

# HY-1000/2000/ND4

## Non-indicating temperature controller



- Proportional control or ON/OFF control
- Simple temperature setting
- Plug in type  
(convenient repairing, inspecting and exchanging)
- Burn out function (output OFF with sensor break)
- Strong durability from the vibration and shock so possible to install directly to the machine



### Suffix code

Model	Code	Description
HY-1000	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	72(W) X 72(H) mm
HY-2000		96(W) X 96(H) mm
ND4		48(W) X 48(H) mm
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 (IEC751)
Control output	M	Relay
Alarm output	N	None (*.Model ND4 does not display)
Control action	R	Reverse action (heating control)
	D	Direct action (cooling control)
Range code		Select the standard range code
Terminal	T	ND4 terminal type

※ ND4 : Please select power voltage (110 V AC or 220 V AC)

### Specification

Input	
Thermocouple	K, J (J type only for HY-2000)
RTD	Pt100 Ω (IEC751)
Input impedance	Approx. 1 MΩ (thermocouple input )
Allowable signal source resistance	100 Ω max (thermocouple input)
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)



## Control function and output

Control type	Proportional control, ON/OFF control (selected by the 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	3 % of FS (Fixed)
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.
Control output	Relay (1 c, 250 V AC 3 A resistive load)

## General specification

Power supply voltage	110 / 220 V AC 60 Hz (ND4 : 110 V AC or 220 V AC).
Voltage fluctuation	±10 % of power voltage
Power consumption	3 VA max
Insulation resistance	Min 20 M $\Omega$ (500 V DC)
Dielectric strength	2,000 V AC 50/60 Hz, for 1 min (between the different recharging part from each other)
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 m/s <sup>2</sup>
Weight	HY-1000 : 400 g, HY-2000 : 400 g, ND4 : 200 g

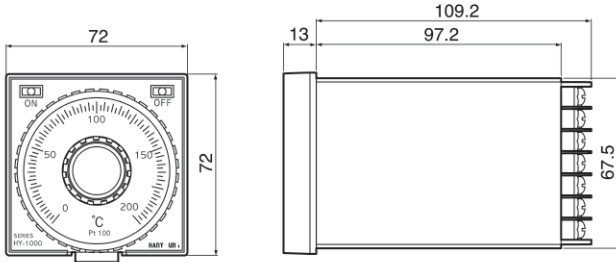
## Range and input code chart

Code	HY-2000		HY-1000		ND4	
	Input	Range(°C)	Input	Range(°C)	Input	Range(°C)
1	-	-	Pt100 $\Omega$	-50 ~ 50	Pt100 $\Omega$	-50 ~ 50
2	Pt100 $\Omega$	-50 ~ 100	-	-	Pt100 $\Omega$	-100 ~ 100
3	-	-	Pt100 $\Omega$	0 ~ 100	Pt100 $\Omega$	0 ~ 100
4	K, J, Pt100 $\Omega$	0 ~ 100	-	-	-	-
5	K, J, Pt100 $\Omega$	0 ~ 200	K, Pt100 $\Omega$	0 ~ 200	K, Pt100 $\Omega$	0 ~ 200
6	K, J, Pt100 $\Omega$	0 ~ 300	K, Pt100 $\Omega$	0 ~ 300	K, Pt100 $\Omega$	0 ~ 300
7	K, J, Pt100 $\Omega$	0 ~ 400	K, Pt100 $\Omega$	0 ~ 400	K, Pt100 $\Omega$	0 ~ 400
8	K	0 ~ 600	K	0 ~ 600	-	-
9	K	0 ~ 800	K	0 ~ 800	-	-
10	-	-	K	0 ~ 1200	-	-
11	K	0 ~ 1200	-	-	-	-

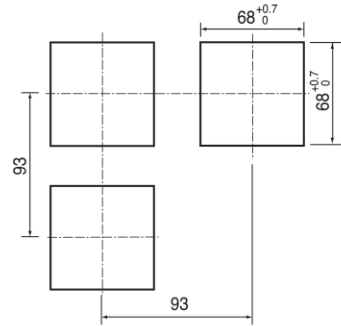
Dimension and panel cutout (Unit : mm)

HY-1000

● Dimension

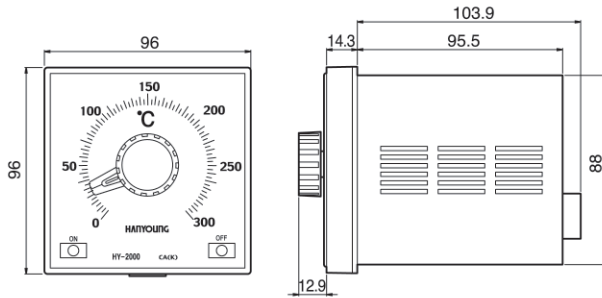


● Panel cutout

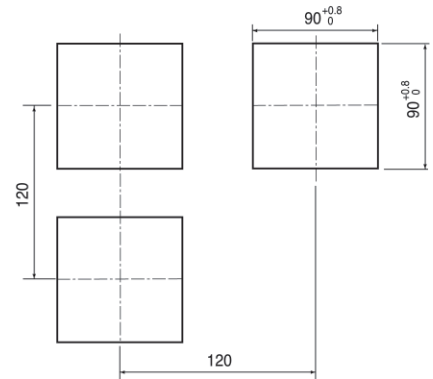


HY-2000

● Dimension

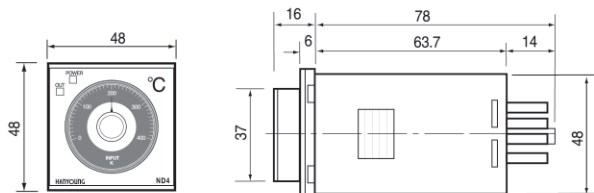


● Panel cutout

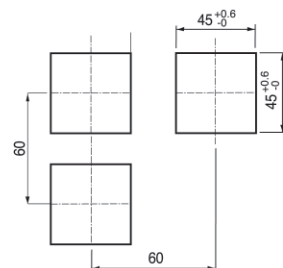


ND4 (Socket type)

● Dimension



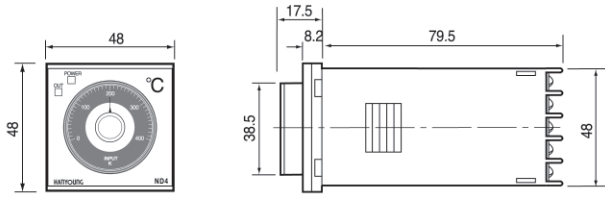
● Panel cutout



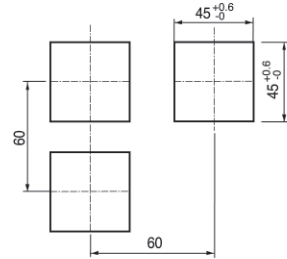


**ND4 (Terminal type)**

● Dimension

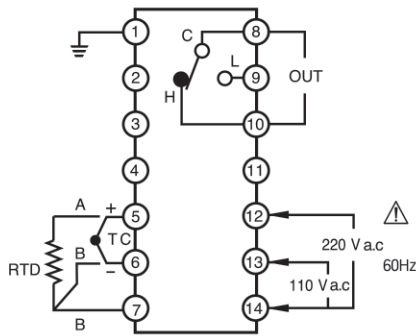


● Panel cutout

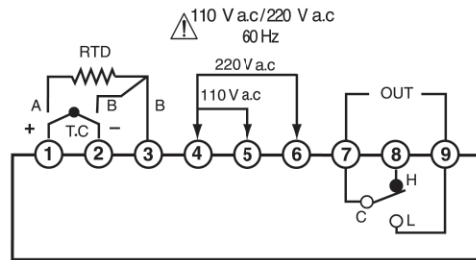


●● Connection diagram

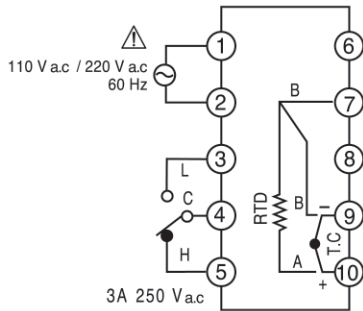
HY-1000



HY-2000



ND4 (Terminal type)



ND4 (Socket type)

