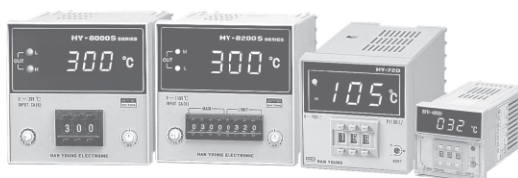


HY Series

Economical digital temperature controller

- Proportional control or ON/OFF control
- Simple temperature setting
- Alarm setting(HY-8200S)
- Clear digital indication



☉ Suffix code

Model		Code				Description
HY-	☐	☐	☐	☐	☐	Digital temperature controller
Dimension	8000S					96 X 96 mm
	8200S					96 X 96 (alarm setting general specification)
	72D					72 X 72
	48D					48 X 48
Control type	F					ON/OFF control
	P					Proportional control
Input	K					K thermocouple
	J					J thermocouple
	R					R thermocouple
	D					RTD KPt 100 Ω
	P					RTD Pt 100 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 (voltage pulse output, 12 V DC)
Alarm output	N					None
	O					High alarm (HY-8200S)
Control action (internal selection)	R					Reverse action (heating control)
	D					Direct action (cooling control)
Range code						Refer to the range and input code

● Specification

Input

Thermocouple	K, J, R
RTD input	Pt 100 Ω , KPt 100 Ω (139.16 Ω when temperature is 100 $^{\circ}\text{C}$)
DC rated voltage	1 – 5 V DC, 4 – 20 mA DC
Input sampling time	500 ms
Input display resolution	Usually less than 1C
Input impedance	Thermocouple min 1 M Ω , DC rated voltage approx. 1 M Ω
Allowable signal source resistance	Thermocouple max 250 Ω , DC voltage max 2 k Ω
Allowable wiring resistance	RTD (max 10 Ω , however resistance among 3 wires should be same)
Allowable input voltage	Within ± 10 V (thermocouple, RTD), within ± 20 V (DC voltage)
Input compensation	Due to the internal volume
Cold junction compensation error	± 2.0 $^{\circ}\text{C}$ (0 ~ 50 $^{\circ}\text{C}$)

Performance

Display accuracy	± 1 % of FS ± 1 Digit
Insulation resistance	Min 20 M Ω (500 V DC)
Dielectric strength	2,000 V AC 50 / 60 Hz, for 1 min (between the different recharging terminal from each other)

Control function and output

Control type	Proportional control, ON/OFF control (selected by the suffix code)
Control action	Reverse action or direct action (selected by the suffix code)
Range setting	Same as the input range
Proportional band	0.1 ~ 10.0 % of FS
Manual reset (M.R)	± 50 % of mV (amount of output)
Proportional cycle	Approx. 25 ~ 30 sec (relay output), approx. 2 ~ 4 sec (SSR output)
Hysteresis	0.2 % fixed (when performing ON/OFF control)
Input signal break detection	Output become OFF when exceeding 10 $^{\circ}\text{C}$ of range limit
Alarm type	High absolute alarm, only with Model HY-8200S
Alarm setting range	Within range limit
Alarm hysteresis	Fix 1 $^{\circ}\text{C}$

● Output

Control output	Relay	Contact capacity : 1 C, 250 V AC, 3 A (resistive load)
	SSR	Approx. more than 12 V DC (resistive load min 800 Ω)
	Current	4 – 20 mA DC (resistive load max 600 Ω)
Alarm output	Relay	Contact capacity : 1 c, 250 V AC, 5 A (resistive load) *only with Model HY-8200S

General specification

Power supply	110 – 220 V AC, 50 – 60 Hz dual usage but Model HY-48D selects 110/220V by using internal switch
Voltage fluctuation	± 10 % of the power 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	10 – 55 Hz, peak amplitude 0.76 mm for 2 hrs each in 3 axis direction
Shock	300 m/s ² , to the direction 6 each 3 times
Weight	700 g (HY-8000S), 750 g (HY-8200S), 500 g (HY-72D), 450 g (HY-48D)

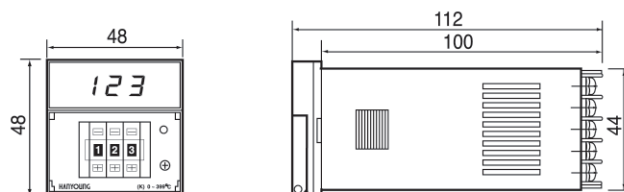
Range and input code

Classification	Code	HY-8000S, 8200S		HY-72D		HY-48D	
		Input type	Range (°C)	Input type	Range (°C)	Input type	Range (°C)
Thermocouple	4	–	–	–	–	K	0 ~ 299
	5	–	–	–	–		0 ~ 399
	6	K, J	0 ~ 199	K, J	0 ~ 199	–	–
	7		0 ~ 299		0 ~ 299		
	8		0 ~ 399		0 ~ 399		
	9		–		0 ~ 599		
	10	K	0 ~ 599	K	0 ~ 799		
	11		0 ~ 799		–		
	12		–		0 ~ 1199		
	13		0 ~ 1199	R	600 ~ 1699		
	14	R	600 ~ 1699	–	–		
RTD	1	–	–	–	–	Pt100 Ω	–49 ~ 49
	2	Pt100 Ω	–99 ~ 99	Pt100 Ω	–99 ~ 99		–99 ~ 99
	3		–99 ~ 199		–99 ~ 199		0 ~ 199
	4		0 ~ 99		0 ~ 99		0 ~ 299
	5		–		–	–	0 ~ 399
	6		0 ~ 199		0 ~ 199		–
	7		0 ~ 299		0 ~ 299		
	8		0 ~ 399		0 ~ 399		
Voltage/current (DC)	–	1 – 5 V	0 ~ 99	1 – 5 V	0 ~ 99	1 – 5 V	0 ~ 99
	–	4 – 20 mA	0 ~ 99	4 – 20 mA	0 ~ 99	4 – 20 mA	0 ~ 99

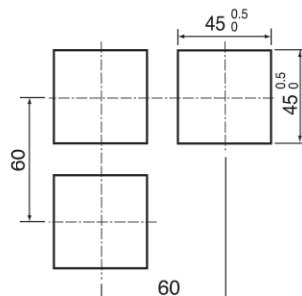
Dimension and panel cutout (Unit : mm)

HY-48D

Dimension

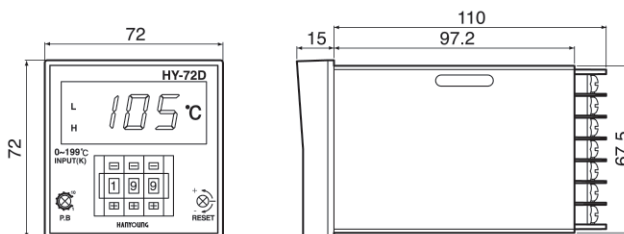


Panel cutout

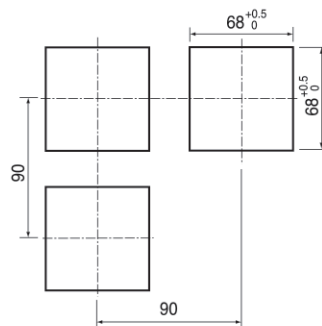


HY-72D

Dimension

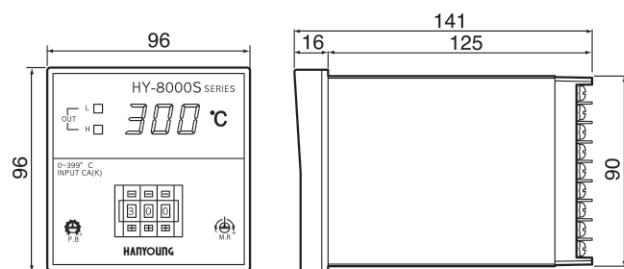


Panel cutout

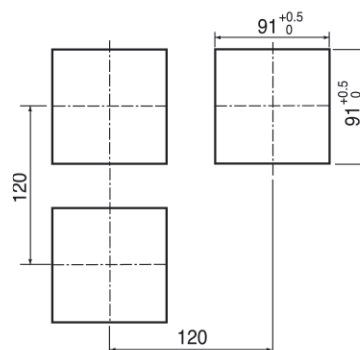


HY-8000S, 8200S

Dimension

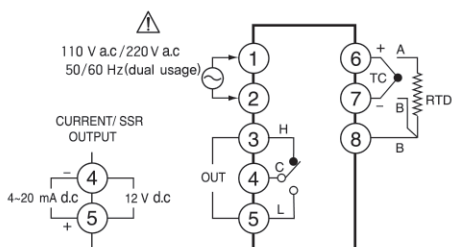


Panel cutout

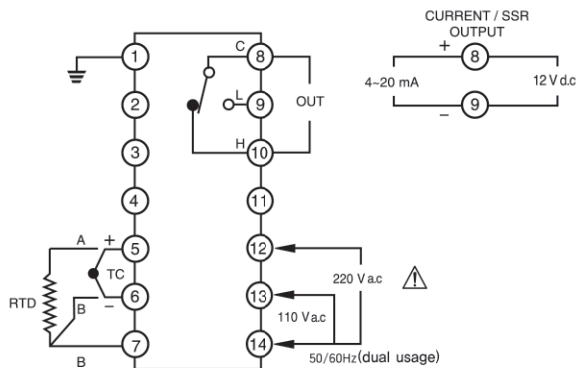


Connection diagram

HY-48D

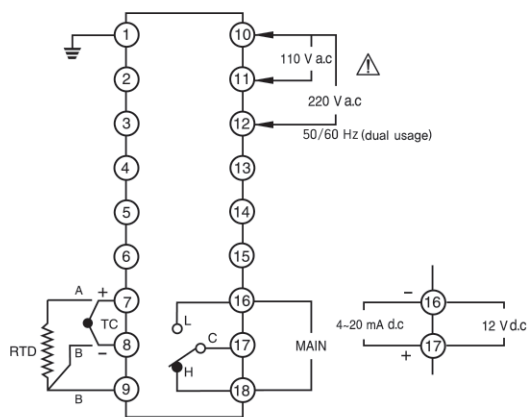


HY-72D



(Cautious) Model HY-48D can select 110 V AC or 220 V AC by using the internal deep switch
(default : 220 V AC)

HY-8000S



HY-8200S

