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AX series

Digital Temperature Controller

Economical price | Convenient functions | High speed sampling | High accuracy temperature controlling

HANYOUNG NUX

HANYOUNG nux

AX2 · AX3 · AX4 · AX7 · AX9

Actualized the highly accurate temperature controlling

High display accuracy

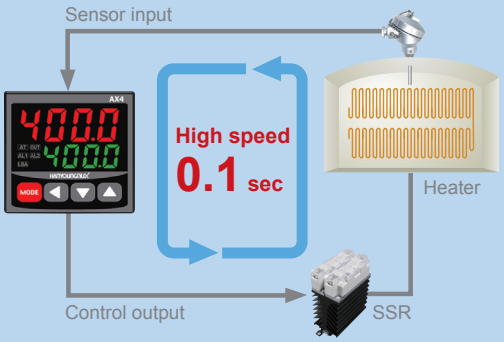
Upgraded the display accuracy to the ±0.3% of F.S (Full Scale)

±0.3 % of F.S

High speed sampling cycle

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

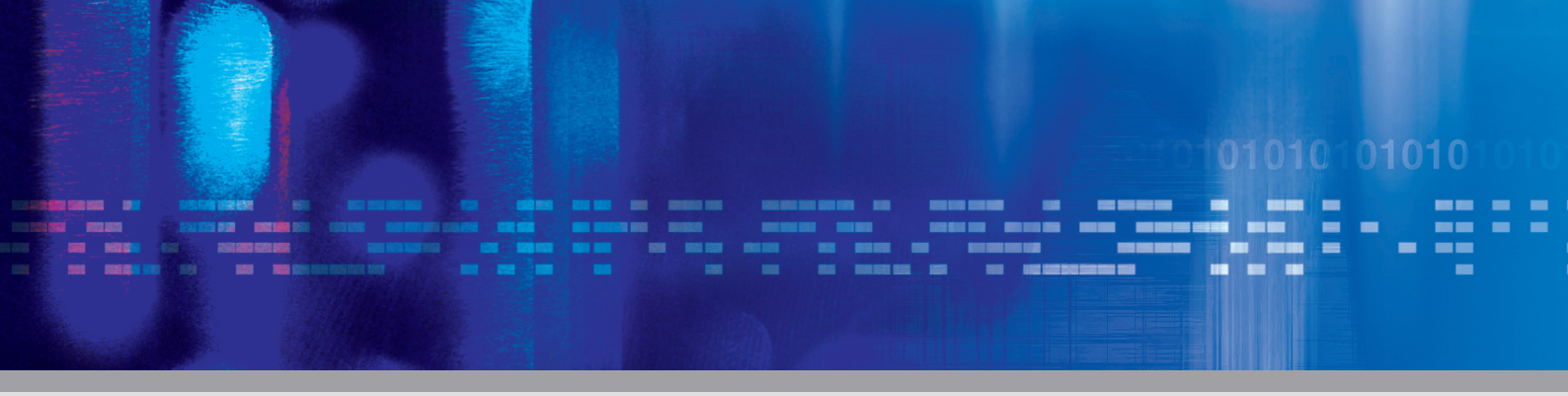
0.1s



0.1℃ / 0.1℉ decimal point display

Able to select either celsius (℃) or Fahrenheit (℉) for temperature display by the internal parameter selection

0.1 ℃ / 0.1 ℉



AX2 · AX3 · AX4 · AX7 · AX9

AX series

Digital temperature controller

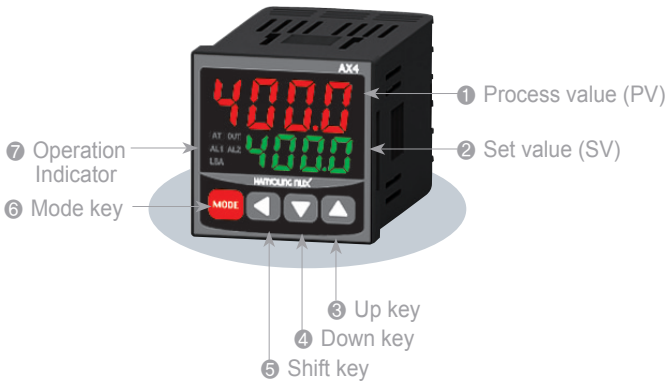
Digital temperature controller

- ▶ Multi-input (K, J, R, T and Pt100 Ω)
- ▶ Multi-output (Relay and SSR)
- ▶ High speed sampling cycle (0.1 sec)
- ▶ Installation depth : 63 ㎜
- ▶ 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) ㎜
	3			96(W) X 48(H) ㎜
	4			48(W) X 48(H) ㎜
	7			72(W) X 72(H) ㎜
	9			96(W) X 96(H) ㎜
Output selection		1		SSR + Relay1 + Relay2
		2		SSR + Relay1 + Relay2 + Relay3
		3		4 - 20 ㎃ + Relay2
		4		4 - 20 ㎃ + 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
❶	Process value (PV)		Display the current temperature in the operation screen
❷	Set value (SV)		Display the set temperature in the operation screen
❸	▲	Up key	Change the operation screen, increase the set value, move to the parameter setting mode
❹	▼	Down key	Decrease the set value, move to the parameter setting mode
❺	◀	Shift key	Shift to the set value digits Move from operation screen - users Move from operator - setting mode
❻	MODE	Mode key	Move from operation screen - users Move from operator - setting mode
❼	AT	Operation Indicator	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 (㎜)						
		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 ㎳				
Input impedance		max 1 ㏁				
Albwable input wiring resistance		10 V d.c				
Display accuracy	Thermocouple K, J, T	± 0.3 % of F.S ±1 digit (RJC error ±0.8 %) ℃				
	Thermocouple R	±1.0 % of F.S ±1 digit in the 0 ~ 600 ℃ range				±2.0 ℃ in the range of 0 ~ 600 ℃, ±0.8 ℃ outside of the range
		±0.3 % F.S ±1 digit in the 600 ~ 1700 ℃ range				
	Pt100	±0.3 % of F.S ±1 digit ℃				
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		• Thermocouple : 0.1 ℃ (K2, J, T), 0.5 ℃ (K1), 0.3 ℃/1 ℉ (R) • RTD : 0.03 ℃, (0.1 ℉)				
Insulation resistance		min 20 ㏁, 500 V d.c. 1 minute (primary terminal - secondary terminal)				
Dielectric strength		2,300 V a.c, 50/60 ㎐, 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 ㎃ d.c (resistive load max. 600 Ω)				
Power supply voltage		100 - 240 V a.c 50 / 60 ㎐				
Voltage fluctuation		±10 % of the power supply voltage				
Power consumption		5.5 VA max				
Ambient temperature		- 5 ~ 50 ℃				
Ambient humidity		35 ~ 85 % R.H (without condensation)				
Vibration resistance		10 - 55 ㎐, 0.75 ㎜, 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

clas sification	Code	Input type	Range	
			Celsius (℃)	Fahrenheit (℉)
Thermocouple	K1	K	-100 ~ 1200 ℃	-148 ~ 2192 ℉
	K2		-100.0 ~ 500.0 ℃	-148 ~ 932 ℉
	J	J	-100.0 ~ 500.0 ℃	-148 ~ 932 ℉
	r	R	0 ~ 1700 ℃	32 ~ 3092 ℉
	t	T	-100.0 ~ 400.0 ℃	-148 ~ 752 ℉
RTD	Pt	Pt100 Ω	-100.0 ~ 400.0 ℃	-148.0 ~ 752.0 ℉

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 operature

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

Display function

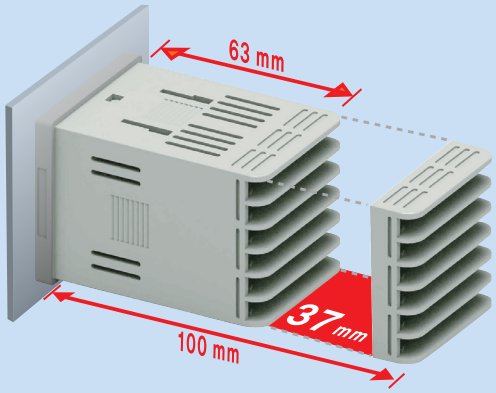
■ Display the process value (PV) and set value (SV) together at the same time (4 digits)

■ Display temperature in Celsius (℃) / Fahrenheit (℉)

■ 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

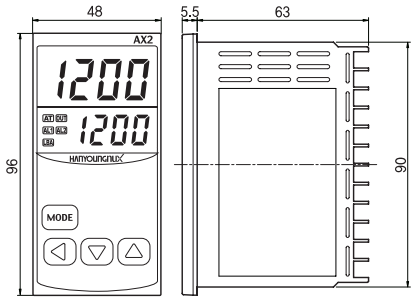


〉〉〉 Dimension and panel cutout / connection diagram

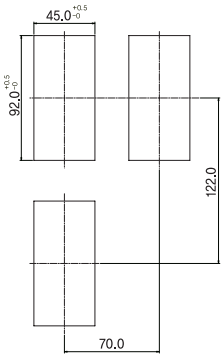
(Unit : ㎜)

AX2

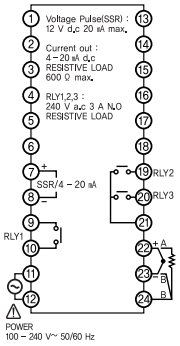
Dimension



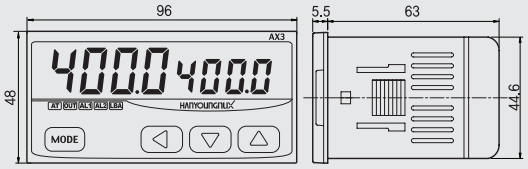
Panel cutout

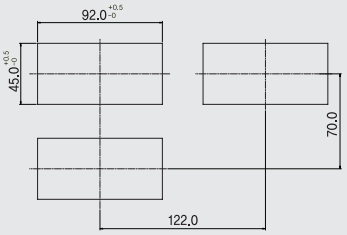


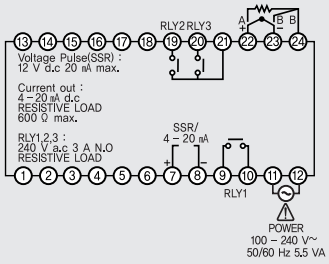
Connection diagram



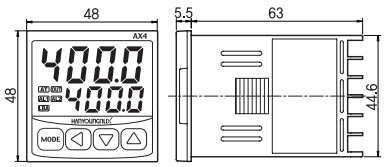
AX3

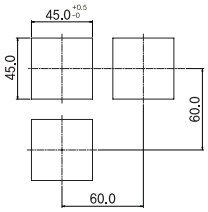


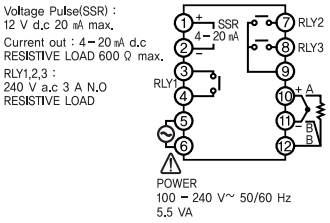




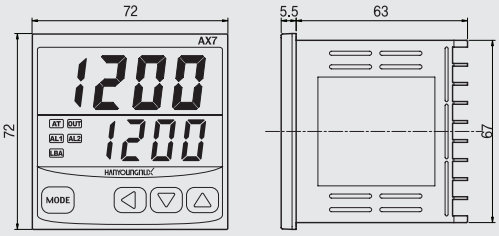
AX4

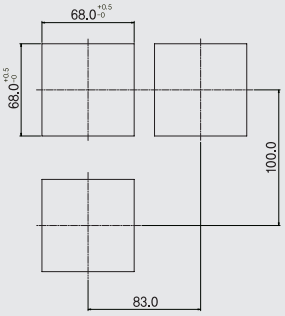


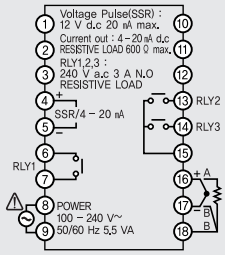




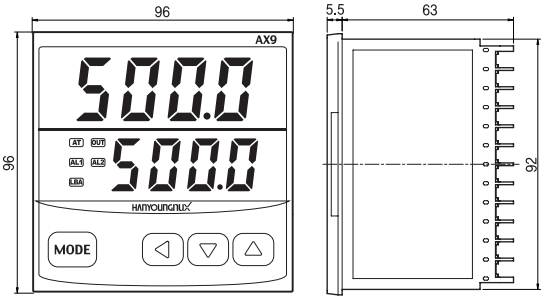
AX7

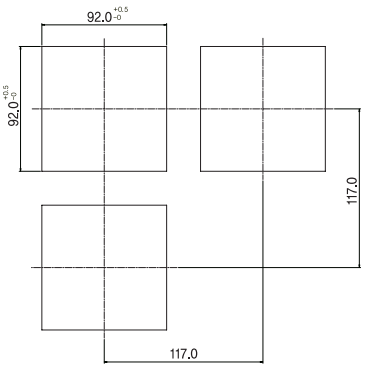


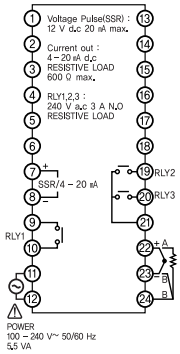




AX9







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