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1.Usage And Features

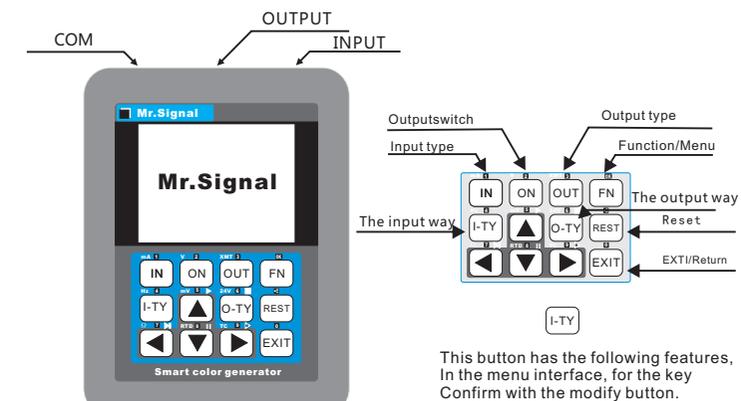
This product is used for debugging industrial PLC and process instruments, and adjusting valves. It is small in size, easy to carry. It has advantages of high precision and powerful functions. Signals can be input and output at the same time. The output is programmable and the input can be real time displayed as curves. With powerful functions at the same time, it is easy to use due to a windows form menu is available for operating this instrument.

2.Product Parameters

OUTPUT							
MODEL	CURRENT	VOLTAGE	PASSIVE	Frequency	Millivolt	Resistor	24V
MR2.0B	●	●	●				●
MR2.0Hz	●	●	●	●			●
MR2.0Pro	●	●	●	●	●		●
MR2.0Pro+	●	●	●	●	●	●	●

INPUT						
型号	CURRENT	VOLTAGE	Frequency	Millivolt	Resistor	
MR2.0B	●	●				
MR2.0Hz	●	●	●			
MR2.0Pro	●	●	●	●	●	

3.Panel And Screen



USB charging
Charging indicator
RS485 interface
Power button

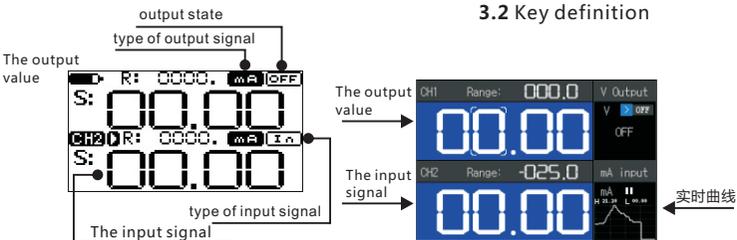
3.1 interface



This button has the following features, In the menu interface, for the key Confirm with the modify button.

Direction: for selecting to set The option of buy or modify the value.

3.2 Key definition



3.3 B/W display content definition 3.4 Color display content definition

4.Basic Operations

4-1.How To Generate Output:

- Press **OUT** to Change Type of Signal. The output type flag will be changed.

mA Output	mA
V Output	V
XMT output	XMT
24V Loop	24V
Hz Output	Hz
mV Output	mV

RTD	PT100
TC	TC-K

 Thermocouple for millivolt way Through the O - TY switch
- Adjust Numbers. Through the keyboard to adjust the Numbers.
- Press **ON** to start generating. If output started and the circuit is close, the output state flag will be **OUT**.

OUT

- If output flag 4 display **LOC/CON**. The circuit is open or no testing subject connected.

LOC/CON

- Same color with black and white machine operation, but a character prompt, in this not elaborate.
- MR2.0PRO : When using millivolt output or output resistance, can use **O-TY** switch Type, such as when using this button to switch the millivolt millivolt signal output with thermocouple Type, the resistance signal switching PT100 / CU50 signal types.

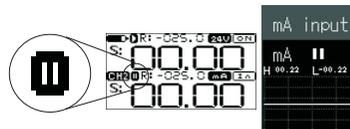
4-2.How To Meter Input :

- Press **IN** to Change Type of Signal. The input type flag will be changed.

mA input	mA
V input	V
- MR2.0PRO : When using millivolt input or input resistance, can use the **I-TY** Switching signal type, such as the millivolt signal output when using this button switch The millivolt and the type of thermocouple and resistance signal swappable PT100 / CU50 Type of signal.

4-3.Input curve Pause! :

Press and hold **ON** for 2 sec, a pause mark will be displayed, then input will be stopped. Press and hold **ON** to resume!



4-4. Enter Menu!

- A) Quick Menu of Input: Press and hold **IN** to enter, press **EXIT** to quit.
- B) Quick Menu of Output: Press and hold **OUT** to enter, press **EXIT** to quit.
- C) Instrument Menu: Press and hold **FN** to enter, press **EXIT** to quit.

4-5.To quickly switch signal mode

The menu location : Instrument Menu>General>Sig SW> **I-TY** Edit

Sig SW: There are two options **Turn/Fast**.

Turn: click the **IN** signal switching time in sequence.

Fast: click on the **OUT** button, the screen will pop up a quick select window, press The corresponding number can quickly choose the required output signal, see figure.



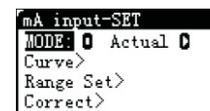
4-5. Basic Operations Of Menu!

Press **▲▼** to select an item, press **I-TY** to edit or enter next menu, press **EXIT** to return.

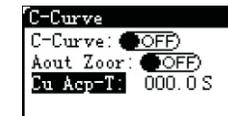
As graphic 4.1, choose an item like 'Mode', press **I-TY** to change options.

As graphic 4.2, choose an item like 'Cu Acp-T', press **I-TY** to start adjusting value.

After finish changing value, press **I-TY** to save.



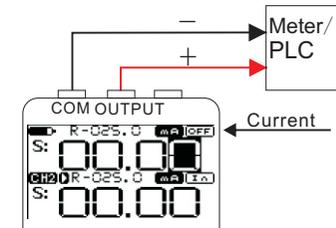
Graphic 4.1



Graphic 4.2

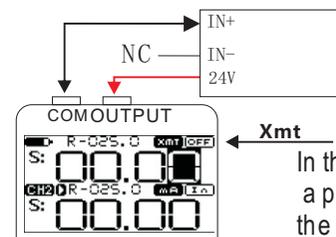
5. Use Case

5-1.Current/Voltage Output To Meter/Plc/Valve/Dsc/Ac Driver Converter, Etc.



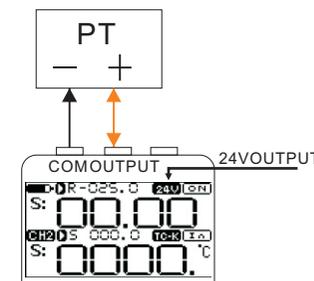
Current/voltage output is the most widely used.

5-2.Simulate A Passive Transmitter(Xmt)



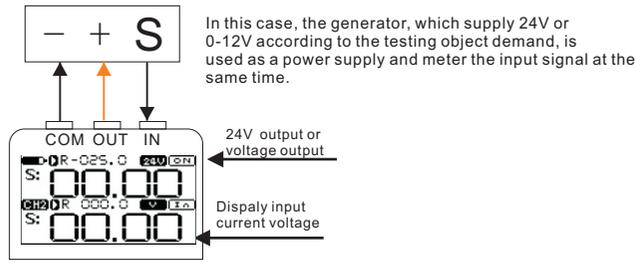
In this case, the generator simulate a passive transmitter, which change the current in the loop as a potentiometer.

5-3.Testing A Passive Transmitters

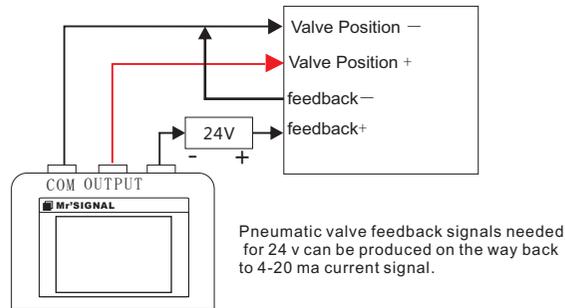
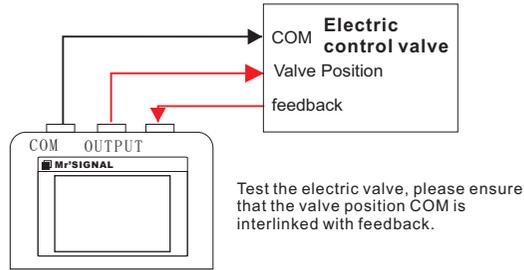


The generator provide 24V power supply, which is necessary while testing a passive transmitter, and meter the current on the loop at the same time.

5-4. Testing A Transmitter/Sensor.

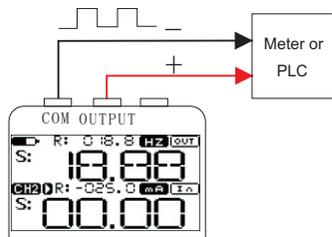


5-5. Signal can be input and output at the same time, each other



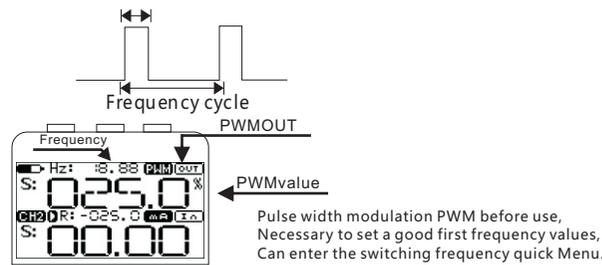
5-6. Frequency output

5-6.1 : Frequency

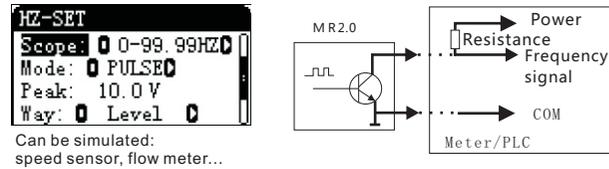


Mode 1: frequency output.
 Mode 2: frequency PWM (pulse width modulation output).
 Way 1: the level of output, can modify the peak voltage output.
 way 2: open collector output, is used to simulate OC gate, need outside power supply.

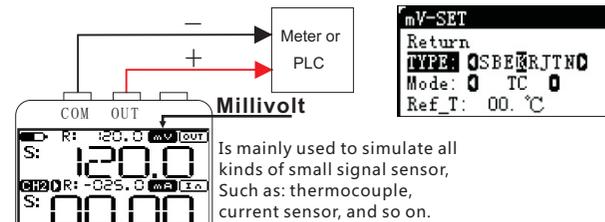
5-6.2 : PWM



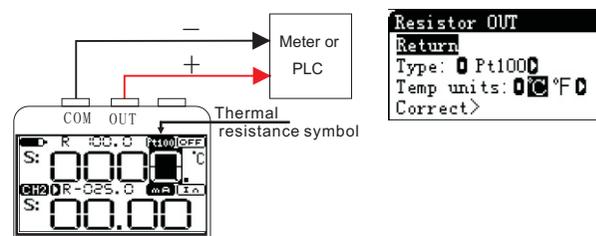
5-6.3 NPN open circuit output



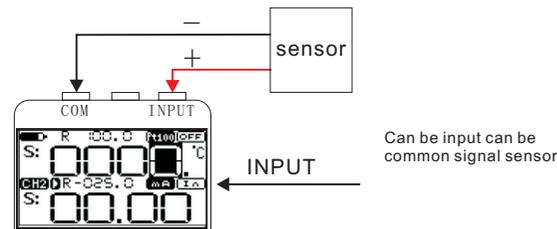
5-7 .Millivolt to simulate thermocouple output



5-8. Thermal resistance output

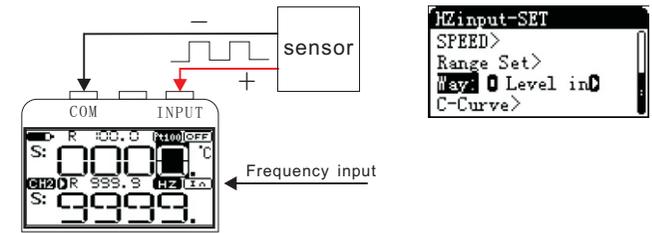


5-9. Signal input

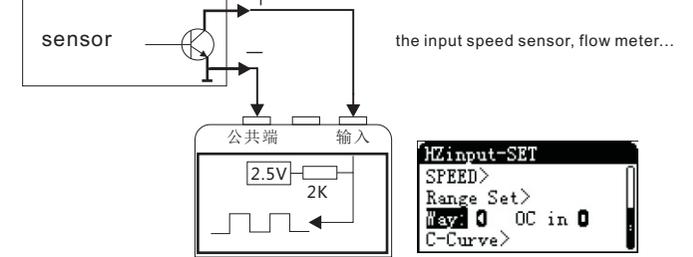


5-10. Frequency input

5-10 - 1. PNP active frequency input level



5-10 - 2. Passive input frequency of the OC



6. Curves

Display input in curves for you to monitor the change of input. Every input can be display as curve in real time. If you use 24V output, the current in the loop can be display as curves as well.

11-1. How To Display Curve

- Go to Quick menu of input->C-Curve->C-Curve, turn on. The input display as curve like graphic 11.1.
- When Output 24V, go to Quick menu of output->Curve->C-Curve, turn on. The current in the loop display as curve like graphic 11.2
- Press the Δ key to pause/resume capture input signal. When output 24V, the way to pause/resume is different. Press the keys in the operation zone to pause/resume as below.



6-2. Auto Zoom

If the change rate of input is small, the rise and fall of the curve is not obvious. Go to Quick menu->C-Curve->Auto Zoom, turn on. Then the change will be zoom in graphically.

6-3. Capture Period

Go to Quick menu->C-Curve->Cu Acp-T, adjust number. This parameter represent a period in which instrument capture input once and add it to the curve. The instrument can display 128 point

7. Attentions

7-1. Extend Battery Life

If you are going to leave the instrument unused for a long time. Do not keep it with an empty battery. Please fully charge the battery before keep it. Discharge and charge at least one time in every 3 month to keep the battery active.

7. The battery replacement

If the battery has bad need to change, be sure to use the battery manufacturer established parameters, or purchased from the manufacturer. Battery for: 14500 rechargeable lithium battery, voltage of 3.6 V, charging termination voltage of 4.2 V, normal manufacturer of battery capacity is in commonly 800 ~ 900 ma, the weight of the battery in about 20 g, please normal manufacturer of battery, It is forbidden to use AAA batteries, battery types are different.

7-3. Self-Check

If you suspect that the instrument does not work. As the instrument allows input and output at the same time, you can do a self-Check this way. Output a signal, and connect the output to the input terminal. The instrument can meter the signal generated by itself.