Manual

1. Instrument introduction

VAC8010F is a multi-function meter based on 2.4 wireless data transmission technology. It can display various physical parameters such as voltage, current, power, capacity, energy, temperature and running time in real time. The battery can be realized separately through two reserved relay interfaces. Charge and discharge management and overvoltage, undervoltage, overcurrent protection. Moreover, the meter uses a 2.4-inch color liquid crystal as a display, and the display data is more comprehensive, clear, and easy to observe.

2. Instrument characteristics:

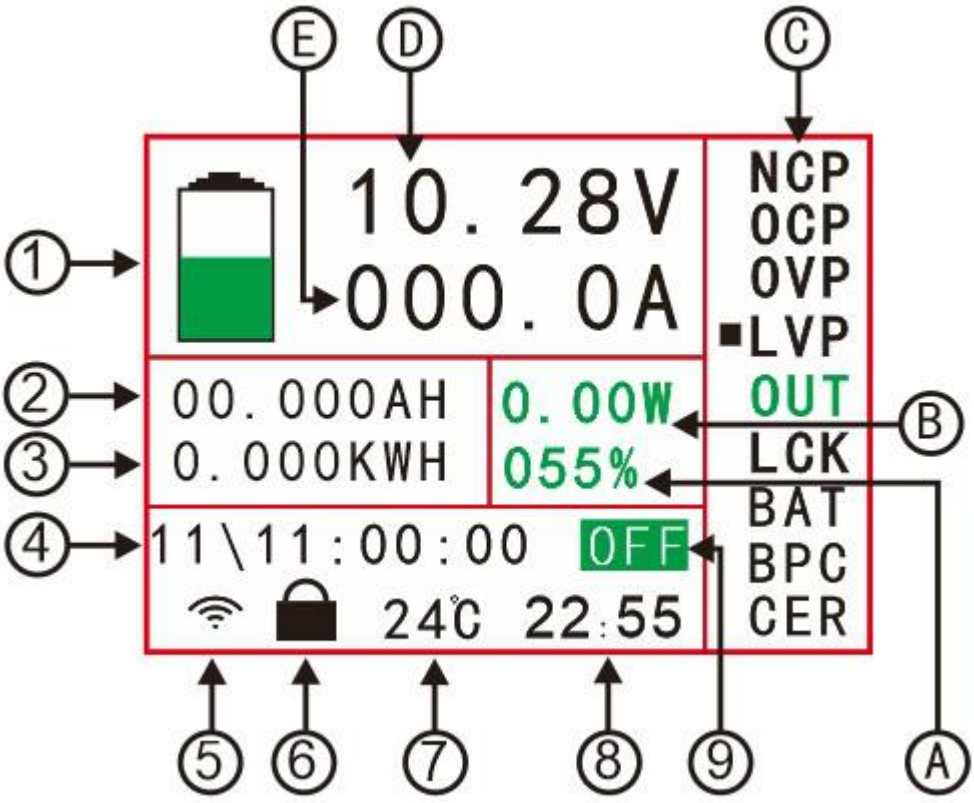
1. Wirelessly transmit data to avoid interference caused by complicated wiring between the display and the detection module, and the wiring is more convenient.
2. Hall sensor is used to realize non-contact detection current, without disconnecting the wire, safe, reliable and convenient.
3. Voltage, current, power, temperature, capacity, percentage of remaining capacity, and running time are displayed simultaneously.
4. Dual relay interface, can manage charging and discharging separately.
5. With charging overvoltage, discharge undervoltage, charging overcurrent, discharge overcurrent protection.
6. With power-off memory function, you can record the AH number and WH number before power-off.

3. Technical indicators

Item		Specification
Input voltage	Measuring range when self-powered	6V~80V
	Measuring range when externally powered	0~120V
Input current measurement range		0~100A

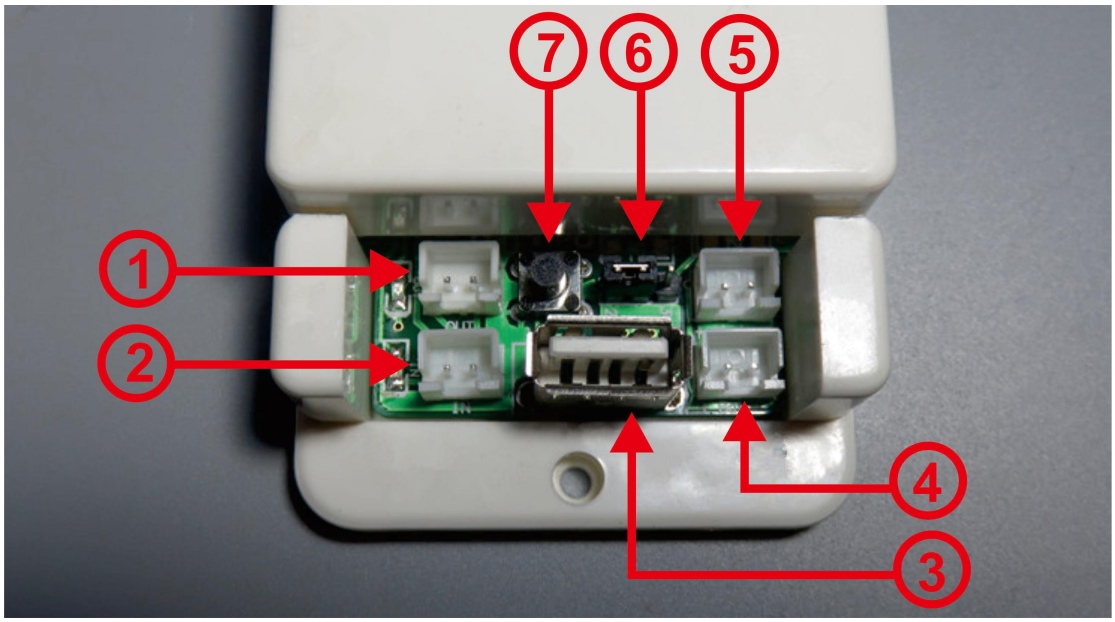
External supply voltage		6-60V
Display method		2.4 inch color LCD display
Measuring range	Voltage	0.01V~120V
	Current	0.1A~100A
	Capacity	0.001AH~65000.00AH
	Energy	0.000KWH~9999KWH
	Time	0~100 hour
	Power value	999KW
	Temperature	1~100℃
Accuracy	Voltage	±1%+2
	Current	±2%+5
	Temperature	±1.5℃
Measurement rate		5 times / sec
Relay delay time		(0-60)S
Communication distance		Open single group 10 meters
Protection type and setting range	OVP (overvoltage protection)	0.01V~500V
	LVP (undervoltage protection)	0.01~500V
	OCP (Charge Overcurrent Protection)	0-500A
	NCP (discharge overcurrent protection)	0-500A
Display panel size		87*49*14 (mm)
Measuring board size		114*54*28 (mm)

4. Display description



1	Battery remaining capacity column chart	8	Single run time cumulative value
2	Cumulative remaining AH number	9	Output status display directory
3	Cumulative energy	A	Percentage of remaining battery capacity
4	The time required for the battery to be fully charged or discharged (calculated based on charge and discharge current and capacity)	B	Power value
5	Wireless communication signal indication	C	Function option directory
6	Key lock indication	D	Measured voltage value
7	Real-time measurement of temperature values	E	Measured current value

5. Measuring board interface descriptions

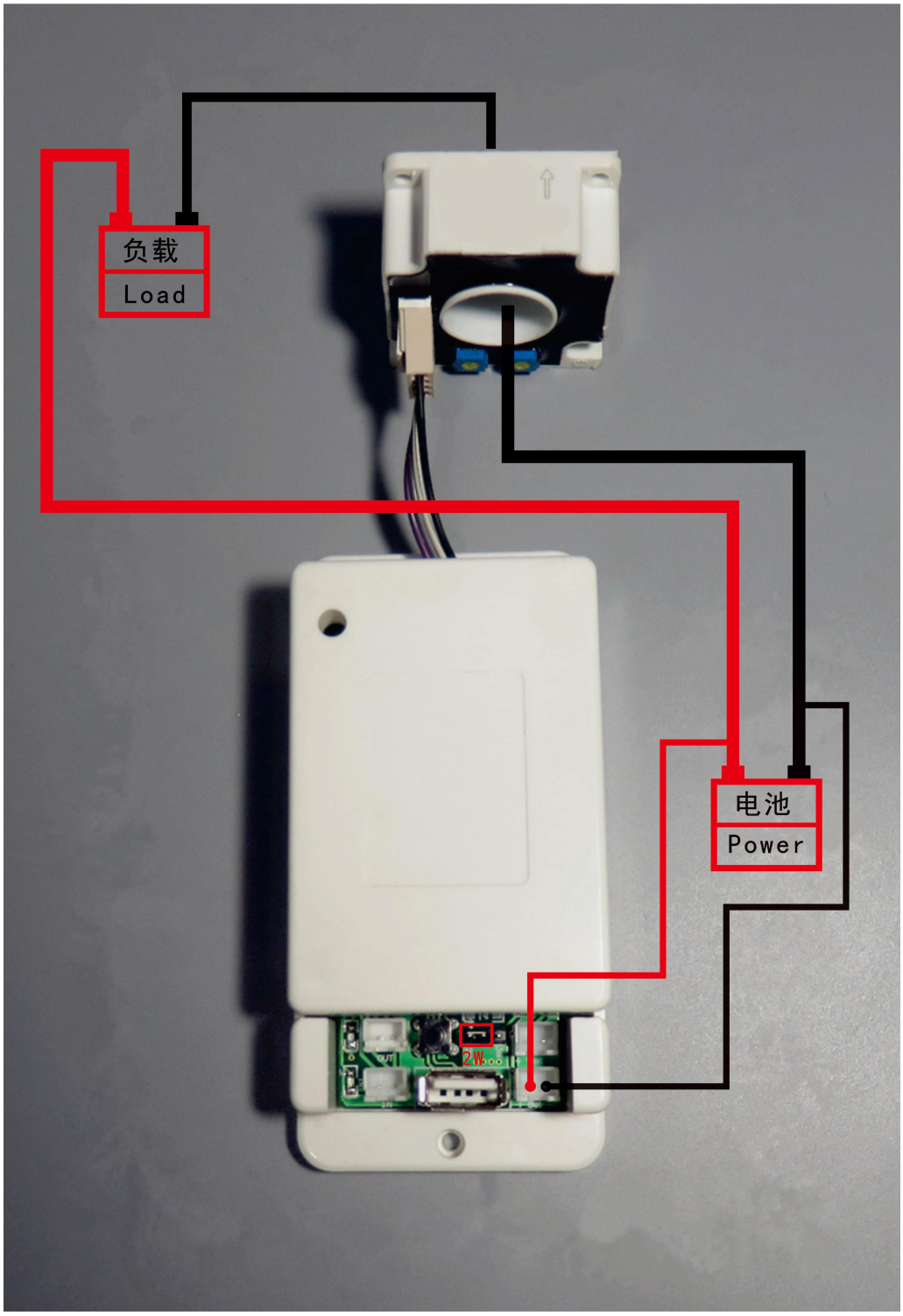


1	Discharge relay control interface
2	Charging relay control interface
3	USB2.0 interface (can supply power to the display board)
4	Voltage measurement interface
5	External power supply interface
6	External power supply and self-power supply selection interface
7	Relay switch button

6. Wiring

1) Self-powered wiring diagram

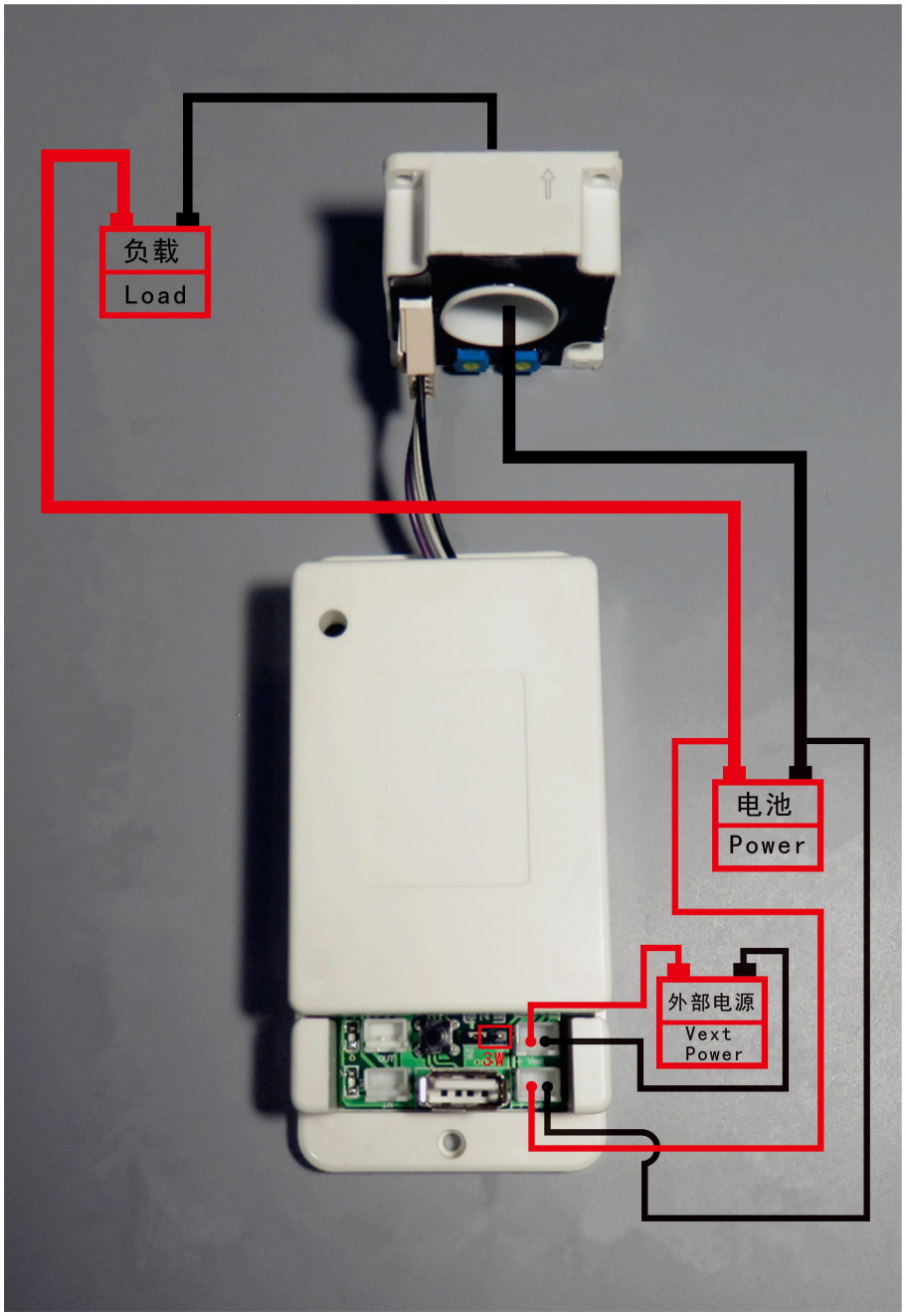
Note: If the battery (power supply) under normal operation has a voltage range of (6-80V), you can use its own power supply wiring. First, adjust the jumper cap of the power supply selection interface to “2W”, and then connect it. The positive and negative poles of the battery (power supply) are connected to the voltage measurement port “+Bat-”; note that “+” is connected to the positive pole of the battery (power supply), “-” is connected to the negative pole of the battery (power supply), and the positive and negative poles of the power supply are not connected. Wrong or reverse, connect the positive pole of the battery (power supply) to the positive pole of the load, the negative pole of the battery (power supply) to the negative pole of the load through the Hall sensor, the current direction flowing through the Hall sensor and the power-on arrow of the Hall sensor When the direction is the same, the measured current will show a positive value, otherwise the measured current will show a negative value.



2) External power supply wiring diagram

Note: If the voltage range of the tested battery (power supply) is not working (6-80V), the external power supply wiring mode can be used. First, adjust the jumper cap of the power supply selection interface to “3W”, and the external power supply. Connect the positive and negative poles to “+Vext-”, pay attention to “+” to the positive pole of the external power supply, and “-” to the negative pole of the external power supply; then connect the positive and negative poles of the battery

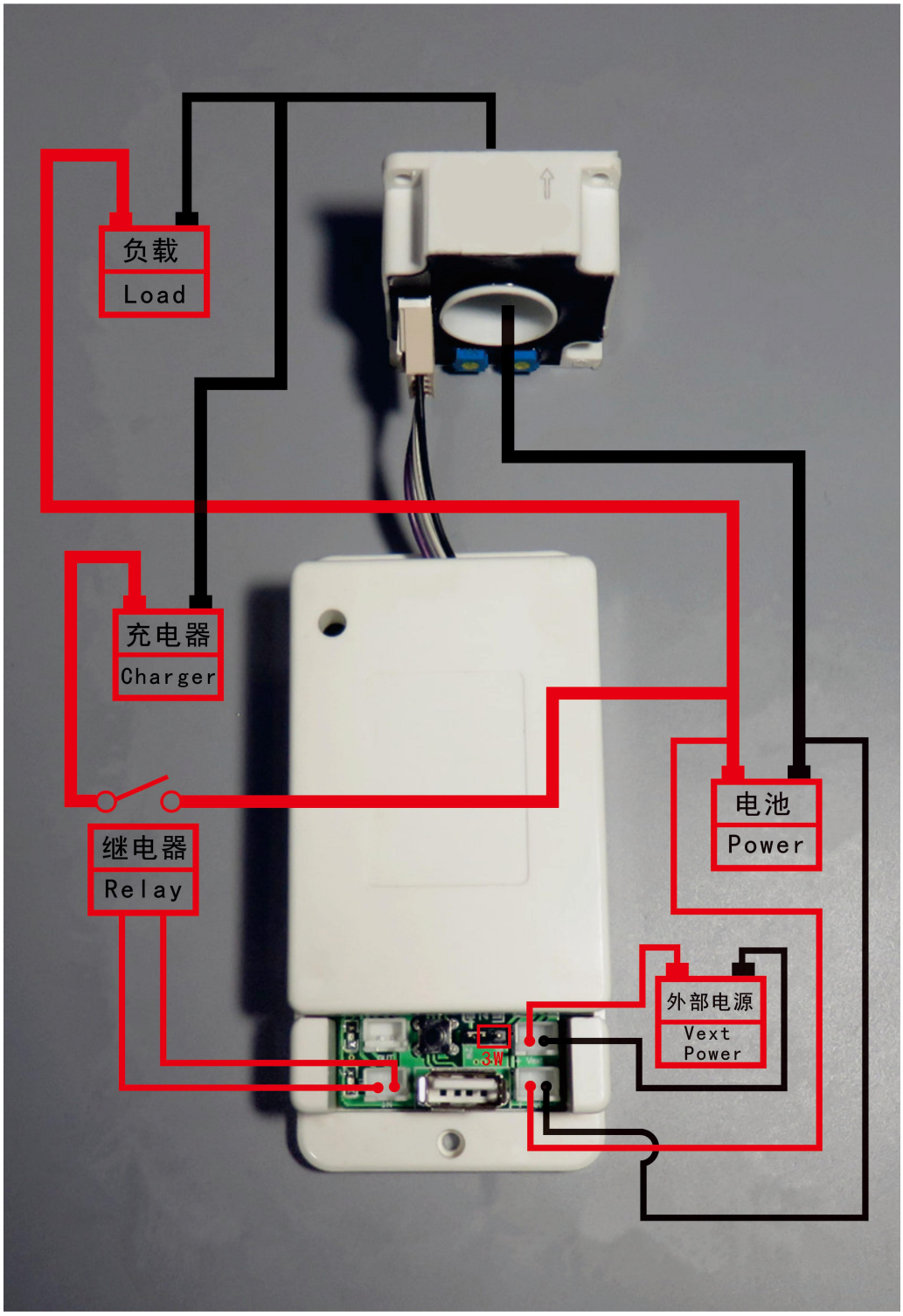
(power supply) to the voltage measurement port “+Bat”. -", pay attention to "+" to the positive pole of the battery (power), "-" to the negative pole of the battery (power supply). Do not connect the positive and negative poles of the battery (power supply) to the positive pole of the load. Connect the positive pole of the battery (power supply) to the positive pole of the load. The negative pole of the battery (power supply) is connected to the negative pole of the load through the Hall sensor when flowing through the Hall sensor. When the current direction is the same as the direction of the power-on arrow of the Hall sensor, the measured current will show a positive value, otherwise the measured current will show a negative value.



(Three-wire connection relay wiring diagram)

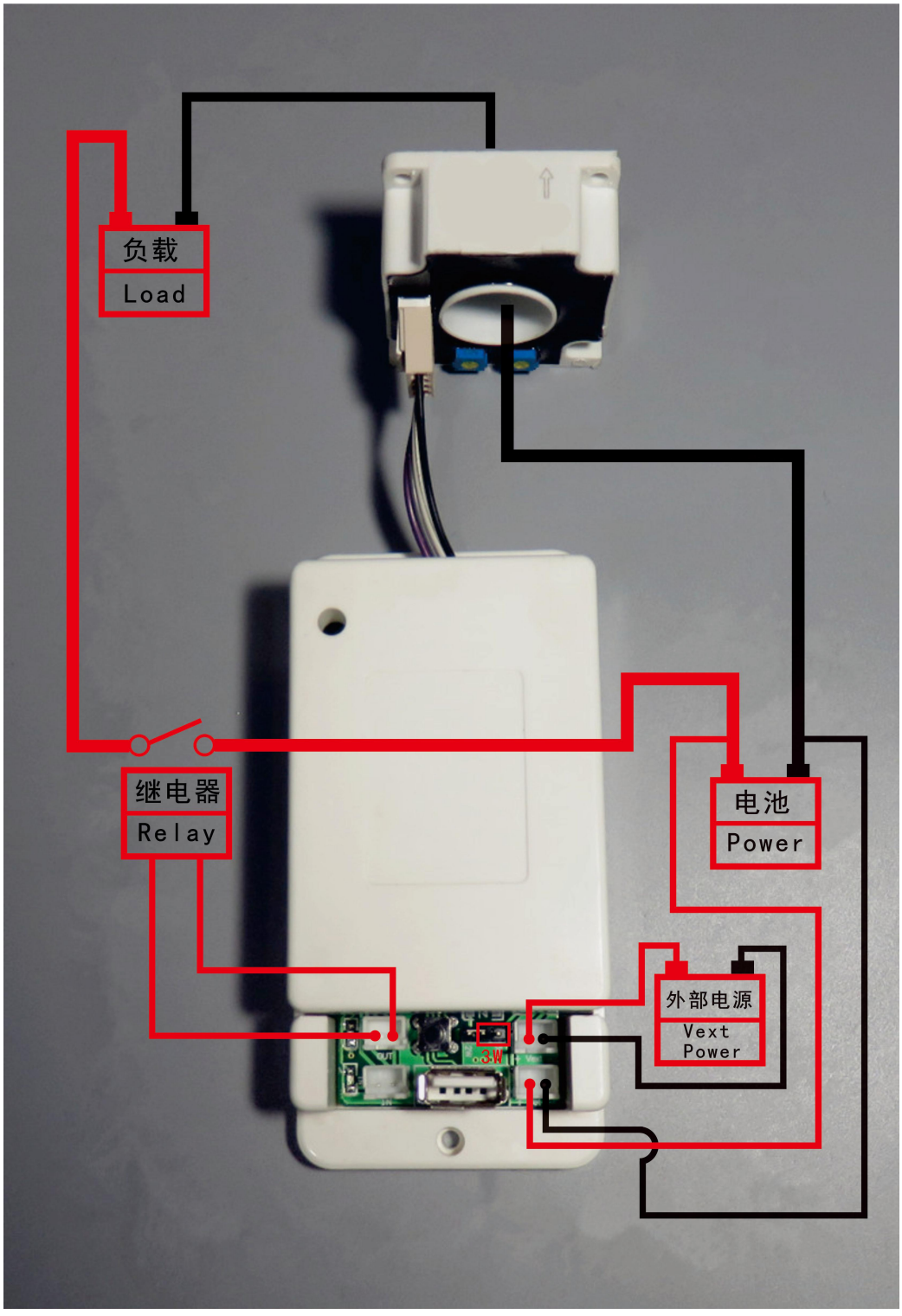
3) Charging relay wiring instructions

Note: The working power supply of the relay is provided by an external power supply. If the relay is connected, an external power supply with the same working voltage as the relay should be provided. Connect the control port of the relay to the interface of the charging controller. If you want to control the positive pole of the charging, pass the positive line through the relay. If you want to control the negative pole of the charging, connect the negative line to the relay. When the relay is connected, the "IN" light is used. It will light up and will go out as a reminder when disconnected.



4) Discharge relay wiring instructions

Note: The working power supply of the relay is provided by an external power supply. If the relay is connected, an external power supply with the same working voltage as the relay should be provided. Connect the control port of the relay to the discharge controller interface. If you want to control the positive pole of the discharge, pass the positive line through the relay. If you want to control the negative pole of the discharge, connect the negative line to the relay. When the relay is connected, the "OUT" light It will light up and will go out as a reminder when disconnected.



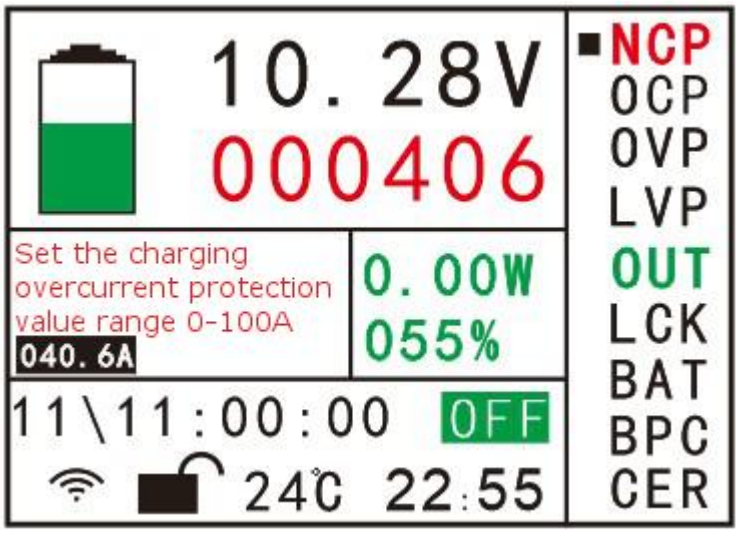
7. Wiring note:

Select the appropriate wiring method according to the range of voltages measured to ensure that the input voltage is within the tolerance of the instrument.

Note: The input voltage range of its own power supply: 6V~80V;
External power supply input voltage range: 0V~120V.

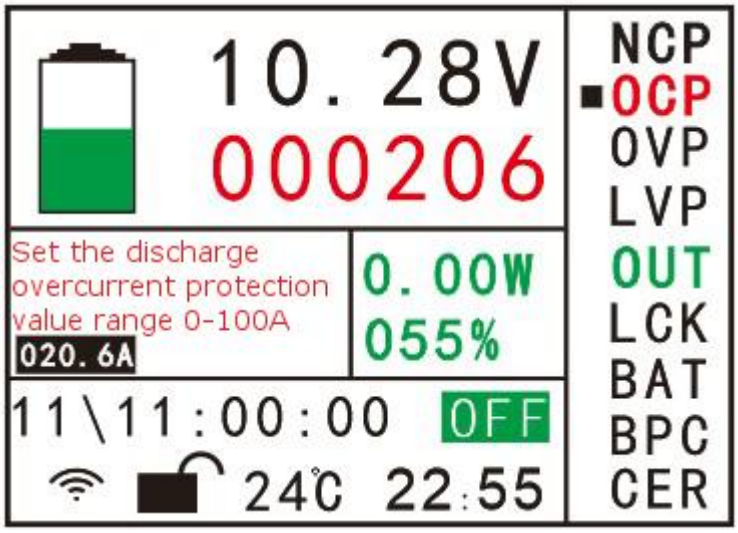
8. Feature introduction and settings

(1) ‘‘NCP’’ charging overcurrent protection value. If the value is greater than 0, the protection will be activated. If it is equal to 0, the protection function will not be activated. When setting the parameters, click the up or down button to move the cursor to ‘‘NCP’’, then click the OK button. Enter the parameter setting interface of Figure (8-1). After entering the page, it will prompt the nature and range of the set parameters, then click the up or down button to change the size of the set parameter value. Note: The current display line will be set when the parameter is set. Change to red and display the wireless return value of the set parameter. When the set parameter value and the current display line data match, the data setting is completed (ignoring the decimal point), then click OK to return to the initial interface to complete the parameter. Settings and save.



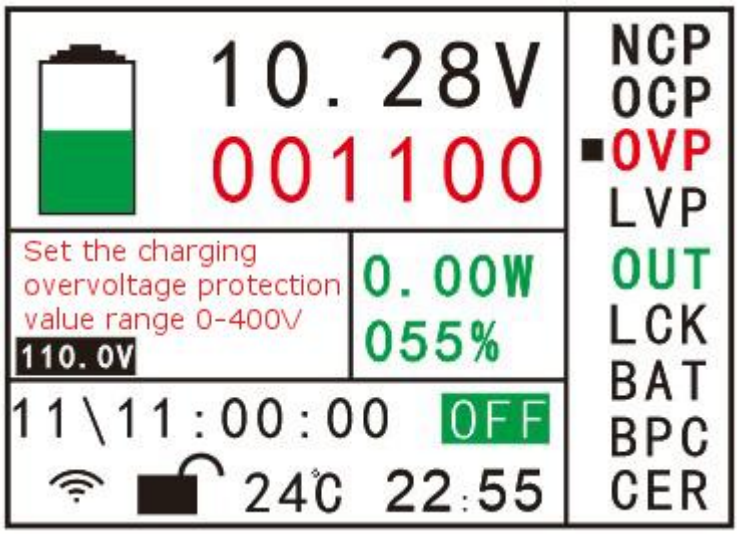
PIC.(8-1)

(2) "OCP" discharge overcurrent protection value. If the value is greater than 0, the protection will be started. If it is equal to 0, the protection function will not be activated. When setting the parameters, click the up or down button to move the cursor to ‘‘OCP’’, then click the OK button to enter the parameter setting interface of the figure (8-2). The parameters are set in the same way as ‘‘NCP’’.



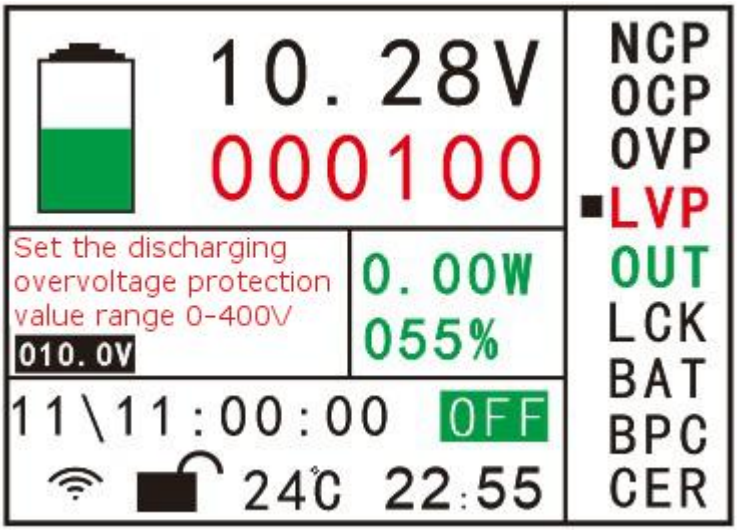
PIC.(8-2)

(3) ‘‘OVP’’ charging overvoltage protection value. If the value is greater than 0, the protection will be started. If it is equal to 0, the protection function will not be activated. When setting the parameters, click the up or down button to move the cursor to ‘‘OVP’’, then click the OK button to enter the parameter setting interface of the figure (8-3). The parameters are set in the same way as ‘‘NCP’’.



PIC.(8-3)

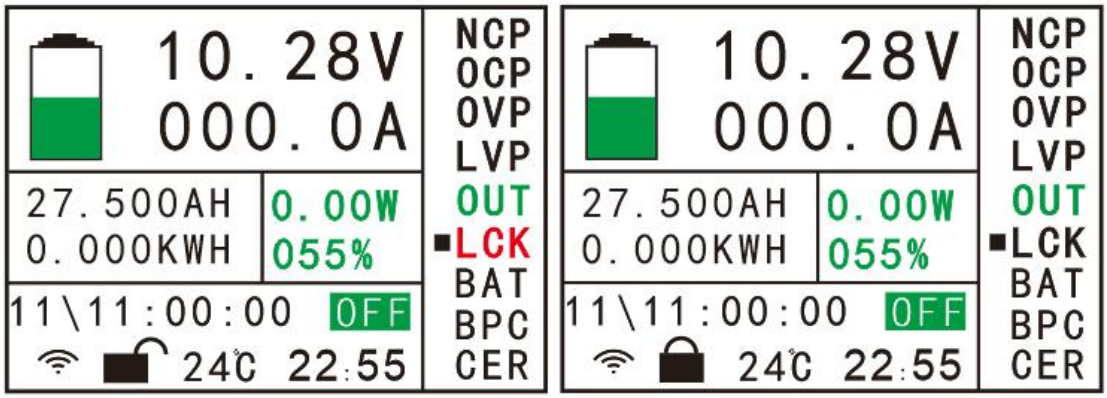
(4) "LVP" discharge undervoltage protection value. If the value is greater than 0, the protection will be started. If it is equal to 0, the protection function will not be activated. When setting the parameters, click the up or down button to move the cursor to ‘‘LVP’’, then click the OK button to enter the parameter setting interface of the figure (8-4). The parameters are set in the same way as ‘‘NCP’’.



PIC.(8-4)

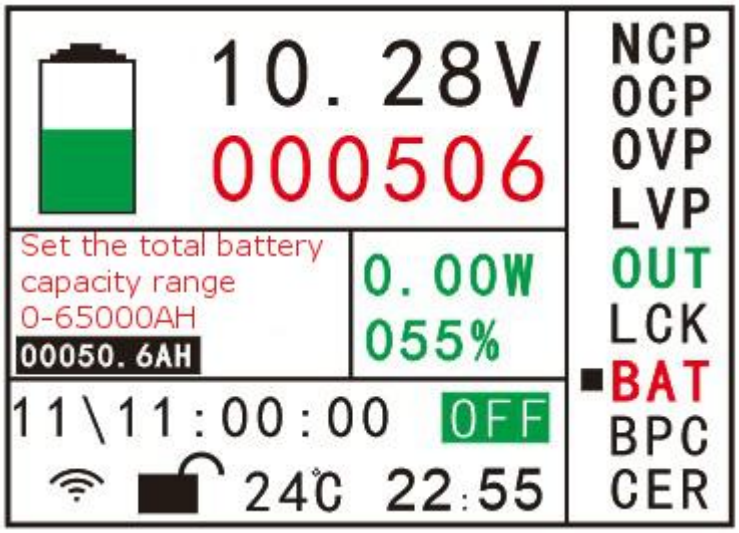
(5) "OUT" output control item, the yellow cursor moves to this position, click "OK" key to open the relay or switch the working status of the two relays.

(6) "LCK" button lock control item, move the cursor to this option, click OK button to select the option, click the up button to lock the button as shown in Figure 8-5. After the button is locked, the button will not work, only long Press OK button 10S or more to unlock if shown in 8-5.



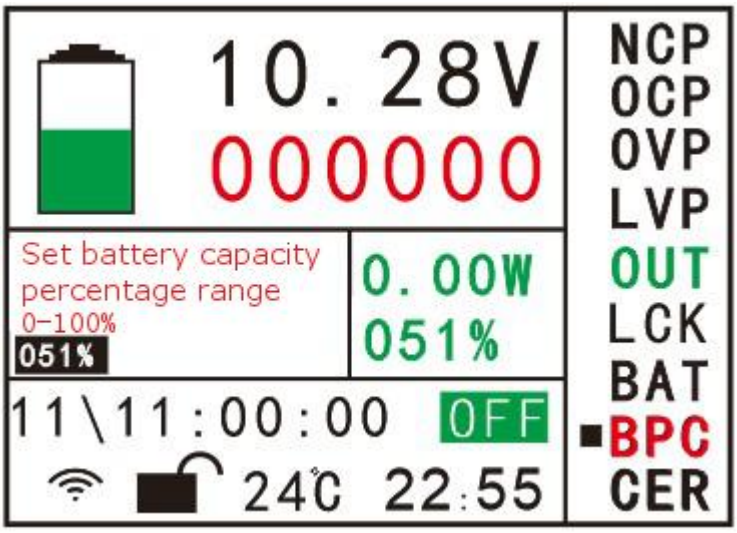
PIC.(8-5)

(7) "BAT" battery total capacity setting item, move the cursor to this option, click OK button to enter the parameter setting page as shown in Figure (8-6), and set the parameters in the same way as "NCP".



PIC.(8-6)

(8) "BPC" battery remaining capacity setting, you can estimate the remaining battery capacity according to the actual use situation. With this option, you can set the remaining capacity of the battery, which is more convenient for testing. When setting the remaining capacity of the battery, the parameter setting is completed when the real-time percentage and the set percentage are the same, as shown in Figure 8-7.

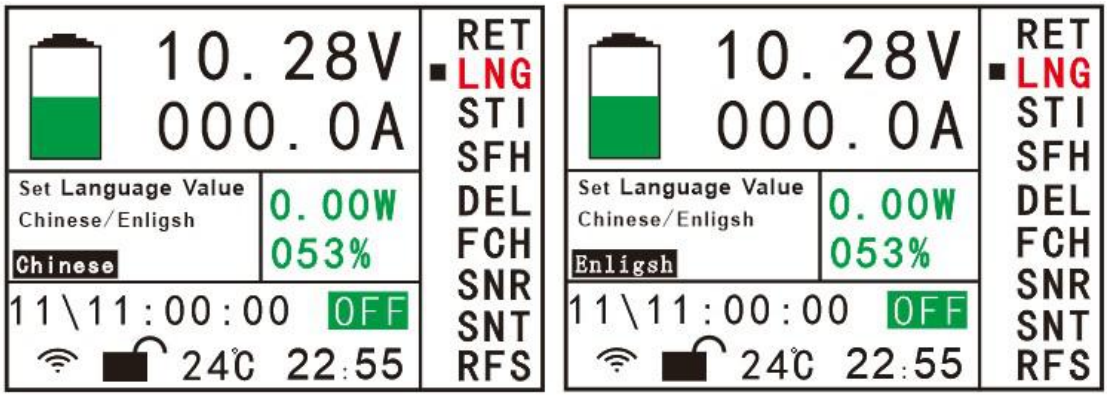


PIC.(8-7)

(9) "CER" current return function. If the actual current value is zero and the instrument display value is not zero, move the cursor to this option and press OK to zero the current.

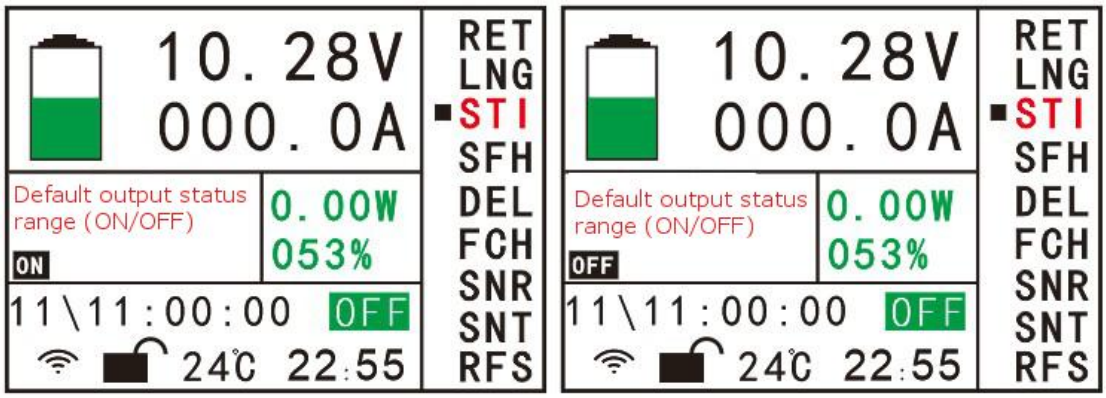
(10) "RET" data reset function, if you want to return to zero watt hour and run accumulated time value, move the cursor to this option, short press OK to reset these two parameters to zero.

(11) "LNG" language switching function, the instrument parameters are preset with Chinese and English interfaces to choose from, enter the parameter setting page as shown in Figure 8-8, click the up or down button to switch the language type.



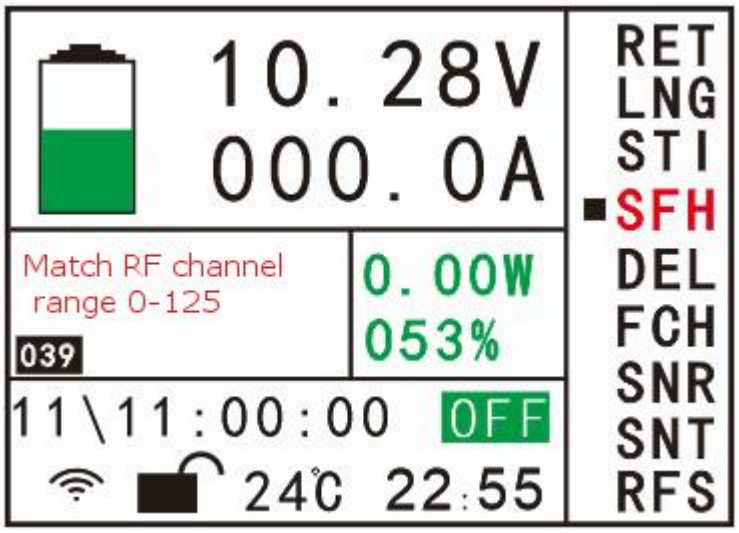
PIC.(8-8)

(12) "STI" relay power-on default output state setting option, if you select ON power-on to automatically close the discharge relay, if you choose OFF charging and discharging relay are not closed, you need to press the button to turn on or switch charging and discharging, as shown in Figure 8-9.



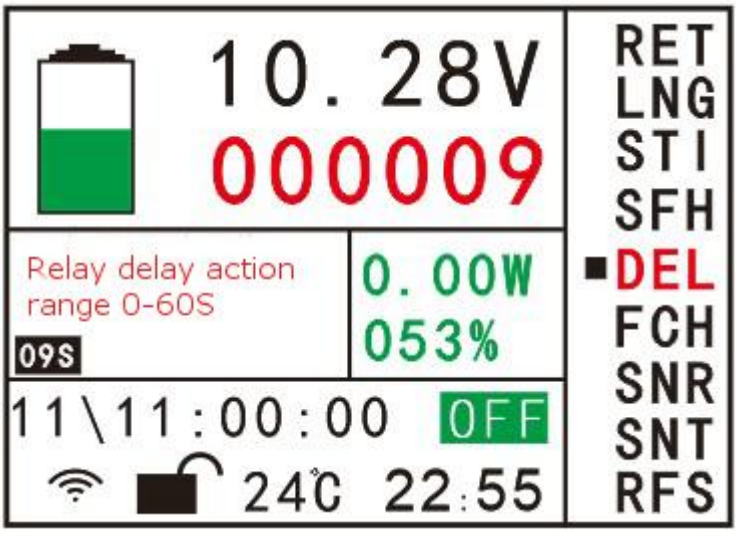
PIC.(8-9)

(13) "SFH" search device function, this function can realize one-to-many communication. By modifying the parameters corresponding to this option, the display can communicate with the measurement module of different address bits, and the detection data of different devices can be viewed at any time. The parameters are set in the same way as "NCP".



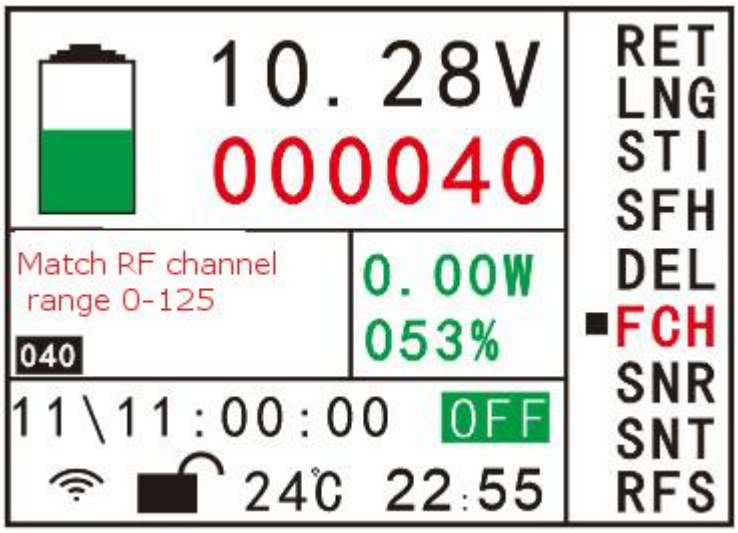
PIC.(8-10)

(14) "DEL" relay delay action time setting option, if the protection parameter has been set, when the instrument detects that the real-time data exceeds the set parameter for less than the relay action delay time, the relay does not open; if the instrument detection data exceeds the setting The time of the parameter is greater than the delay time of the relay, and the relay is disconnected. The parameters are set in the same way as "NCP".



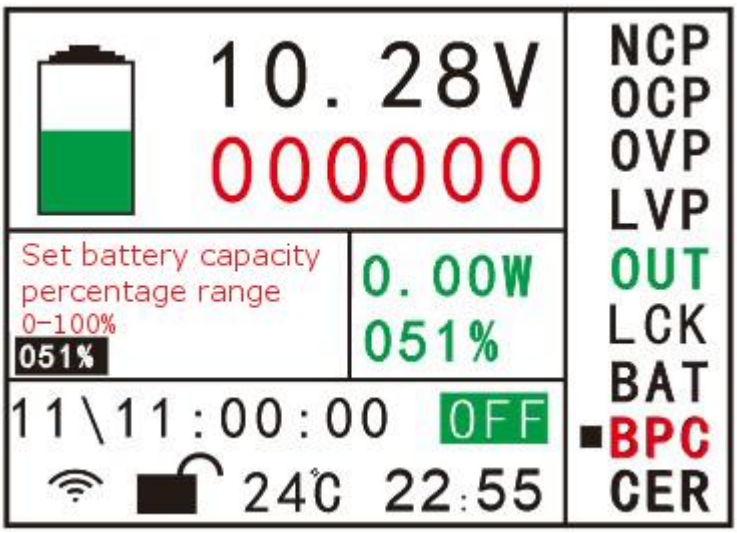
PIC.(8-11)

(15) "FCH" communication address setting function, this function can change the default communication address of the display and detection module, and set the parameters in the same way as "NCP".



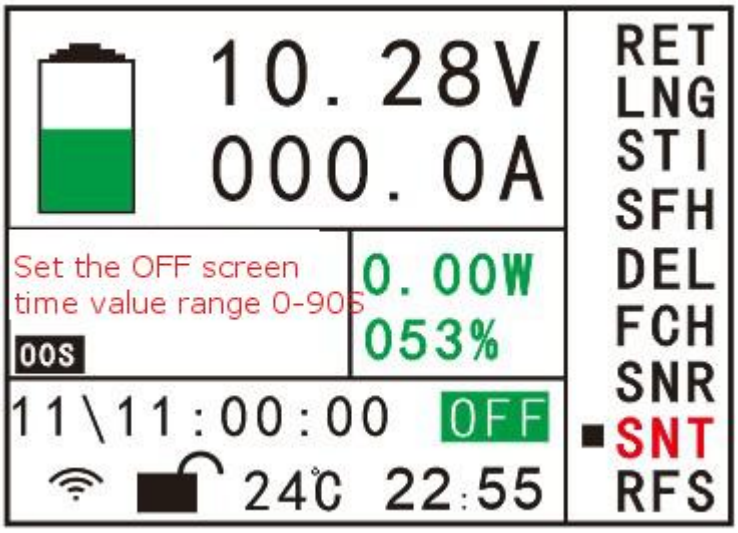
PIC.(8-12)

(16) "SNR" screen current value setting option, if the setting value of this option is not 0, and the information screen time value is not 0, then when the actual current value is less than the SNR setting value, the display device The display will be turned off after the set real time is reached. When the actual current value is detected to be greater than the set SNR value, the LCD will automatically light up. The parameters are set in the same way as "NCP".



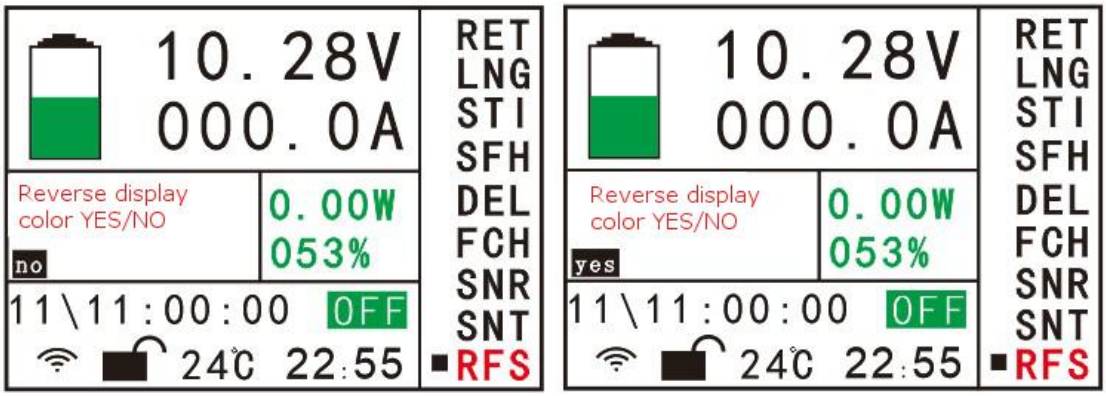
PIC.(8-13)

(16) "SNT" screen time setting option, if the SNT setting is 0, the display will never be turned off. If the SNT value is greater than 0, the value of "SNR" is used to implement the interest screen function. The parameters are set in the same way as "NCP".



PIC.(8-14)

(17) “RFS” color reversal function. If this function is enabled, the displayed color will be changed when the next display is powered on. Move the cursor to “RFS”, click OK to enter the parameter setting page, and click the up button to confirm the flip display color.



PIC.(8-15)

9. Precautions

1. Do not exceed the voltage and current range, otherwise the meter will be damaged.
2. The positive and negative poles cannot be reversed, and the reverse may damage the instrument.
3. The working temperature is -10 ~ 50 ° C, the storage temperature is -20 ~ 70 ° C, and the instrument should be in a dry environment.
4. Do not attempt to disassemble the instrument. Failure to seal the package will void the warranty.