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±12V/0-24mAVoltage and current source signal generator Manual



1.Technical Index

1.1 External power supply DC15-30V power 1w (not charging)/4W (charging);

1.2 3.7V lithium battery capacity 1100mAh, maximum charging current 0.6A (optional);

1.3 External microUSB-5V current 0.2A (not charging)/0.8A (charging);

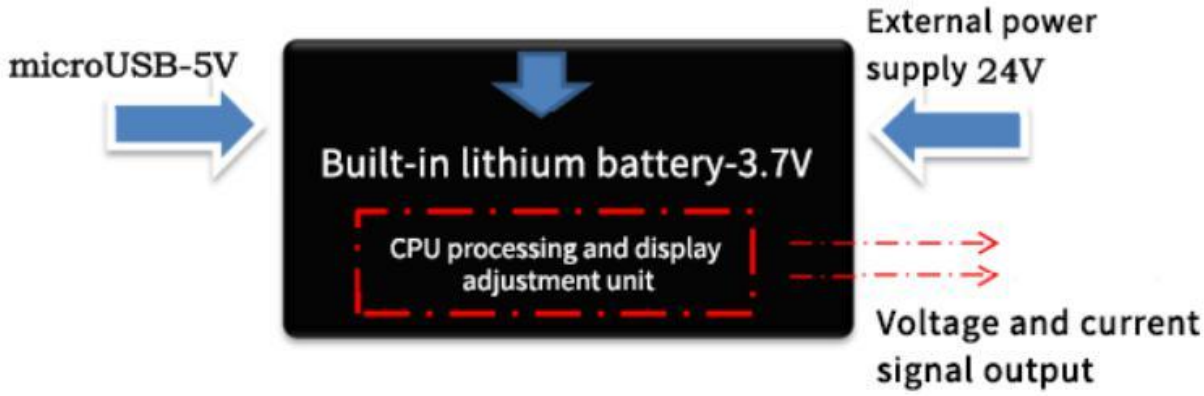
1.4 The voltage output is adjustable from ±12V, the accuracy after calibration is 0.05V, and the maximum current is 20mA;

1.5 The current output is adjustable from O-24mA, the accuracy after calibration is 0.05mA,The current sampling resistance is not more than 500 ohms;

1.6 The digital tube displays 4 digits, two decimal places;

1.7 Encoder knob 1 circle: 30 pulses;

2.Power Supply



3 power supply methods, as long as one is used, it can work, and it can be connected at the same time;

Battery indicator status：

Battery indicator	green	yellow	Red	Flashing	Green does not flash
Battery status	Electricity≥80%	80%≥Electricity≥40%	40%≥Electricity	recharging。。。	Brimming

Complementary：Hold down“MODE”key 1 second，The digital tube flashes for 5 seconds to display the actual battery voltage。

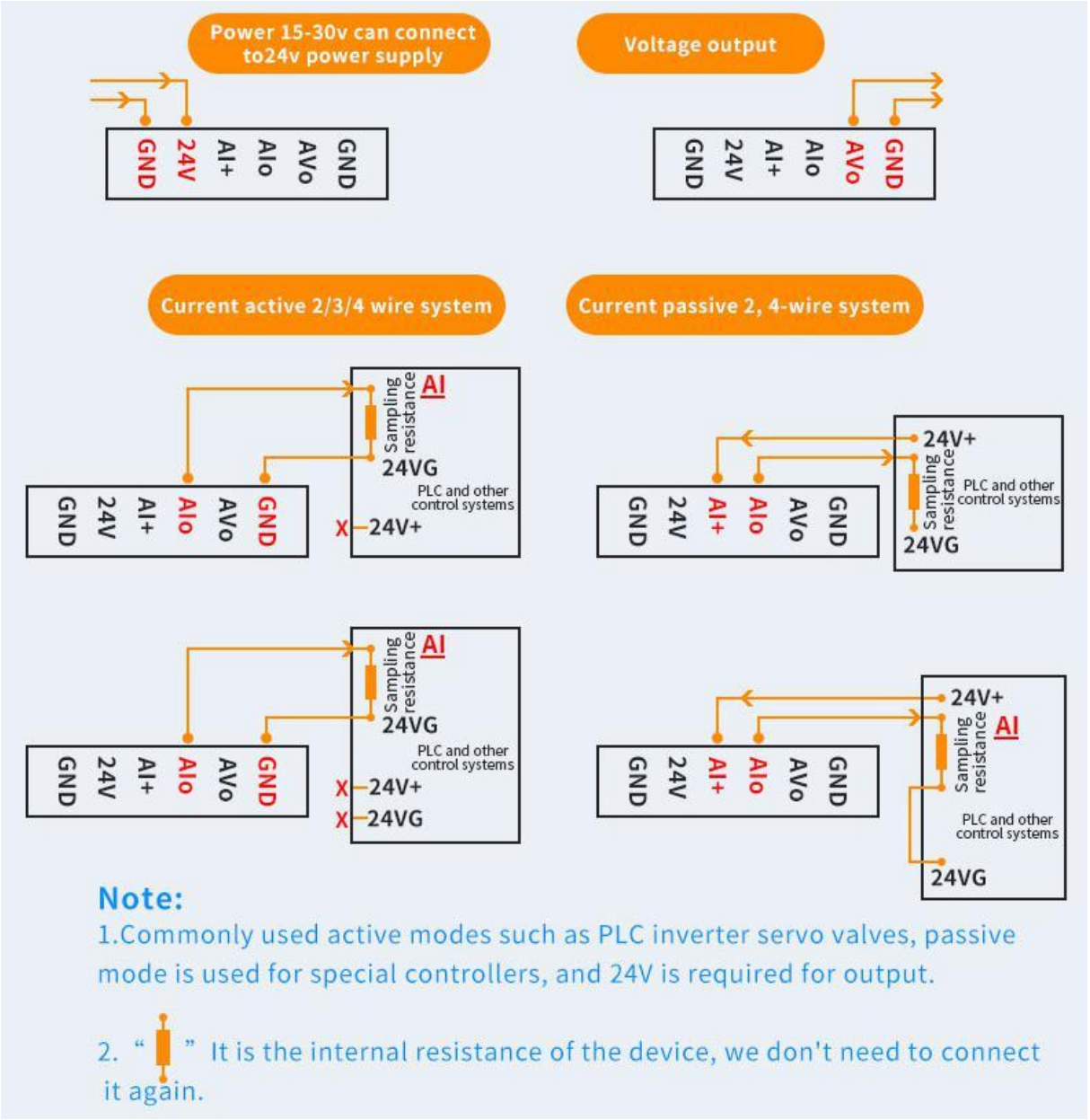
3. Dimensions



4. Wring Diagram







How to judge whether it is active or passive connection? Common methods are as follows:

1 ： See the internal schematic document of the device， I+ is 24V+，it is the passive connection； I- is 24VG，it is the active connection；

2 ： Use a multimeter to measure the voltage between I+ and I-， =0V is the active connection， =24V is the active connection；

5. Voltage/Current switching



Press the MODE button, one key switch to adjust the voltage and current mode；The indicator shows what state it is in，System operation corresponds to which mode to operate； The original mode after switching,Will continue to output， It’s just not in a state of adjustment；

6. System Opetion(Where “OK<confirm key>” is:Push the knob diwn,Turn clockwise to “+<ADD>”,Anticlockwise rotation” -<reduce>”):

6.1 In the normal operation screen, short press the confirm key to save the output value , After letting go, Screen display"...",Successfully saved,After the next boot,The output value is this saved value; When debugging equipment, We need to

randomly adjust the output value, Just don’t press the encoder knob, After restarting, the original value will be saved;

6.2 Parameter settings:

6.2.1 In the normal operation screen,Press and hold the confirm button for 2 seconds,Enter setting state , Display”F001”(Parameter number 001);

6.2.2 Turn the knob to change the parameter number (First entry F002 Need to enter the password first“+ - - + （Rotate the knob）”);

6.2.3 Parameter number interface, Press the confirm key to enter the corresponding parameter value setting, Rotate the knob to modify the parameters;

6.2.4 Parameter number interface, Press the confirm key to enter the corresponding parameter value setting, Rotate the knob to modify the parameters;

6.2.5 Rotate the knob directly to the last parameter number, press the OK key, the setting is completed and enter the normal operation screen;

6.2.6 If there is no operation on the parameter setting screen for more than 10s, it will exit the setting state and enter the normal operation screen;

6.3 For example:

6.3.1 Modify "F001" coarse and fine adjustment

adjustment;

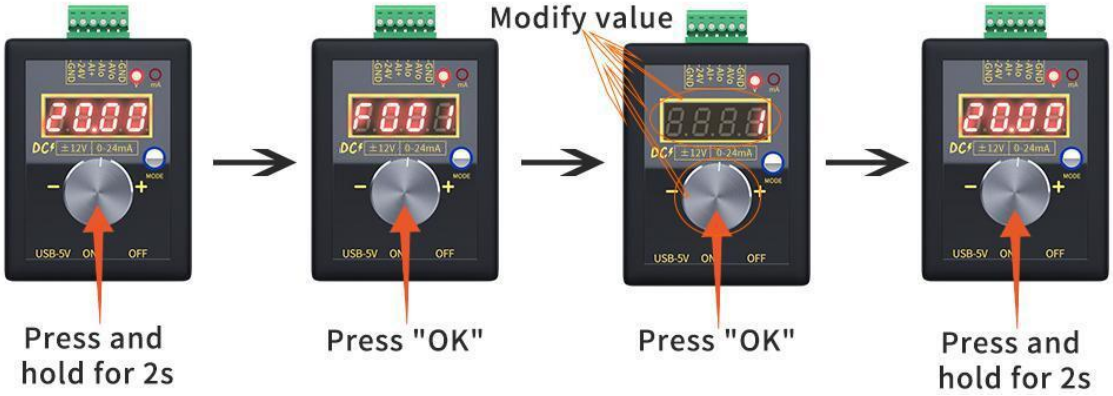


Figure 1→2: Press and hold the knob for 2 seconds, Enter setting state, Display “F001”;

Figure 2→3: Press "OK", Set the value of "F001"设, Turn the knob to modify it;

Figure 3→4: Press "OK", Exit the setting state after saving, Enter the normal;

6.3.2 Modify "F006" calibration value

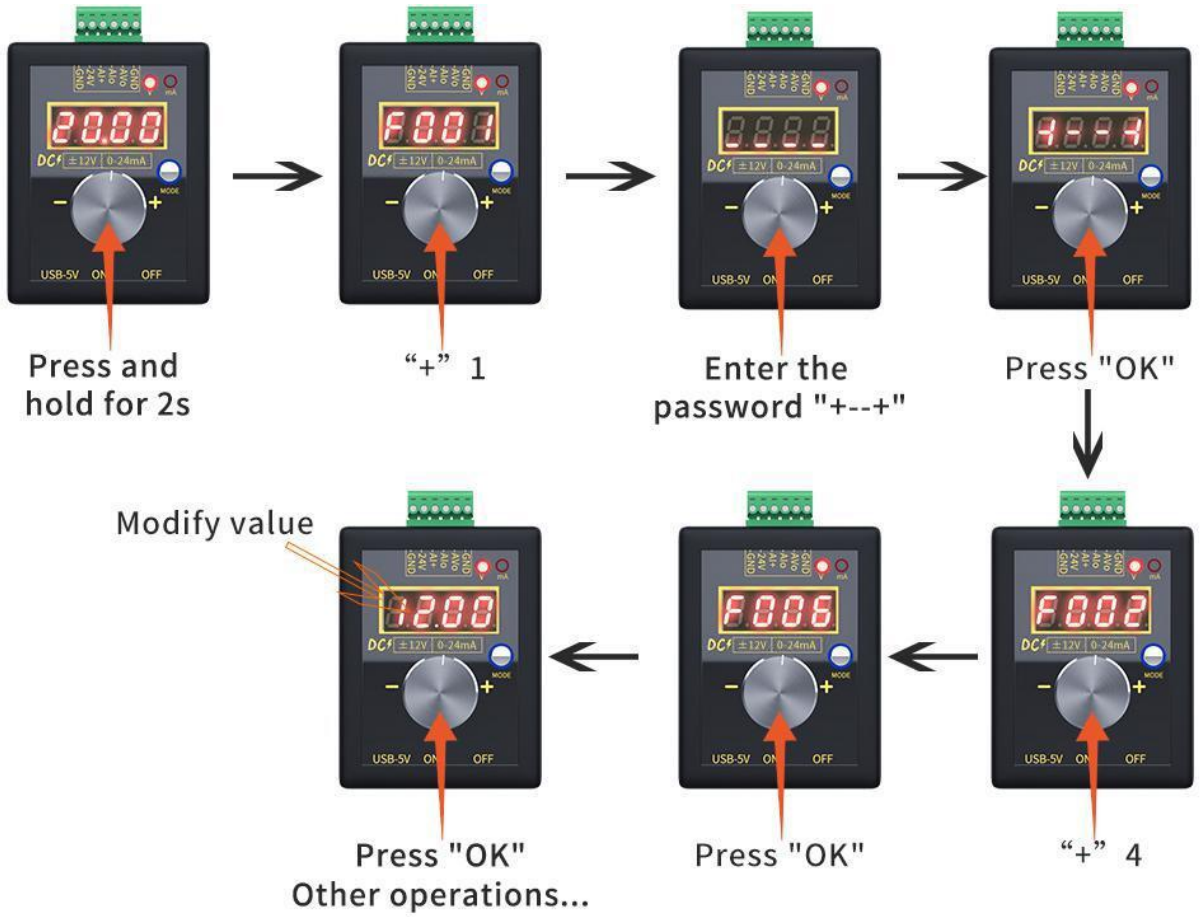


Figure 1→2: Press and hold the knob for 2 seconds， Enter setting state，Display“F001”

Figure 2→3: “+”1 Pulse， Display“- - - -”；

Figure 3→4: Enter password“+ - - +”， Display“= = = =”；

Figure 4→5: Press "OK", if the password is entered correctly, it will display "F002"Or "F100", otherwise it will display "Err" to exit, there may be an error, pleaseenter it again;

Figure 5→6: Rotate the knob "+" to display to“F006”；

Figure 6→7: Press "OK",Enter to set the parameter value of "F006", Then modify this value to make the actual output equal to -10V or 4mA

Figure 7→ : Press "OK" to save, or automatically exit the setting state after 10s

of inactivity, and the parameters will not be saved;

6.4 In the voltage regulation mode, enter the voltage setting, parameter description table：

Serial number	Description	Remark	Default
F001	Coarse adjustment or fine adjustment	0:Coarse adjustment, 1:fine adjustment, 2:Shortcut mode (Need to be set firstF100>0)	**0**
F002	Output mode	**0:±12V, 1:±5V, 2:0**-10V, **3:**2-10V, **4:0**-5V, 5:1-5V, 6:0-3.3V, 7:0-2.5V, 8:0-1V, 9:-10-0V	**0**
F003	Display mode	**0:**Actual voltage, **1:**percentage**0-100.0**, **2:50HZ**,** 3:0-1500	**0**
F004	Coarse adjustment mode plus and minus value/each pulse	**1-50 plus and minus figures for each pulse, no decimal point concept (1-50) x 10**	**1**
F005	fine adjustment mode plus and minus value/each pulse	**1-50 plus and minus figures for each pulse, no decimal point concept (1-50) x 10**	**1**
F006	Output calibration value -10V	**-999 -- +999 Internal reference only, Please be cautious when modifying**	
F007	Output calibration value 0V	**-999 -- +999** Internal reference only, Please be cautious when modifying	
F008	Output calibration value 10V	**-999 -- +999** Internal reference only, Please be cautious when modifying	
F009	Digital tube brightness	1-8: Level 1 is the darkest, level 8 is the brightest	**1**
F100	Quick output points	0:Quick output mode is not used, **2-9:**Points	**0**
F101...F109	9-point output value	Range -12V to +12V How many points are there how many values can be set	

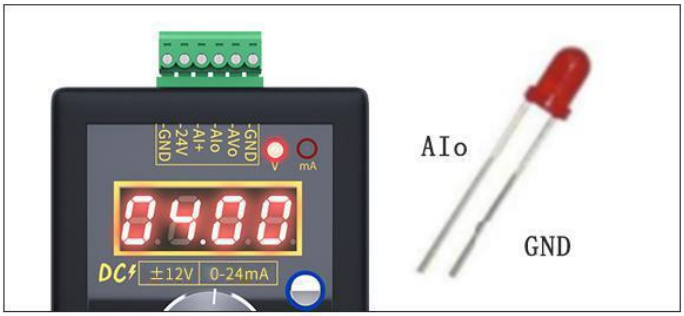
6.5 In the regulation current mode, Enter the current setting,parameter description table：

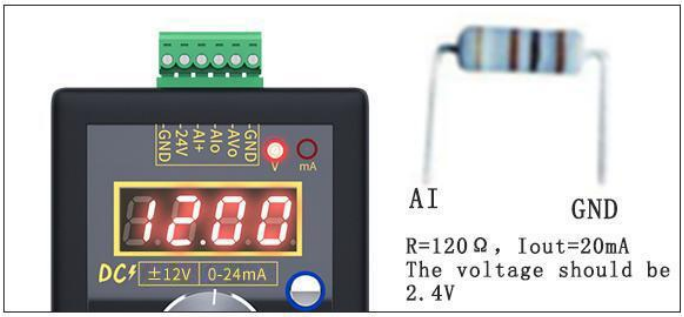
Serial number	Description	Remark	Default
F001	Coarse adjustment or fine adjustment	0:Coarse adjustment, 1:fine adjustment,2:Shortcut mode(Need to be set firstF100>0)	**0**
F002	Output mode	**0:0-20mA, 1:4-20mA , 2:0-24mA**	**0**
F003	Display mode	**0: Actual current, 1: percentage 0-100.0, 2: 50HZ**	**0**
F004	Coarse adjustment mode plus and minus value/each pulse	**1-50 plus and minus figures for each pulse, no decimal point concept (1-50) x 10**	**1**
F005	fine adjustment mode plus and minus value/each pulse	**1-50 plus and minus figures for each pulse, no decimal point concept (1-50) x 10**	**1**
F006	Output calibration value 4mA	**-999 -- +999 Internal reference only, Please be cautious when modifying**	
F007	Output calibration value 12mA	**-999 -- +999** Internal reference only, Please be cautious when modifying	
F008	Output calibration value 20mA	**-999 -- +999** Internal reference only, Please be cautious when modifying	
F009	Digital tube brightness	1-8: Level 1 is the darkest, level 8 is the brightest	**1**
F100	Quick output points	0:Quick output mode is not used, **2-9**:Points	**0**
F101...F109	9-point output value	Range 0-24mA How many points are there how many values can be set	

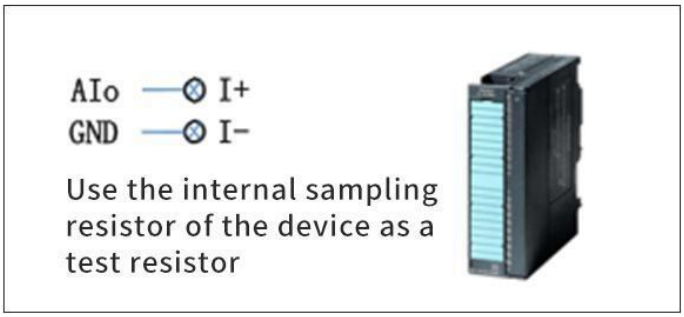
7 Current output test method: Alo GND

We often encounter people who say that there is no current when measuring current. In fact, the ammeter is broken, the gear is wrong or the wrong hole is inserted. There is a fuse inside the multimeter to measure the current. This is easy to blow, so we use the method of voltage measurement. Verify the transition of the signal generator as follows:

7.1 The simplest method: power on, directly measure the voltage between AIo and GND when there is no load, =0V is a defective, otherwise 99% may be no problem, because when there is voltage to measure current, it is equivalent to short circuit and there will definitely be current ；







7.2 Connect an LED indicator, if the brightness changes with the adjustment, then the signal generator current output is no problem; 7.3 Connect a 50-300

ohm resistor to AIo GND. If there is voltage and it meets "Voltage = Current X Resistance", the voltage will change with the adjustment, then the signal generator current output is no problem;

7.4 If there is a PLC/inverter, measure the resistance between I+ and I-. If it is between 50-300 ohms, you can use it as a test resistance. Connect AIo to I+, GND to I-, and measure the voltage. If there is voltage, and Satisfy "Voltage = Current X Resistance", the voltage will change with the adjustment, then the signal generator current output is no problem;

8 NOTE:

8.1 Please read this manual carefully before use;

8.2 Turn off the power before wiring

8.3 Exceeding the range shown in the technical indicators may cause the instrument to work abnormally or even be damaged;