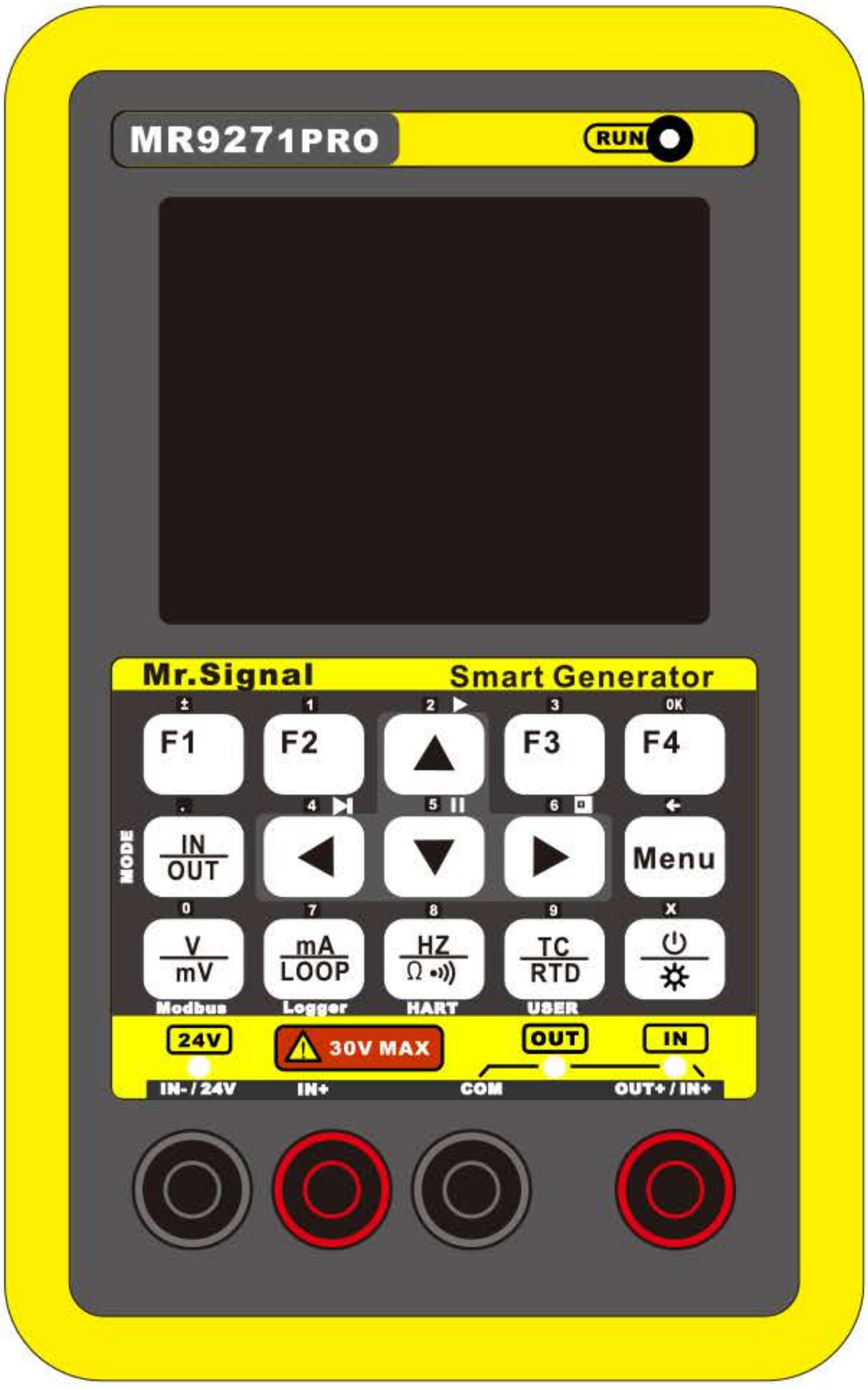
Quick user manual

MR9271PRO



Product Introduction

This product is a multifunctional signal generator that can output various types of signals,Including voltage, current, frequency, resistance, thermal resistance, thermocouple, etc. Among them, the most significantThe characteristics are simplex and duplex modes.

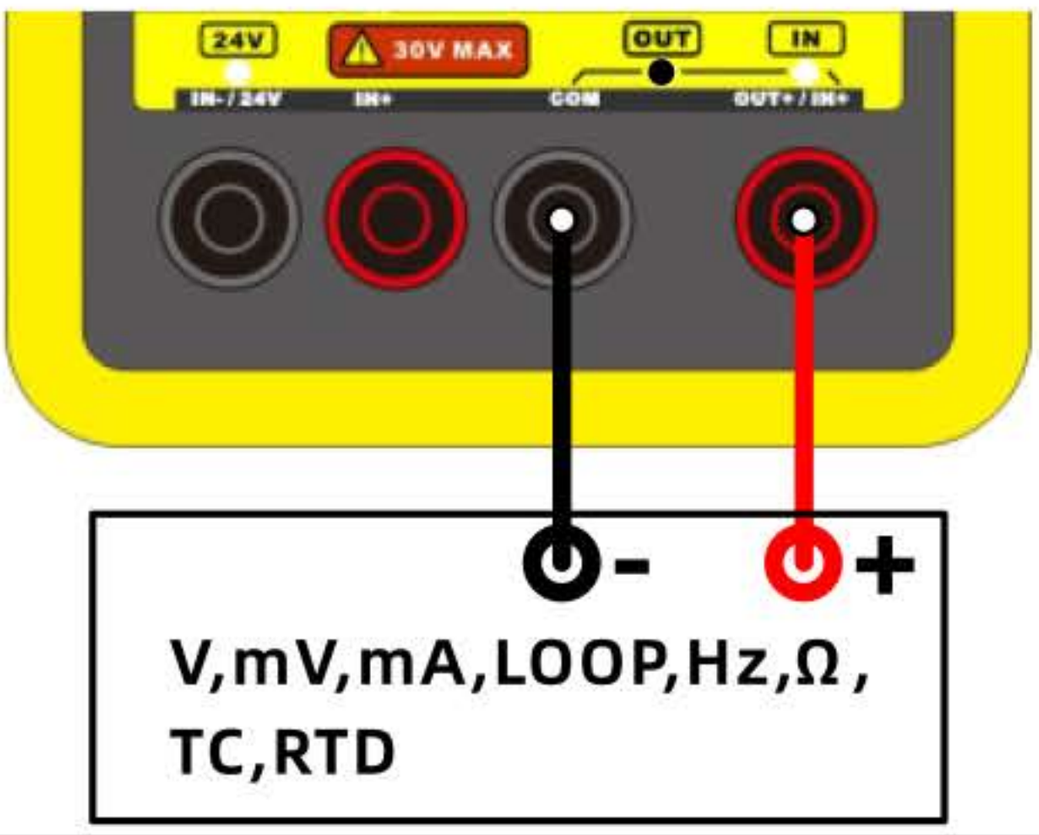
1、Product parameters

Output signal parameters				
Signal	**Range**	**Accuracy**	**SR**	**IR**
Current signal（mA）	0~23mA	0.03%	0.001mA	100Ω
Voltage signal（V）	0~23V	0.03%	0.001V	2K
Low voltage（V）	-0.22~2.4V	0.03%	0.1mV	2K
Millivolt（mV）	-10~110mV	0.03%	0.01mV	2K
passive signal （XMT）	0~24mA	0.03%	0.001mA	100Ω
24V circuit detection	0~24mA	0.05%	0.001mA	100Ω
frequency（Hz）	0~100kHz	0.03%	0.001HZ~1HZ	100K
TC-S	0~1760℃	0.10%	1℃	2K
TC-B	0~1810℃	0.10%	1℃	2K
TC-R	0~1760℃	0.10%	1℃	2K
TC-E	0~990℃	0.10%	0.1℃	2K
TC-K	0~1320℃	0.10%	0.1℃	2K
TC-J	0~1190℃	0.10%	0.1℃	2K
TC-T	0~390℃	0.10%	0.1℃	2K
TC-N	0~1290℃	0.10%	0.1℃	2K
WRE25	0~2300℃	0.10%	0.1℃	2K
WRE26	0~2300℃	0.10%	0.1℃	2K
Pt1000	-199~850℃	0.10%	0.1℃	---
Pt100	-199~850℃	0.10%	0.1℃	---
Resistance output	0~4000Ω	0.10%	0.1Ω	---

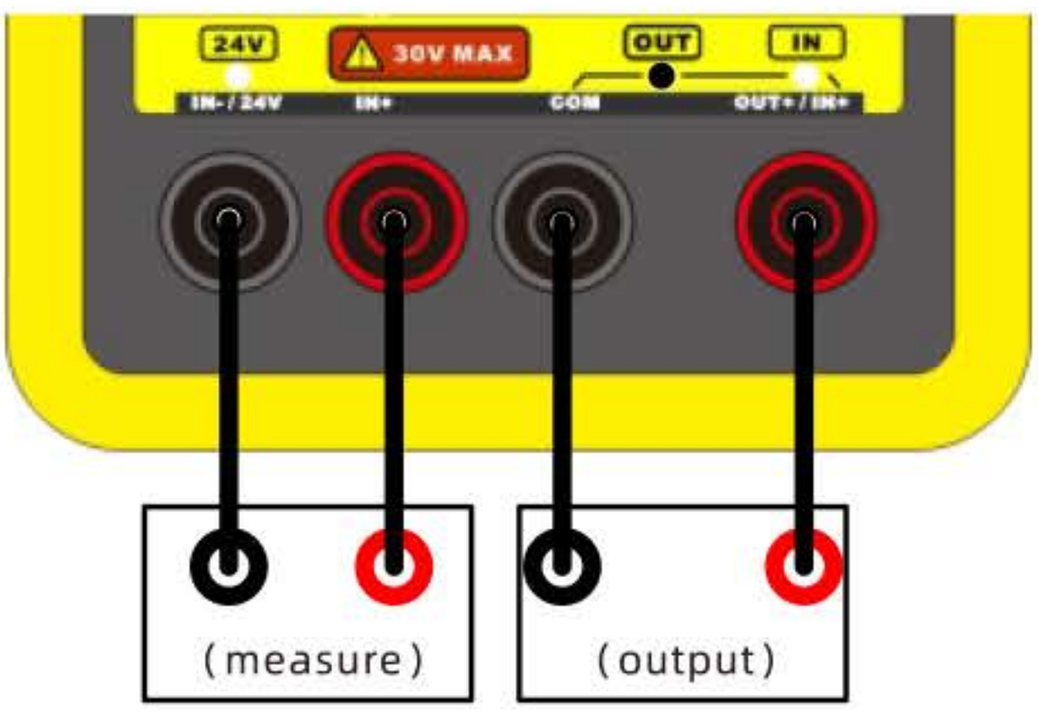
Input signal parameters				
Signal	**Range**	**Accuracy**	**SR**	**IR**
Current signal（mA）	-24~24mA	0.03%	0.001mA	10Ω
Voltage signal（V）	-30~30V	0.03%	0.001V	2MΩ
±5(V)	-5~5V	0.03%	0.0001V	2MΩ
frequency（Hz）	0~50000Hz	0.03%	Auto Range	100K
Millivolt（mV）	-110~110mV	0.03%	0.01mV	20MΩ
TC-S	0~1760℃	0.10%	1℃	20MΩ
TC-B	0~1810℃	0.20%	1℃	20MΩ
TC-E	0~990℃	0.10%	1℃	20MΩ
TC-K	0~1320℃	0.10%	1℃	20MΩ
TC-R	0~1760℃	0.10%	1℃	20MΩ
TC-J	0~1190℃	0.10%	1℃	20MΩ
TC-T	0~390℃	0.10%	1℃	20MΩ
TC-N	0~1290℃	0.10%	1℃	20MΩ
WRE25	0~2300℃	0.10%	1℃	20MΩ
WRE26	0~2300℃	0.10%	1℃	20MΩ
Pt1000	-199~850℃	0.10%	0.1℃	---
Pt100	-199~850℃	0.10%	0.1℃	---
Resistance input	0~400KΩ	0.10%	Auto Range	---

2、The difference between simplex and duplex modes

Measurement and output do not require port replacement



Simultaneous measurement and output



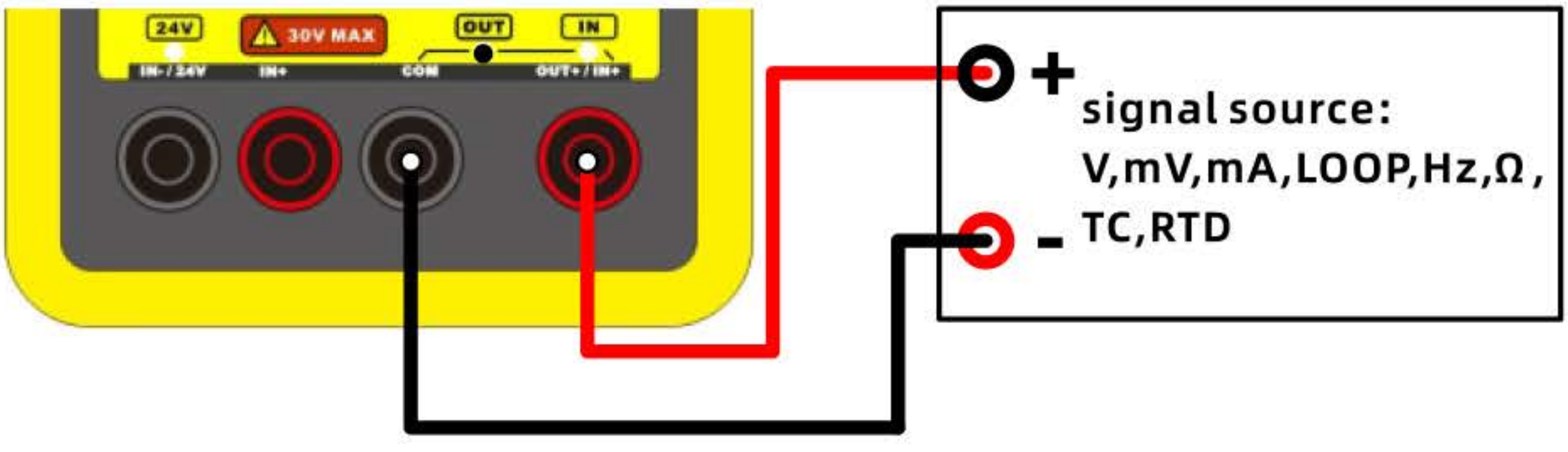
3、Simplex mode: measurement

① Press key Menu to enter the menu and select "simplex mode”

② In simplex mode, press IN/OUT to select measurement, 

and the IN indicator light will light up. The wiring is shown in the following figure.

③ Press the corresponding V/mV mA/LOOP HZ/Ω TC/RTD signal type button, and press each button multiple times to switch signal types.



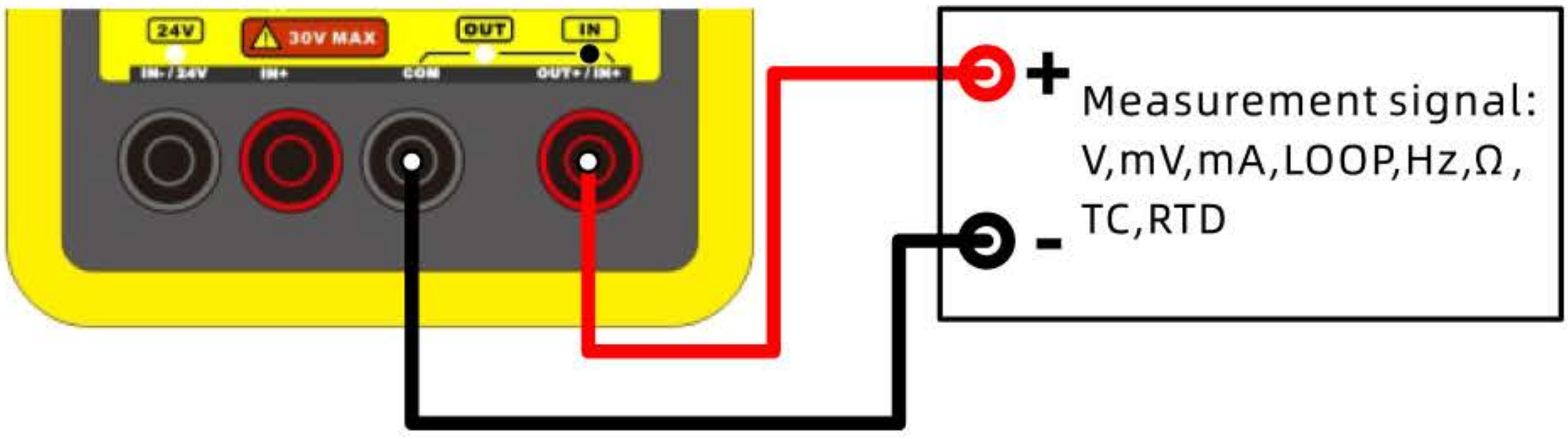
4. Simplex mode: output

① Press key Menu to enter the menu and select "simplex mode”

② In simplex mode, after pr IN/OUT ng the 1 key to select output, 

the output indicator lightIt will light up, as shown in the following picture.

③ Press the corresponding V/mV mA/LOOP HZ/Ω TC/RTD signal type button, and press each button multiple times to switch signal types.



5、Duplex mode

Duplex mode working interface (1-1)

Lower screen selection status (1-3)

Upper screen selection status (1-2)

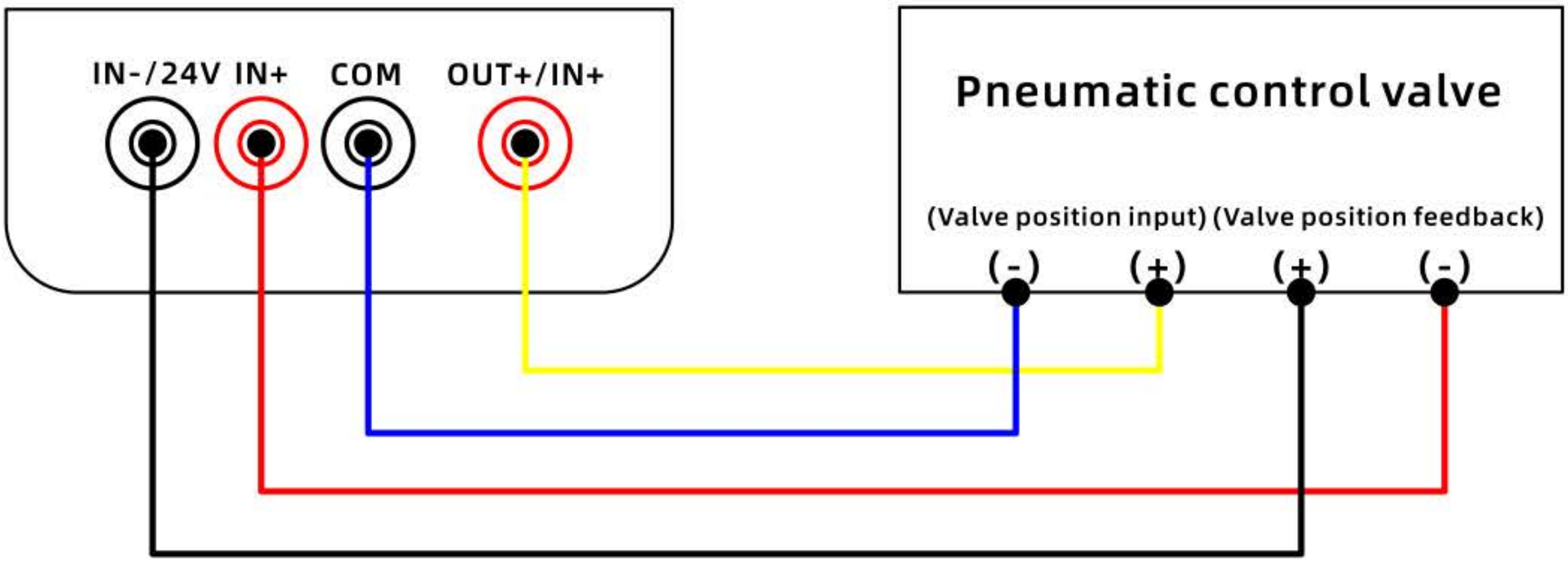
① Press key [Menu] to enter the menu and select "duplex mode"'

② Output signal, press key [IN/OUT] to enter selection mode, select the upper half of the screen(See left figure 1-2)

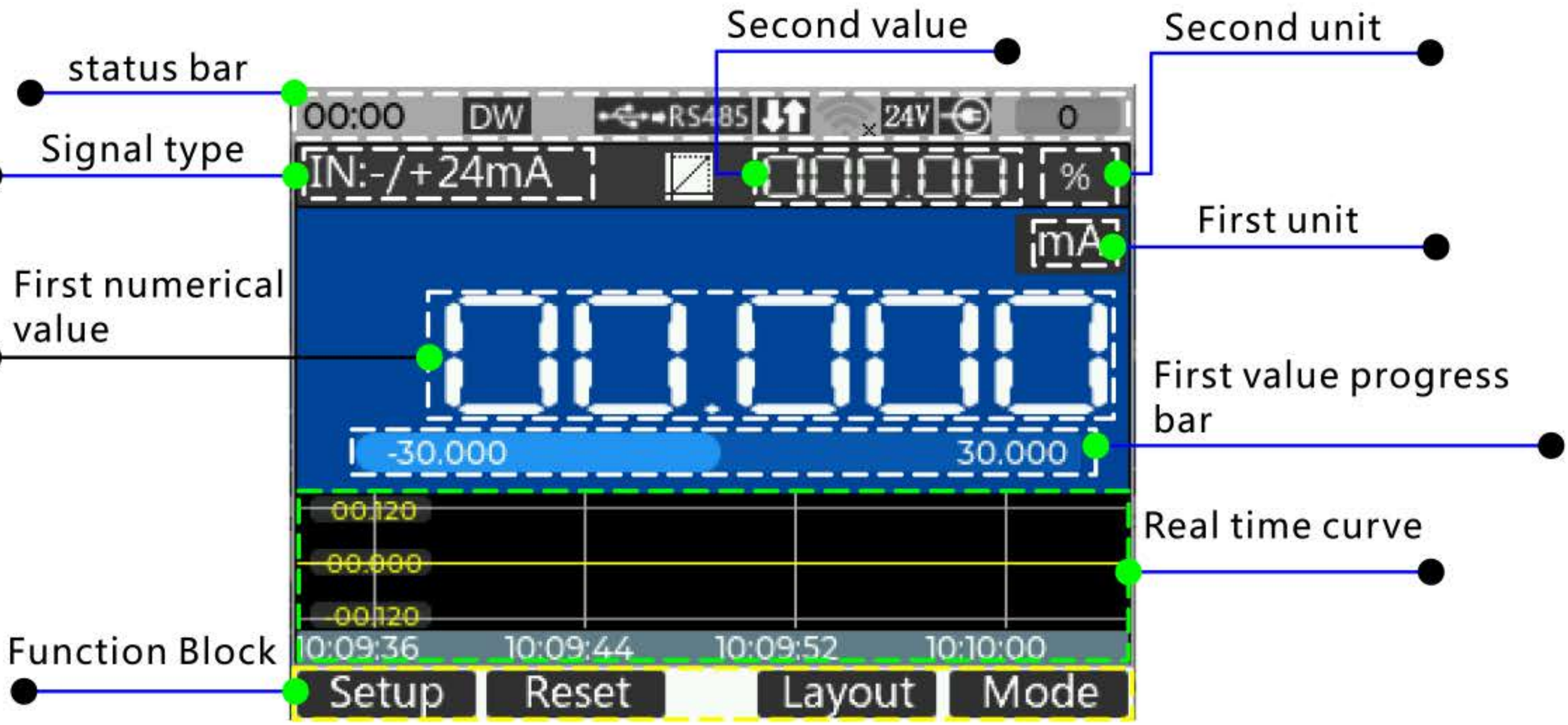
③ In the mode selection state, press [V/mV] [mA/LOOP] [HZ/Ω•))] [TC/RTD] to select the output signal type, set the output signal, and press left or right to switch back to the mode.

6、Duplex mode wiring diagram (example)

The duplex mode is suitable for various debugging devices. Here, a pneumatic valve is used as an example for wiring reference.



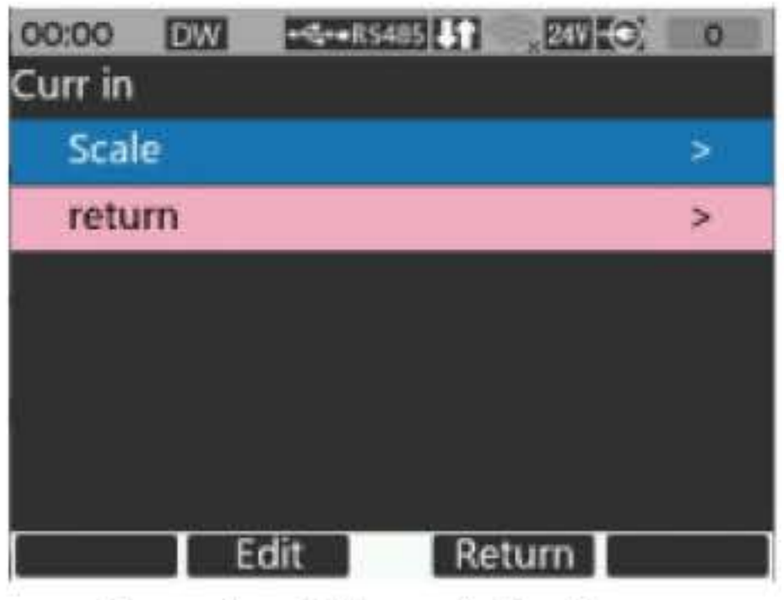
7、Introduction to Simplex Interface



Simplex curve digital measurement interface

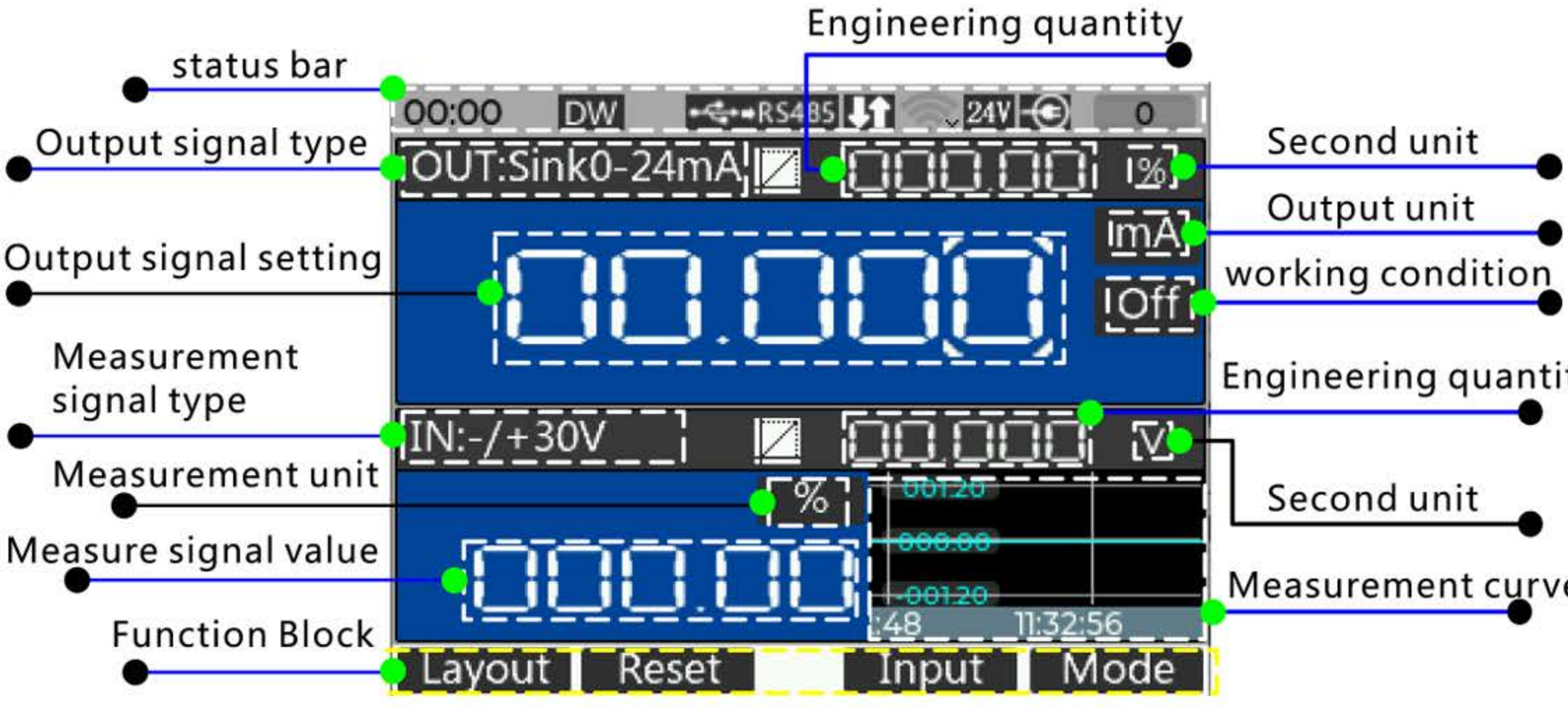
Simplex output digital interface

Measurement curve interface

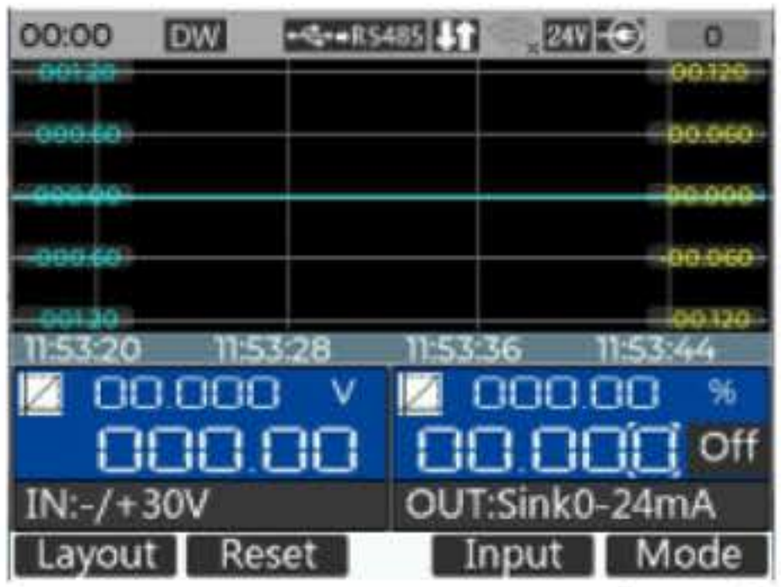


Input settings interface

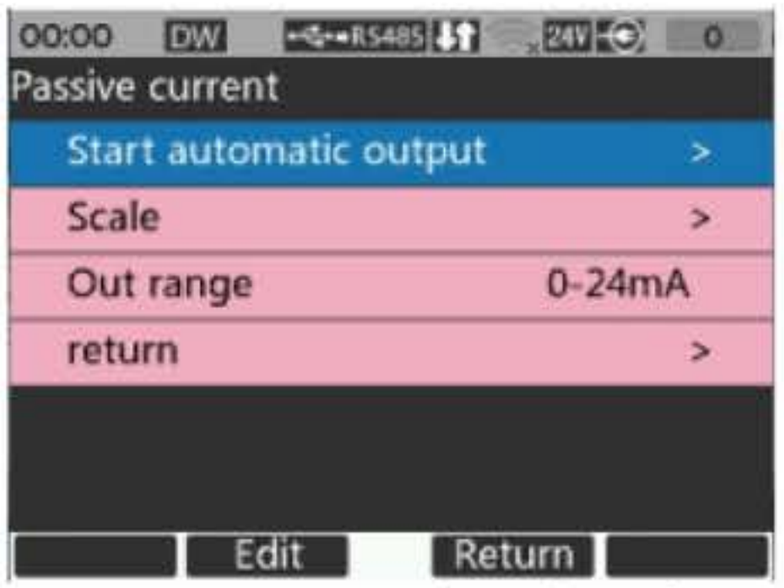
8、Introduction to Duplex Interface



Duplex work interface



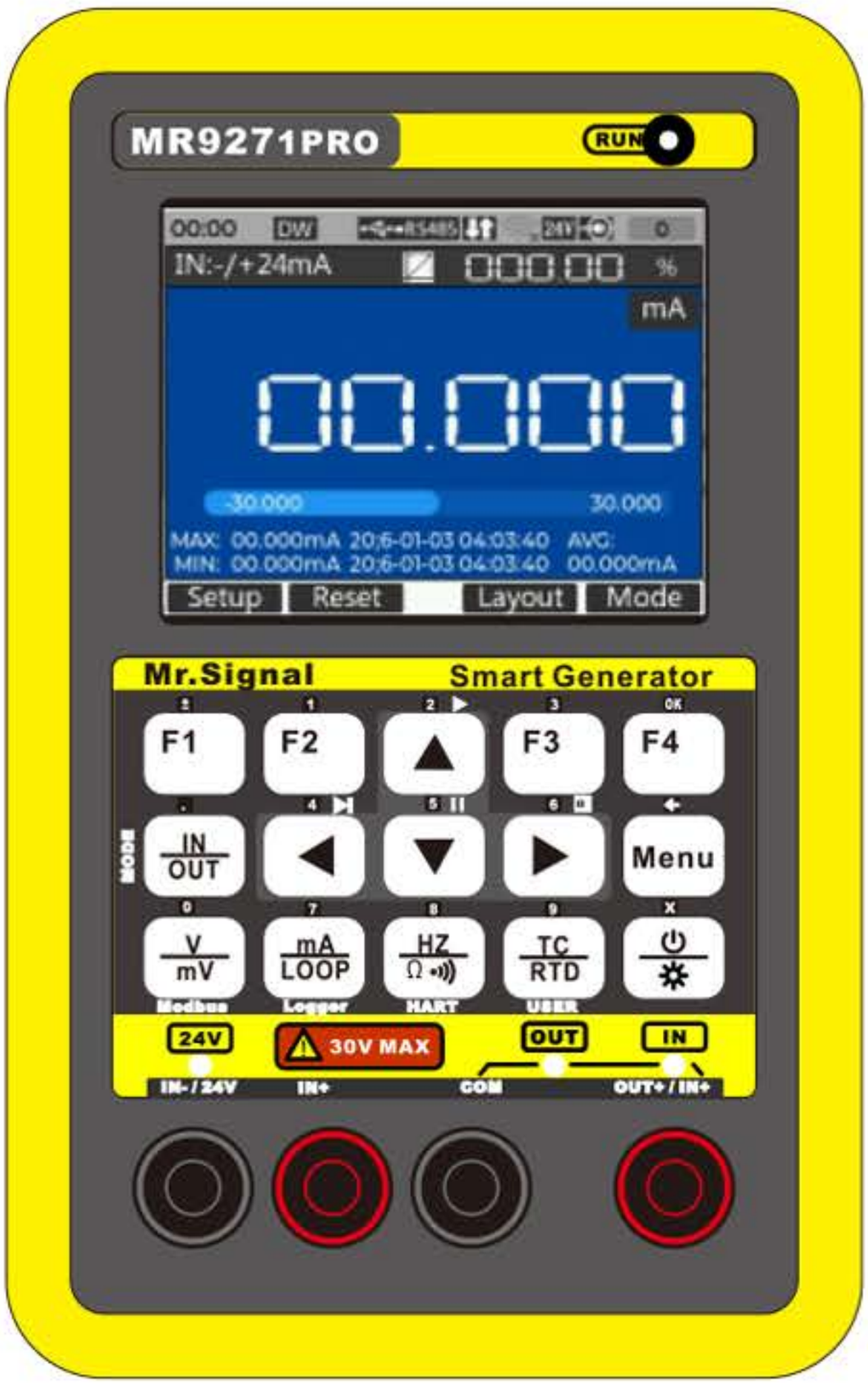
Output measurement curve interface



Measurement settings interface

menu

9、Panel Description

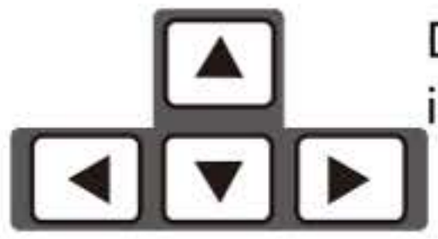


9-1 Key functions:

F1 F2 F3 F4 four buttons, corresponding to the bottom of the screenUnder different functions, the characters in the four "function blocks" will affectThe selected function should change.

IN/OUT Used to switch between measurement and output interfaces.

9-2 Direction keys:



Direction key setting signal, help me in the menuSelect the menu item.

Menu The key to enter the menu

9-3 Signal type selection:

V/mV There are three options to switch between -5~5V/-30~30V/-220~220mV.

mA/LOOP Switch between "current signal/passive signal" with three options.

HZ/Ω Can switch between "frequency/resistance", with an additional three levels of resistance.

TC/RTD Can switch between "thermistor/thermocouple" and modify the type.

⏻/☼ Long press to power on, single press to modify backlight brightness.

9-4 Numerical Editor

The numbers and characters in the numerical editor match the keys on the keyboardCorresponding to each other.

10、ModTable Function Description

(1-1)

(1-2)

ModTable is a software that integrates ModScan and ModSim functions, combining twoThe advantage of this provides a comprehensive MODBUS communication solution. Here is a brief introduction to ModTable:

Comprehensive simulation: Simultaneously simulate MODBUS master and slave stations for comprehensive communication testing.

Integrated tools: Integrate ModScan's sending/receiving capabilities with ModSim's device simulation capabilities.

Efficient debugging: Simplify the testing and debugging process of MODBUS networks to improve work efficiency.

11、Introduction to ModBUS Application 1-1

Modbus RTU remote control: **can communicate with configuration software or PLC via RS485 to achieve online instrument settingsThe output signal is the input signal of the monitoring instrument.**

Modbus RTU master station: Conduct communication testing on slave devices with RS485 MODBUS interface, refer toNumber setting, parameter copying, online monitoring and other operations.

Modbus Rtu custom slave: **can simulate all types of variables of Modbus devices for configuration softwareDebugging of components or PLC**

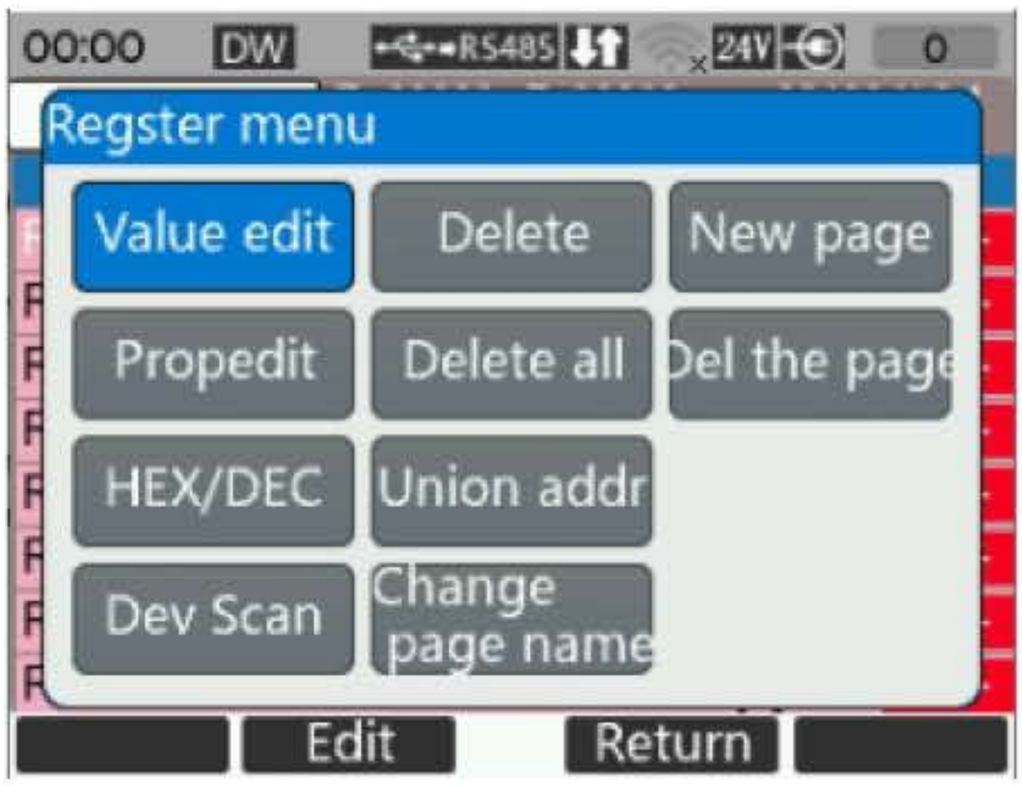
Configuration interface

Operation interface

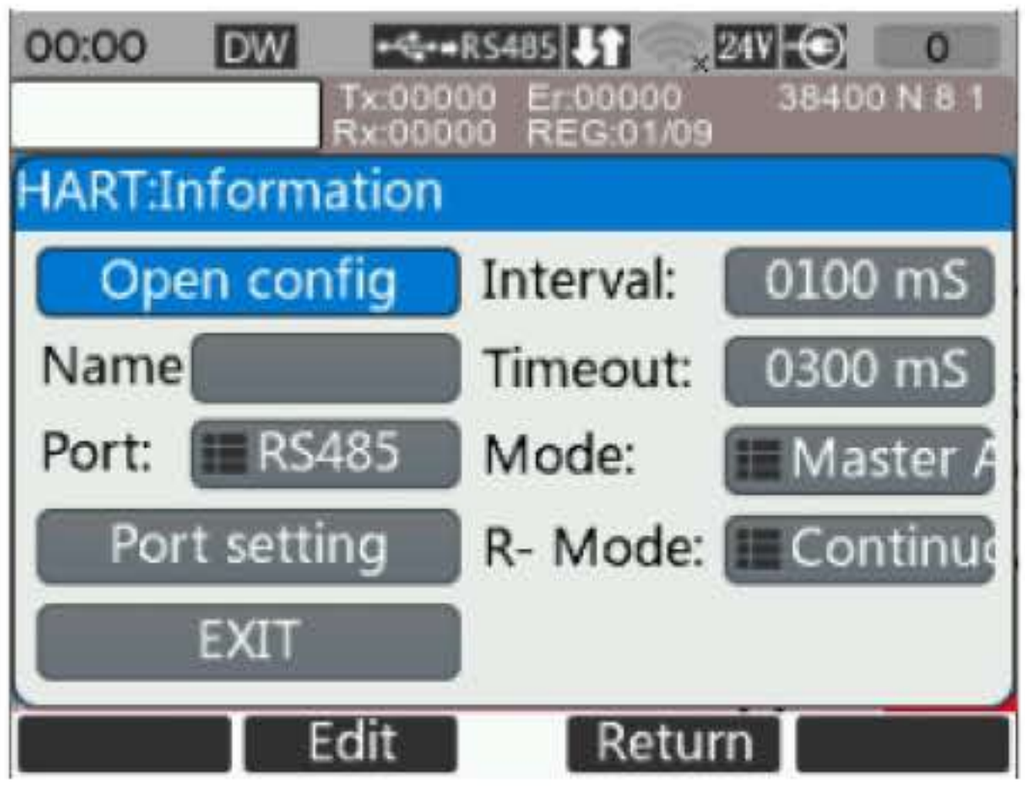
Configuration interface: This interface allows you to select the configuration interface, create a new configuration file, or delete a configuration file.

Operation interface: This interface allows adding variables, communication from devices, etc.

12、Introduction to ModBUS Applications 1-2



Variable menu

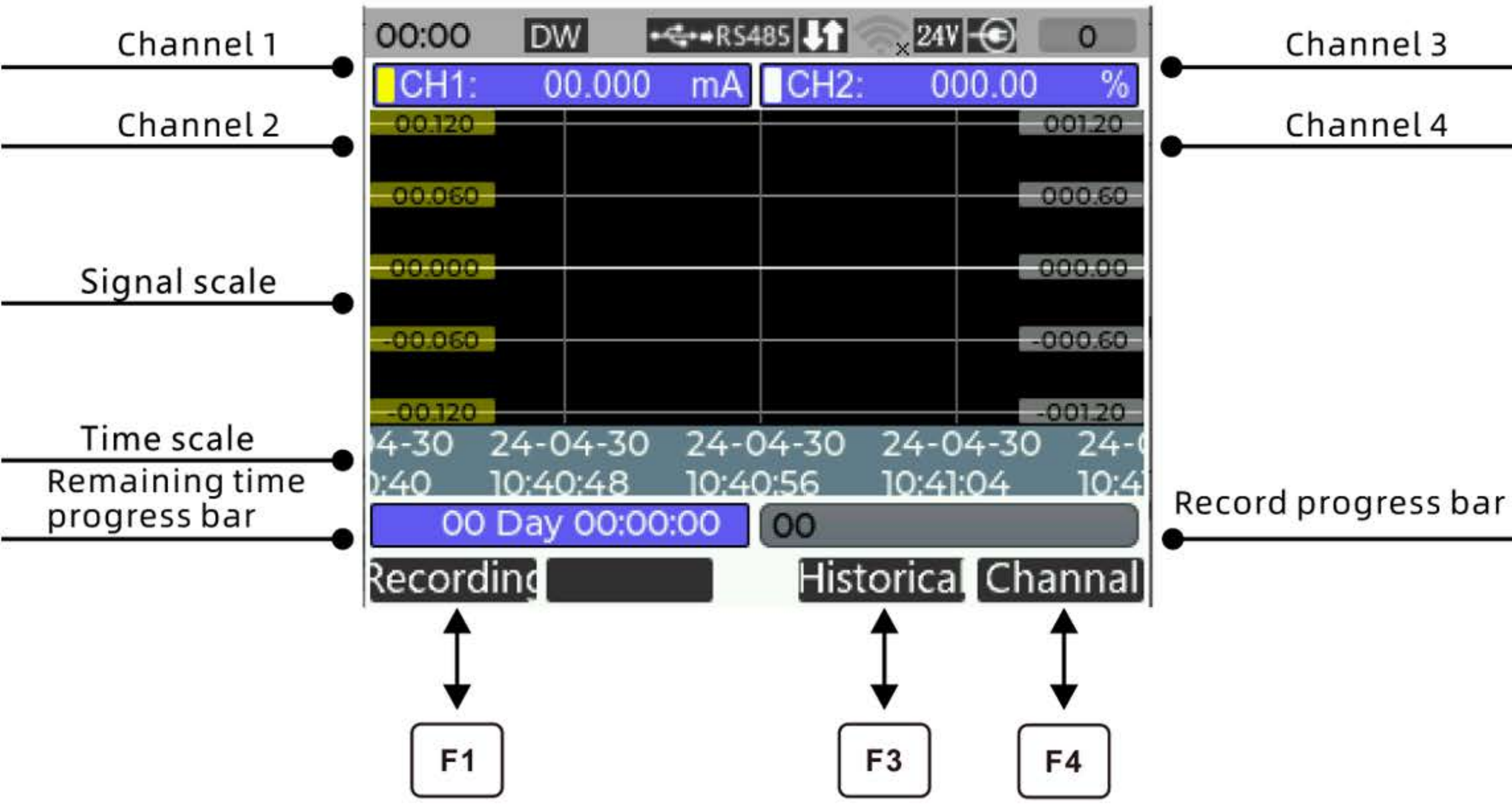


Modbus settings interface

Variable menu: Modify variable parameters, scan device address and baud rate.

Operation interface: Modify baud rate, modify name, change mode, and exit the program.

13、Application Description of Recorder

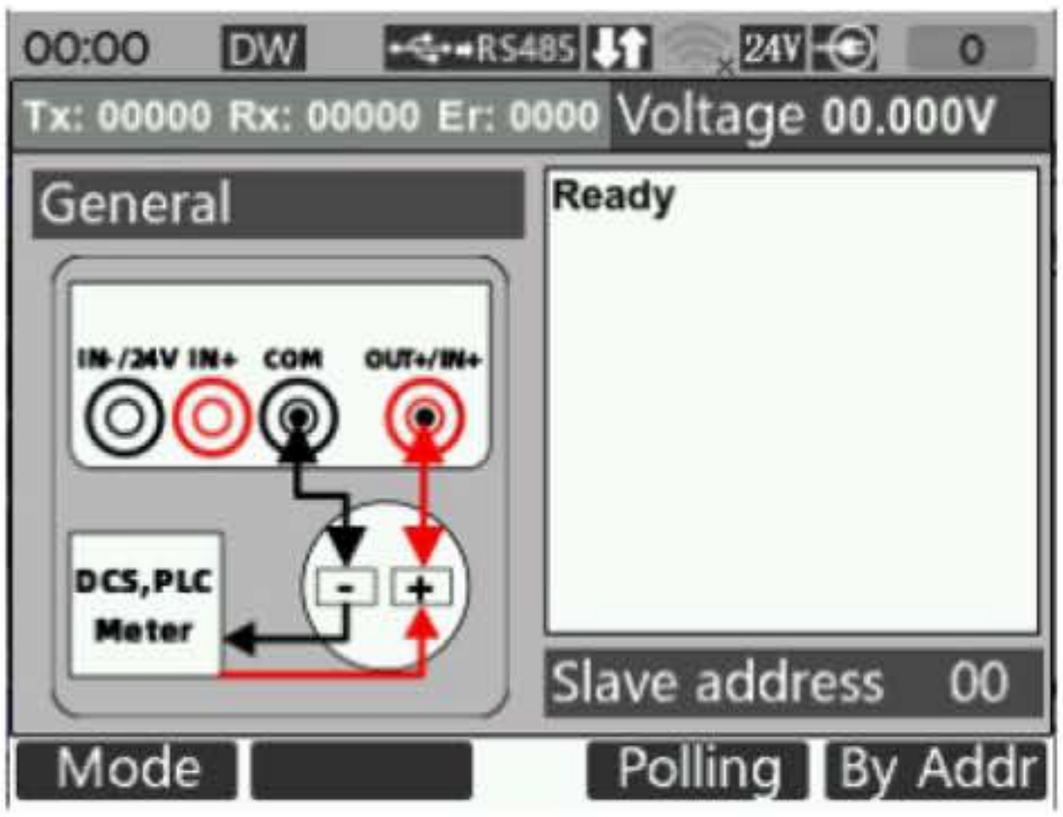


Start recording: After entering "Start recording", you can enable start recording, modify the recording duration, and modify the number of recordsAccording to the file name, set whether to shut down after recording.

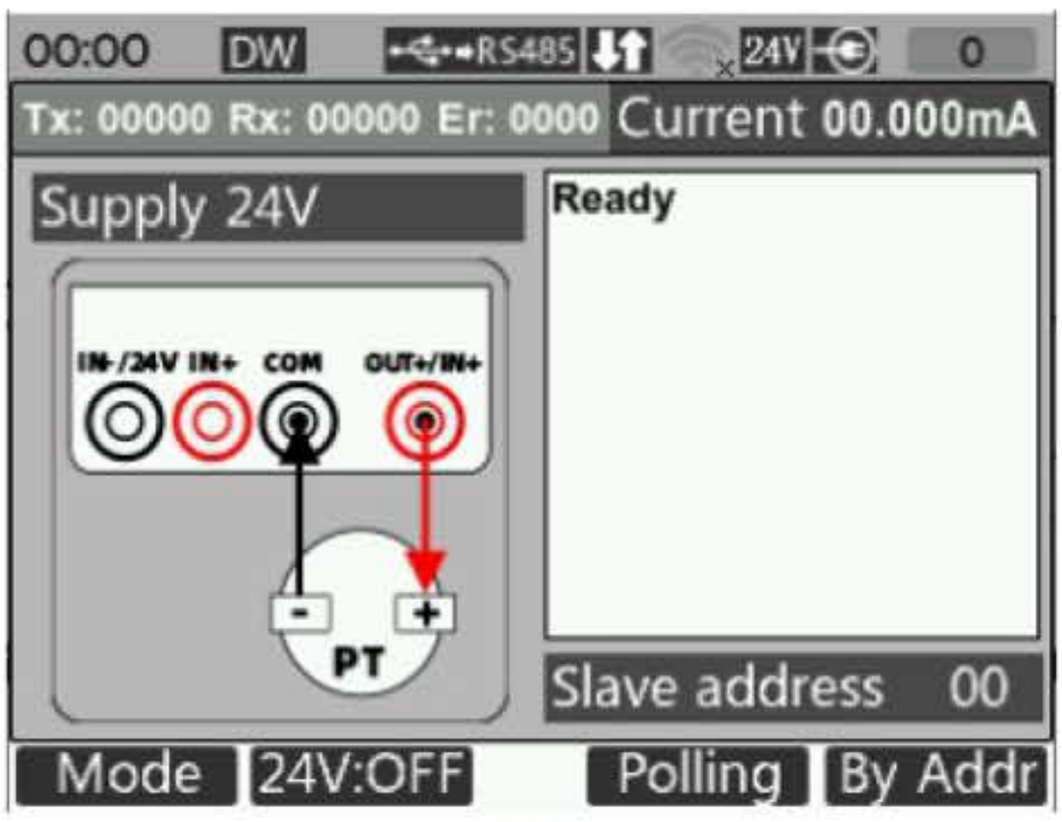
History: After entering "History", you can select the saved record data to view.

Channel Settings: After entering "Channel Settings", you can modify the signal source and select the number of signal channels.

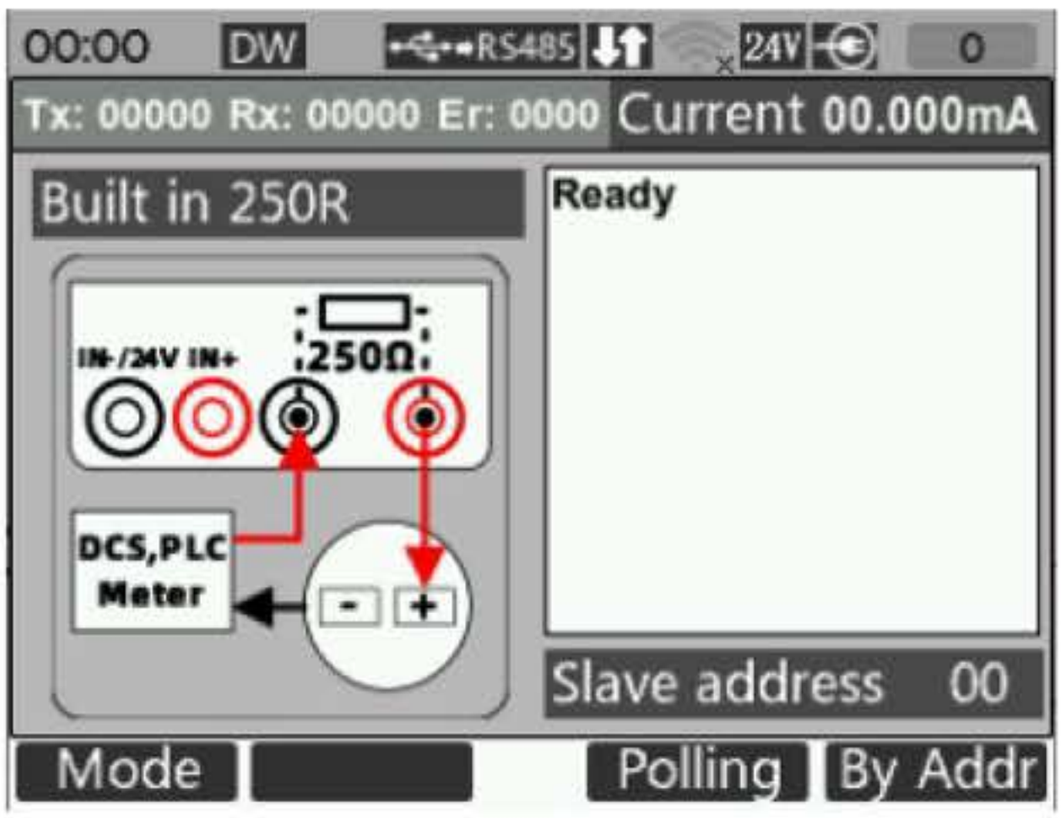
14、Introduction to Three Connection Modes of Hart 1-1



General mode: The transmitter has its own power supply for wiring.

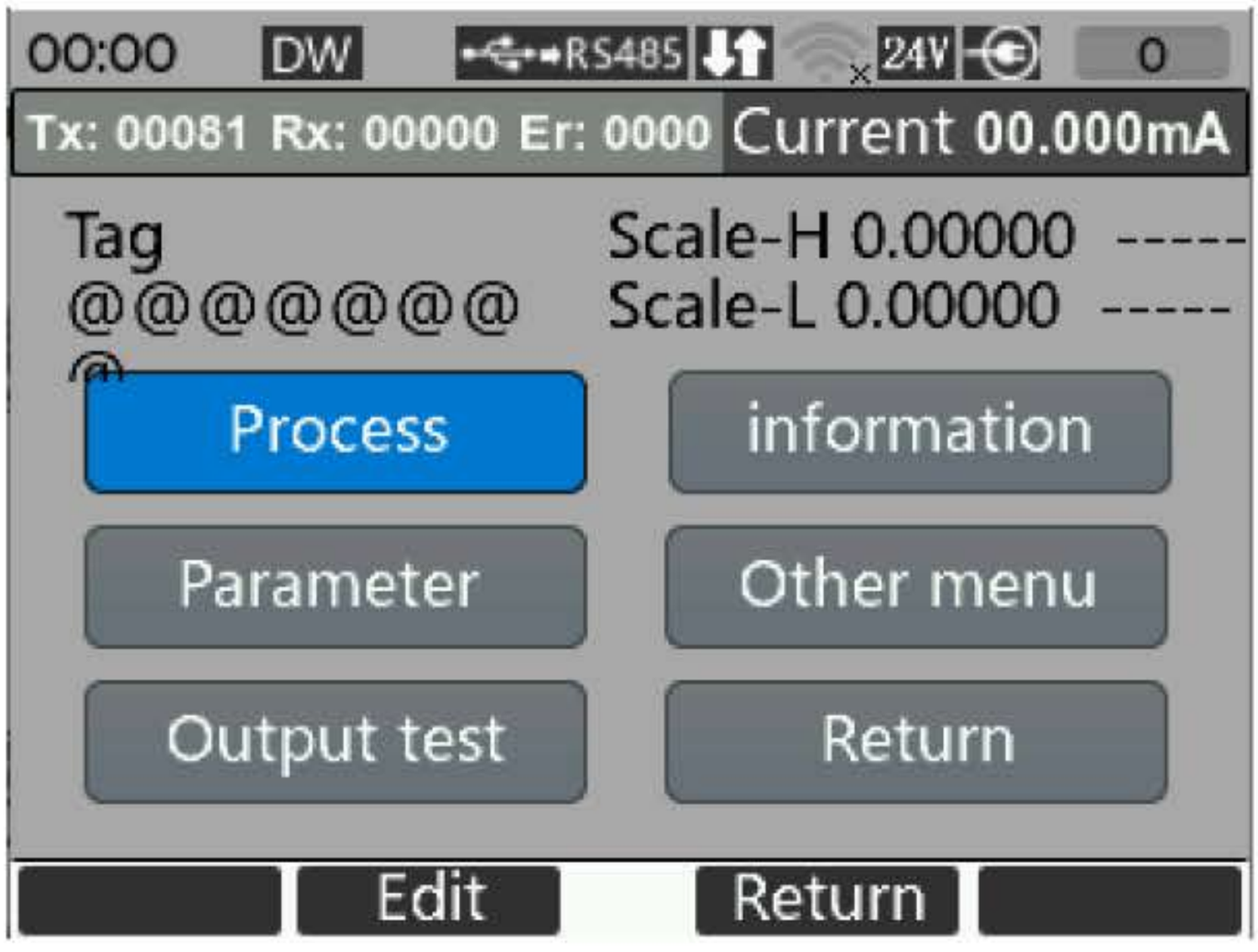


24V power supply mode: The IN port will provide 24V power.



Built in 250 ohm mode: As shown in the figure, the COM and OUT ports willConnect a 250 ohm resistor for wiring.

15、Hart operation interface 1-2



Process variable: After entering, PV can be reset to zero.

Parameter settings: After entering, the unit can be modified, the range can be changed, the damping can be changed, the device communication address can be set, and the output can be changedCode.

Output debugging: Fixed output 4-20mA, calibrate the accuracy of 4-20mA.

Device information: Modify device label, modification date.

Other instructions: No function currently available.

16、Product Daily Maintenance Instructions

16-1 Signal precision fine-tuning:

The product needs regular calibration, so we have created a menu that can be adjusted,The advantage is that if adjusted incorrectly, the fine tuning value can be reset to zero, which is not easily affectedSignal accuracy.

16-2 External device calibration:

Output signal calibration requires a high-precision 5-and-a-half-digit multimeter that you believe is reliable for measuring signal calibrationA multifunctional signal calibration source is required, and resistance measurement can be done using a resistance box.

17. Battery:

This product has a battery level monitoring module and is equipped with a default 18650/3000ma lithium battery at the factoryIf the user needs to replace the purchased lithium battery and it is not a 3000mA capacity, it must be charged to the batteryThe meter needs to be reset using the following method. After setting, a calibration is required to accurately indicateThe capacity and calibration method are simple, but it takes some time:

1. Fully charge. 2. Turn on and discharge to automatic shutdown.
3. Then fully charge again and complete the calibration.

18. Improper operation instructions:

1. In duplex mode, the resistance thermal resistance measurement should be used on IN - and IN+, but not on IN+and COM,There will be an error of a few ohms on the negative side.When in simplex mode, the IN port cannot be used to measure resistance, as there may be errors on the other side.3. The product cannot be connected to any voltage greater than 30V, otherwise it will seriously damage the product.

19. Firmware upgrade

1. Press and hold down keys [F1] and [V/mV] simultaneously, insert the data cable, and wait for a mobile disk to pop up on the computer screenAfterwards, copy the firmware into the mobile drive to complete the upgrade.

Operation video

Shanghai Lanyi Electronic Technology Co., Ltd
www.lanyigs.com/Email:mrsignal@qq.com