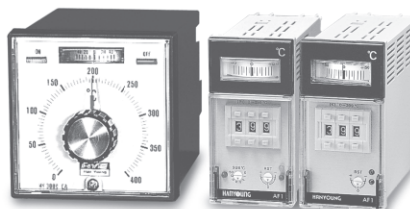


HY-3000 / AF1

Deviation indicating temperature controller

- Proportional control or ON/OFF control
- Simple temperature setting
- Burn out function
(output OFF with sensor break)
- Control action does not get influenced
by the break down of indicator



●● Suffix code

Model		Code					Description		
Dimension	HY-3000	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	96X96	Deviation indicating temperature controller	
	AF1-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	48X96		
Control type		F						ON/OFF control (2 position control)	
		P						Proportional control	
Input		K						K thermocouple	
		J						J thermocouple	
		P							Resistance Temperature Detector(RTD) Pt100 Ω (IEC)
		V							1 - 5 V DC
		C							4 - 20 mA DC
Control output		M						※ Relay	
		C							※ Current output (4 - 20 mA DC)
		S							SSR (12 V DC voltage pulse output)
Sub output(SUB) (only with model AF1)		N						※ NONE	
		O							※ High action
		P							Low action
		W							※ High/Low action
Control operation		R						※ Reverse action (heating control)	
		D							※ Direct action (cooling control)
Range code								Select the standard range code	

※ Applied only to the AF1

● Specification

Input

Thermocouple	K, J
RTD	Pt100 Ω, KPt100 Ω (139.6 Ω when temperature is 100 °C)
DC voltage input	1 – 5 V DC 4 – 20 mA DC (only with AF1)
Input impedance	Thermocouple and DC voltage input approx. 1 MΩ
Allowable signal source resistance	Thermocouple (100 Ω max). DC voltage (2 kΩ max)
Allowable wiring resistance	RTD 10 Ω max. (but resistances among 3 wires should be same)
Allowable input voltage	Within ±10 V (thermocouple, RTD, DC voltage).
Cold junction compensation error	±2.0 °C (0 ~ 50 °C)

Performance

Display accuracy	±2.5 % of FS (HY-3000), ±1.0 % of FS (AF1)
Insulation resistance	20 MΩ min (500 V DC)
Dielectric strength	2,000 V AC 50/60 Hz, for 1min, (between the different recharging part from each other)

Control function and output

Control type	Proportional control, ON/OFF control (selected by composition of suffix code)
Control action	Reverse action or direct action (selected by composition of suffix code)
Range setting	Same as the input range chart
Proportional band	HY-3000 : ±2.5 % of FS (Fixed), AF1 : ±3 % of FS (Fixed)
Manual reset(M.R)	±10 % of M.V (amount of output). only with Model AF1
Proportional cycle	Approx. 25 ~ 30 sec (relay output), approx. 2 ~ 4 sec (SSR output)
Hysteresis	Fixed to approx. 2 % of FS, (ON/OFF control, 400 °C standard)
Input signal break detection	When exceeding the range limit, output becomes OFF.
Sub output (SUB)	Only with Model AF1. High, low, high/low action (refer to suffix code)
Sub output setting range	Approx. 50 °C regarding main setting (400 °C range standard)
Sub output hysteresis	1 °C fixed

● Output

Control output	Relay output	Contact : 1 a, 1 b, 250 V AC. 3 A(resistive load) (HY-3000), 5A (AF1)
	SSR	Approx. 12 V DC (resistive load min 800 Ω)
	Current	4 – 20 mA DC (resistive load max 600 Ω)
Sub output	Relay	Only with Model AF1. contact : 1a, 250 V AC. 3 A (resistive load)

General specification

Power Supply Voltage	110/220 V AC 60 Hz
Voltage fluctuation	±10 % of the power supply voltage
Power consumption	3 VA max
Ambient temperature	0 ~ 50 °C
Ambient humidity	35 ~ 85 % RH (without dew condensation)
Storage temperature	-25 ~ 65 °C
Vibration resistance	10 - 55 Hz, peak amplitude 0.76 mm, for 1hr each in 3 axis direction
Shock resistance	300 %g
Weight	400 g (HY-3000), 350 g (AF1)

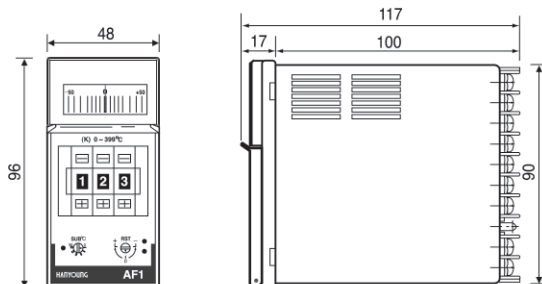
Range and input code chart

Code	HY-3000		AF1	
	Input	Range(°C)	Input	Range(°C)
1	-	-	Pt100 Ω	-99 ~ 99
3	Pt100 Ω	-50 ~ 100	-	-
4	K, J, Pt100 Ω	0 ~ 100	Pt100 Ω	0 ~ 99
5	K, J, Pt100 Ω	0 ~ 200	K, Pt100 Ω	0 ~ 199
6	K, J, Pt100 Ω	0 ~ 300	K, Pt100 Ω	0 ~ 299
7	K, J, Pt100 Ω	0 ~ 400	K, Pt100 Ω	0 ~ 399
8	K	0 ~ 600	-	-
9	K	0 ~ 800	-	-
11	K	0 ~ 1200	-	-

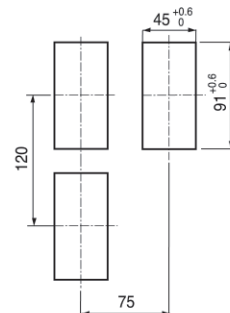
Dimension and panel cutout (Unit : mm)

AF1

● Dimension

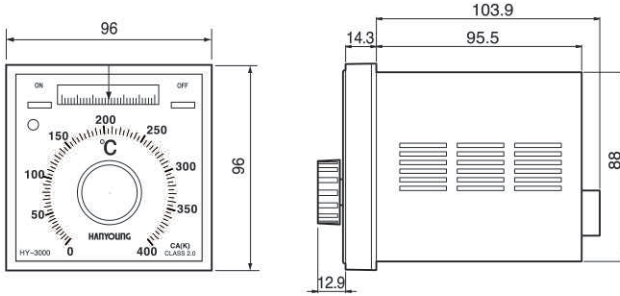


● Panel cutout

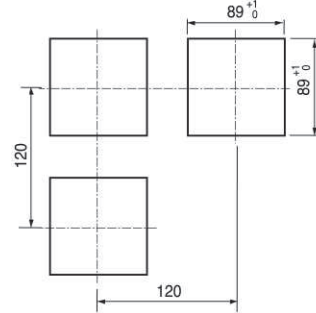


HY-3000

● Dimension

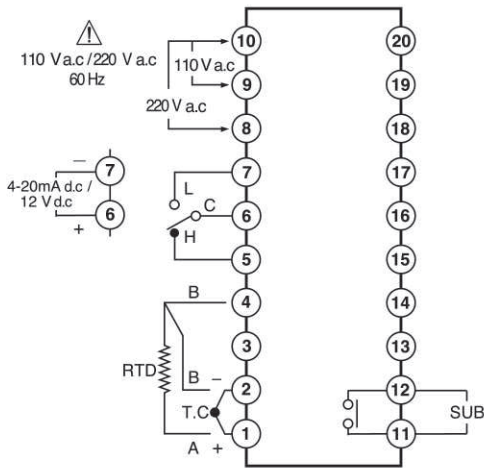


● Panel cutout

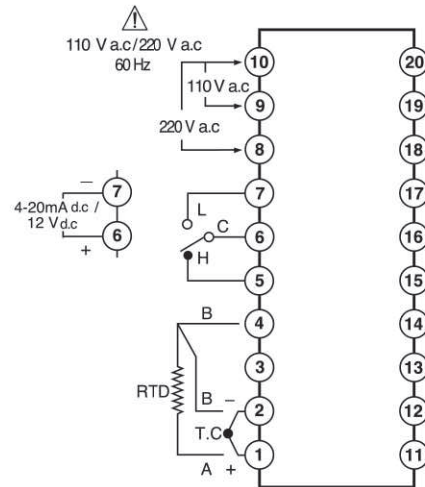


● Connection diagram

AF1(built in alarm output)



AF1



HY-3000

