HDM1100 Digital Display Controller

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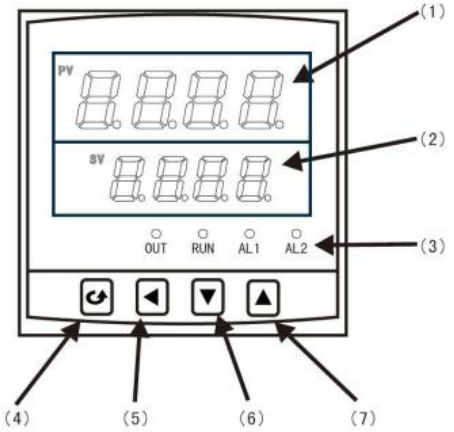
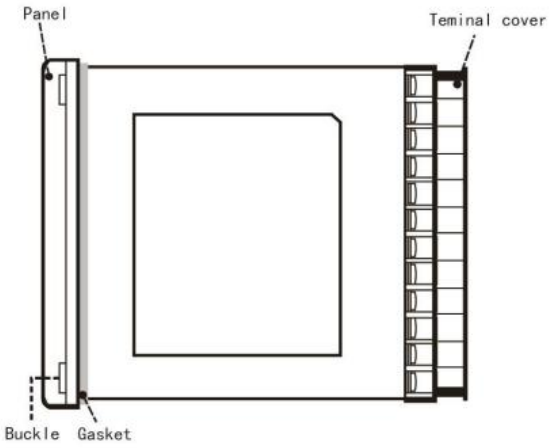
Product Introduction

HDM1100 Simple single loop digital display control instrument, fool operation, a 0.3 magnitude measurement precision, seven new appearance size, double four LED display, can support the thermocouple, heat resistance, voltage (root operation), current (root operation) and input in the transmitter, suitable temperature, pressure, flow, liquid level, humidity, such as industrial process monitoring. It supports 2-way alarm function, 1-way transformer output or RS485 communication interface using standard MODBUS protocol, 1-way DC24V feed output, photoelectric isolation of input end, output end and power end, 100-240V AC/DC or 12-36V DC switching power supply, standard snap-in installation, working environment temperature is 0-50ºC, and relative humidity is 5-85%RH without condensation.

Display panel appearance structure drawing

(1) PV display window (measured value)
(2) SV display window
Display parameters like input type in measurement mode.
Display setting value in parameters setting mode.
First Alarm(AL1)、Second Alarm(AL2) Indicator light, Running lights(RUN) and Output lights(OUT)
(4) Confirmation
(5) Shift key
(6) Decrease key
(7) Increase key





External dimensions and hole dimensions of the instrument:

External dimension/Code	Hole dimension	External dimension/Code	Hole dimension
160*80mm (Horizontal type)/A	152*76mm	46*96mm (Vertical Type)/E	45*92mm
80*160mm (Vertical type)/B	76*152mm	72*72mm (Quadrate type)/F	68*68mm
96*96mm (Quadrate type)/C	92*92mm	48*48mm (Quadrate type)/H	45*45mm
96*48mm (Horizontal type)/C	92*45mm		

Ordering Guide

HDM1100☐-☐-☐/☐/☐( )-☐-( ) Single-loop digital display controller

① ② ③ ④ ⑤ ⑥ ⑦

Remark：

1. Contact capacity of one-way relay (with normally open and normally closed contact): AC220V/3A, DC30V/5A (resistive load);
   Contact capacity of two-way relay (only one set of normally open contacts): AC220V/3A, DC30V/5A (resistive load)
2. Instrument size H, relay contact capacity: AC220V/0.6A, DC30V/0.6A (resistive load)

①Specification	
Code	Width×height×depth
A	160x80x110mm(horizon)
B	80x160x110mm(vertical)
C	96x96x110mm(square)
D	96x48x110mm(horizontal)
E	48x96x110mm(vertical)
F	72x72x110mm (square)
H	48x48x110mm (square)

③Output (OUT)	
Code	Output type (load resistance RL)
X	No output
0	4-20mA (RL≤600Ω)
1	1-5V (RL≥250KΩ)
2	0-10mA (RL≤1.2KΩ)
3	0-5V (RL≥250KΩ)
4	0-20mA (RL≤600Ω)
5	0-10V (RL≥4KΩ)
D1	RS-485 communication interface (Modbus)

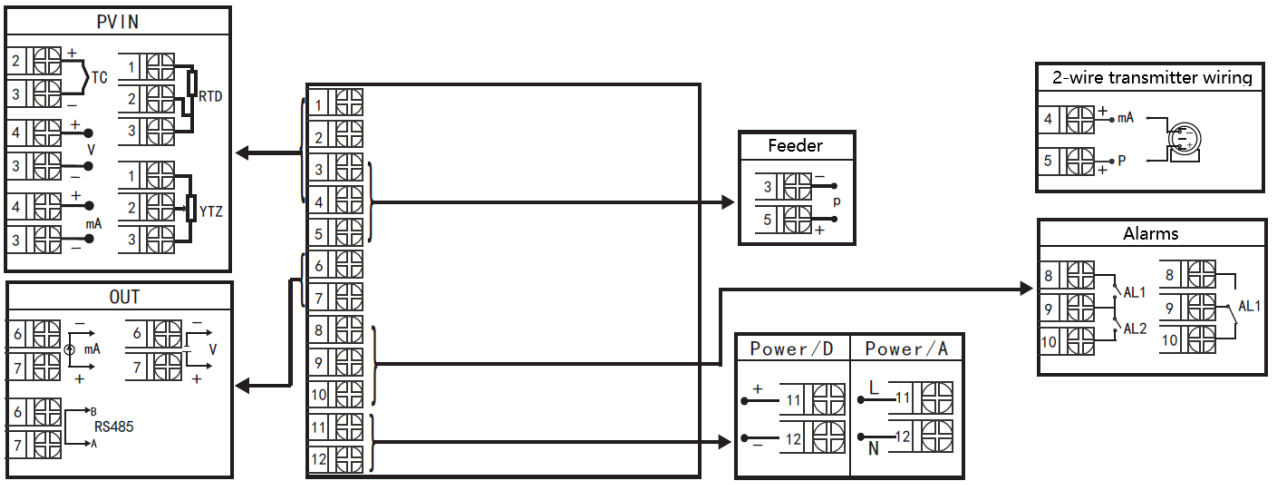
④Alarm (relay contact output)	
Code	Limits for alarm

②Input graduation	
No.	Graduation (measurement range)
00	Thermocouple B(400~1800℃)
01	Thermocouple S(0~1600℃)
02	Thermocouple K(0~1300℃)
03	Thermocouple E(0~1000℃)
04	Thermocouple T(-200.0~400.0℃)
05	Thermocouple J(0~1200℃)
06	Thermocouple R(0~1600℃)
07	Thermocouple N(0~1300℃)
08	F2(700~2000℃)
09	Thermocouple Wre3-25(0~2300℃)
10	Thermocouple Wre5-26(0~2300℃)
11	Thermal Resistance CU50(-50.0~150.0℃)
12	Thermal Resistance CU53(-50.0~150.0℃)
13	Thermal Resistance CU100(-50.0~150.0℃)
14	Thermal Resistance PT100(-200.0~650.0℃)
15	Thermal Resistance BA1(-200.0.0~600.0℃)
16	Thermal Resistance BA2(-200.0~600.0℃)
17	Linear Resistance 0~1KΩ(-1999~9999)
18	Remote Resistance 0-350Ω (-1999~9999)
19	Remote resistance 30-350Ω (-1999~9999)
20	0~20mV (-1999~9999)
21	0~40mV (-1999~9999)
22	0~100mV (-1999~9999)
23	Internal reserved
24	Internal reserved

X	No output
1	1-limit alarm
2	2-limit alarm
⑤Feed output	
Code	Voltage range
X	No output
P	Feed output (load current≤30mA) For example, "P(24)" means feed output 24V
⑥Power supply	
Code	Voltage range
A	AC/DC100~240 (AC/50-60hz)
D	DC20~29
⑦Remarks	
N/A, omissible	

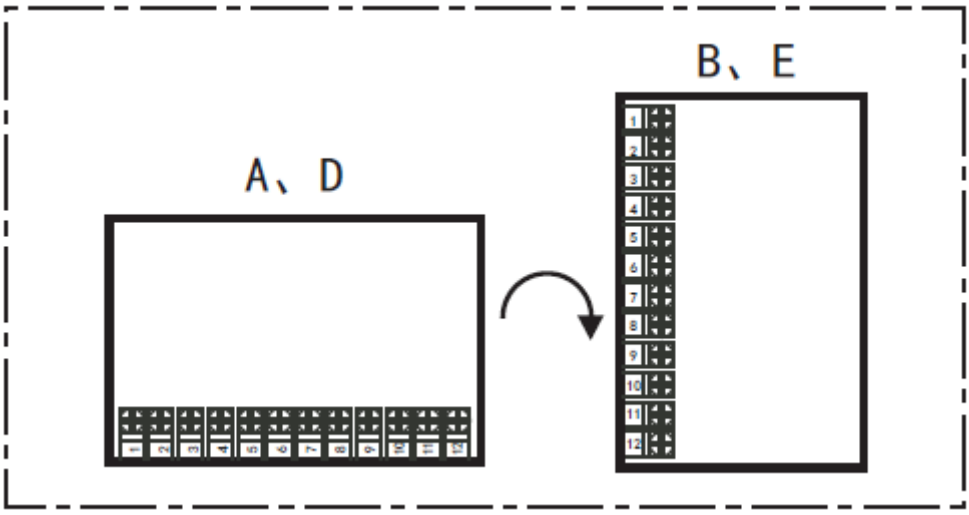
25	0~20mA (-1999~9999)
26	0~10mA (-1999~9999)
27	4~20mA (-1999~9999)
28	0~5V (-1999~9999)
29	1~5V (-1999~9999)
30	Internal reserved
31	0~10V (-1999~9999)
32	0~10mA (extraction) (-1999~9999)
33	4~20mA (extraction) (-1999~9999)
34	0~5V (extraction) (-1999~9999)
35	1~5V (extraction) (-1999~9999)
55	Full switch

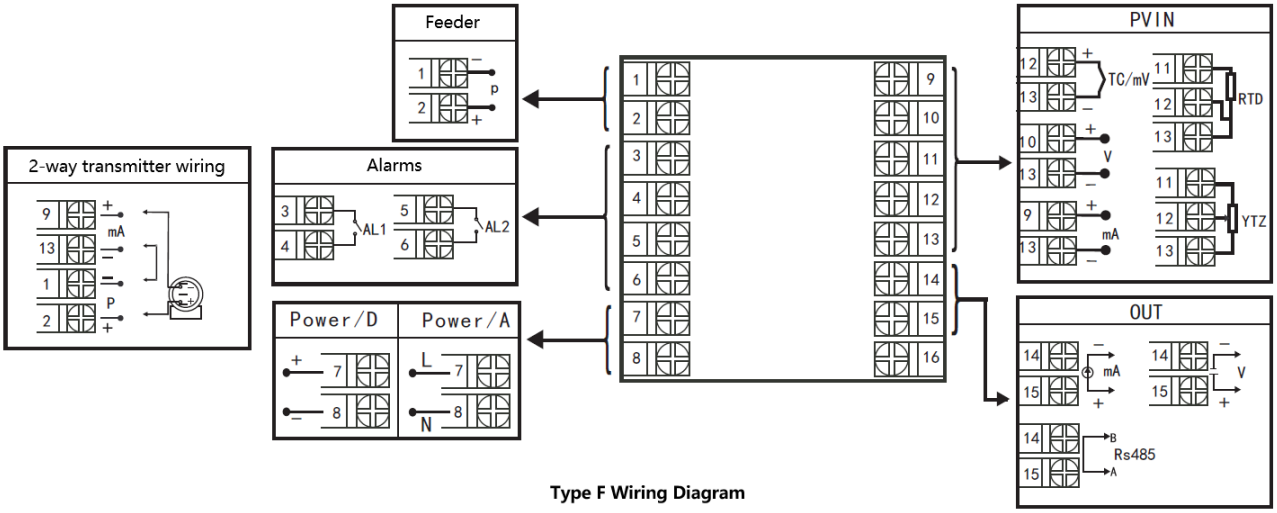
Wiring



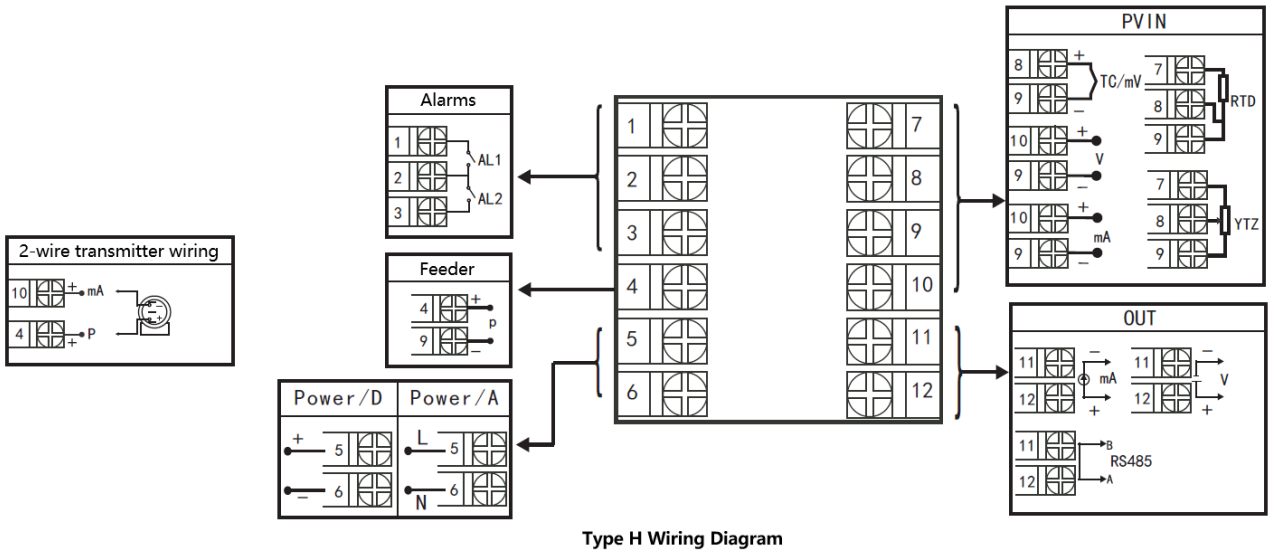
Type A B C D E Wiring Diagram

Note: The direction of the terminal of the rear cover of the horizontal and vertical instrument is different. See below.





Type F Wiring Diagram



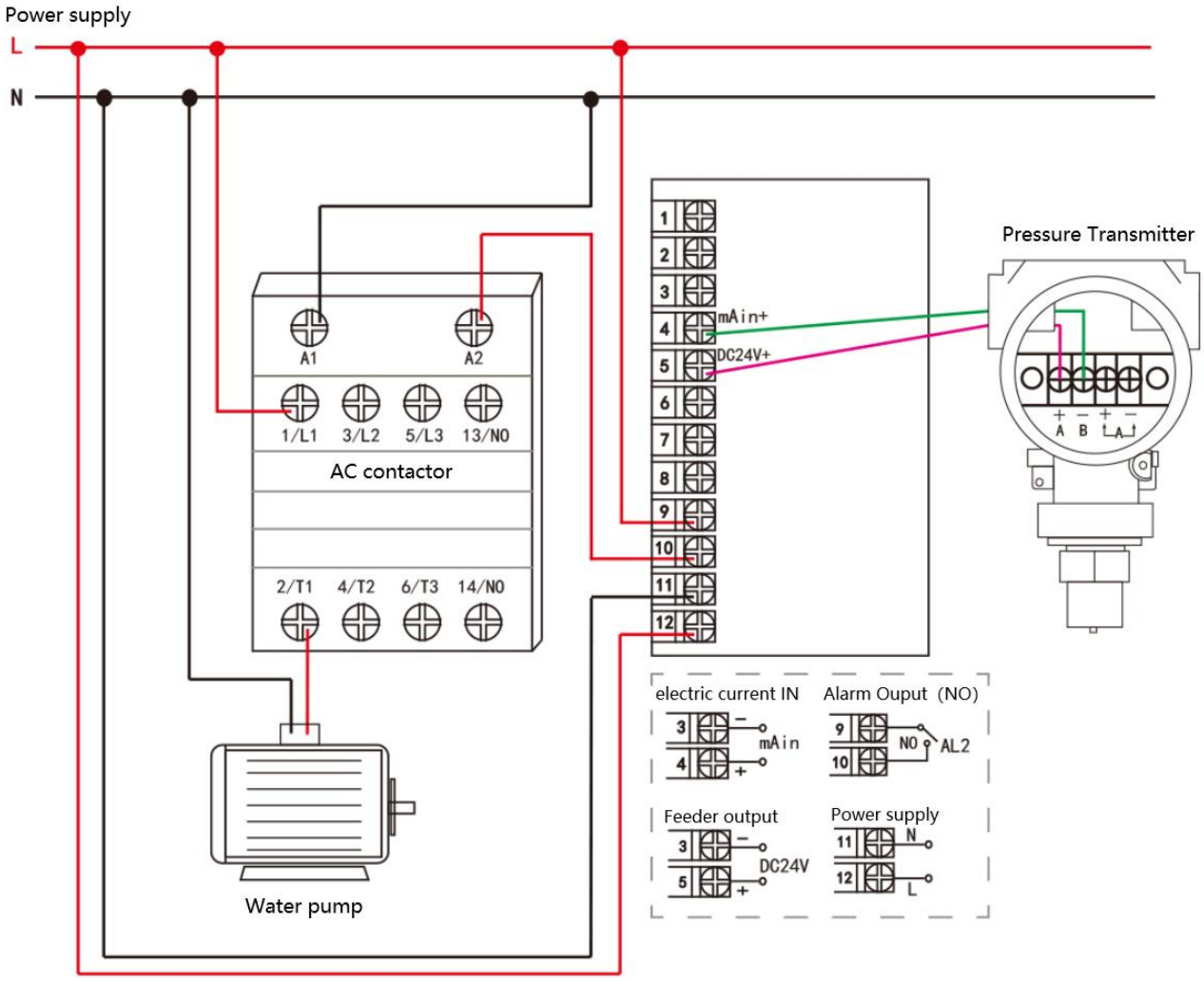
Type H Wiring Diagram

Note: If different functions are marked on the same set of terminals in the wiring diagram above, only one of the functions can be selected. For example, the RS485 communication function and control output function is on the same set of OUT terminals, and only one can be selected. If both need to exist at the same time, the control output can only choose the output of switching

quantity and the terminal is on AL2.

Wiring Examples

Connect with 2-wire pressure transmitter, 4-20mA input, 4-20mA output, one way replay, feed supply function, the wiring way can refer below.



Operation

After power-on self-test, the instrument will enter operating mode automatically. Press for parameters setting.

1) Press and hold for reset.
2) Any other menu, press and hold for 5 seconds to go back to measurement menu.

★ Back to operating mode

1) Manual return: in parameters setting mode, hold for 5 seconds to return to real-time measurement mode.

2) Automatic return: in parameters setting mode, inaction for 60 seconds will bring the instrument back to real-time measurement mode.

L1 Parameters Setting

In the operating mode, press , PV will display LOC and SV will display parameter symbol: press increase/decrease key for setting.

See table below for L1 parameters (matching functions of the ordered model; there will not be parameters for functions not available):

Parameter	Symbol	Name	Setting Range (Value)	Description	Preset value
LoC	LoC	Parameter lock	LoC=00 LoC≠00.132 LoC=132	No lock (valid for change of L1 parameters) Lock (valid for change of L1 parameters) No lock (valid for change of L1 and L2 parameters)	00
AL1	AL1	Primary alarm value	-1999-9999	Setting value for primary alarm	50 or 50.0
AL2	AL2	Secondary alarm value	-1999-9999	Setting value for secondary alarm	50 or 50.0
AH1	AH1	Primary alarm hysteresis value	0-9999	Primary alarm hysteresis value	02 or 2.0
AH2	AH2	Secondary alarm hysteresis value	0-9999	Secondary alarm hysteresis value	02 or 2.0
SdiS	SdiS	SV display screen Content In measurement mode	SdiS=0 SdiS=1 SdiS=2 SdiS=5 SdiS=6 SdiS=7	Input graduation Primary alarm value Secondary alarm value Display PH unit Display ℃ No display	0

L2 Parameters Setting

In the operating mode, press , PV will display LOC and SV will display parameter symbol:

press increase/decrease key for setting. Loc=132 and hold to enter L2 parameters interface.

See table below for L2 parameters (matching functions of the ordered model; there will not be parameters for functions not available):

Parameter	Symbol	Name	Setting Range (Value)	Description	Preset value
Pn	Pn	Input graduation	0~35	Set input graduation type (see L2 Parameters Pn Lookup Table)	27
dP	Dp	Decimal point	dp=0 dp=1 dp=2 dp=3	No decimal point Ten decimal places (XXX.X) One hundred decimal places (XX.XX) One thousand decimal places (X.XXX)	0
AL1	ALM1	Primary alarm mode	ALM1=0 ALM1=1 ALM1=2	No alarm Lower-limit alarm Upper-limit alarm	2
AL2	ALM2	Secondary alarm mode	ALM2=0 ALM2=1 ALM2=2	No alarm Lower-limit alarm Upper-limit alarm	1
FK	FK	Filter coefficient	0-4	To prevent flopping of displayed value	0
Addr	Addr	Equipment code	0-250	Setting of equipment code of the instrument in communication	1
bAUd	Baud	Baud rate	1200 2400 4800 9600	Baud rate: 1200bps Baud rate: 2400bps Baud rate: 4800bps Baud rate: 9600bps	9600
Pb	Pb	Display input zero shift	Full range	Set and display shift of input zero	0
PK	PK	Display input range scale	0-1.999 times	Set and display amplification scale of input range	1.000
ouL	OuL	Lower limit of measurement range of transducing output	Full range	Set lower limit of measurement range of transducing output	0

<table>
<tr><td>ouH</td><td>ouH</td><td>Upper limit of measurement range of transducing output</td><td>Full range</td><td colspan="4">Set upper limit of measurement range of transducing output</td><td>1000</td></tr>
<tr><td>PL</td><td>PL</td><td>Lower limit of measurement range</td><td>Full range</td><td colspan="4">Set lower limit of measurement range of input signal</td><td>0</td></tr>
<tr><td>PH</td><td>PH</td><td>Upper limit of measurement range</td><td>Full range</td><td colspan="4">Set upper limit of measurement range of input signal</td><td>1000</td></tr>
<tr><td>Cut</td><td>Cut</td><td>Small measuring signal cutting</td><td>0.000-1.000</td><td colspan="4">This function only works for voltage/current extraction signal; when input signal<lower limit of input signal+ (upper limit of input signal-lower limit of input signal>*set percentage, the instrument displays lower limit of measurement range.</td><td>0.000</td></tr>
<tr><td rowspan="4">out</td><td rowspan="4">Out</td><td rowspan="4">Transducing output type</td><td>Signal type</td><td>Parameter symbol</td><td>Signal type</td><td>Parameter symbol</td><td rowspan="4">4-20</td></tr>
<tr><td>0-20mA</td><td>20mA</td><td>0-5V</td><td>0-5V</td></tr>
<tr><td>0-10mA</td><td>10mA</td><td>1-5V</td><td>1-5V</td></tr>
<tr><td>4-20mA</td><td>4-20</td><td>No output</td><td>0mAE</td></tr>
<tr><td>T-Pb</td><td>T-Pb</td><td>Zero correction at cold junction</td><td>Full range</td><td colspan="4">Set zero correction value at cold junction</td><td>0</td></tr>
<tr><td>T-PE</td><td>T-Pk</td><td>Gain correction at cold junction</td><td>0-1.999 times</td><td colspan="4">Set gain correction value at cold junction</td><td>1.000</td></tr>
<tr><td>o-Pb</td><td>O-Pb</td><td>Zero shift of the transmitting</td><td>Full range</td><td colspan="4">Setting of the zero shift of the transmitting output</td><td>0</td></tr>
</table>

★ L2 Parameters Pn Lookup Table

Degree no . Pn	Signal types	measuring range	Degree no. Pn	Signal types	measuring range
0	Thermocouple B	400~1800℃	18	Remote Resistance 0~350Ω	-1999~9999
1	Thermocouple S	0~1600℃	19	Remote Resistance 30~350Ω	-1999~9999
2	Thermocouple K	0~1300℃	20	0~20mV	-1999~9999
3	Thermocouple E	0~1000℃	21	0~40mV	-1999~9999
4	Thermocouple T	-200.0~400.0℃	22	0~100mV	-1999~9999
5	Thermocouple J	0~1200℃	23	Reserved	-1999~9999
6	Thermocouple R	0~1600℃	24	Reserved	-1999~9999
7	Thermocouple N	0~1300℃	25	0~20mA	-1999~9999
8	F2	700~2000℃	26	0~10mA	-1999~9999
9	Thermocouple Wre3-25	0~2300℃	27	4~20mA	-1999~9999
10	Thermocouple Wre5-26	0~2300℃	28	0~5V	-1999~9999
11	RTD Cu50	-50.0~150.0℃	29	1~5V	-1999~9999
12	RTD Cu53	-50.0~150.0℃	30	Reserved	-1999~9999
13	RTD Cu100	-50.0~150.0℃	31	0~10V	-1999~9999
14	RTD Pt100	-200.0~650.0℃	32	0~10mA square	-1999~9999
15	RTD BA1	-200.0~600.0℃	33	4~20mA square	-1999~9999
16	RTD BA2	-200.0~600.0℃	34	0~5V square	-1999~9999
17	Linear resistance 0~500Ω	-1999~9999	35	1~5V square	-1999~9999

Note: Select the method of quickly switching the graduation number: change the secondary parameter Pn, move the decimal point to the thousands or hundreds place, and press the increase or decrease key to switch the first and last graduation numbers; when the decimal point is in the tens place, switch the graduation number every ten places; when the decimal point is in the one's place, switch the graduation numbers sequentially.