

## Dual setting type, High accuracy temperature controller

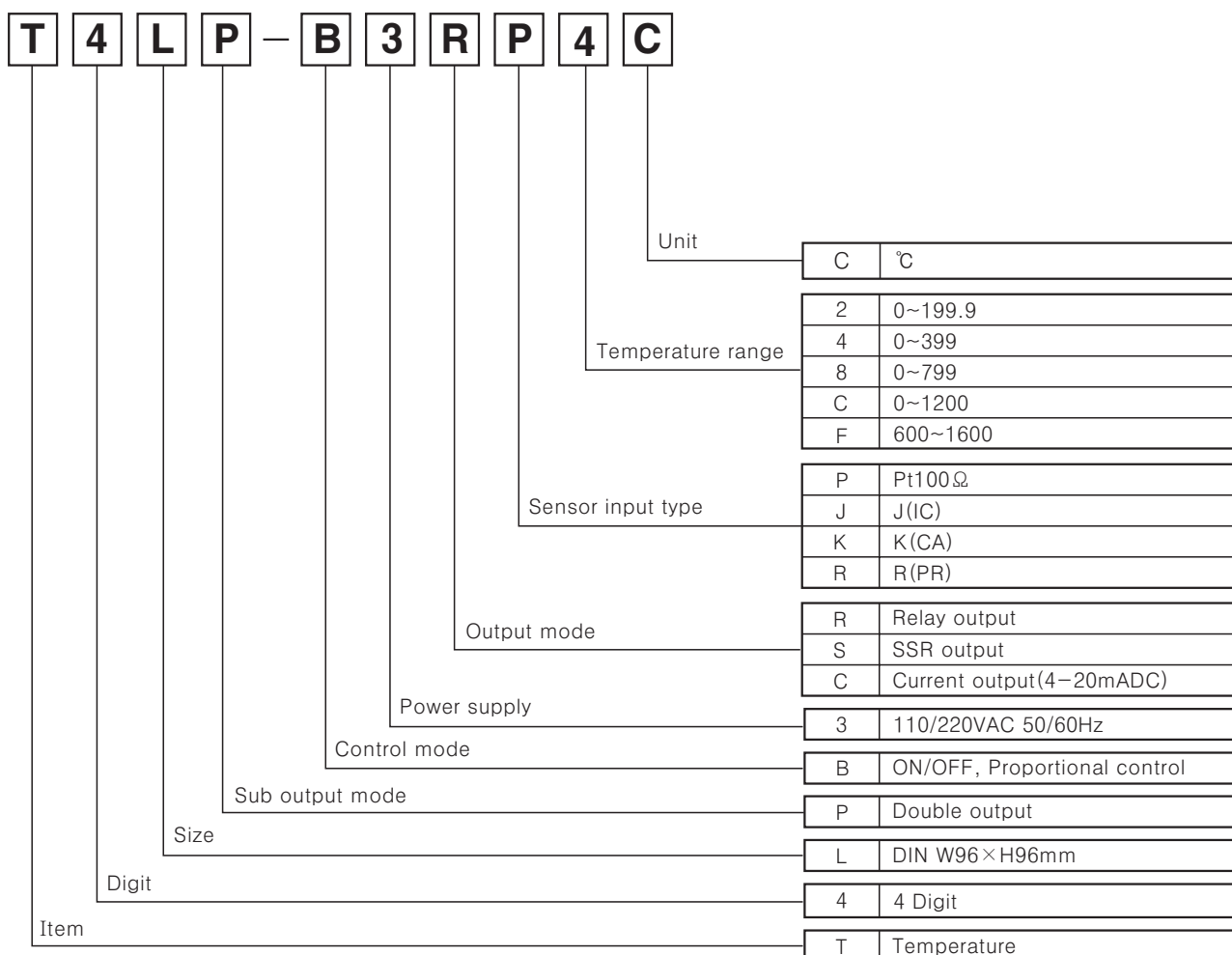
### ■ Features

- Dual setting type
- High accuracy measuring function :  $\pm 0.5\%$
- Control heater and cooler at once
- It is able to control a heater and a cooler with 1 piece of dual setting temperature controller. The 1st(Low set) output is for a heater control and 2nd(High set) output is for a cooler control.



**⚠ Please read "Caution for your safety" in operation manual before using.**

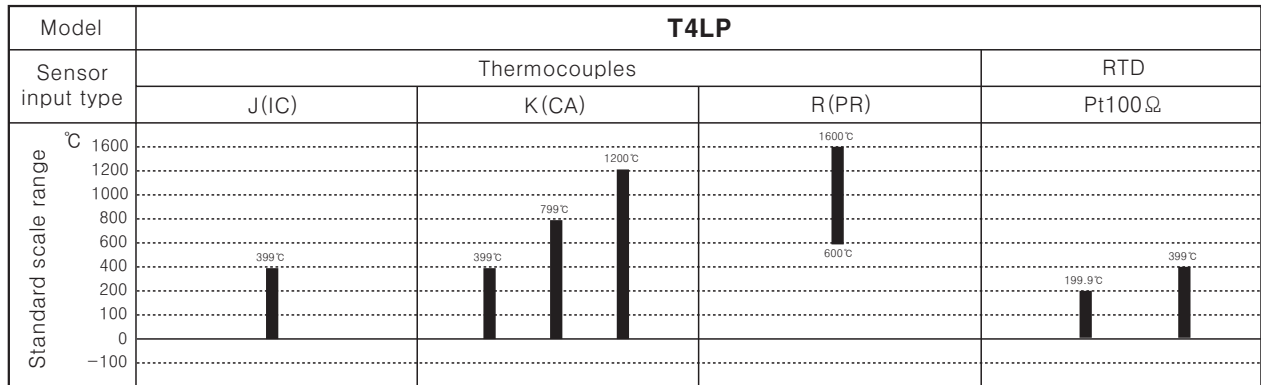
### ■ Ordering information



※ Please check the range of temperature when select model. (Please see C-32 page)

# Dual Setting Type

## Temperature range for each sensor



## Specifications

Model	T4LP	
Power supply	110/220VAC 50/60Hz	
Allowable voltage range	90 ~ 110% of rated voltage	
Power consumption	3VA	
Display method	7Segment LED Display	
Character size	W9.5×H14.2mm	
Display accuracy	F · S ± 0.5% rdg ± 1digit	
Setting type	Digital switch setting	
Setting accuracy	F · S ± 0.5%	
Sensor input	Thermocouples : K(CA), J(IC), R(PR) / RTD : Pt100Ω	
Input line resistance	Thermocouples : Max. 100Ω, RTD : Max. 5Ω per a wire	
Control	ON/OFF	Hysteresis F · S 0.2 ~ ±3%
	Proportional	Proportional band : F · S 1 ~ 10%, Period : 20sec. fixed□
Reset VR range	F · S ± 3% (Only for control deviation)	
Control output	<ul style="list-style-type: none"> <li>●Relay output : 1st out : 250VAC 3A 1c 2nd out : 250VAC 2A 1c</li> <li>●SSR output : 24VDC ±3V 20mA max.</li> <li>●Current output : 4~20mADC Load 600Ω max.</li> </ul>	
Self-diagnosis	Built-in burn out function	
Insulation resistance	Min. 100MΩ (at 500VDC)	
Dielectric strength	2000VAC 50/60Hz for 1 minute	
Noise strength	± 2kV the square wave noise(pulse width:1μs) by the noise simulator	
Vibration	Mechanical	0.75mm amplitude at frequency of 10 ~ 55Hz in each of X, Y, Z directions for 1 hour
	Malfuction	0.5mm amplitude at frequency of 10 ~ 55Hz in each of X, Y, Z directions for 10 minutes
Shock	Mechanical	300m/s <sup>2</sup> (Approx. 30G) 3 times at X, Y, Z direction
	Malfuction	100m/s <sup>2</sup> (Approx. 10G) 3 times at X, Y, Z direction
Relay life cycle	Mechanical	Min.10,000,000 times
	Electrical	Min.100,000 times(250VAC 3A at resistive load)
Ambient temperature	-10 ~ +50°C (at non-freezing status)	
Storage temperature	-25 ~ +65°C (at non-freezing status)□	
Ambient humidity	35 ~ 85%RH	
Weight	Approx. 487g	

(A)  
Counter

(B)  
Timer

(C)  
Temp.  
controller

(D)  
Power  
controller

(E)  
Panel  
meter

(F)  
Tacho/  
Speed/  
Pulse  
meter

(G)  
Display  
unit

(H)  
Sensor  
controller

(I)  
Proximity  
sensor

(J)  
Photo  
electric  
sensor

(K)  
Pressure  
sensor

(L)  
Rotary  
encoder

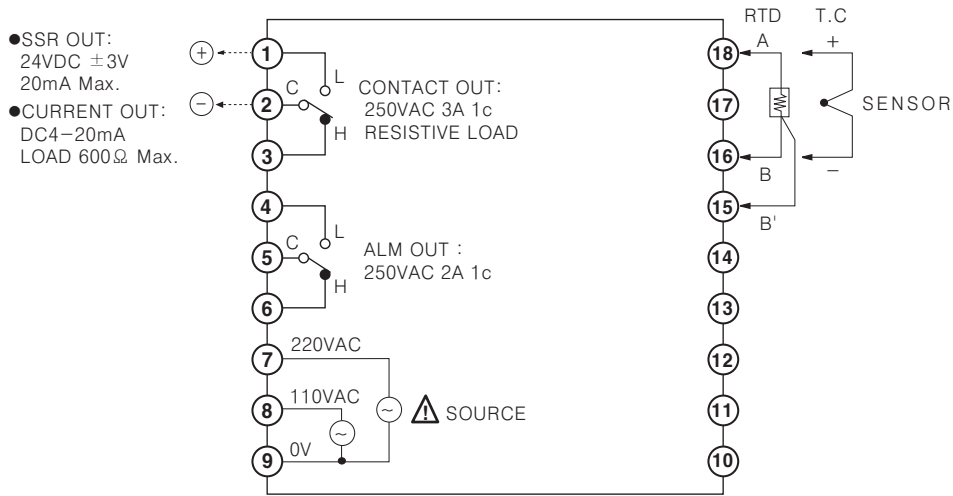
(M)  
5-Phase  
stepping  
motor &  
Driver &  
Controller

# T4LP

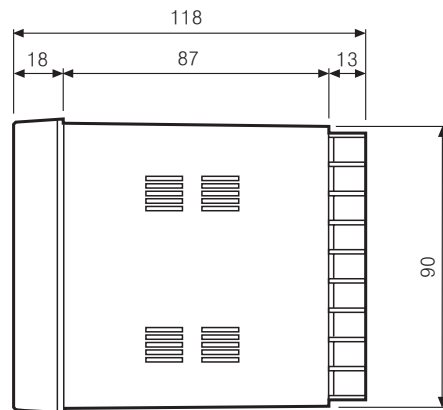
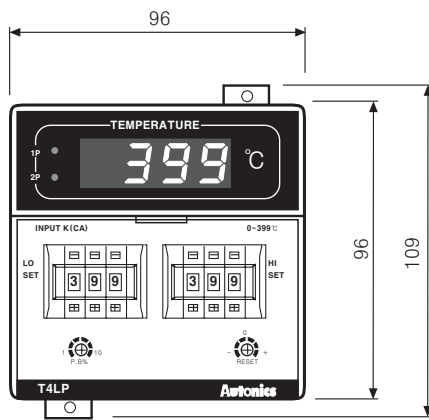
## Connections

※RTD(Resistance Temperature Detector) : Pt 100Ω (3-wire type)

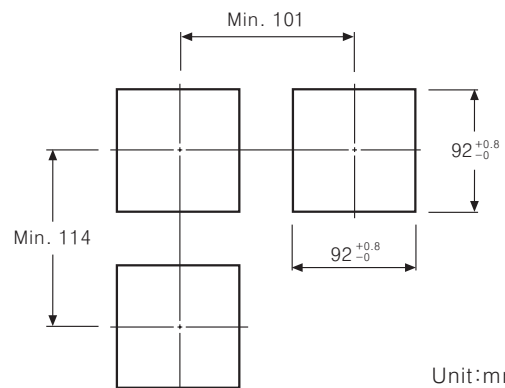
※Thermocouple : K, J, R



## Dimensions



### ●Panel cut-out



# Dual Setting Type

## ■ Proper usage

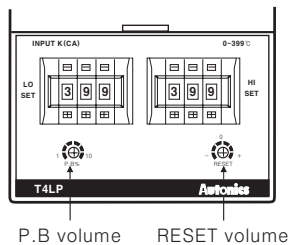
### ◎ Operation

This controller has two outputs operating separately. In other words, setting the values separately is available. Front Low set runs with reverse operation as other common controllers and High set runs by normal operation. Using these control types makes that controlling heater and cooler is available.



※ Terminal block ①, ②, ③ are for Low set output, and terminal block ④, ⑤, ⑥ are for High set output.

### ◎ Using front volume



#### ● P.B volume

In case of ON/OFF control, set variable F.S 0.2~3% of hysteresis, and in case of proportional control, set variable F.S 1~10% of hysteresis.

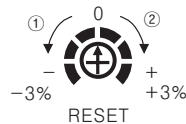
However, hysteresis(F.S 0.5%) and proportional band(F.S 3%) are fixed in T3S.

#### ● RESET volume

Adjusting the offset generated by using proportional control.

Adjusting range of reset volume is F.S  $\pm 3\%$ .

Do not change the reset volume when using ON/OFF control.



① Turn left when offset value is higher than set value. (Direction ①)

② Turn right when offset value is lower than set value. (Direction ②)

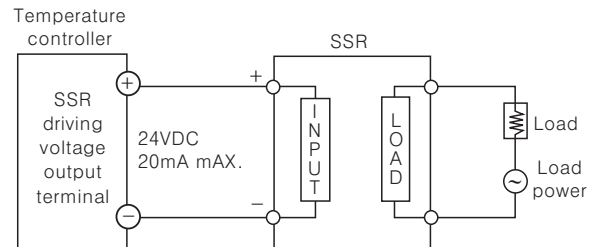
### ◎ Normal • Reverse operation

Reverse operation outputs ON when processing value is lower than setting value, and it is used with reverse operation when heated.

On the contrary, normal operation runs conversely and used for cooling. (This item runs as a reverse operation)

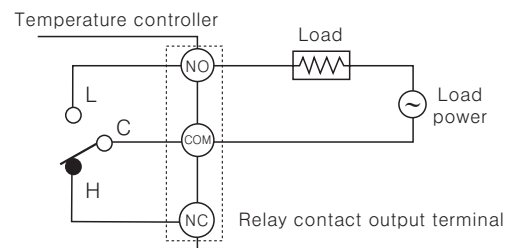
### ◎ Application of temperature controller and load connection

#### ● SSR output



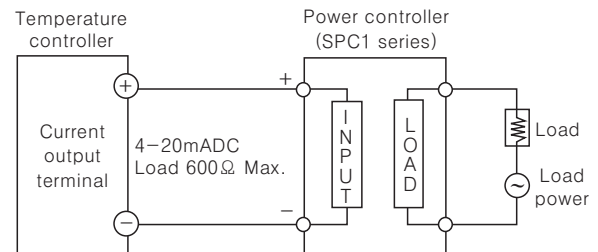
※ When using SSR driving voltage in the other purposes, do not over the range of rated current.

#### ● Relay output



Output	Relay contact capacity
1st OUT	250VAC 2A
2nd OUT	250VAC 3A

#### ● Current output

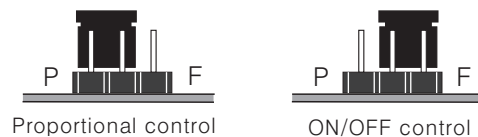


※ The current value of 4~20mADC is available at lower than 600 $\Omega$  of resistive load.

### ◎ How to select ON/OFF or proportional by plug pin

Factory specification is proportional control.

When using ON/OFF control, transfer the switch of control mode from P to F after detaching the case from its body.



(A) Counter

(B) Timer

(C) Temp. controller

(D) Power controller

(E) Panel meter

(F) Tacho/Speed/Pulse meter

(G) Display unit

(H) Sensor controller

(I) Proximity sensor

(J) Photo electric sensor

(K) Pressure sensor

(L) Rotary encoder

(M) 5-Phase stepping motor & Driver & Controller