

XDB905 series Single-loop intelligent measuring instrument Instruction Manual



1.Main Features

- Support thermocouple, thermal resistance, voltage, current and two-wire transmitter input; suitable for physical measurement and display of temperature, pressure, liquid level, length, etc.; can perform high-precision linear correction on various nonlinear signals .
- Adopt high-brightness LED digital display and high-precision 40-line light bar display to display the measured value clearly and intuitively.
- Support up to four alarm functions, including two upper limit and two lower limit alarms, which can be independently alarmed.
- Adopt advanced jumper-free technology to change the index number freely.
- Have a variety of standard serial two-way communication functions (RS232C, RS-485, RS-422, etc.)
- Equipped with intelligent data collector and configuration software based on Windows XP platform, which can realize networking with the host computer.

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2. Model Definition

① C803 ② 21 ③ 08 ④ HL ⑤ P ⑥ T ⑦

Here is a meter:

- ① The basic function is the measurement display table;
- ② The size of the panel is horizontal type (160X80mm);
- ③ The communication mode is RS-232, and the output mode is relay output;
- ④ The input type is Pt100;
- ⑤ The first alarm is an upper limit alarm, and the second alarm is a lower limit alarm;
- ⑥ With DC24V feed output;
- ⑦ The power supply mode is AC90-256V power supply.

The meanings of the 7 parts in the instrument model are as follows:

- ① Indicates the basic functions of the instrument
Indicates that the display alarm instrument has linear voltage/current input such as thermocouple, thermal resistance, mV, mA, 5V, 10V, etc., and the measurement accuracy is 0.5.
- ② Indicates the dimensions of the instrument panel
Panel 160X80mm (WXH), horizontal, opening 152X76mm
Panel 80X160mm (WXH), vertical, opening 76X152mm
Panel 96X48mm (WXH), horizontal, opening 92X45mm Panel 48X96mm (WXH), vertical, opening 45X92mm
Panel 96X96mm opening 92X92mm, insertion depth 110mm
Panel 72X72mm opening 68X68mm, insertion depth 90mm
Panel 48X48mm opening 44X44mm, insertion depth 90mm
- ③ Indicates the communication mode and output mode of the instrument: RS-485 and other communication and relay, 4~20mA and other output can be selected
- ④ Indicates the input type of the instrument: you can refer to the code, and the graduation number can be changed freely
- ⑤ Indicates the alarm mode of the instrument: the alarm mode of the first, second, third and fourth channels can be switched freely
- ⑥ Indicates the additional function of the instrument: optional with 24V feed (if not necessary, it can be omitted)
- ⑦ Indicates the power supply of the instrument: DC24V, AC90-265V switching power supply and AC220V can be selected

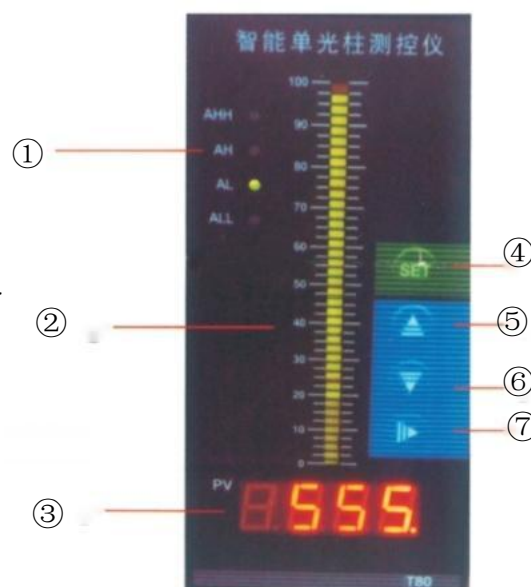
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3. Technical Specifications

- Input specifications (one instrument is compatible): Thermocouple: B, S, K, E, J, T, WRe, etc.
Thermal resistance: Pt100s Cu50 and other remote pressure resistance
Linear voltage: 0~5V, 1~5V, 0~10V, 1~10V, etc. One by one input impedance N250Q
Linear current: 0~10mA, 0~20mA, 4~20mA, etc.---input impedance <250.
Linear resistance: 0~400Q (can be used to measure remote resistance pressure gauge)
- Measuring range: -1999-1999 words
- Measurement accuracy: 0.5%FS ± 1 word
- Transmission output: analog output DC0~10mA (load capacity W750Q)
DC4~20mA (load capacity W500Q)
DC0-5V (load capacity W250Q) DC1-5V (load capacity C250Q)
Switch output relay control output---relay ON/OFF with hysteresis
Contact capacity: AC220V/3A; DC24V/6A (resistive load)
Thyristor control input---SCR (thyristor zero-crossing trigger pulse) output, which can trigger thyristor solid state relay output SSR (solid state relay control signal) output
- Use environment: ambient temperature 0~5. hook
Relative humidity W85RH
Avoid strong corrosive gases
- Supply voltage: AC220V+10-15% (50Hz ± 2Hz linear power supply)
- Power consumption: W5W

4. Panel Description

- ① Indicator light: AHH—upper upper limit alarm
AH -- upper limit alarm
AL -- lower limit alarm
ALL—Lower and lower limit alarm
- ② 40-segment beam: Visually display the ratio of PV value
- ③ PV window: display the measured value, in the parameter setting state, display the parameter symbol or set value
- ④ Setting key: used to enter parameter setting state, confirm parameter modification, etc.
- ⑤ Data increase key,
- ⑥ Data reduction key
- ⑦ Data shift key



5. Operating Instructions

5.1 Setting Parameters

In the basic display state, press and hold the SET key for 3 seconds to enter the field parameter table. Use A, V, >, etc. to modify the parameter value, and long press the SET key to exit the parameter setting state. Set PASS=555 to enter the system parameter setting state.

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| Parameter | Name | Description | Setting range | Factory default |
|-----------|-----------------------------------|---|---------------|-----------------|
| AH | Upper limit alarm | When the measured value $PV > AH$ value, the upper limit alarm will be generated. When the measured value $PV < (AH - dH)$ value, the meter will cancel the upper limit alarm. | -1999~9999 | 300 |
| dH | Upper limit alarm hysteresis | aka dead zone, stagnation. The hysteresis is used to avoid frequent misoperations of the bit adjustment output due to the fluctuation of the measured input value. | 0~9999 | 0 |
| AL | Lower limit alarm value | When the measured value $PV < AL$ value, the lower limit alarm will be generated, and when the measured value $PV < (AL + dL)$ value, the instrument will cancel the lower limit alarm. | -1999~9999 | 200 |
| dL | Lower limit alarm hysteresis | Same as (dH) | 0~9999 | 0 |
| AHH | Upper and upper limit alarm value | When the measured value $PV > AHH$ value, the upper limit alarm will be generated, and when the measured value $PV < (AHH - dHH)$ value, the meter will cancel the upper limit alarm. | -1999~9999 | 400 |
| DHH | Upper limit alarm hysteresis | Same as (dH) | 0~9999 | 0 |
| ALL | Lower and lower limit alarm value | When the measured value $PV < ALL$ value, the lower limit alarm will be generated, and when the measured value $PV < (AL + dLL)$ value, the instrument will cancel the lower limit alarm. | -1999~9999 | 100 |
| dLL | Lower and lower limit alarm | Same as (dH) | 0~9999 | 0 |
| PASS | Password parameter | PASS=555 | 0~9999 | 0 |

5.2 System parameter table (set PASS=555, then press SET key to enter)

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| | | Sn | Input Specs | Sn | Input Specs | Factory parameters |
|-------------|---|--|-------------|------------------|----------------------------------|--------------------|
| Sn | Input Specs | 0 | S | 12 | 0-10V | 15 |
| | | 1 | R | 13 | 0~10mA | |
| | | 2 | B | 14 | 0~20mA | |
| | | 3 | K | 15 | 4~20mA | |
| | | 4 | N | 16 | mV signal | |
| | | 5 | E | 17 | Resistance R non-standard signal | |
| | | 6 | J | 18 | Frequency F non-standard signal | |
| | | 7 | T | 19 | 0~5V square root | |
| | | 8 | Pt100 | 20 | 1~5V square root | |
| | | 9 | Cu50 | 21 | 0~10mA square root | |
| | | 10 | 0~5V | 22 | 4~20mA square root | |
| | | 11 | 1~5V | 23 | Full switch input | |
| dot | decimal point | dot=0 | | no decimal point | | 1 |
| | | dot=1 | | decade | | |
| | | dot=2 | | hundreds | | |
| | | dot=3 | | Thousands | | |
| PUL | PV range lower limit | Set the measurement lower limit of the input signal | | -999~9900 | 0.0 | |
| PUH | PV range upper limit | Set the upper measurement range of the input signal | | -900~9999 | 500.0 | |
| Pb1A | Zero migration | Set the shift amount of the input zero point | | full scale | 0.0 | |
| F1Lt | Filter coefficients | The setting cannot exceed 0.900, otherwise the instrument will make an error | | 0.100~0.900 | 0.100 | |
| K 1 | Input scale ratio | Set the display input range magnification ratio | | 1~1.999 times | 1.000 | |
| OU-A | First transmission output | Corresponding to the measured value for linear output | | OU-A=1(0~10mA) | 2 | |
| | | | | OU-A=2(4~20mA) | | |
| OUH | Light column range | Set the measuring light column range of the input signal | | | 500.0 | |
| PH | Upper limit alarm type | Switching relay normally open/normally closed contacts | | 1 - High alarm | 1 | |
| | | | | 2- Low alarm | | |
| PL | Lower limit alarm type | The definition is the same as the PH term | | Same as PH | 2 | |
| PHH | Upper and upper limit alarm type | The definition is the same as the PH term | | Same as PH | 1 | |
| PLL | Lower and lower limit alarm type | The definition is the same as the PH term | | Same as PH | 2 | |
| 1nPH | Non-standard signal input Maximum value | 10~1000mV; 10-400Ω; 2~300Hz | | | 100.0 | |

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| | | | | |
|-------------|--------------------------------|--------------------------|-----------|-----|
| 1nPL | Non-standard signal input Min. | 0~90mV; 0-390Ω; 0~2998Hz | | 0.0 |
| bAUd | Communication baud rate | Communication speed | 0=1200bps | 3 |
| | | | 1=2400bps | |
| | | | 2=4800bps | |
| | | | 3=9600bps | |
| 1d | Correspondence address | Set the mailing address | 0~31 | 1 |

6.Example

Example 1: Liquid level transmitter 0~5 meters (on the sign), 4-20mA output, output alarm when the water level is greater than 4 meters, and alarm when it is lower than 1 meter (in mm)

| Parameters | Name | Set Value | Notes |
|------------|----------------------------|-----------|---|
| Sn | Signal input type | 15 | PUH is the highest range value of the transmitter |
| dot | Signal input decimal point | 1 | |
| PUL | Lower range limit | 0.0 | |
| PUH | Upper range limit | 500.0 | |
| AL | Lower limit alarm | 100 | |
| AH | Upper limit alarm | 400 | |

Example 2: Control the water pump system, lower limit relay hysteresis control (take the liquid level transmitter 5m, start the pump below 1m, and stop the pump above 4m).

| Parameters | Name | Set Value | Notes |
|------------|-------------------------------------|-----------|---|
| Sn | Signal input type | 15 | PUH is the highest range value of the transmitter |
| dot | Signal input decimal point | 1 | |
| PUL | Lower range limit | 0.0 | |
| PUH | Upper range limit | 500.0 | |
| AL | Lower limit alarm | 100 | |
| dL | Lower limit alarm return difference | 300.0 | |

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The parameter modification process is as follows:

