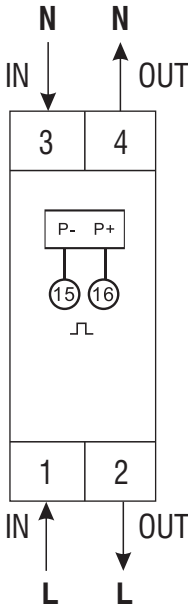
2 DIN Mod.



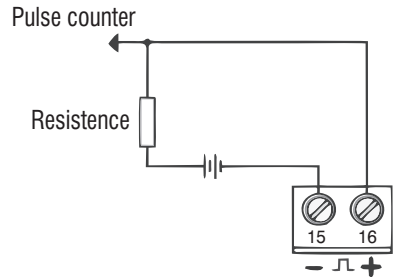
2.3 - Wiring Diagrams

Measurement input wiring

Single phase two wire (1P2W)



Pulse output terminal wiring



3 - GENERAL FUNCTION DESCRIPTION

3.1 - Definition of monthly freeze and daily freeze

Monthly Freeze: monthly electricity consumption calculated on a specific day of the month.

Daily Freeze: daily electricity consumption calculated at a given time of day.

The **1SDSD05CEM2WIFI** meter provides the statistical function of monthly and daily electricity consumption. For the time point of monthly freezing and daily freezing, free setting operation can be realized through PERRY SMART APP. The meter can monitor the current time in real time, when the time reaches the set monthly freezing date, the meter will automatically freeze the monthly electricity consumption; when the time reaches the set daily freezing time, the meter will automatically freeze the daily freezing time. The definition of the freezing rule is detailed below.

3.1.1 - Monthly freeze rules

The monthly freezing is set by the value of the date. When the time reaches 00:00 of the set date, the meter will freeze the current electricity quantity used and save it as the electricity consumption of the previous month. Ruling definition of month freezing date: the month frozen date is set before 15 days (including 15 days), when the frozen energy is divided into the electricity consumption of the previous month, and the date of the month freezing is set after 15 days, when the month frozen acts, the frozen energy is divided into the electricity consumption of the current month.

Example 1: The date of monthly freezing is set to 5, assuming the current is 20:00 on July 4, then when the time reaches 00:00 on July 5, the meter will perform the freezing operation of monthly electricity consumption, dividing the frozen electricity consumption for June (00:00 on June 5 to 00:00 on July 5).

In accordance with the above freezing rules: Inquiry the July electricity consumption of the meter before 00:00 on July 5 will show 0, because the meter has not reached the monthly freezing date, so the accumulated energy at this time is still the electricity consumption in June.

Example 2: The date of monthly freeze is set to 27, assuming the current time is 20:00 on July 26, then when the time reaches 00:00 on July 27, the meter will perform the freezing operation of monthly electricity consumption, dividing the frozen electricity consumption for July (00:00 on June 27 to 00:00 July 27).

3.1.2 - Daily freeze rules

The daily freezing is set by the value of the time point. When the time reaches the set time point, the meter will freeze the current electricity quantity used and save it as the electricity consumption of the previous day.

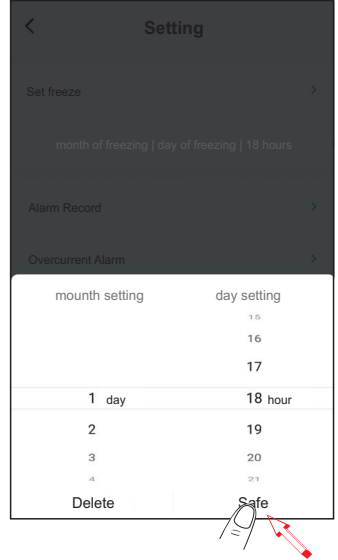
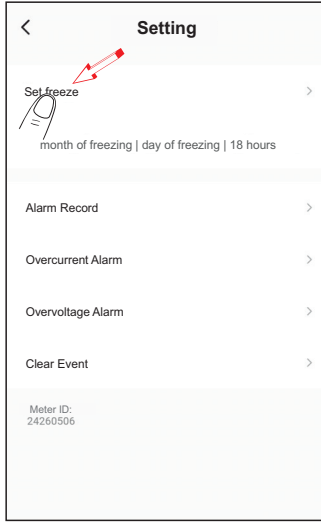
Example 1: The time of daily freezing is set to 3, assuming the current time is 02:00 on July 5, then when the time reaches 03:00 on July 5, the meter will perform the freezing operation of daily electricity consumption, dividing the frozen electricity consumption on July 4 (03:00 on July 4 to 03:00 on July 5).

Example 2: The time of daily freezing is set to 20, assuming the current time is 02:00 on July 5, then when the time reaches 20:00 on July 5, the meter will perform the freezing operation of daily electricity consumption, dividing the frozen electricity consumption on July 4 (20:00 on July 4 to 20:00 on July 5). In accordance with the above freezing rules: If you inquiry the electricity consumption on July 5 at the period between on 20:00 on July 4 to 19:59 on July 5, the meter will show 0. Because the meter has not reached the daily freezing time point, so the accumulated electricity consumption at this time is still the electricity consumption on July 4. Inquiry the meter electricity consumption on July 5 at the period between on 20:00 July 5 to 19:59 July 6, then the current accumulated electricity consumption value is displayed.

3.1.3 - How to setting the month freeze date and day freeze time

Open the PERRY SMART APP, to find the meter to be set up, click to enter the meter interface , click the setting button in the bottom right corner of the screen to enter the setup interface, click "Frozen Set" on the setting interface, select the month freezing date and day freezing time to be set, click the "confirm" button to set up.

Example: Setting the Monthly Freeze date and Daily Freeze time



IMPORTANT:

1. The default **month freezing** date of the meter is 1th and the **day freezing** time is 00:00.
2. After reset the freeze date and time, the meter automatically reset data on monthly and daily consumption and then reaccumulates.

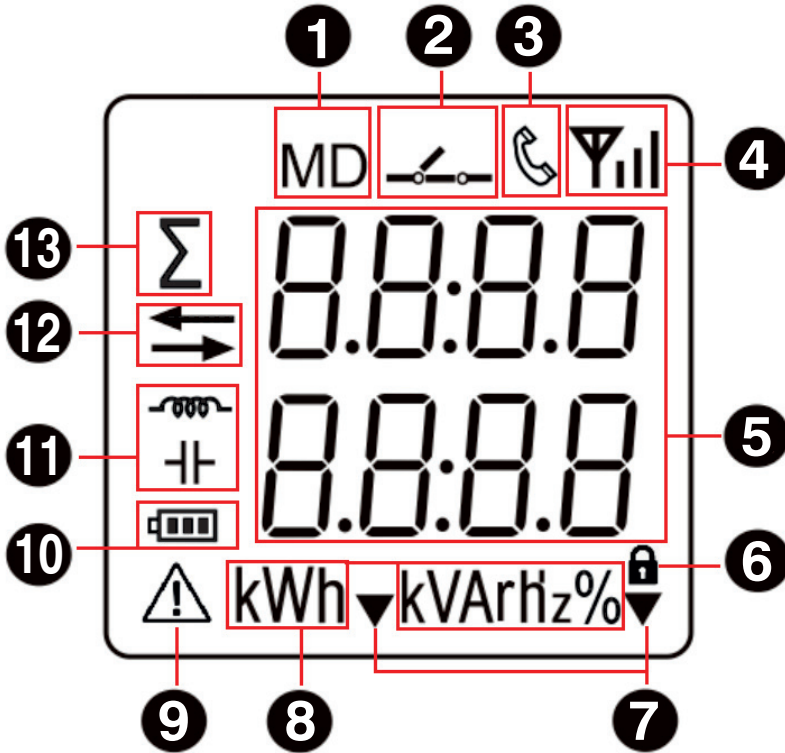
4 - OPERATION

4.1 - Meter startup instructions

After the **1SDSD05CEM2WIFI** product is properly wired and connected to the power supply, the products will first enter the self-test process, under which the LCD screen display sequence is shown as follows:

First screen display	Display full screen characters	
Second screen display	Displays the software version number of the power meter	

4.2 - LCD display area description



1: Maximum demand icon.

2: Relay status icon.

3: Communication Status Icon.

4: Wireless signal strength icon.

5: Measured values.

6: Lock icon, dicates that the device is locked.

7: Auxiliary display icon.

8: An icon of a unit of measurement data.

9: Warning Status icon.

10: Battery status Icon displays the battery status.

11: Display icon of the load feature.

12: Direction icon for import and export,, \rightarrow mean import,
 \leftarrow mean export.

13: Sum icon, which indicates that the data currently displayed is the sum parameter.

4.3 - Network config operation

Step 1: After completing the wiring according to the wiring diagram of the meter, then power on the meter (**STA LED** flashes quickly).

Step 2: Connect the phone's WIFI to the router that the meter needs to connect (make sure 2.4G WIFI, will otherwise cause subsequent config network failure).

App:
Perry Smart



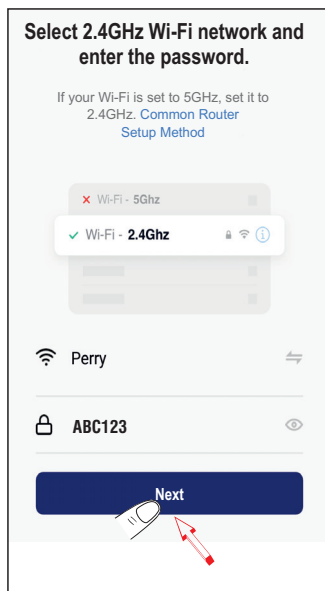
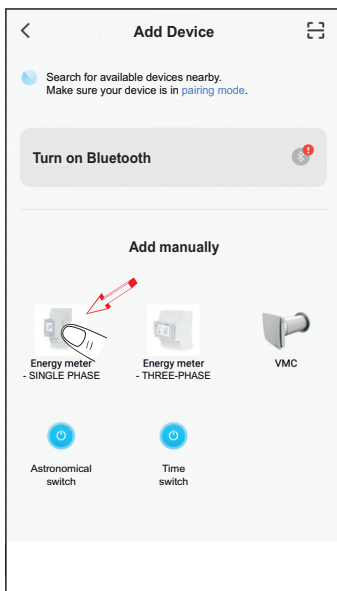
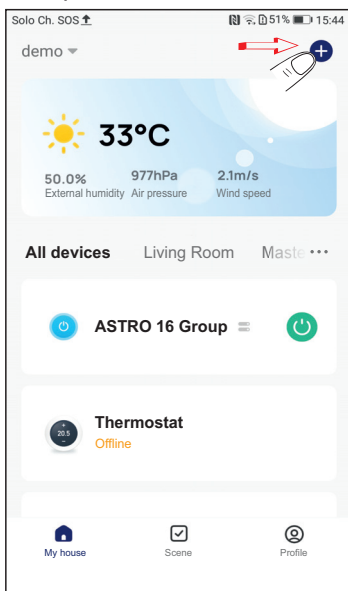
IMPORTANT! For the operating modes of the Wi-Fi control system, also consult the specific APP manual by accessing the 1SDSD05CEM2WIFI product page on the Perry website.

Step 3: Download and open the PERRY SMART APP on your smartphone and click on the (+) Add device button to select "**Energy Meter SINGLE-PHASE**".



Step 4: Verify whether the name and password of the WIFI hotspot prompted on the mobile phone interface belong to the target router needing to be connected. After confirming the information, click the "**Next**" button to operate according to the prompts to complete the operation of the distribution network.

Note: During network config, you are advised to enable Bluetooth for your mobile phone to improve the smooth network config.

Example:






4.4 - Button definition description







Button	Definition	Click (pressed briefly)	Press 3 second
	Button 1: Esc / Scroll	Scroll the page of the displayed page	<ol style="list-style-type: none"> 1. In the main display screen: enter or exit the auxiliary screen. 2. In the setting screen: exit or return to the previous screen.
	Button 2: Confirm / Shift	In the setting screen: right move the setting cursor.	<ol style="list-style-type: none"> 1. In the main display screen: enter the setting mode. 2. In the setting screen: enter the setting state or carry out confirmation operation. 3. In the auxiliary screen: reset WIFI (see 4.5.2 for details)



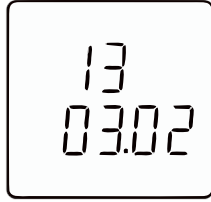
4.5 - Description of display screen

4.5.1 - Main display screen

After the meter is powered on and passes the self-test process, the interface entered is defined as the main display interface, which is used to display the main measurement parameters, electric quantity data, instrument information and other data of the product. Users can scroll the display page by pressing the **button 1**.

LCD Display	Description
	Total active energy Example: Total active energy = 738,59 kWh
	Voltage Example: Voltag = 230,0 V  is mean : The load is an inductive load

	<p>Current</p> <p>Example: Current = 5.000 A</p> <p>⎓ is mean : The load is an inductive load</p>
	<p>Active power</p> <p>Example: Active power = 1,618 kW</p> <p>⎓ is mean : The load is an inductive load</p>
	<p>Power factor</p> <p>Example: Power factor = 0,986</p> <p>⎓ is mean : The load is an inductive load</p> <p>← is mean : The power factor is negative.</p>
	<p>Frequency</p> <p>Example: Frequency = 50,03 Hz</p> <p>+ is mean : The load is an capacitive load</p>
	<p>Displaying the current date of the system real-time clock.</p> <p>Example: The current date is March 11, 2021</p>
	<p>Displaying the current time of the system real-time clock.</p> <p>Example: The current time is 17:25.26</p>

 <p>The LCD display shows the Greek letter sigma (Σ) in the top left corner, followed by the text 'PLS' in the top right. Below this, the number '1000' is displayed in a large font, and 'kWh' is shown in a smaller font at the bottom left.</p>	<p>Pulse output mode and pulse constant of optocoupler output channel.</p> <p>Example: The left figure represents the total active power in the pulse output mode, and the pulse constant is 1000 imp/kWh</p>
 <p>The LCD display shows the Greek letter pi (π) in the top left corner. Below it, the number '2103' is displayed in the top row and '1101' is displayed in the bottom row.</p>	<p>The serial number of meter</p> <p>Example: The serial number is 21031101.</p>
 <p>The LCD display shows the number '13' in the top row and '03.02' in the bottom row.</p>	<p>Software version number</p> <p>Example: The serial number is 1303.02</p>

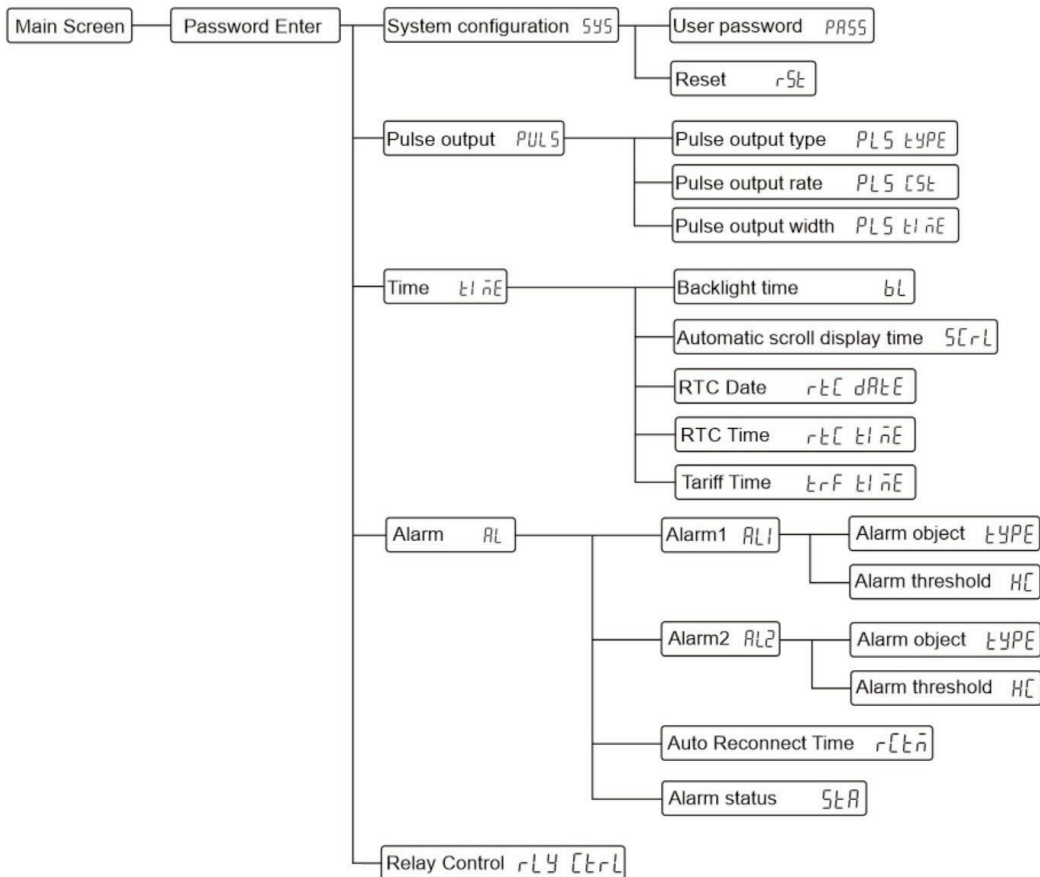
4.5.2 - Auxiliary display screen

Under the main display screen, press **button 1** for 3 second to enter the screen of auxiliary display. At this point, click **button 1** can be scroll the page needs to be viewed. Under the screen of auxiliary display, can press **button 1** for 3 second return to the main display screen. If there is no button operation in more than 1 minute under the screen of auxiliary display, the meter will automatically return to the main display screen.

LCD display	Description
1. WIFI status indicator interface	
<p>The LCD display shows the number '0' in the top left corner, 'Ed' in the center, and three dashes '---' below it.</p>	Indicates that the current WIFI is in Smartconfig state.
<p>The LCD display shows the number '2' in the top left corner, 'Ed' in the center, and 'OFF' below it.</p>	Indicates that the current WIFI is configured but not connected to the route.
<p>The LCD display shows the number '3' in the top left corner, 'Ed' in the center, and 'OFF' below it.</p>	Indicates that the current WIFI is configured and connected to the router, but not connected to the cloud.
<p>The LCD display shows the number '4' in the top left corner, 'Ed' in the center, and 'on' below it. In the top right corner, there is a signal strength icon consisting of four vertical bars of increasing height.</p>	WIFI connects to a router and connects to the cloud.
<p>Note: On this screen, press button 2 for 3 seconds, WIFI will be reset, and the meter will enter the network configuration mode.</p>	
2. WIFI signal strength indicator interface	
	WIFI signal strength indicator.

4.6 - Setting-up

The logical diagram of the parameter setting menu is as follows:



How to enter the "Parameter setting Menu" screen:

Step 1: In the main display screen, press **button 2** for 3 second to enter the user password input mode.

Note: The user password input screen is shown in the figure on the right.



Passo 2: Enter the correct user password (**Button 1** to set, **Button 2** for moving).
Once you have entered your password, press **Button 2** for 3 second to confirm.

Example: How to enter a password:

A: Click **button 1** to increase or decrease the number of flashing bits.

B: Click **button 2** to move the flashing position to the right.

C: After entering the correct password, press **button 2** for 3 second for confirmation. If the password is verified correctly, the power meter will enter the screen of "Parameter Setting menu".

Note: Under the user password input screen, can press 3 second **button 1** to return to the main display screen. If there is no button operation in more than 1 minute under this screen, the power meter will automatically return to the main display screen.

4.6.1 - Set system class parameters

System class parameters include: user password, reset historical electricity consumption log.

1. After entering the "Parameter Setting Menu" screen, select the setting screen (as shown in the figure below), and then press button 2 for 3 second to enter the system class parameter setting screen.



2. Setting user password



User password setting range:0000 to 9999, default is 0000.

Press **button 1** to scroll the page and select the next setting screen (rSt). Press **button 1** for 3 seconds to exit the setting menu and return to the previous setting screen.

Press **button 2** for 3 seconds to enter the password setting state, the setting digit will flash (as shown in the following figure)

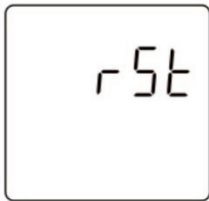


Press **button 1** to set the number. Click **button 2** to move to the right flashing position. After entering the correct password, press **button 2** for 3 seconds to confirm the setting.

The instrument will save the setting value and exit the setting state.

If, on the contrary, you want to exit the setting state without saving the setting parameters.

3. Reset historical electricity consumption log



Press **button 2** for 3 second to enter the reset state. Click **button 1** to scroll the page and select the next setting screen.

Press **button 1** for 3 second to exit the setting menu and return to the previous setting screen.



LEO is mean: Historical monthly and historical daily consumption of active power.

Press **button 2** for 3 second to confirm the reset.

Press **button 1** for 3 second to exit the reset state without reset the selected option.

4.6.2 - Set pulse output class parameters

Pulse output class parameters include: pulse output type, pulse output rate and pulse output width.

1. After entering the "Parameter Setting Menu" screen, select the setting screen (as shown in the figure below), and then press **button 2** for 3 second to enter the pulse output class parameter setting screen.



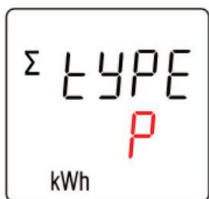
2. Setting pulse output type



The type of energy represented by the pulse output.
Options that can be set: total active energy, import active energy, export active energy, total reactive energy, import reactive energy, export reactive energy, default is total active energy.

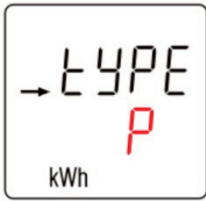
Press **button 2** for 3 second to enter the setting state, and the character of the setting becomes the flashing state. Click **button 1** to scroll the page and select the next setting screen.

Press **button 1** for 3 second to return to the previous level setup menu.

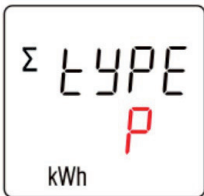


Click **button 1** to select the pulse output type. Press **button 2** for 3 second to confirm the setting. The meter will save the setting value and exit the setting state. Press **button 1** for 3 second to exit the setting state without saving the setting parameters.

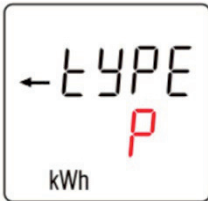
Note: Pulse output type corresponding to the display characte (see Appendix A)



On the left, the pulse output type is import active power



On the left, the pulse output type is total active power



On the left, the pulse output type is export active power



On the left, the pulse output type is import reactive power



On the left, the pulse output type is total reactive power



On the left, the pulse output type is export reactive power

3. Setting pulse constant



Pulse constant can be set: 1, 10, 100, 1000 imp/kWh(kvarh), default is 1000 imp/kWh(kvarh).

Press **button 2** for 3 second to enter the setting state, and the digit of the setting becomes the flashing state. Click button 1 to scroll the page and select the next setting screen.

Press **button 1** for 3 second to return to the previous level setup menu.

Note: The pulse constant cannot be set to 1000 when the pulse width time is equal to 200ms.



Click **button 1** to select the pulse constant. Press **button 2** for 3 second to confirm the setting. The power meter will save the setting value and exit the setting state.

Press **button 1** for 3 second to exit the setting state without saving the setting parameters.

4. Setting pulse output width



The pulse output width represents the effective duration of the pulse output.

Options that can be set: 60, 100, 200, unit is ms, default is 100ms. Press **button 2** for 3 second to enter the setting state, and the digit of the setting becomes the flashing state.

Click **button 1** to scroll the page and select the next setting screen. Press **button 1** for 3 second to return to the previous level setup menu.

Note: When the pulse constant is equal to 1000 imp/kWh (kvarh), the pulse width time cannot be set to 200ms.



Click **button 1** to select the pulse output width. Press **button 2** for 3 second to confirm the setting. The power meter will save the setting value and exit the setting state. Press **button 1** for 3 second to exit the setting state without saving the setting parameters.

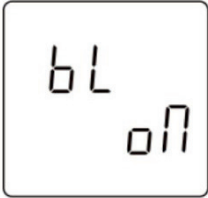
4.6.3 - Set time class parameters

Time class parameters include: backlight time, automatic scroll display time, System time (RTC) and Tariff time (not operational).

1. After entering the "Parameter Setting Menu" screen, select the setting screen (as shown in the figure below), and then press **button 2** for 3 second to enter the time class parameter setting screen.



2. Setting backlight time



Backlight time can be set: on, off, 5, 10, 30, 60, 120, unit is minute, default is 60 minutes.

Press **button 2** for 3 second to enter the setting state, and the character of the setting becomes the flashing state. Click **button 1** to scroll the page and select the next setting screen. Press **button 1** for 3 second to return to the previous level setup menu.

Note:

The character "on" means the backlight is always on, and "off" means the backlight is always off.



Click **button 1** to select the backlight time.

Press **button 2** for 3 second to confirm the setting.

The power meter will save the setting value and exit the setting state. Press **button 1** for 3 second to exit the setting state without saving the setting parameters.

Note: on that means is on, off that means is off.

3. Setting automatic scroll display time



Automatic scroll display time set range: 0 to 60, unit is second, default is 0 second.

Press **button 2** for 3 second to enter the setting state, and the digit of the setting becomes the flashing state.

Click **button 1** to scroll the page and select the next setting screen. Press **button 1** for 3 second to return to the previous level setup menu.

Note: Automatic scroll display time is 0, means no automatic wheel display



Click **button 1** to increase or decrease the number of set bits.

Click **button 2** can be moved the set bits to the right.

Press **button 2** for 3 second to confirm the setting.

The power meter will save the setting value and exit the setting state.

Press **button 1** for 3 second to exit the setting state without saving the setting parameters.

4. Setting date of RTC for multitariff meter (**NOT OPERATIONAL MENU**)

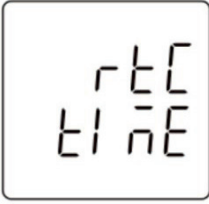


Press button 2 for 3 second to enter the setting state, and the digit of the setting becomes the flashing state. Click button 1 to scroll the page and select the next setting screen. Press button 1 for 3 second to return to the previous level setup menu.



Click button 1 to increase or decrease the number of set bits. Click button 2 can be moved the set bits to the right. Press button 2 for 3 second to confirm the setting. The meter will save the setting value and exit the setting state. Press button 1 for 3 second to exit the setting state without saving the setting parameters.

5. Setting time of RTC for multitariff meter (**NOT OPERATIONAL MENU**)



Press button 2 for 3 second to enter the setting state, and the digit of the setting becomes the flashing state. Click button 1 to scroll the page and select the next setting screen. Press button 1 for 3 second to return to the previous level setup menu.



Click button 1 to increase or decrease the number of set bits. Click button 2 can be moved the set bits to the right. Press button 2 for 3 second to confirm the setting. The meter will save the setting value and exit the setting state. Press button 1 for 3 second to exit the setting state without saving the setting parameters.

4.6.4 - Set alarm parameters

The alarm parameters include: alarm object, alarm threshold value, automatic reconnect time of relay, alarm status.

1. After entering the "Parameter Setting Menu" screen, select the setting screen (as shown in the figure below), and then press **button 2** for 3 second to enter the alarm parameter setting screen.



Note: This series of products support up to 2 channels alarm parameter Settings.

2. Set alarm parameters for channel 1



Alarm parameter setting menu for **channel 1**. Press **button 2** for 3 seconds to access the alarm parameter selection screen.

Click **button 1** to scroll the page and select the next setting screen.

Press **button 1** for 3 second to return to the previous level setup menu.

2.1. Set the alarm monitoring object of **channel 1**



The setting screen of alarm monitoring object of **channel 1**.

Press **button 2** for 3 second to enter the setting state, and the character of the setting becomes the flashing state.

Click **button 1** to scroll the page and select the next setting screen.

Press **button 1** for 3 second to return to the previous level setup menu.



Click **button 1** to select the alarm monitoring object.

Press **button 2** for 3 second to confirm the setting.

The meter will save the setting value and exit the setting state.

Press **button 1** for 3 second to exit the setting state without saving the setting parameters.

The corresponding character table of the alarm object

NULL is mean no alarm object is associated, that is, the alarm function is disabled.

U is mean voltage, **I** is mean current, **P** is mean active power, **F** is mean frequency.

2.2. Set the alarm threshold value of **channel 1**



The setting screen of alarm threshold value of **channel 1**.

Press **button 2** for 3 second to enter the setting state, and the digit of the setting becomes the flashing state.

Click **button 1** to scroll the page and select the next setting screen.

Press **button 1** for 3 second to return to the previous level setup menu.



Click **button 1** to set the number.

Click **button 2** can be moved the set bits to the right.

Press **button 2** for 3 second to confirm the setting.

The meter will save the setting value and exit the setting state.

Press **button 1** for 3 second to exit the setting state without saving the setting parameters.

3. Set alarm parameters for **channel 2**



Alarm parameter setting menu for **channel 2**.

Note: see Settings operations described for channel 1.

4. Set automatic reconnect time of relay.



The setting screen of automatic reconnect time for relay.
The value ranges from 0 to 90 (unit: second).

Note: If the relay auto reconnect time is 0, it means that the meter will not reconnect automatically after the alarm event and must be reconnected manually.

Press **button 2** for 3 second to enter the setting state, and the digit of the setting becomes the flashing state.
Click **button 1** to scroll the page and select the next setting screen.
Press **button 1** for 3 second to return to the previous level setup menu.



Click **button 1** to set a value.

Click **button 2** can be moved the set bits to the right.

Press **button 2** for 3 second to confirm the setting.
The meter will save the setting value and exit the setting state.
Press **button 1** for 3 second to exit the setting state without saving the setting parameters.

5. Visualizzazione dello stato di allarme



The left figure indicates that the alarm has been triggered and the relay is disconnected.

Click **button 1** to scroll the page and select the next view screen.
Press **button 1** for 3 second to return to the previous level setup menu.

Note: If the alarm is triggered, press **button 2** for 3 second in this screen to enter the manual operation screen (see screenshot on next page).



Note: flashing **rSL** text

then press **button 2** for 3 seconds to deactivate the alarm and connect the relay.



The left figure indicates that no alarm is triggered and the relay is in the connect state.

4.6.5 - Manual controlled relay

Relay control: manually control the connect or disconnect action of the relay.

1. After entering the "Parameter setting menu" screen, select the setting screen (as shown in the following figure), then press **button 2** for 3 seconds to enter the control relay setting screen.



Manual control relay setting menu.

Press **button 2** for 3 second to enter the screen for manual control.

Click **button 1** to scroll the page and select the next setting screen.

Press **button 1** for 3 second to exit setup menu.



Click **button 1** to select the relay action type.

Press **button 2** for 3 second to confirm the setting.

The meter will control the relay action according to the selected action type.

Press **button 1** for 3 second to exit the setting state and not operate the relay.

Nott: **OFF** is mean disconnect relay; **ON** is mean connect relay.

5 - ALARM

1SDSD05CEM2WIFI products can support the alarm function, which is associated with the inbuilt-relay of the meter. According to the real-time measurement data of the monitored object and the set alarm threshold, if the measured data exceeds the set threshold value, the instrument will automatically disconnect the relay and perform alarm prompt. The alarm function is to compare the measured data of the monitored object with the alarm threshold value every second, to judge whether the alarm threshold value is exceeded, and if it is, the alarm action will be triggered.

5.1 - Alarm parameter description

1. Alarm monitoring object: the measurement parameters associated with the alarm. The meter compares the data of the measurement parameters every second to determine whether the alarm threshold is exceeded, so as to decide whether to trigger the alarm. The alarm monitoring object supports measurement parameters. The specific alarm object is shown in Table 7-1 below.

2. Alarm threshold: When the measured data of the monitored object is greater than this threshold, an alarm event will be triggered.

3. Automatic reconnect time of relay: When the alarm event occurs, after the relay is disconnected, the meter will start timing processing, and when the timing time is equal to the set automatic reconnect time, the meter will automatically reconnect the relay.

Note: If the automatic reconnect time for relay is 0, it means that the meter will not automatically reconnect after the alarm occurs, and it needs to be reconnect manually.

Table 7-1: Alarm monitoring object

Number	Alarm parameter
0	Voltage
1	Current
2	Active power
3	Frequency

5.2 - Alarm parameter setting process

Step 1: Binding the alarm monitoring object.

Step 2: Setting alarm threshold value.


Step 3: Setting the automatic reconnect time of relay.

Note: In order to prevent the alarm action triggered by mistake in the process of setting alarm parameters, when entering the alarm parameter setting state, the meter will automatically suspend the alarm monitoring function, and when exiting the alarm parameter setting screen, the meter will automatically start the alarm monitoring function to prevent the alarm triggered by mistake.

5.3 - Alarm action process

After the alarm monitoring object is associated, the meter compares the measured data and alarm threshold value of the monitored object every second, if the measured data is greater than the alarm threshold value, the alarm event will be triggered and executed immediately the following alarm action.

Alarm action of meter:

1. Disconnect the meter inbuilt-relay.
2. The LCD will display the alarm icon: 
3. Generates an SOE event and records it to memory.

Note:

1. If the alarm monitoring function of two channels is enabled at the same time, the meter will perform the alarm action when an alarm occurs in either alarm channel.
2. When the meter alarm action, if the automatic reconnect function is enabled, when the automatic reconnect time arrives, the relay will automatically reconnect, without manual intervention. If the automatic reconnect time is set to 0, the relay needs to be reconnect manually. The operation mode of manually closing relay supports key operation and remote communication operation.



Appendix A – LCD character definition table

0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
A	b	C	d	E	F	G	H	I	J
A	B	C	D	E	F	G	H	I	J
K	L	M	N	O	P	Q	R	S	T
K	L	M	N	O	P	Q	R	S	T
U	V	W	X	Y	Z				
U	V	W	X	Y	Z				

Appendix B – Failure code reference table

N.	Fault code	Fault description
1	Err-01	Relay cannot be disconnected fault.
2	Err-02	The battery voltage is too low.
3	Err-03	1.Relay cannot be disconnected fault 2.The battery voltage is too low
4	Err-04	WIFI module fault
5	Err-05	1.Relay cannot be disconnected fault 2.WIFI module fault
6	Err-06	1.The battery voltage is too low 2.WIFI module fault
7	Err-07	1.Relay cannot be disconnected fault 2.The battery voltage is too low 3.WIFI module fault

Appendix C – Alarm prompt comparison table

N.	The action of the meter	Alarm definition
1	LCD display alarm icon  , but no fault code	The overlimit alarm of the monitored object occurs
2	LCD does not display alarm icon  but it does display fault code	Meter fault

Appendix D – Status indicator status table

N.	STA LED flashing status	Description
1	Fast flashing	Indicates that the current WIFI is in Smartconfig state.
2	Slow flashing	Indicates that the current WIFI is in AP-config state.
3	On for 0,25 seconds and off for 2 seconds	Indicates that the current WIFI is configured but not connected to the route.
4	On for 0,25 seconds and off for 1 seconds	Indicates that the current WIFI is configured and connected to the router, but not connected to the cloud.
5	On	WIFI connects to a router and connects to the cloud.



A series of 20 horizontal lines spaced evenly down the page, providing a template for handwriting practice.



DISPOSAL OF ELECTRICAL & ELECTRONIC EQUIPMENT

This symbol on the product or its packaging indicates that this product shall not be treated as household waste. Instead, it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment, such as for example:

- sales points, in case you buy a new and similar product;
- local collection points (waste collection centre, local recycling center, etc...).

By ensuring this product is disposed of correctly, you will help prevent potential negative consequence for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product.

The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.



The device contains a non-removable battery and it must not be disposed of as urban waste but recycled in order to protect the environment. Failure to comply with the requirements of EU Directive 2006/66, and the national legislations for implementation of this Directive, for the disposal of products at the end of their service life, is punishable by law.

