AI208 Series Temperature Controller Manual

Features:

- ⊙ K type TC / PT100 RTD input;
- ⊙ Display, Control and Alarm function;
- ⊙ Two freedom degree PID arithmetic;
- ⊙ Heating control Auto-tuning function;
- ⊙ Relay or SSR output;
- ⊙ Easy operation

1. Model

AI208 – □ – □ □ □ – □

- Input signal type: K: K type P: PT100 RTD (other signal can be special ordered)
- Input: 10: Single phase input
- Alarm: B: One alarm
- Output Function: R: Relay output; S: SSR output
- Dimension: 4:48H×48W 6:96H×48W 7:72H×72W 8:48H×96W(can be ordered) 9:96H×96W 80:80H×160W (can be ordered) 16:160H×80W (can be ordered)
- AI 208 Series Temperature Controller

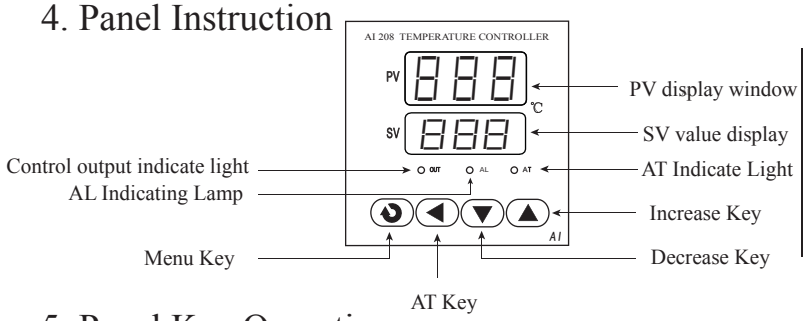
2. Model Illustration

Model	Control Output	Input signal	Range	Dimensiom
AI208-□-RB10-K	Relay Output	K type	0～400℃	4:48H×48W 6:96H×48W 7:72H×72W 9:96H×96W Other size can be ordered
AI208-□-RB10-P	Relay Output	PT 100	0～600℃	
AI208-□-SB10-K	SSR Output	K type	0～400℃	
AI208-□-SB10-P	SSR Output	PT 100	0～600℃	

3. Technical Specification

Input Type	K type TC (Resolution: 1℃) PT 100 RTD (Resolution: 1℃)
Accuracy	0.5%F.S±3digits 25℃
Output Type	Relay Output: Capacity 3A/220VAC
	SSR Output: 24V Power, Load: 30mA
Alarm Output	Relay Output: Capacity 1A/220VAC
Power Supply	100～240V AC/DC
Total Current	＜20mA（220VAC）
Working Ambient	0～50℃ 45～80%RH
Storage Ambient	-10～60℃ 25～85%RH

4. Panel Instruction



PV Display Window:
Measuring Value or parameter code Display Window
SV Display Window:
Setting Value and parameter Display Window
AT: Auto-tuning indicate light, light on: on working;
OUT: Control output indicating lamp,
light on: output, light off: withour output.
AL: Alarm output indication,
light on: alarm is on, light off: alarm is off.

5. Panel Key Operation

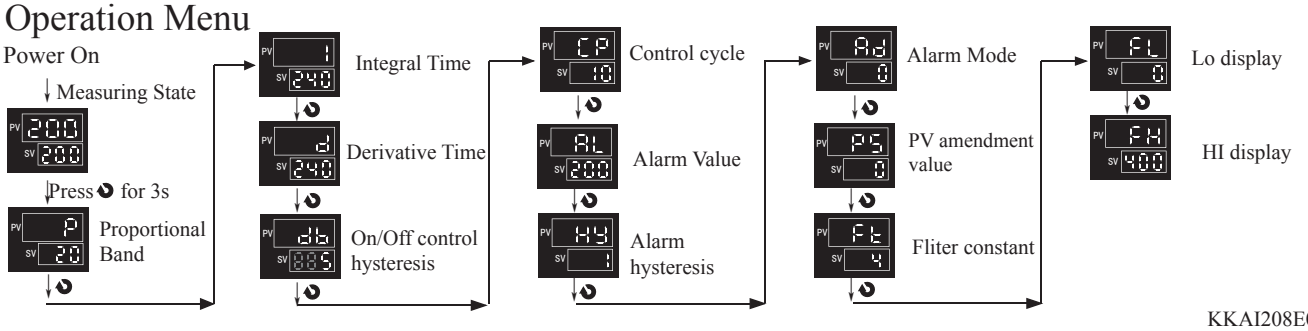
（1）SET Key：In normal display status, press SET key to show setting menu; Under the condition of modifing SV and Parameter Value, SET should be pressed after each modifing.

（2） ◄ Key: Under normal display condition, press ◄ key shortly can enter into SV modifing state, SV value flashing; press ◄ Key for a long time, meter can enter into Auto-tuning state, AT light on; in setting menu, parameter flash after ◄ key shortly pressed, then parameter can be modified.

（3） ▼Key：Under the condition of modifing SV and Menu parameter, press this key less than 3 seconds can slowly decrease value, on the contrary, press this key more than 3 seconds can quickly decrease value

(4) ▲ Key: Under the condition of modifing SV and Menu parameter, press this key less than 3 seconds can slowly increase value, on the contrary, press this key more than 3 seconds can quickly increase value

6. Operation Menu



7. Setting Menu

Parameter	Illustration	Range	EXW setting
P	Proportional Band, the more smaller, the quicker can be heated; increase P and decress shock, Increase in control deviation; Decress P and control deviation, can increase shock. (P=0 means ON/OFF conttrol)	0-400 (600)	20
I	Integral Time; the more smaller I, the stronger Integral role , the more settings tend to eliminate the deviation, if the integration time is too weak, There may not be able to eliminate bias	0-999	240
d	Differential time, reduce the differential effect to an appropriate value can prevent system oscillation, the larger of the D the stronger differential effect.	0-999	240
db	Hysteresis-type control bit (bit-type control is effective)	1-200	5
CP	Control cycle, 1 for the SSR control output, 4-255 for the relay control output	1-255	20
AL	Alarm Value	0-400 (600)	200
HY	Alarm hysteresis	0-100	1
Ad	Alarm mode: 0: absolute lower limit alarm 1: The absolute upper limit alarm	0-1	0
PS	PV correction, to modify errors arising from measurement process	-50-50	0
Ft	Filter constant, the smaller the coefficient, the reaction faster, but may cause fluctuations	0-200	4
FL	Display Lower Limit	0-399 (599)	0
FH	Display Higher Limit	1-400 (600)	400 (600)

Note:The parameter value in brace is the range of Pt100

8. Advanced Features

PID parameter determination and self-tuning operation

1. Manually set the PID parameters:

Instrument at the factory has been configured a default PID parameters. The PID value can be applied to the general temperature control heating system When using the default PID parameters when the temperature effect is not very satisfactory, for certain automatic control theory and experience, users can manually modify the PID value of experience

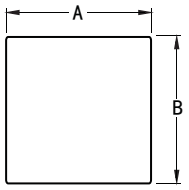
2. Automatically set PID parameters:

When the user does not know how to set the PID parameters， self-tuning function which within the instrument can be used , auto-tuning function is to meter the different heating systems based on user needs， PID temperature control automatically calculate the value of three parameters, instrumentation, the use of the calculated PID parameter values to automatically adjust temperature control.

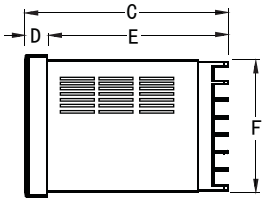
Self-tuning Method: First to set a SV value, and then hold down the "◀" key more than 3 seconds; not off "AT" indicator light on . "AT" indicator light on, means the self-tuning is running, this time in order to ensure the accuracy of the results of self-tuning, change the SV value of the parameters is not permitted until "AT" eliminate, the meter will automatically refresh PID value, this time, the instrument will be automatically and accurately control temperature

9. Shape and Installation Hole Size

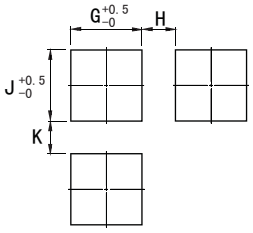
panel Size



Side Size



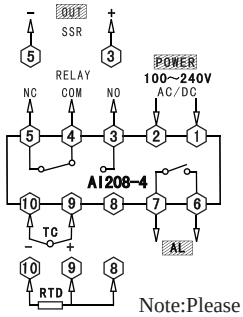
Mounting Size

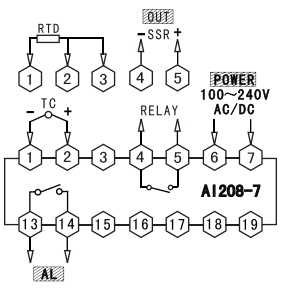


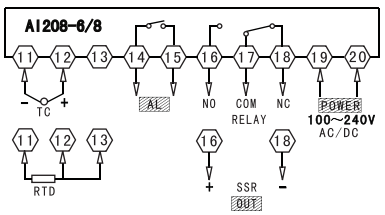
Model	A	B	C	D	E	F	G	H(Min)	J	K(Min)
4:(48*48)	48	48	97.5	6.5	91	45	45.5	25	45.5	25
6:(96*48)	48	96	97.5	9	88.5	89.5	45	25	90	25
7:(72*72)	72	72	97.5	9	88.5	67	67.5	25	67.5	25
8:(48*96)	96	48	97.5	9	88.5	44.5	92	25	45	25
9:(96*96)	96	96	97.5	9	88.5	91.5	90	25	92	25
80:(80*160)	160	80	96	13	83	75.5	155.5	30	76	30
16:(160*80)	80	160	96	13	83	155	76	30	155.5	30

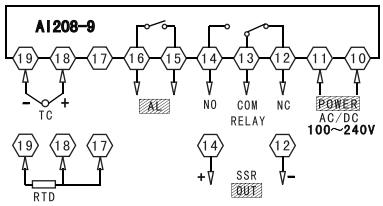
10. Connecting

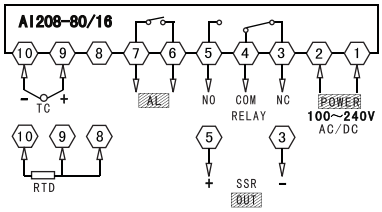
Power Supply:100-240V AC/DC
Voltage Output:DC 24V 30mA
Relay Output:AC 250V 3A











Note:Please subject to the connection drawing on the meter if there is any change!

11.Simple Problem Shooting

Display Message	Shooting Method
Display ERR	Check whether input is interrupted; check the FH value and FL value; determine the temperature of the working environment whether it is normal, Check the input signal selection is correct