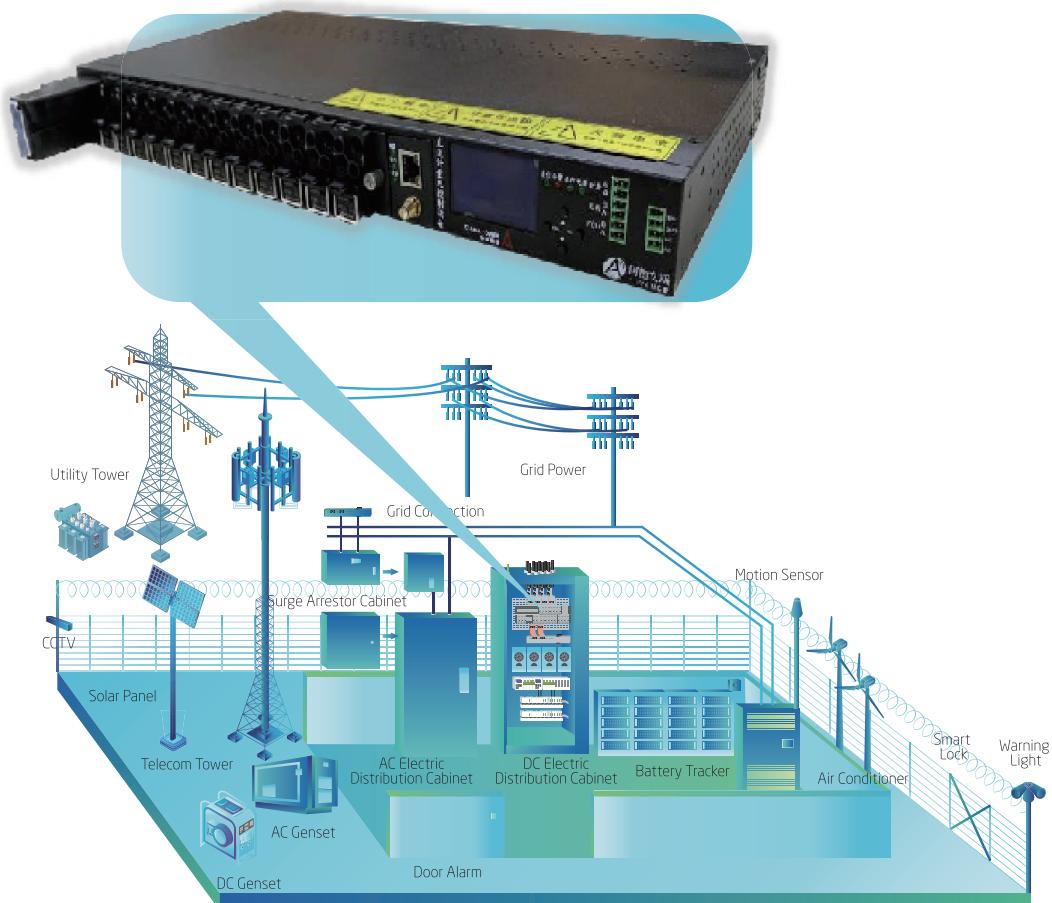


Intelligent DCDU 1U for Telecom Tower Base

User Manual

04/2024





Shunt metering

Let operators to see the actual electricity consumption and pay accordingly

Automatic reclosing

Ensure uninterrupted power supply of the tower

Energy saving and cost reduction

Achieve energy saving and cost reduction through peak load shifting and time-sharing power supply

Differentiated power backup

Realize automatic power supply based on different power supply and different service power supply policies

Remote control

Make the power consumption process of the tower visible and controllable

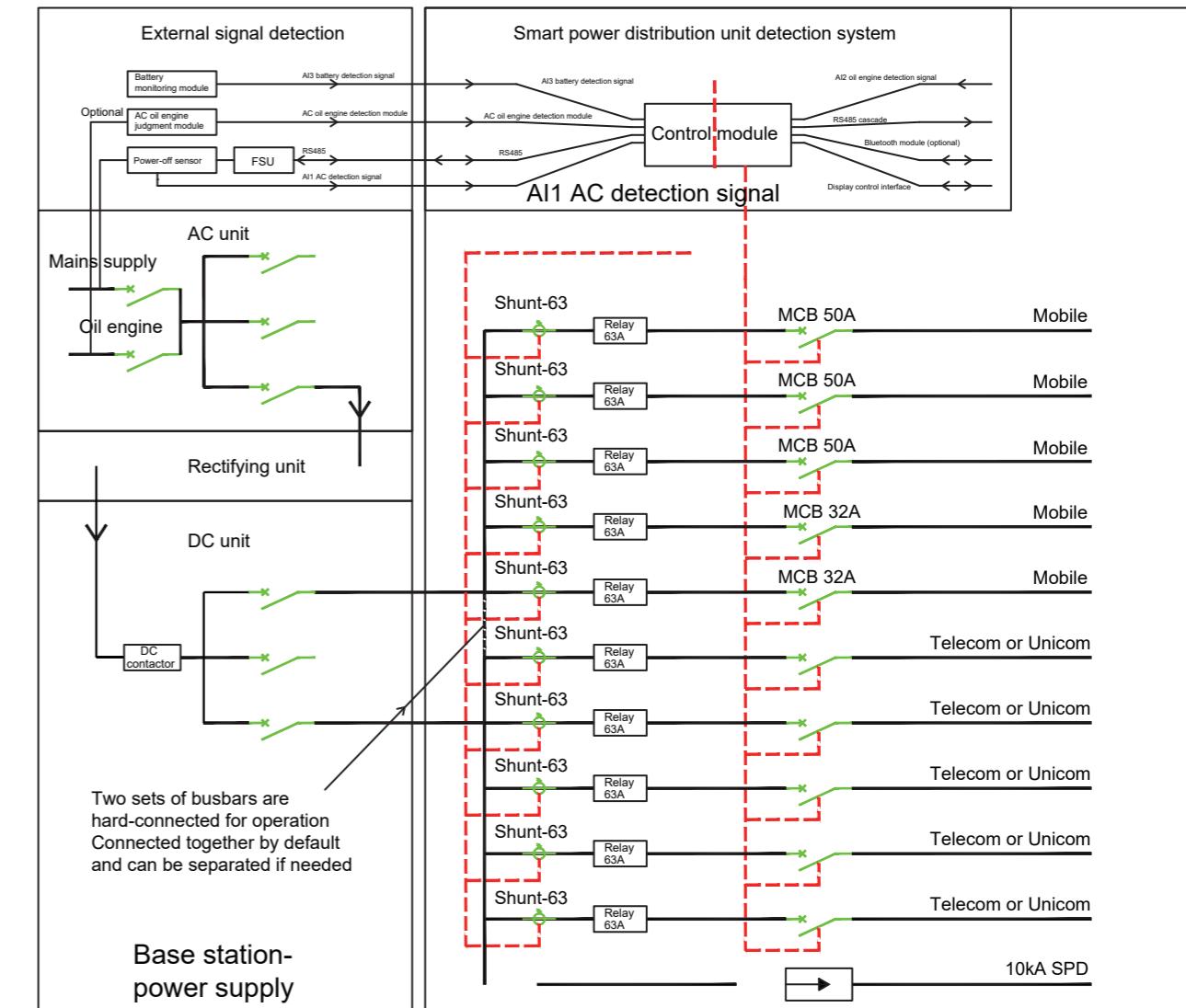
Status recognition

Apply AI algorithms to identify the working status of base station device

Precision management

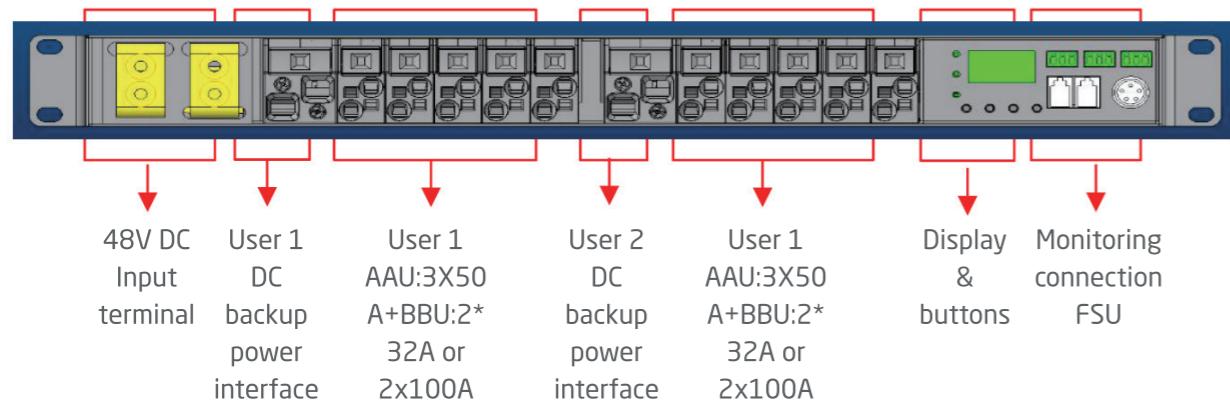
real-time power consumption data display and multi-dimensional analysis, make energy consumption at a glance

Base Station-Smart Power Distribution Unit 1U Each circuit can control metering



Control metering

- 1. Support differentiated power backup for 5G users
- 2. Support household energy metering for 5G users
- 3. Support 5G users to generate energy on demand



Appearance

- High-density design: 19-inch rack installation and 1U high-density design to save space;
- Minimalist installation: innovative circuit breaker front outlet for simple maintenance and less wiring space, makes it easy to install;
- Clever structure and flexible plug in and out of circuit breakers of various current specifications. The configuration can be flexibly increased or decreased on-site according to whether the operator has a power distribution box and DC power generation;

Modules

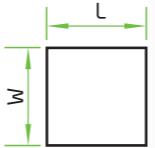
- Decoupled from the power supply, suitable for all power supplies;
- Support two 5G users to power off according to the duration, which can be set through FSU;
- A single user supports 5 channels of power distribution to meet the power distribution requirements of AAU and BBU;
- 1% high detection accuracy;
- It adopts the shunt instead of Hall sensors to make installation and wiring simple;
- Solve the problem of insufficient capacity of small oil engines and difficulty in transporting large oil engines;
- Optional energy generation function (AC/DC), supporting flexible configuration;

No.	Frame size	Circuit number	Metering and control module	Relay type	Display	Remark	Current
1	1U	12	Modular, pluggable	Circuit breaker	✓	Standard product	63A/125A
2	1U	12	Modular, pluggable	✓	✓	Standard product	
3	1U	18	Modular, non-pluggable	✓	/	Expand product	
4	1U	15	Terminal wiring, non-pluggable	✓	/	Expand product	

Metering and control module is used to realize load power metering and on-off control (referred to as module or 1U circuit breaker), and should have a fuse (or circuit breaker) protection device.

The technical indicators of the smart metering and control module comply with:

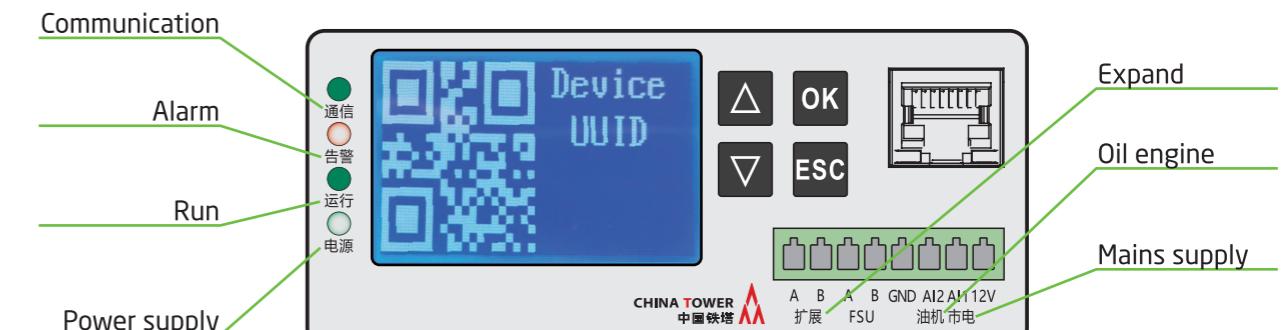
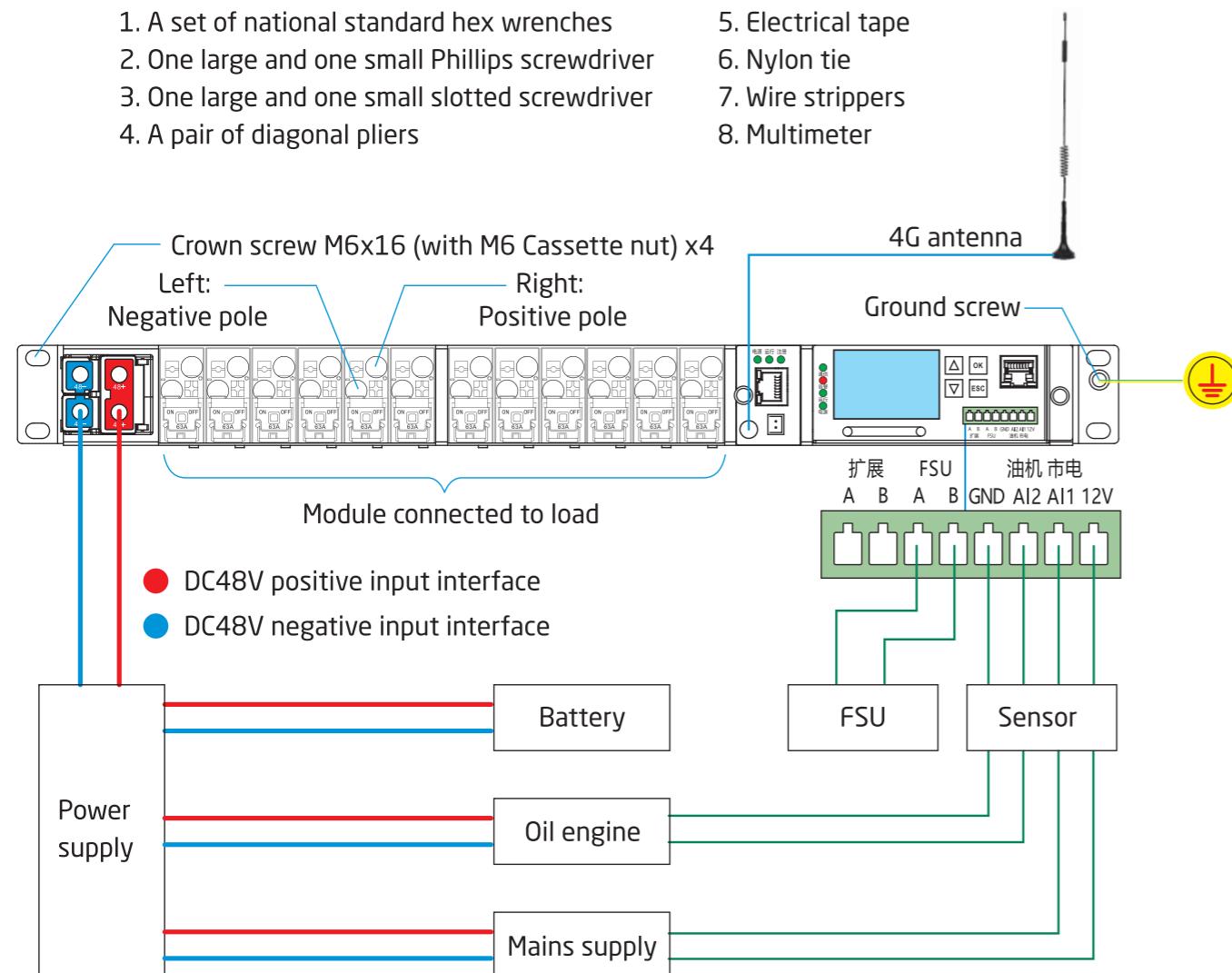
Metering and Control Module	
CCC certification	GB/T 14048.2
CE certification	IEC/EN 14048.2
Working temperature	-40°C ~+70°C non-rated working temperature requires derating
Storage temperature	-40°C ~+70°C
Rated working temperature	40°C
Relative humidity	≤95%
Altitude	≤2000m, capacity reduction is required for distances exceeding 2000m
Pollution grade	Class 2
Functions	
Rated working voltage	DC48V
Rated current	16A 32A 63A 100A
Breaking capacity	Ics=7.5kA Icu=10kA
Poles	1PN (negative pole opening and closing, positive pole is always on)
	Working temperature
voltage drop	130mV
Mechanical life	6000 times
Electrical life	4000 times
Wiring	Front, tubular screw terminal crimping
Wiring size(mm ²)	Bare wire: 25~35 Crimped with insulation: 10~25 Uninsulated crimp termination: 35 The diagram of the cross-section of the crimped end is shown on the right: 1) Cross-sectional area of crimped end: L≤10mm, W≤7mm 2) When the crimp end is inserted into 27mm, the diameter of the insulating sleeve or heat shrinkable tube ≤ 12.8mm
Plug depth (mm)	27
Stripping depth(mm)	21
Screw specifications	M5
Rated torque(N·m)	1.5
Ultimate torque(N·m)	2.5
Trip characteristics	11In
Installation	Plug-in; Main power: copper bar connection, thickness 2mm; Signal: Gold finger connection, PCB thickness 1.6mm



Indicator	1)Closing: Normal closing, the red indicator is always on.
	2)Opening: Normal opening, green indicator is always on.
	3)Unauthorized: The yellow indicator is always on.
	4)Alarm: the red indicator flashes when closing; the green indicator flashes when opening; in the unauthorized status, the yellow indicator flashes.
	5)One-key function indication: Red indicator flashes quickly when closing; green indicator flashes quickly when opening; in the unauthorized status, the yellow indicator flashes.
	6) Communication off indication: blue light flashing.
Metering	Voltage: 0~80Vd.c., accuracy 0.5%
	Current: 0.5~125A, accuracy 1%
	Power: 0~10kW, accuracy 1%
	Energy: 0~700000kWh, accuracy 1%
Circuit breaker status	ON/OFF
Address recognition	Support (address range: 1~118)
Circuit breaker rated current upload	Support
Authorization unlock	Support
Anti-misoperation	Support
Control function	Support
Low voltage power-off	Support
Reverse connection	Support
Overcurrent alarm	Support
Load disconnect alarm	Support
Battery disconnect alarm	Support
Load low voltage power-off alarm	Support
Battery low voltage power-off alarm	Support
Closing failure alarm	Support
Opening failure alarm	Support
Reverse connection alarm	Support
Controller fault alarm	Support
Current setting	Setting range: 3A~In
Power-off enable setting	Support
Power-off voltage setting	Setting range: 0~50.00Vd.c., default 38.00Vd.c.
Power-up voltage setting	Setting range: 0~54.00Vd.c., default 50.00Vd.c.
Communication mode	RS485
Lightning surge	With lightning protector 8/20us, 15kA impact

Installation tools:

1. A set of national standard hex wrenches
2. One large and one small Phillips screwdriver
3. One large and one small slotted screwdriver
4. A pair of diagonal pliers
5. Electrical tape
6. Nylon tie
7. Wire strippers
8. Multimeter



Up OK OK or function switch
Down ESC 0 to 9 can be entered in the data items.

Up OK OK or function switch
Down ESC Return to the previous level (exit)

Scan the QR code on the mobile base station APP to register: After registration, remote opening and closing in the APP or on the website can be realized. After successful registration, the registration light will be on.

Through panel key operations, you can query device information and set configuration parameters. For details, see "LCD Operation Instruction".

Dimensions

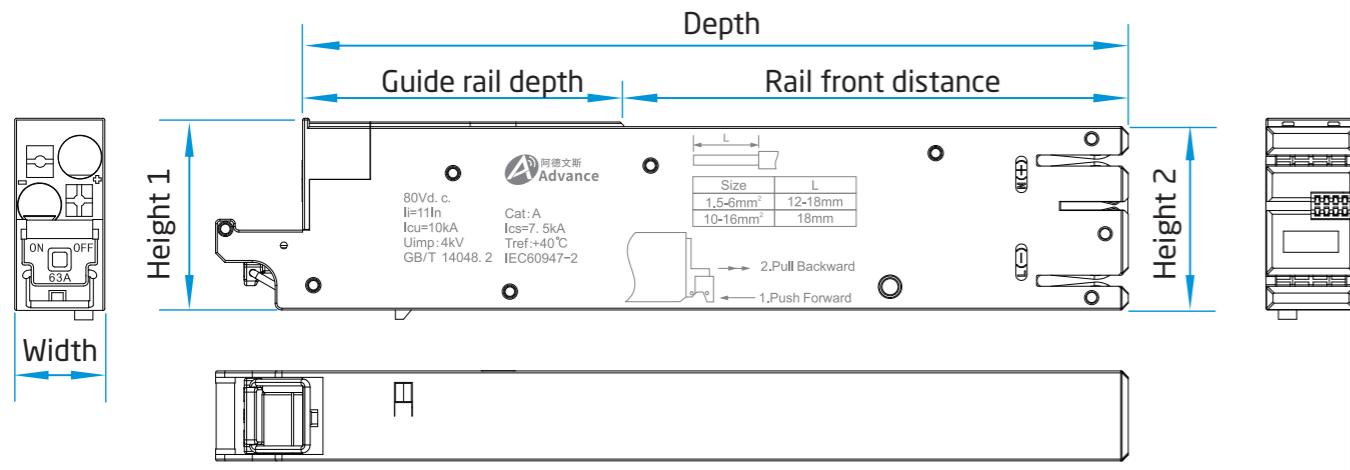


Figure 1

Figure 1 is a dimension diagram of the smart metering and control module, where (height 1) refers to the height of the circuit breaker without guide rails, and (height 2) refers to the height of the circuit breaker with guide rails.

The main body size requirements of smart metering and control modules are shown in Table 1.

Table 1 Main body dimensions

No.	Specification	Dimensions(mm)				Remark
		Depth	Width	Height 1	Height 2	
1	64A	180±0.2	19.6±0.2	39±0.2	41±0.2	
2	100A	180±0.2	29.6±0.2	39±0.2	41±0.2	

Guide rail size

The guide rail size for smart metering and control modules are shown in Table 2. Both 64A and 100A smart metering and control modules have two guide rails, located above the circuit breaker (as shown in Figure 1); the spacing refers to the distance between the two guide rails.

Table 2 Guide rail dimensions

No.	Specification	Number of Guide Rails	Dimensions(mm)				Remark
			Depth	Width	Height	Spacing	
1	64A	2	70±5	2	2±0.2	10	
2	100A	2	70±5	2	2±0.2	20	

Terminal Strip & Communication Port Size

The terminal strip and communication port are shown in Figure 2 and Figure 3, and the dimensions are shown in Table 3. The positive and negative poles adopt a spring clip design to ensure that the positive and negative poles of the smart metering and control module are tightly installed with the plug-in strip of the modular power supply.

Table 3 Terminal strip and communication port dimensions

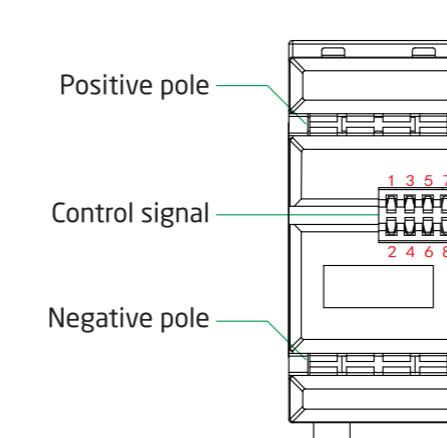
Terminal strip size (mm)				
Positive to neutral	Negative to neutral	Distance between positive and negative poles	Height of positive and negative poles	Depth of positive and negative poles
13.1	13.1	26.2	2.4	20
Communication port size (mm)				
Communication port	Height	Depth	Width	
16.3mm from negative pole	1	20	10	

Note: "Positive to neutral", "negative to neutral" and "distance between positive and negative poles" all refer to the distance measured based on the positive and negative neutral line.

Communication Port Pin Assignment

The communication port layout is shown in Figure 2.

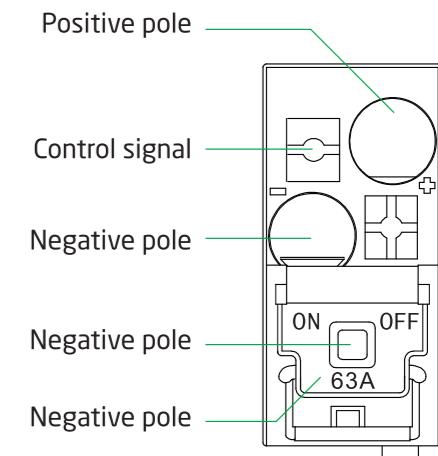
Using 8pin pins, the pin assignment is shown in Table 4



(Figure 2)

Pin number	Function
1	Power supply+
2	Power supply-
3	Address recognition bit
4	Address recognition bit
5	Reserved
6	Reserved
7	RS485+
8	RS485-

Table 4 Communication port pin assignment



(Figure 3)

Wiring Panel

The wiring panel is shown in Figure 3, which mainly includes wiring ports, wiring screws, on/off buttons and indicator. The wiring port adopts a diagonal shape, with the positive wiring port on the upper right and the negative wiring port on the lower left; the indicator is an LED indicator.

Terminal Strip & Communication Port Size

Press  or  on the main interface to display device status in up and down cycles.



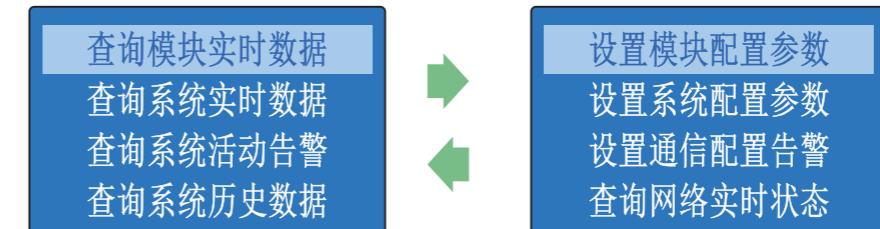
检索插槽模块
自动识别进行中... 23
稍等... 请勿操作
模块数量8

Module installation:

Insert the circuit breaker into the guide rail. The device will automatically identify the address in 30s, or long press  to make the host start addressing.

Main Menu

Press the [OK] button on the main interface to enter the data query and parameter setting interface. Press  or  to cycle up and down to display query items and setting items. Press  or  to select, press the [OK] button to enter after selecting, and press the **ESC** to exit step by step until to the main interface



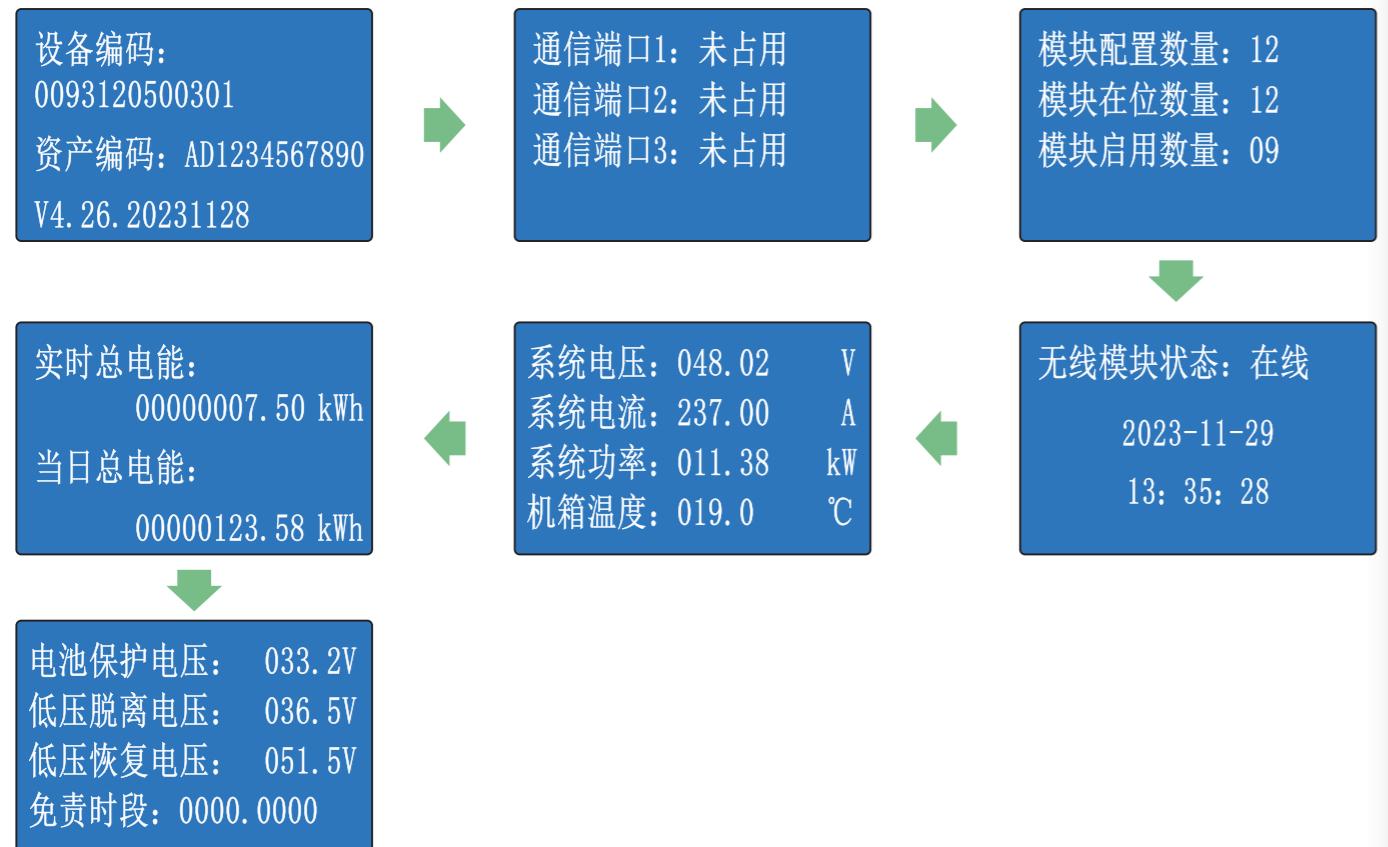
Query Module Real-time Data

After entering the "Query Module Real-time Data" menu, press  or  to select the corresponding module, and then press the **OK** button to view the module information.



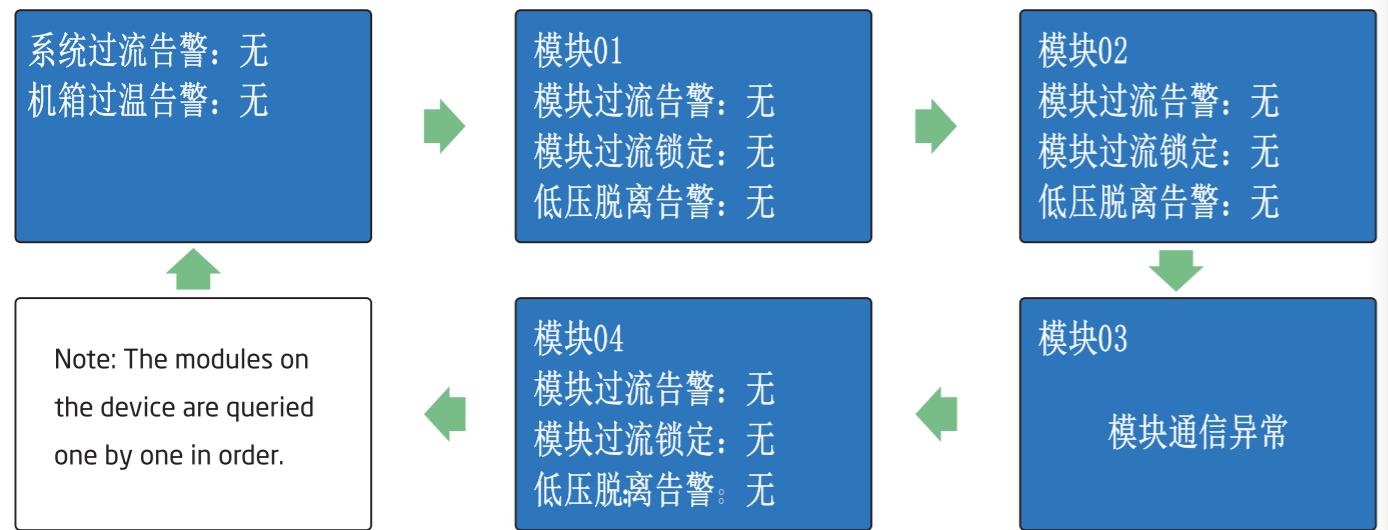
Query System Real-time Data

After entering the "Query System Real-time Data" menu, press  or  to view the system's real-time information.



Query System Activity Alarm

After entering the "Query System Activity Alarm" menu, press  or  to view the activity alarms of each module.



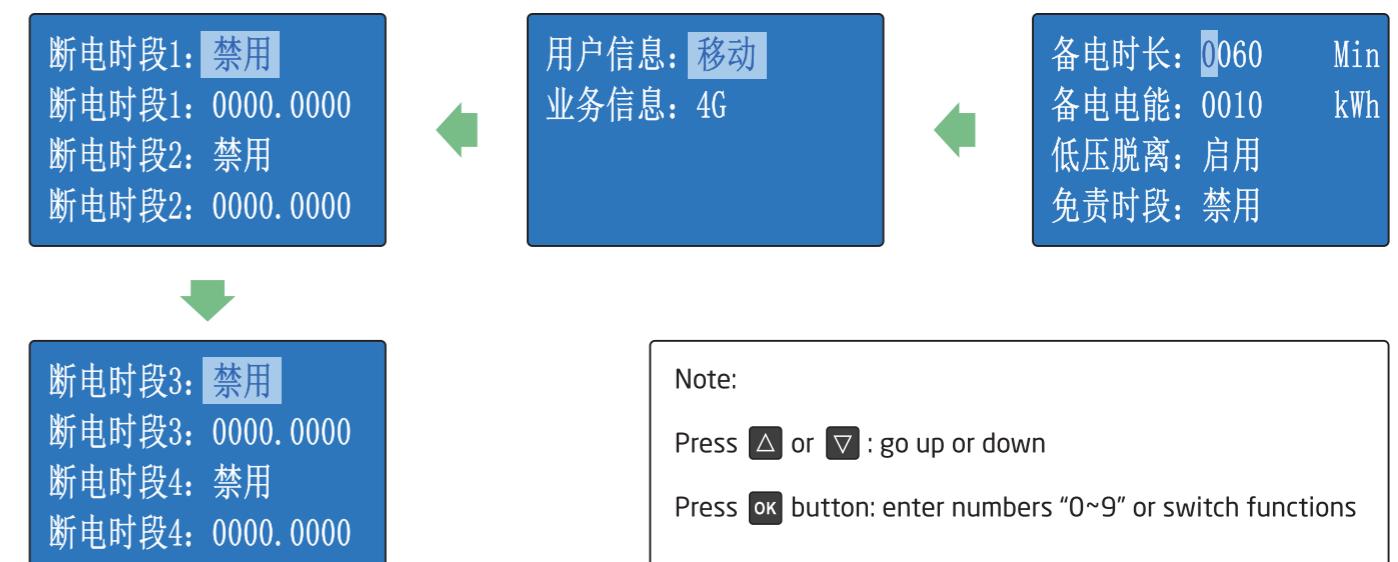
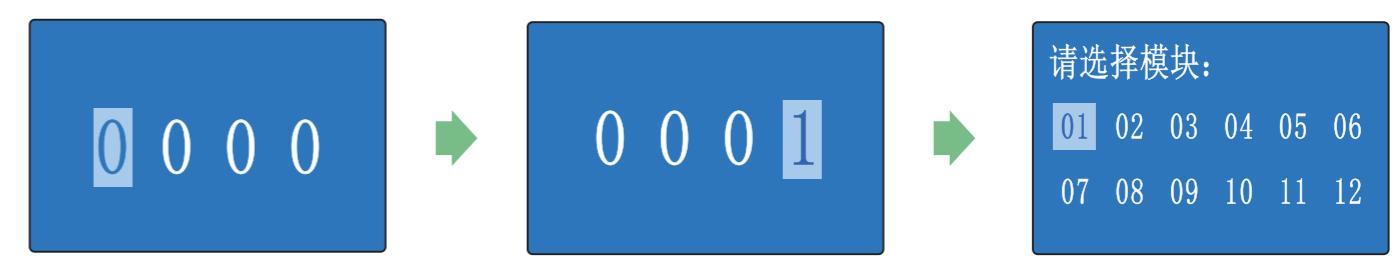
Query System Historical Data

After entering the "Query System Historical Data" menu, press  or  to view system historical information.



Set Module Configuration Parameters

After entering the "Set Module Configuration Parameters" menu, you need to enter the password "0001", press  or  to move the cursor to the 4th digit, press  button to enter the number "1", and then long press  button for 2s.
Press  or  to select the corresponding module, and then press the ok button to enter the parameter setting page.



Set System Configuration Parameters

After entering the "Set System Configuration Parameters" menu, you need to enter the password "0001", press 

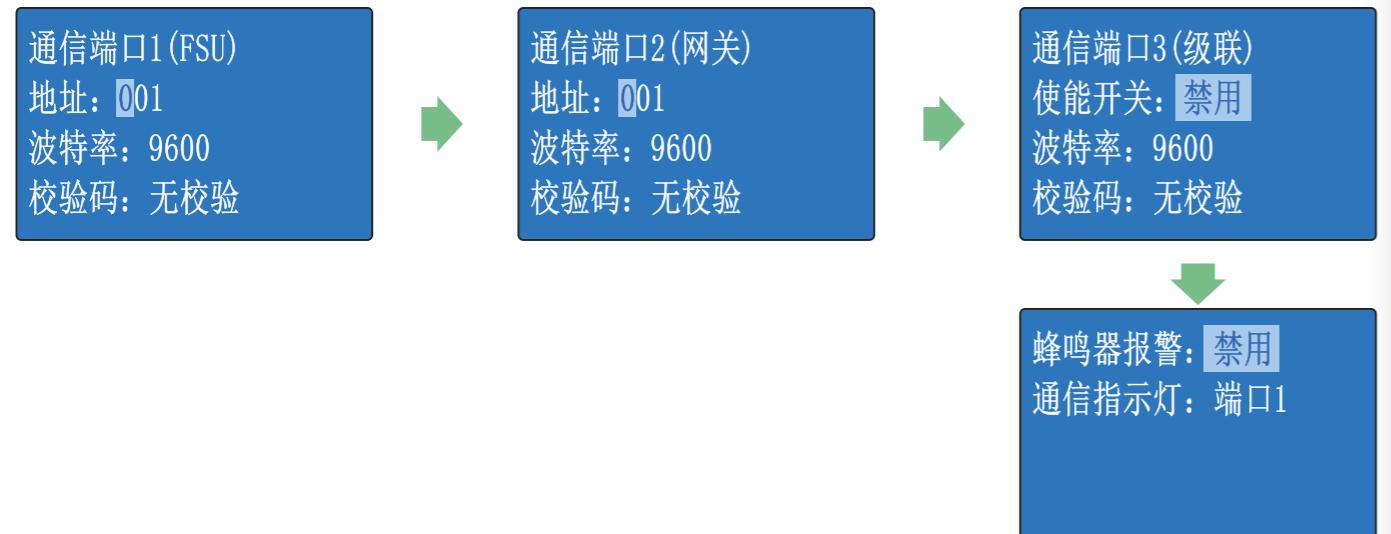
or  to move the cursor to the 4th digit, press the  button to enter the number "1", and then long press the  button for 2s. .

System configuration parameters can be set or modified.



Set Communication Configuration Alarm

After entering the "Set Communication Configuration Alarm" menu, press  or  to switch pages up and down, and press the  button to enter parameter setting page.



Query Real-time Network Status

After entering the "Query real-time network status" menu, you can check the network status, SIM card number and IMEI number. Status display: power on, power off, create Socket, activate PDP.



Shanghai Matis Electric Co.Ltd

Web:www.matismart.com

Tel:+86 21 6050 3668,+86 18621879631

Add: Room 318-320, No.83,West Huanhu Road, Pudong, Shanghai, China 201306

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