

AX series

Digital Temperature Controller

Economical
price

Convenient
functions

High speed
sampling

High accuracy
temperature controlling



AX2 · AX3 · AX4 · AX7 · AX9



➔ Actualized the highly accurate temperature controlling

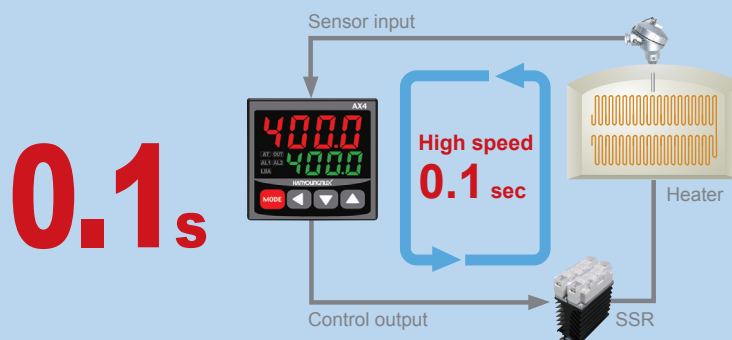
High display accuracy

Upgraded the display accuracy to the $\pm 0.3\%$ of F.S (Full Scale)

± 0.3 % of F.S

High speed sampling cycle

Performs more precise temperature controlling by the high speed sampling cycle (0.1 s)



0.1°C / 0.1°F decimal point display

Able to select either celsius (°C) or Fahrenheit (°F) for temperature display by the internal parameter selection

0.1 °C / 0.1 °F

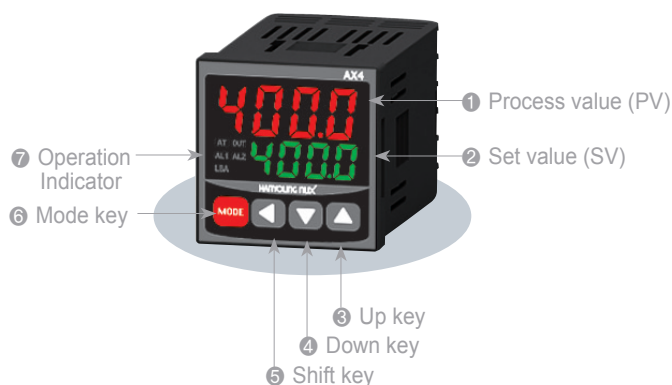
AX2 · AX3 · AX4 · AX7 · AX9

AX series

Digital temperature controller

Digital temperature controller

- ▶ Multi-input (K, J, R, T and Pt100 Ω)
- ▶ Multi-output (Relay and SSR)
- ▶ High speed sampling cycle (0.1 sec)
- ▶ Installation depth : 63 mm
- ▶ Control loop break alarm (LBA)



>> Suffix code

Model	Code	Description
AX	☐ - ☐ ☐	Digital temperature controller (Multi input : K, J, R, T, Pt 100 Ω)
Dimension	2	48(W) X 96(H) mm
	3	96(W) X 48(H) mm
	4	48(W) X 48(H) mm
	7	72(W) X 72(H) mm
	9	96(W) X 96(H) mm
Output selection	1	SSR + Relay1 + Relay2
	2	SSR + Relay1 + Relay2 + Relay3
	3	4 - 20 mA + Relay2
	4	4 - 20 mA + Relay2 + Relay3
Power supply voltage	A	100 - 240 V a.c 50 / 60 Hz

※ Relay output operates as control output, alarm output and LBA output depending on the internal parameter setting.

>> Part name and function

NO	Name	Information
①	Process value (PV)	Display the current temperature in the operation screen
②	Set value (SV)	Display the set temperature in the operation screen
③	Up key	Change the operation screen, increase the set value, move to the parameter setting mode
④	Down key	Decrease the set value, move to the parameter setting mode
⑤	Shift key	Shift to the set value digits Move from operation screen - users Move from operator - setting mode
⑥	Mode key	Move from operation screen - users Move from operator - setting mode
⑦	AT	Light ON with the PID auto tuning
	OUT	Light ON with the control output operation
	AL1	Light ON with the Alarm1 operation
	AL2	Light ON with the Alarm2 operation
	LBA	Light ON with the Loop break alarm operation



AX series

>> Specification

Model	AX4	AX3	AX7	AX2	AX9
Dimension W X H X D (mm)					
	48 X 48 X 63	96 X 48 X 63	72 X 72 X 63	48 X 96 X 63	96 X 96 X 63
Input type	Multi input (Thermocouple : K, J, R, T, IEC 584-1), (RTD : Pt100 Ω , IEC751)				
Sampling cycle	100 ms				
Input impedance	max 1 M Ω				
Albware input wiring resistance	10 V d.c				
Display accuracy	Thermocouple K, J, T	± 0.3 % of F.S ± 1 digit (RJC error ± 0.8 %) $^{\circ}\text{C}$			
	Thermocouple R	± 1.0 % of F.S ± 1 digit in the 0 ~ 600 $^{\circ}\text{C}$ range			± 2.0 $^{\circ}\text{C}$ in the range of 0 ~ 600 $^{\circ}\text{C}$, ± 0.8 $^{\circ}\text{C}$ outside of the range
		± 0.3 % F.S ± 1 digit in the 600 ~ 1700 $^{\circ}\text{C}$ range			
	Pt100	± 0.3 % of F.S ± 1 digit $^{\circ}\text{C}$			
Display type	7 Segment LED (PV : red, SV : green)				
Font size	PV	13.0 X 6.5	15.9 X 7.6	14.5 X 7.0	22.5 X 11.2
	SV	9.2 X 5.2	12.0 X 6.0	9.4 X 4.7	10.8 X 5.2
Input resolving power	- Thermocouple : 0.1 $^{\circ}\text{C}$ (K2, J, T), 0.5 $^{\circ}\text{C}$ (K1), 0.3 $^{\circ}\text{C}/1$ $^{\circ}\text{F}$ (R) - RTD : 0.03 $^{\circ}\text{C}$, (0.1 $^{\circ}\text{F}$)				
Insulation resistance	min 20 M Ω , 500 V d.c. 1 minute (primary terminal - secondary terminal)				
Dielectric strength	2,300 V a.c, 50/60 Hz, for 1min (primary terminal - secondary terminal)				
Control method	PID control by Auto-tuning, ON/OFF control				
Manual reset	Users set with in the range 0.0 % - 100.0 %				
Control output operation	Reverse operation / Direct operation selectable by the parameter setting				
Control output	Relay output ※Selectable by the prameter setting 1a contact, 3 A 240 V a.c, 3 A 30 V d.c (resistive load)				
	- Voltage pluse output for running SSR [time sharing proportional control (CYC)] - Voltage plus output for running SSR [phase control (PHR)] 0/12 V d.c, pulse voltage (resistive load minimum 600 Ω)				
	4 - 20 mA d.c (resistive load max. 600 Ω)				
Power supply voltage	100 - 240 V a.c 50 / 60 Hz				
Voltage fluctuation	± 10 % of the power supply voltage				
Power consumption	5.5 VA max				
Ambient temperature	- 5 ~ 50 $^{\circ}\text{C}$				
Ambient humidity	35 ~ 85 % R.H (without condensation)				
Vibration resistance	10 - 55 Hz, 0.75 mm, each to direction X, Y and Z for 2 hours				
Shock resistance	300 % to direction 6 each 3 times				
Weigh	180 g	320 g	300 g	320 g	400 g

>> Range and input code

classification	Code	Input type	Range	
			Celsius ($^{\circ}\text{C}$)	Fahrenheit ($^{\circ}\text{F}$)
Thermocouple	℄1	K	-100 ~ 1200 $^{\circ}\text{C}$	-148 ~ 2192 $^{\circ}\text{F}$
	℄2		-100.0 ~ 500.0 $^{\circ}\text{C}$	-148 ~ 932 $^{\circ}\text{F}$
	℄	J	-100.0 ~ 500.0 $^{\circ}\text{C}$	-148 ~ 932 $^{\circ}\text{F}$
	℄	R	0 ~ 1700 $^{\circ}\text{C}$	32 ~ 3092 $^{\circ}\text{F}$
	℄	T	-100.0 ~ 400.0 $^{\circ}\text{C}$	-148 ~ 752 $^{\circ}\text{F}$
RTD	℘℄	Pt100 Ω	-100.0 ~ 400.0 $^{\circ}\text{C}$	-148.0 ~ 752.0 $^{\circ}\text{F}$

AX series

Digital temperature controller

Economical • Convenient • Fast Sampling Cycle High Accuracy Temperature Control

It maintains the ease of use with its essential functionality for engineers and job-site operators and high accuracy temperature control is achieved with fast sampling cycle

→ Simple selection

Multi input (sensor)

- Thermocouple
K, J, R, T
- RTD
Pt100 Ω

Display accuracy
 $\pm 0.3\%$ of F.S

Sampling cycle
0.1 초



The image shows a digital temperature controller unit labeled AX4. The display shows two rows of numbers: 4000.0 in red and 4000.0 in green. Below the display are three buttons: a red 'MODE' button, a left arrow, and a right arrow. The unit is labeled 'HANYOUNG NUX' at the bottom.

Control output type

- Relay output 3 contacts (selectable among the control output/alarm1/alarm2/LBA)
- SSR output 1 contact (Built in as standard)
※ Relay output can have maximum 3 contacts which can be selected as control output, alarm1 output, alarm2 output and LBA output.

Control method
PID control by auto-tuning or on-off control.

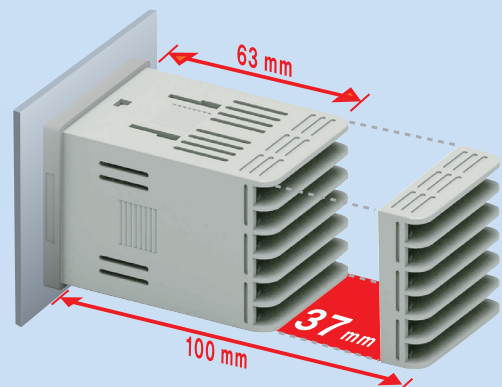
Control output operation
Reverse operation (heating control)/direct operation (cooling control) selectable by the internal parameter.

Display function

- Display the process value (PV) and set value (SV) together at the same time (4 digits)
- Display temperature in Celsius ($^{\circ}\text{C}$) / Fahrenheit ($^{\circ}\text{F}$)
- Display the position of decimal point (0.1/1 selectable)

Installation Depth 63 mm

AX series With the design of reducing the installation depth it provides more space for installation and the control panel and control box can be miniaturized



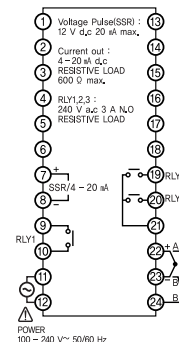
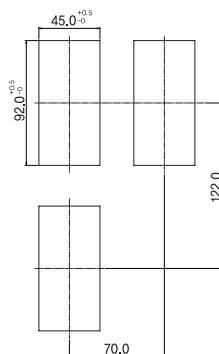
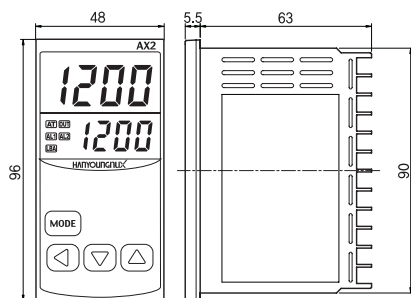
>>> Dimension and panel cutout / connection diagram

(Unit : mm)

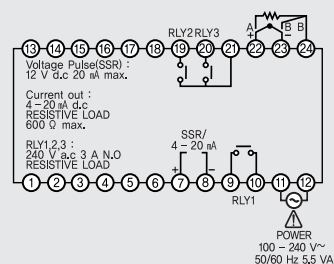
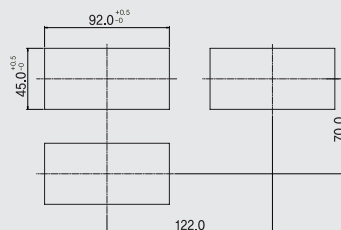
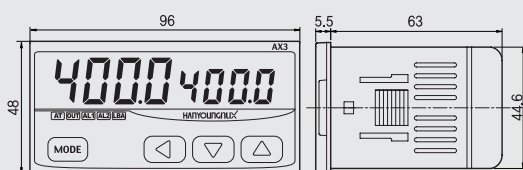
Dimension

Panel cutout

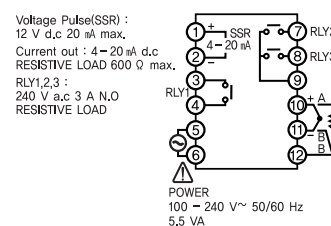
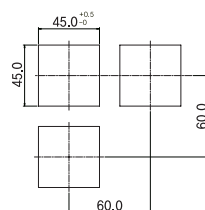
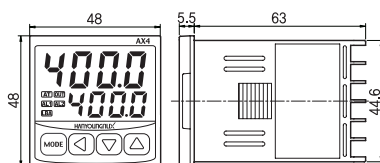
Connection diagram



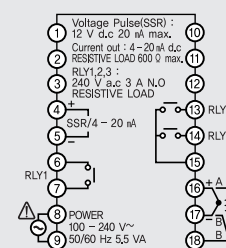
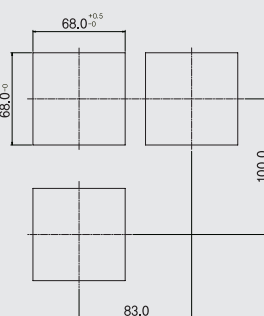
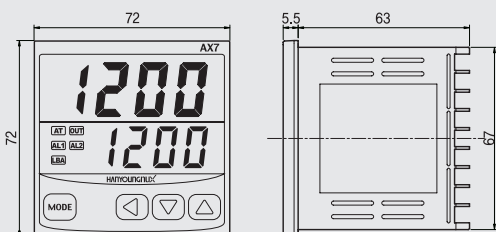
AX2



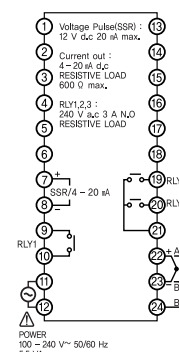
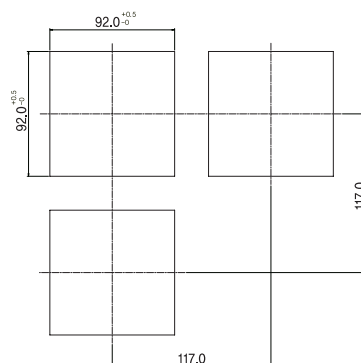
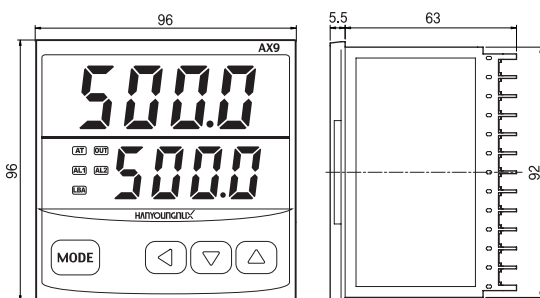
AX3



AX4



AX7



AX9