

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

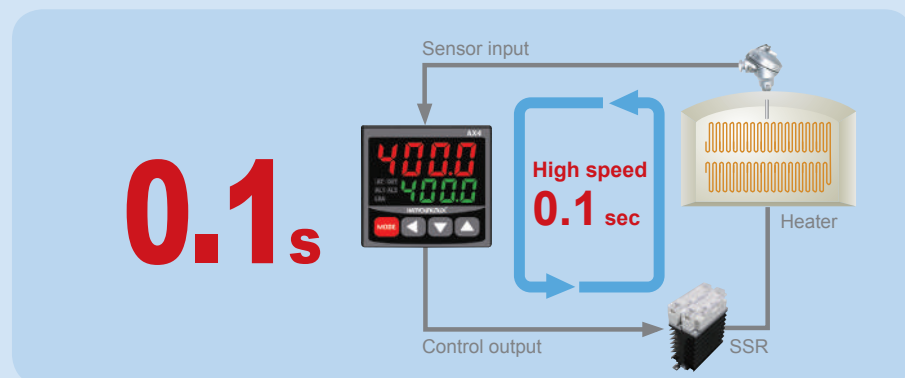
High display accuracy

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)

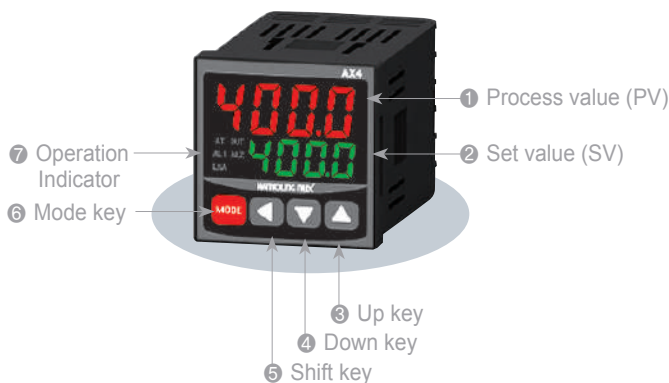
» Suffix code

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 MΩ					
Albvable input wiring resistance	10 V d.c					
Display accuracy	Thermocouple K, J, T					
	Thermocouple R					
	Pt100					
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	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	18.7 X 9.3
Input resolving power	<ul style="list-style-type: none"> Thermocouple : 0.1 °C (K2, J, T), 0.5 °C (K1), 0.3 °C/1 °F (R) RTD : 0.03 °C, (0.1 °F) 					
Insulation resistance	min 20 MΩ, 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	<ul style="list-style-type: none"> Relay output ※Selectable by the prameter setting 1a contact, 3 A 240 V a.c, 3 A 30 V d.c (resistive load) 					
	<ul style="list-style-type: none"> 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) 					
Power supply voltage	4 - 20 mA d.c (resistive load max. 600 Ω)					
Voltage fluctuation	100 - 240 V a.c 50 / 60 Hz					
Power consumption	±10 % of the power supply voltage					
Ambient temperature	5.5 VA max					
Ambient humidity	- 5 ~ 50 °C					
Vibration resistance	35 ~ 85 % R.H (without condensation)					
Shock resistance	10 - 55 Hz, 0.75 mm, each to direction X, Y and Z for 2 hours					
Weigh	300 ٪ to direction 6 each 3 times					
	180 g	320 g	300 g	320 g	400 g	

» Range and input code

clas sification	Code	Input type	Range	
			Celsius (°C)	Fahrenheit (°F)
Thermocouple	℄1	K	-100 ~ 1200 °C	-148 ~ 2192 °F
	℄2		-100.0 ~ 500.0 °C	-148 ~ 932 °F
	℄	J	-100.0 ~ 500.0 °C	-148 ~ 932 °F
	r	R	0 ~ 1700 °C	32 ~ 3092 °F
	℄	T	-100.0 ~ 400.0 °C	-148 ~ 752 °F
RTD	℘℄	Pt100 Ω	-100.0 ~ 400.0 °C	-148.0 ~ 752.0 °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
± **0.3** % of F.S

Sampling cycle
0.1 초



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.

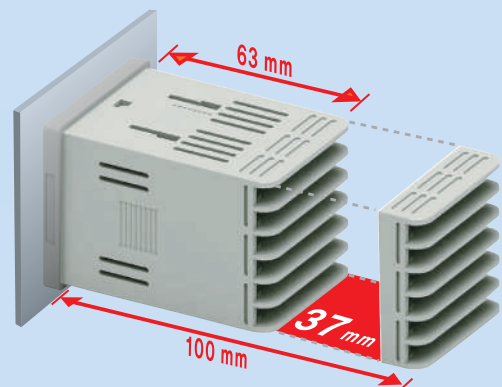
Control output operation
Reverse operation (heating control)/direct operation (cooling control) selectable by the internal parameter.

Display function

- Display the process value (PV) and set value (SV) together at the same time (4 digits)
- Display temperature in Celsius (°C) / Fahrenheit (°F)
- Display the position of decimal point (0.1/1 selectable)

Installation Depth 63 mm

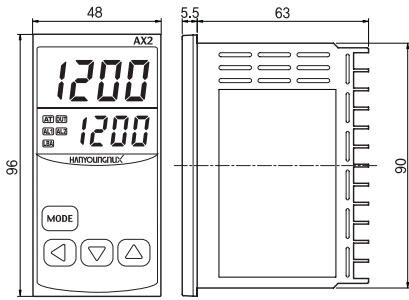
AX series With the design of reducing the installation depth it provides more space for installation and the control panel and control box can be miniaturized



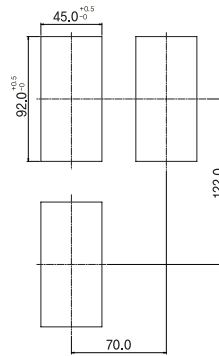
Dimension and panel cutout / connection diagram

(Unit : mm)

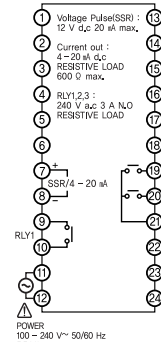
Dimension



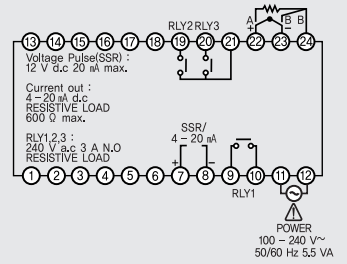
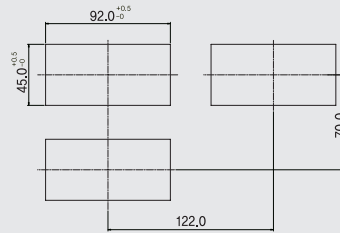
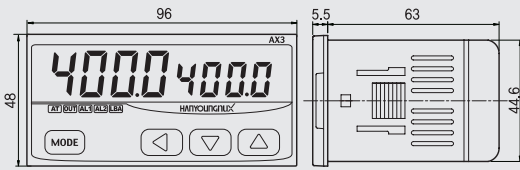
Panel cutout



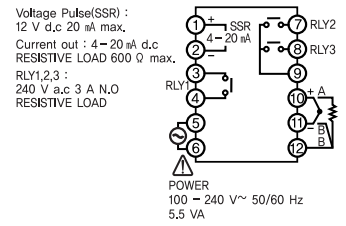
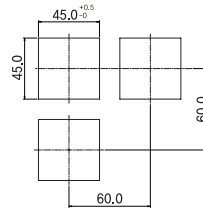
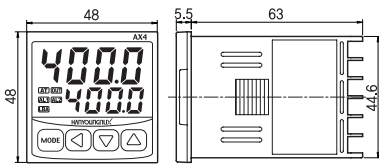
Connection diagram



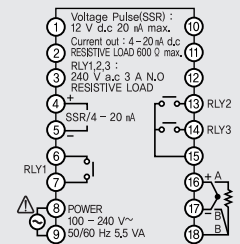
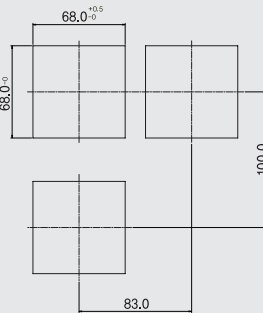
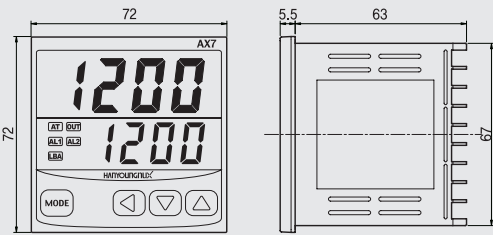
AX2



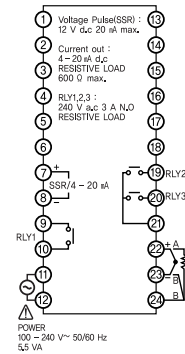
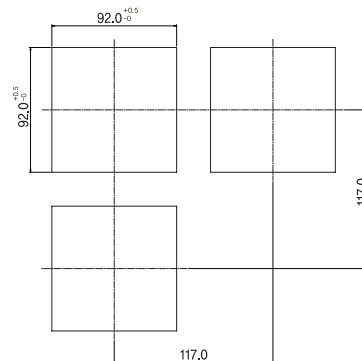
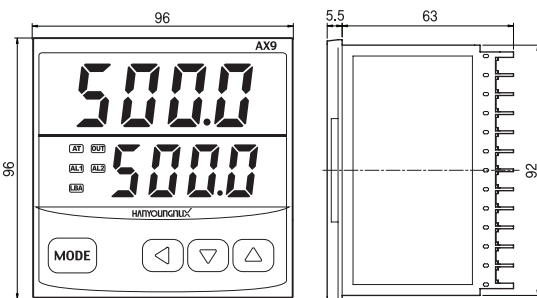
AX3



AX4



AX7



AX9