

SDM230-WIFI

Single-Phase Two Module DIN rail Meters



- Measures kWh, kVArh, kW, kVAr, kVA, PF, Hz, dmd, V, A, etc.
- Bi-directional measurement IMP & EXP
- Two pulse outputs
- WiFi Communication
- Din rail mounting 35mm
- 100A direct connection
- Better than Class 1 / B accuracy

User Manual V1.0

Application

The SDM230-Wifi “with a white back-lighted LCD screen for perfect reading” are used to measure single-phase like residential, utility and industrial application. Use the cthings app to view realtime measurements and usage over time in graphs, The unit measures and displays various important electrical parameters, and provide a communication port for remote reading and monitoring. Bi-directional energy measurement makes the unit a good choice for solar PV energy metering.

PART 1 Specification

General Specifications

Voltage AC (Un)	230V
Voltage Range	176~276V AC
Base Current (Ib)	10A
Max. Current (Imax)	100A
Mini Current (Imin)	0.5A
Starting Current	0.4% of Ib
Power Consumption	<2W/10VA
Frequency	50/60Hz(±10%)
AC Voltage Withstand	4KV for 1 minute
Impulse Voltage Withstand	6KV-1.2uS waveform
Overcurrent Withstand	30 Imax for 0.01s
Pulse Output Rate	
-Pulse Output 1	1000/100/10/1 imp/Exp/kWh/kVArh (configurable)
-Pulse Output 2	1000imp/kWh (default) for import kWh
Display	LCD with white backlit
Max. Reading	999999.9 kWh/kVArh

Accuracy

Voltage	0.5% of range maximum
Current	0.5% of nominal
Frequency	0.2% of mid-frequency
Power factor	1% of Unity
Active power	1% of range maximum
Reactive power	1% of range maximum
Apparent power	1% of range maximum
Active energy	Class 1 IEC62053-21
	Class B EN50470-1/3
Reactive energy	Class 2 IEC62053-23

Environment

Operating temperature	-25°C to +55°C
Storage and transportation temperature	-40°C to +70°C
Reference temperature	23°C ± 2°C
Relative humidity	0 to 95%, non-condensing
Altitude	up to 2000m
Warm up time	5s
Installation category	CAT III
Mechanical Environment	M1
Electromagnetic environment	E2
Degree of pollution	2

Output**Pulse Output**

The meter provides two pulse outputs. Both pulse outputs are passive type.

Pulse output 1 is configurable. The pulse output 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(default) /0.01/0.1/kWh/kVArh.

Pulse width: 200/100/60ms

Pulse output 2 is non-configurable. It is fixed to import kWh. The constant is 1000imp/kWh.

Wi-Fi support: 2.4Ghz b/g/n

Wi-Fi data freq.: Every second

Mechanics

Din rail dimensions	36x100x63 (WxHxD) DIN 43880
Mounting	DIN rail 35mm
Ingress protection	IP51 (indoor)
Material	self-extinguishing UL94V-0

LCD display

Item	Descriptions
1	7 digits used to display measured values or RTC
2	Total value
4	Import information, Export information
5	Max. Demand for Power or Current
6	Pulse output 1 and Pulse output 2
7	Measurement units
8	PF = power factor Hz = frequency
9	Bar display of Power
10	Communication indicator
11	Time information
12	Low battery warning
13	Lock symbol



PART 2 Operation

Initialization Display

When it is powered on, the meter will initialize and do self-checking.



Full screen → software version → Software number → Self testing → AP distribution network

Signal symbol




The signal bar on the normal display interface indicates the networking status.
 In the connected state, signal bars 0-6 indicate signal strength
 If the signal bar flashes simultaneously in 6 bars, it indicates that it is not connected to the network.






Failed to connect to WiFi module

Scroll display by Button




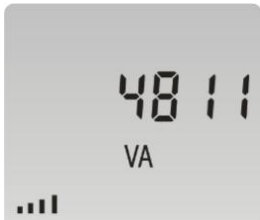
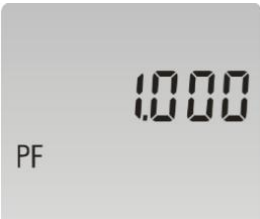

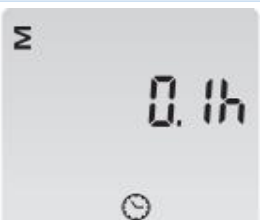
After initialization and self-checking program, the meter display the measured values. The default page is total kWh. If the user wants to check other information, he needs to press the scroll button on the front panel.



The display order by scroll button  :

Total kWh → import kWh → export kWh → resettable kWh → total kVAh → import kVAh → export kVAh → resettable kVAh → Max. power demand → voltage → current → W → VAr → VA → power factor → frequency → running time → server time → Version number of ESP32


Page	Display	Descriptions
1		Total active energy Example: 70.00kWh
2		Import active energy Example: 50.00kWh
3		Export active energy Example: 20.00kWh


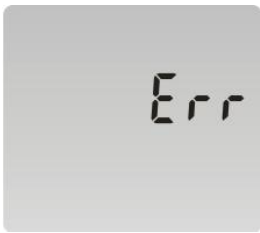

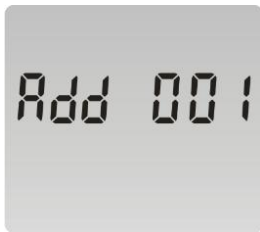
4		Total resettable energy
5		Total reactive energy Example: 10.00kVArh
6		Import reactive energy Example: 5.00kVArh
7		Export reactive energy Example: 5.00kVArh
8		Total resettable reactive energy
9		Total Max. power demand Example: 6930W
10		Voltage Example: 229.8V

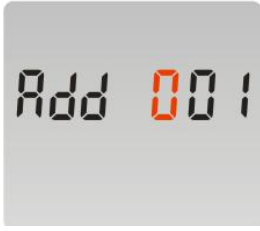
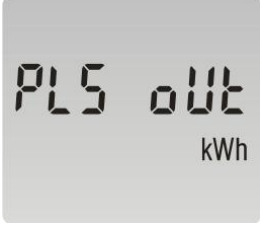

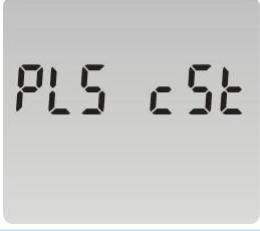

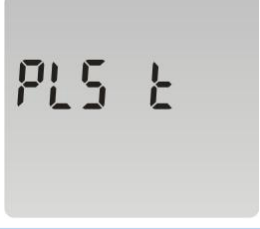

11		<p>Current Example: 30.156A</p>
12		<p>Active Power Example: 4700W</p>
13		<p>Reactive Power Example: 1030VAR</p>
14		<p>Apparent power Example: 4811VA</p>
15		<p>Power factor Example: 1.000</p>
16		<p>Frequency Example: 49.99Hz</p>
17		<p>Running time Example: 0.1h</p>

18		Server time Example: 01:01:01 Note:If not connected to the server, the meter will display offline
19		Version number of ESP32 Example: ESP04.04


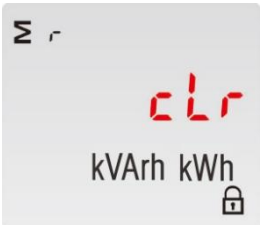



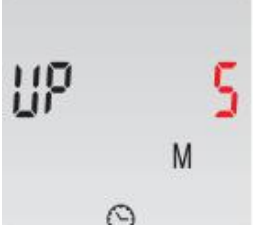

Set-up Mode






To get into Set-up Mode, the user need press the “Enter” button  for 3 second.

Page	Display	Descriptions
		The setting is done correctly
		The entering information is wrong. The operation fails.
1		Password To get into Set-up mode, it asks a password confirmation. Default password: 1000
2		Address ID Default ID is 001 Range: 001~247

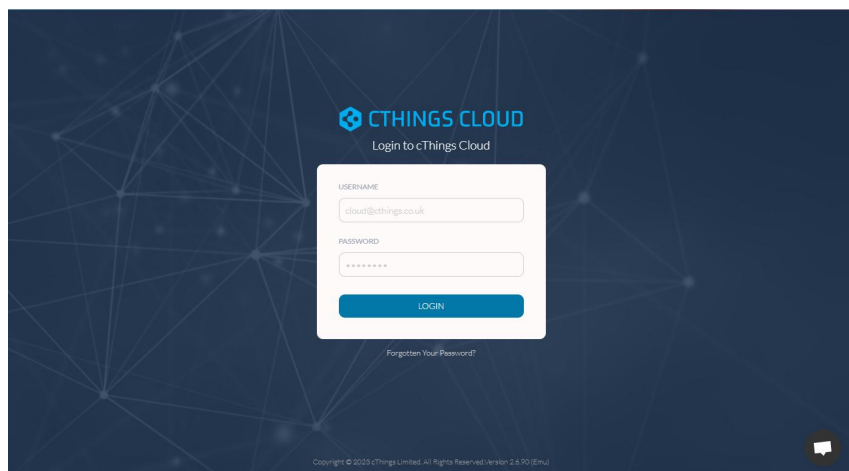
2-1		<p>Press the “Enter” button, the first digit flash.</p> <p>Press the “Scroll” button to change the value. After choosing the new address value, the user need pressing the “Enter” button to confirm the setting.</p>
3		<p>Pulse Output</p> <p>Default: Export kWh</p> <p>Option: kWh / kVArh / Imp. kWh / Exp.kWh / Imp.kVArh / Exp.kVArh</p>
3-1		<p>Press the “Enter” button, the red part flash.</p> <p>Press the “Scroll” button to change the option.</p> <p>After choosing the new Pulse output option, the user need pressing the “Enter” button to confirm the setting.</p>
4		<p>Pulse Constant</p> <p>Default: 1000</p> <p>Option: 1000 / 100 / 10 / 1</p>
4-1		<p>Press the “Enter” button, the red part flash.</p> <p>Press the “Scroll” button to change the option.</p> <p>After choosing the new Pulse constant option, the user need pressing the “Enter” button to confirm the setting.</p>
5		<p>Pulse duration</p> <p>Default: 100mS</p> <p>Option: 200 / 100 / 60ms</p>
5-1		<p>Press the “Enter” button, the red part flash.</p> <p>Press the “Scroll” button to change the option.</p> <p>After choosing the new Pulse duration option, the user need pressing the “Enter” button to confirm the setting.</p>

6		<p>Demand Integration Time Default: 15 minutes Option: 5 / 10 / 15 / 30 / 60 / OFF</p>
6-1		<p>Press the “Enter” button, the red part flash. Press the “Scroll” button to change the option. After choosing the new DIT option, the user need pressing the “Enter” button to confirm the setting.</p>
7		<p>Automatic Scroll Time Interval Default: 0 S Option: 0 ~ 255S</p>
7-1		<p>Press the “Enter” button, the red part flash. Press the “Scroll” button to change the option. After choosing the new “Scrl” option, the user need pressing the “Enter” button to confirm the setting.</p>
8		<p>Backlit lasting time set-up Default: 60 min Option: 0 (OFF) / 5/ 10/ 20/ 30/ 60 Long press “Enter” button to enter set-up mode.</p>
8-1		<p>Press the “Scroll” button to change the option. After choosing the new “Scrl” option, the user need pressing the “Enter” button to confirm the setting.</p>
9		<p>Clear Long press “Enter” to enter clear interface.</p>

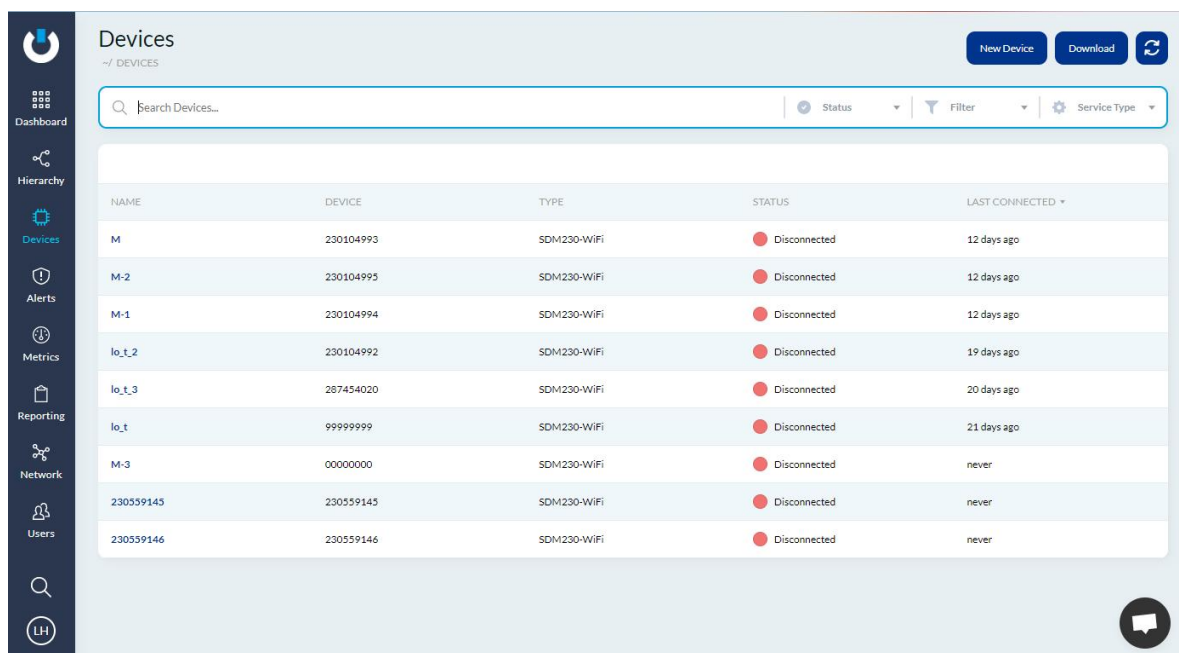
9-1		<p>Clear Max demand of active power Long press “Enter” button to confirm the operation.</p>
9-2		<p>Clear the resettable energy From the “11-1” page, press “Scroll” button enter into the energy reset page. Long press the “Enter” button to confirm the operation.</p>
10		<p>Password Default: 1000</p>
10-1		<p>Press the “Enter” button, the red part flash. Press the “Scroll” button to change the value. After choosing the new password, the user need pressing the “Enter” button to confirm the setting.</p>
11		<p>Upload data interval Long press “Enter” button to confirm the operation.</p>
11-1		<p>Upload data interval Default :5min Option:1-250min</p>
12		<p>AP mode Long press “Enter” button to confirm the operation.</p>

12-1		Press the “Enter” button to set the AP mode
13		Online update function Long press “Enter” button to confirm the operation.
13-1		Online update function Two options: Meter: Meter update ESP32: wifi mudule update
14		After all settings are completed Good: Good means the successful setting Err: Err means the setting is unsuccessful
		

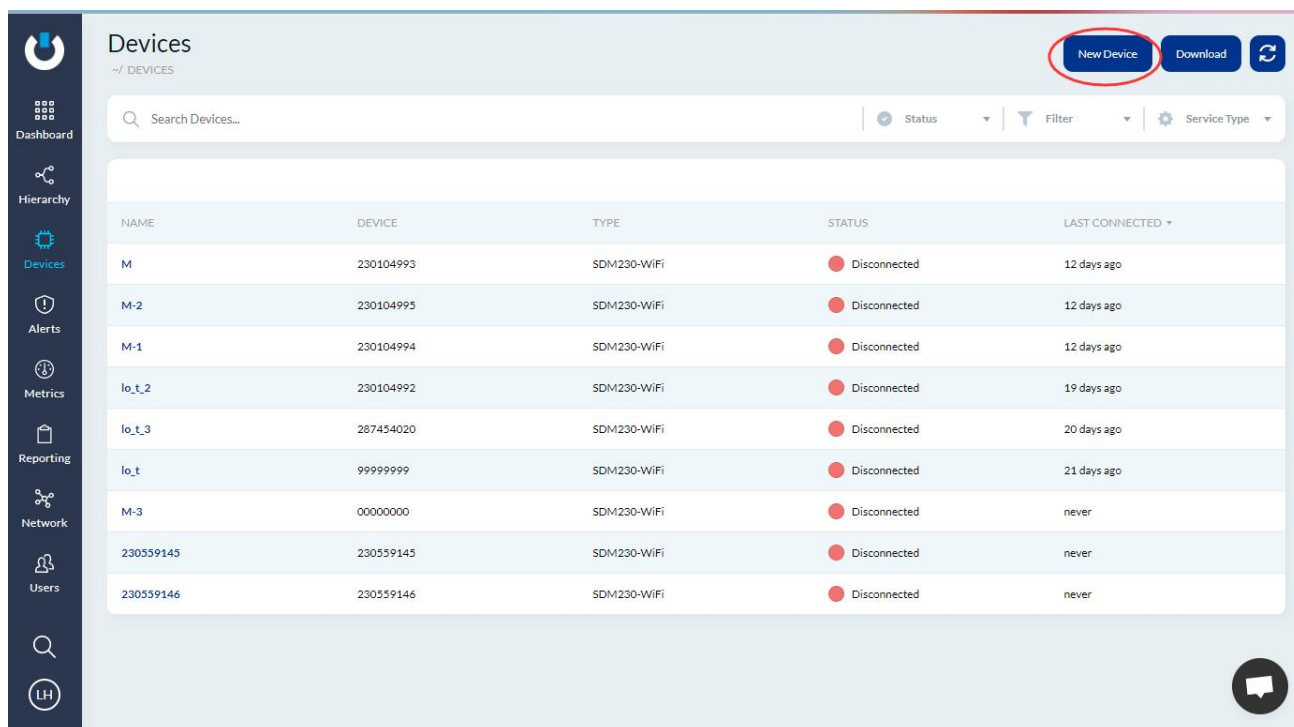
How to add the new meter on Cthings Web?



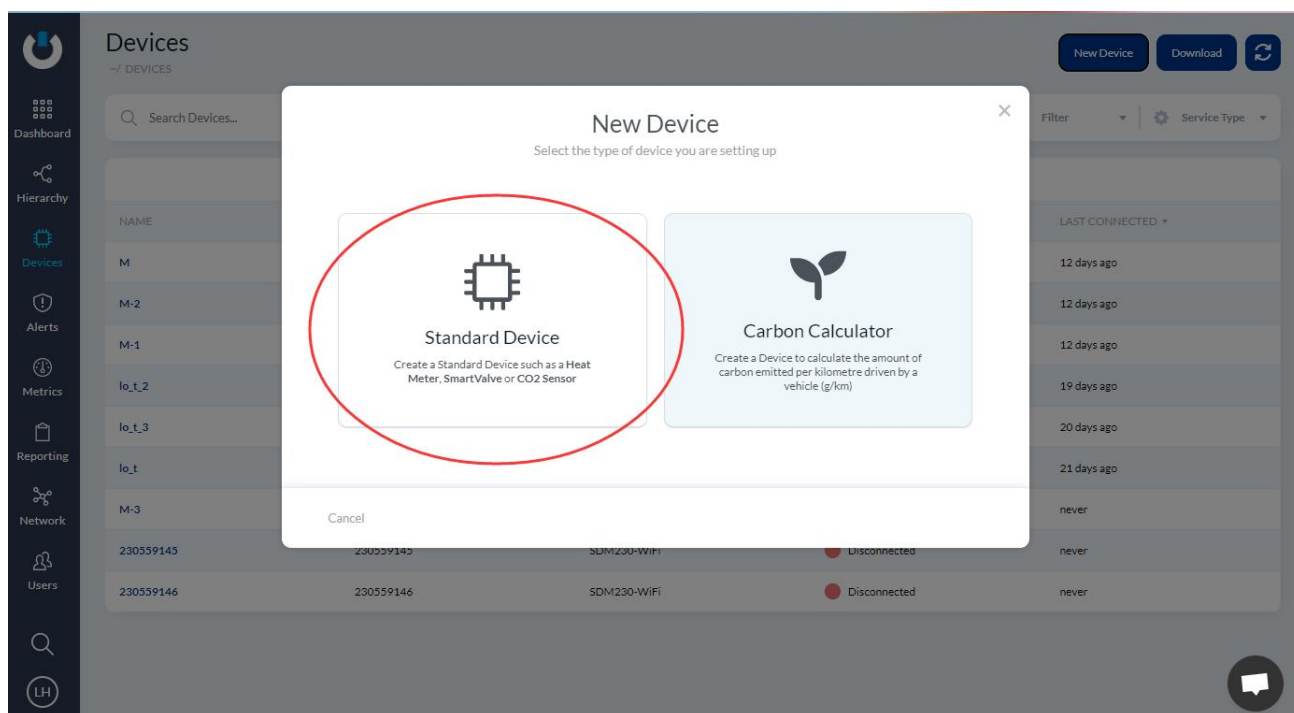
1. Login to cthings web platform



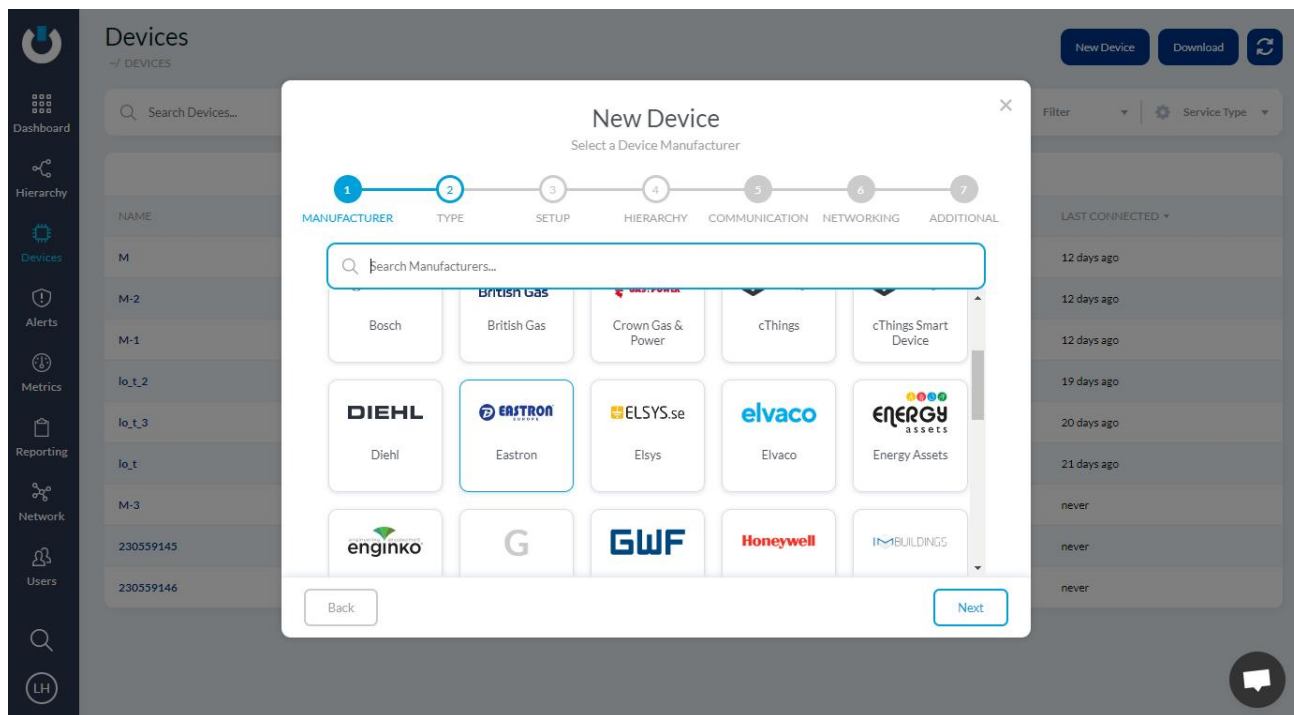
2. Enter the device interface



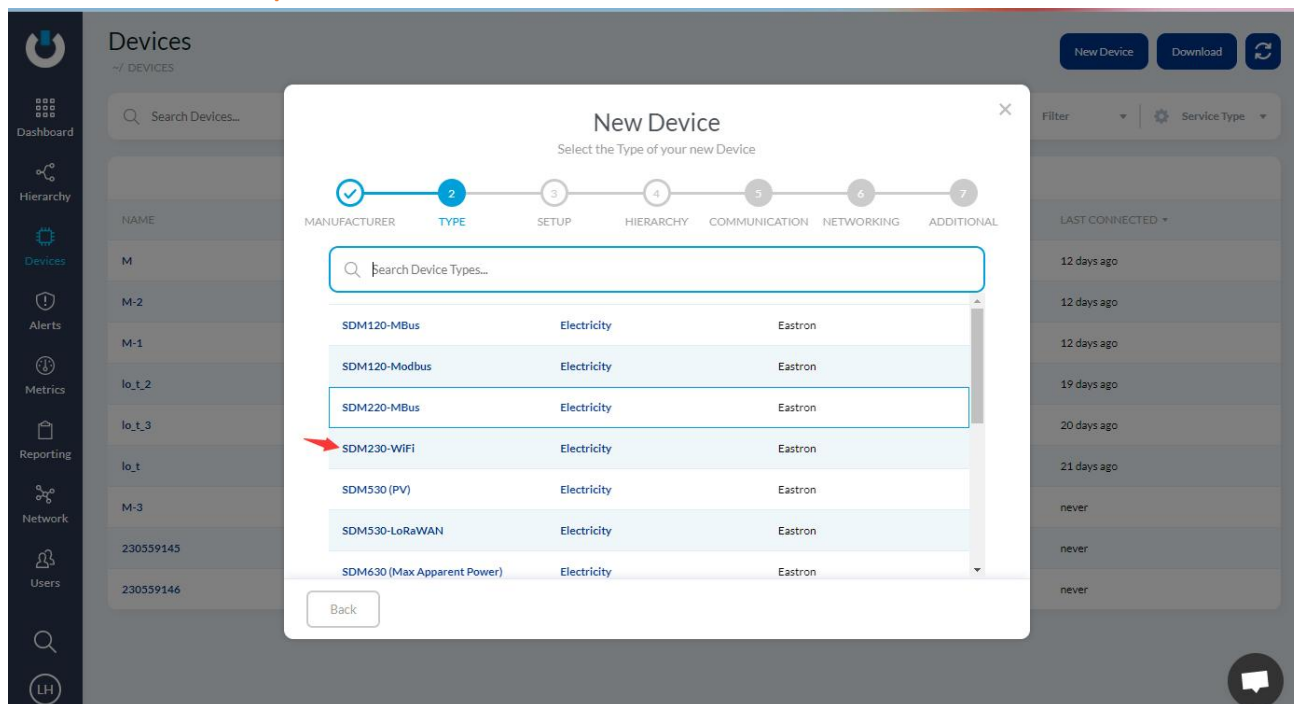
3. Press the New Device



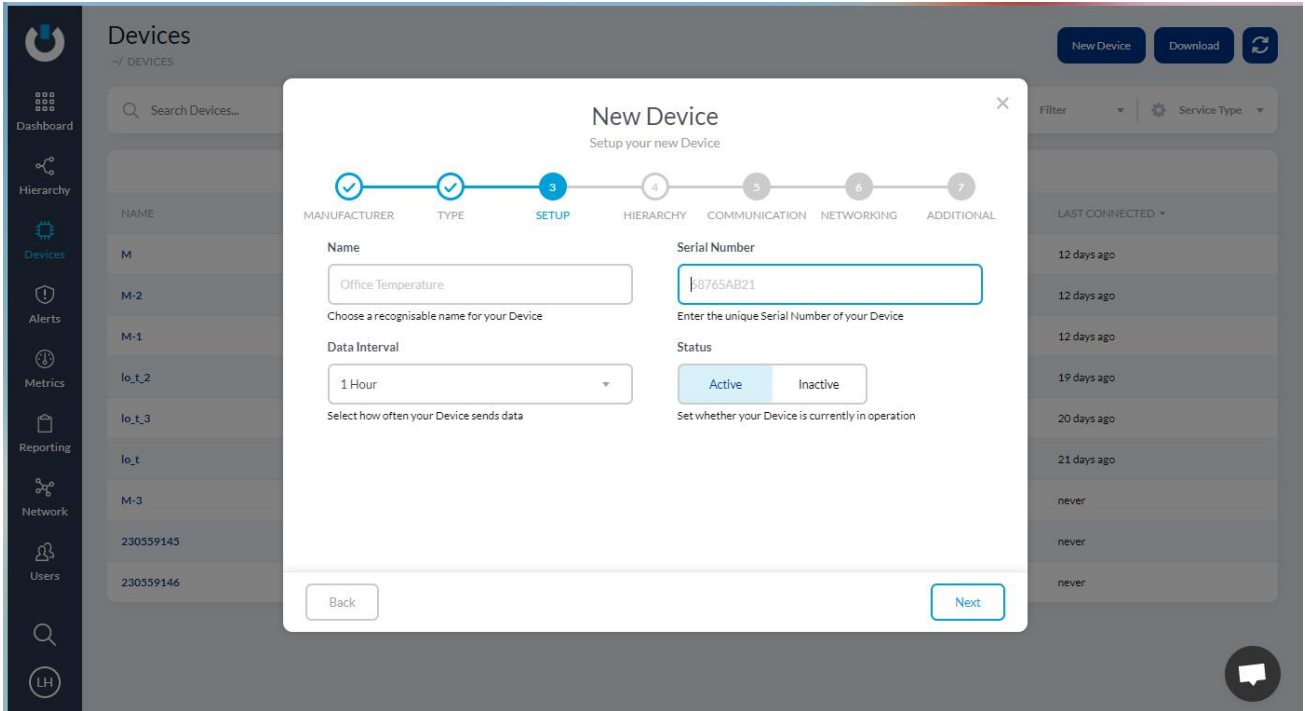
4. Select the standard Device option



5. Select the Eastron option

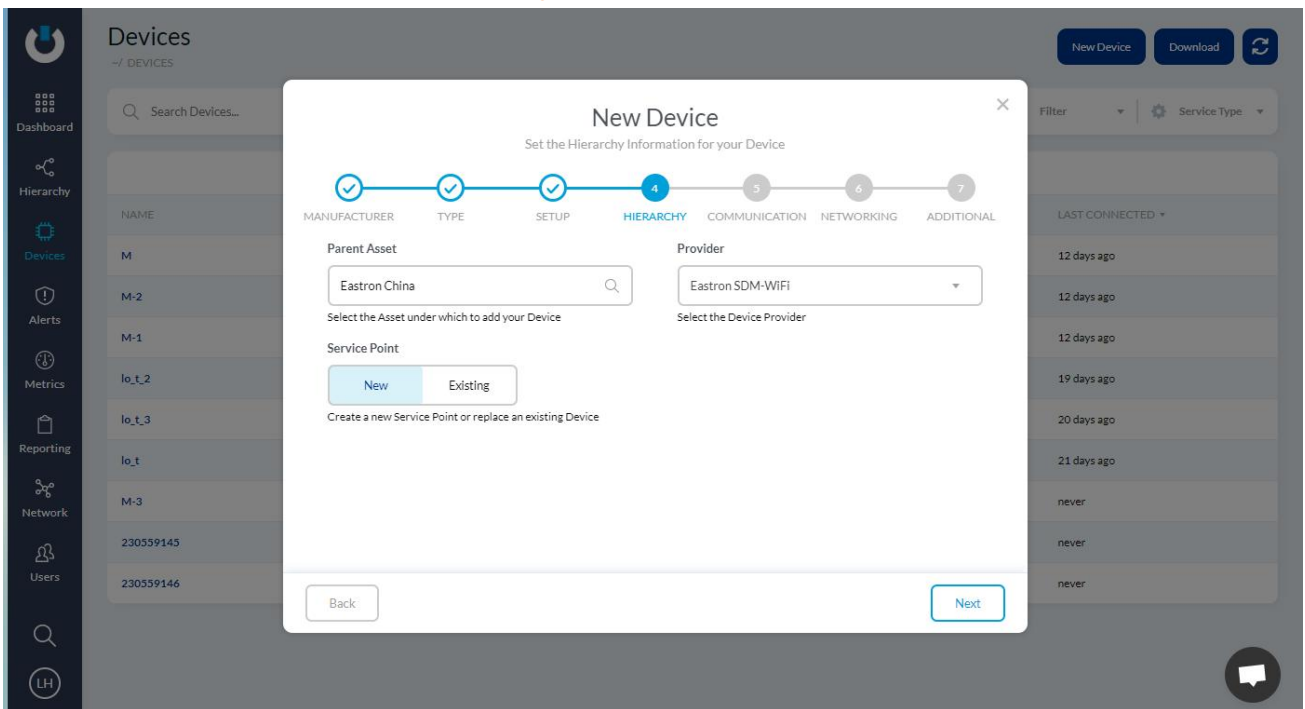


6. Select 230 WiFi

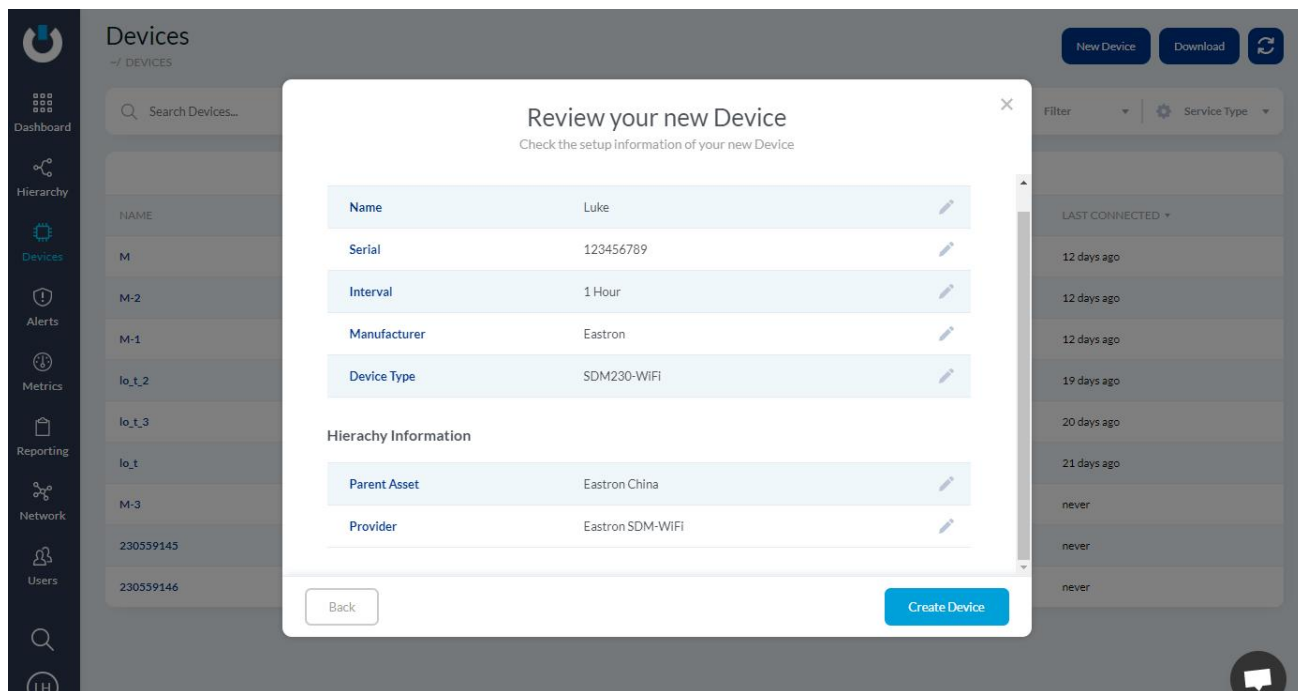


7. we can name devices according to your own ideas

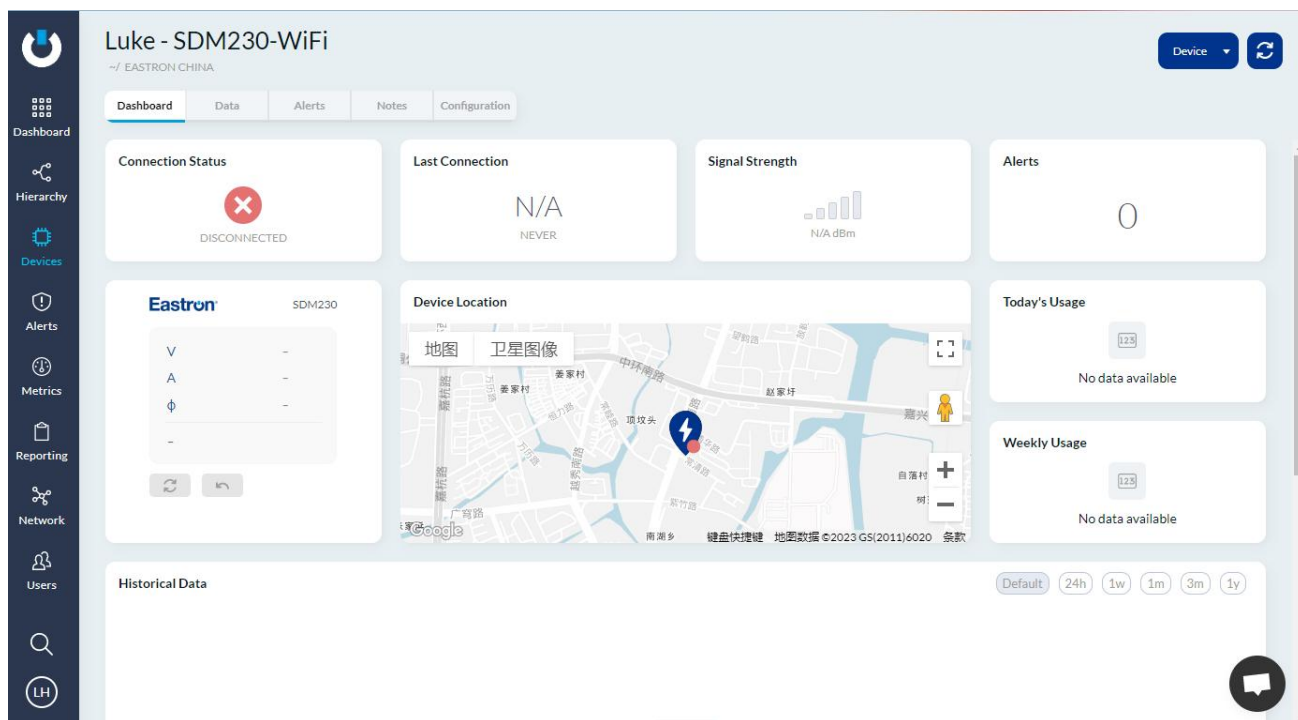
Please note The serial number needs to correspond to the correct one



8. According to the above diagram

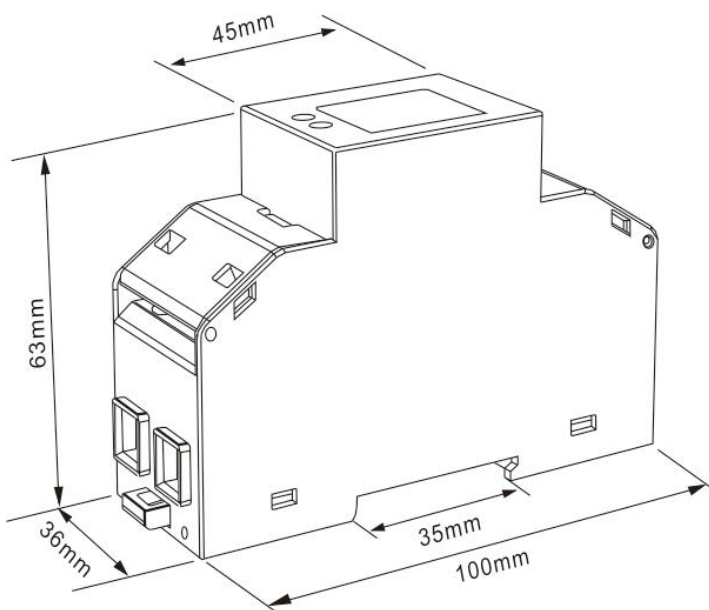
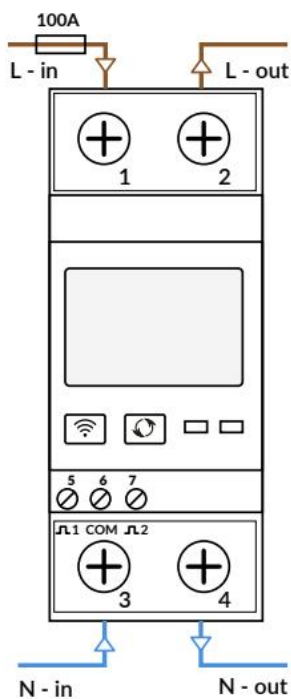


9.Finally, it can be checked and confirmed

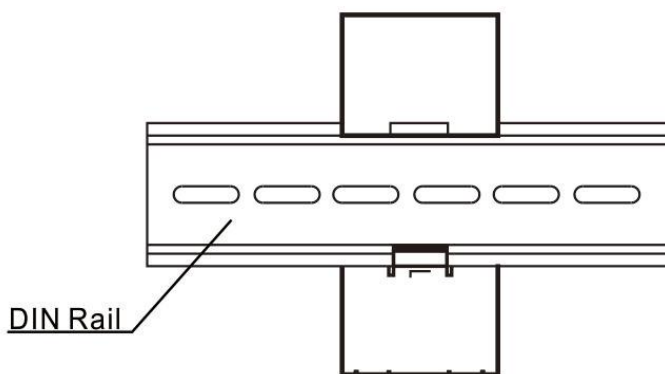
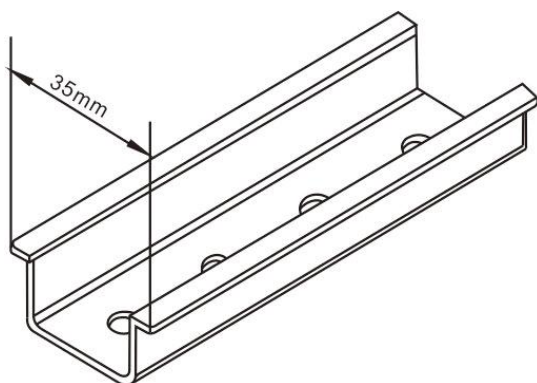


10.Then we can monitor our electricity meters in real time

Wiring and Dimension



Installation



CONTACT US

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

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