

# Dial Setting /Deviation Setting Type

## Analog and Non indication type ,Set temperature by dial

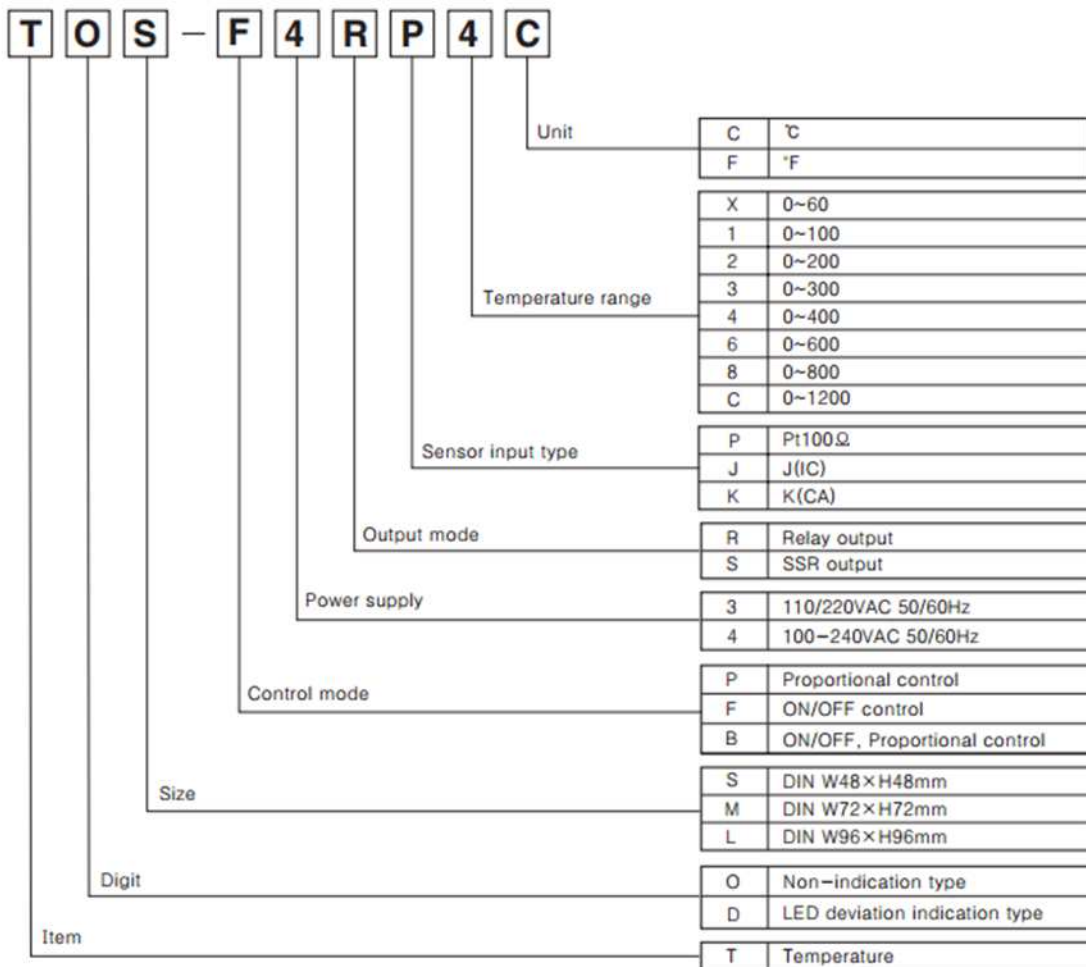
### ■ Features

- Non indicating type
- Temperature deviation indication type by LED : TDM, TDL
- Setting temperature by Dial : TOS



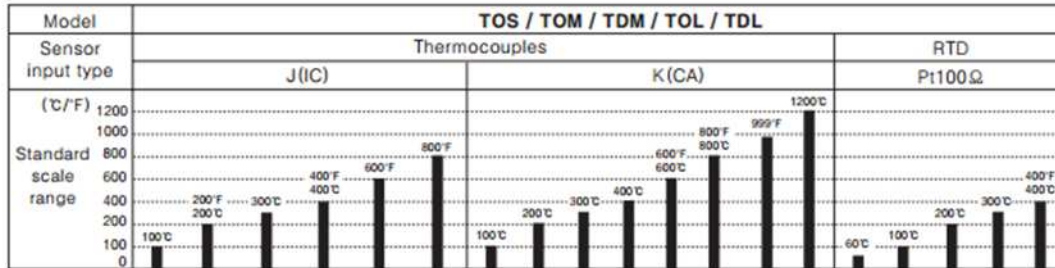
**⚠** Please read "Caution for your safety" in operation manual before using.

### ■ Ordering information



# TOS/TOM/TDM/TOL/TDL

## Temperature range for each sensor



\*Only TOS series is available °F degree for above Temp. range.

## Specifications

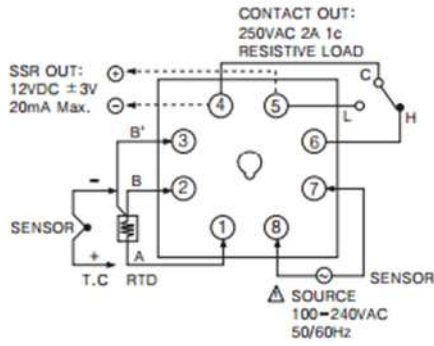
Model	TOS	TOM	TDM	TOL	TDL
Power supply	100-240VAC 50/60Hz	110/220VAC 50/60Hz			
Allowable voltage range	90 - 110% of rated voltage				
Power consumption	2VA	3VA			
Display method	LED ON indicator	LED ON/OFF indicator	LED deviation indicator	LED ON/OFF indicator	LED deviation indicator
Display accuracy	-----				
Setting type	Dial setting				
Setting accuracy	F · S ± 2%				
Sensor input	Thermocouples : K(CA), J(IC) / RTD : Pt100Ω				
Input line resistance	Thermocouples : Max. 100Ω, RTD : Max. 5Ω per a wire				
Control	ON/OFF	Hysteresis : F · S 0.5 ± 0.2% fixed <input type="checkbox"/>			
	Proportional	Proportional band : F · S 3% fixed, Period : 20sec. fixed <input type="checkbox"/>			
Control output	<ul style="list-style-type: none"> <li>●Relay output : 250VAC 2A 1c</li> <li>●SSR Output : 12VDC ±3V Load 20mA Max.</li> </ul>	<ul style="list-style-type: none"> <li>●Relay contact output : 250VAC 3A 1c</li> <li>●SSR Output : 12VDC ±3V 20mA 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			
	Malfunction	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			
	Malfunction	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) <input type="checkbox"/>				
Ambient humidity	35 - 85%RH				
Weight	Approx. 104g	Approx. 419g	Approx. 461g	Approx. 426g	Approx. 471g

# Dial Setting /Deviation Setting Type

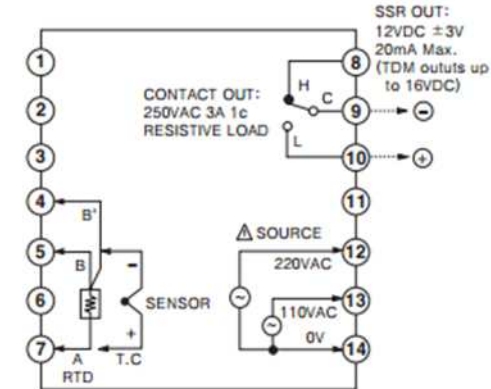
## Connections

\*RTD(Resistance Temperature Detector) : Pt 100Ω(3-wire type) \*Thermocouple : K, J, R

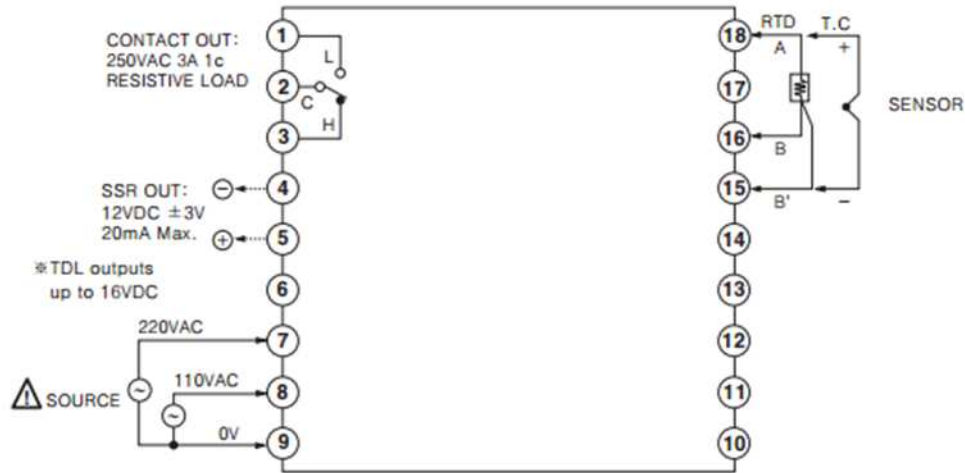
### TOS



### TOM, TDM

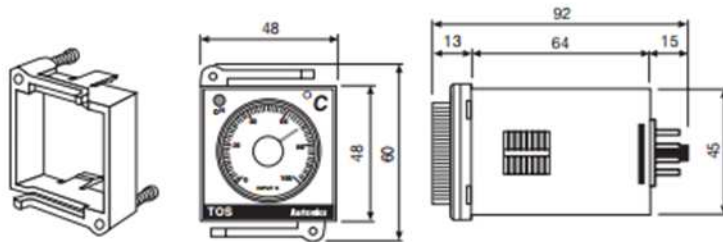


### TOL, TDL

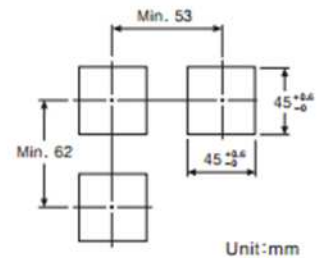


## Dimensions

### TOS



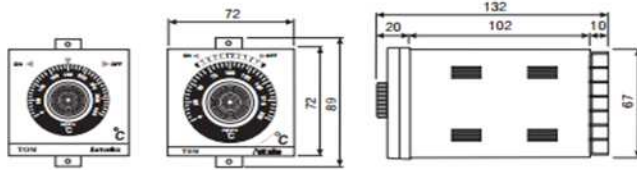
### Panel cut-out



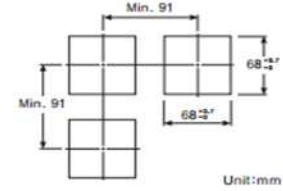
# TOS/TOM/TDM/TOL/TDL

## ■ Dimensions

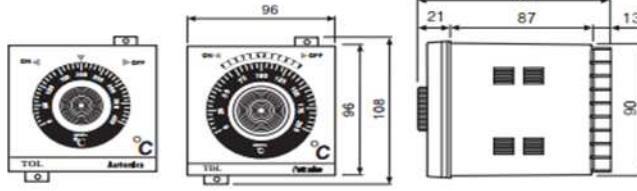
### ● TOM, TDM



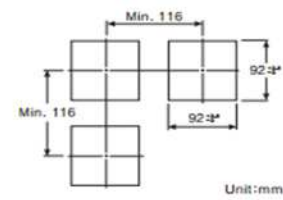
### ● Panel cut-out



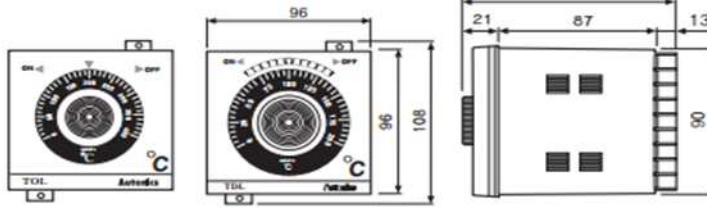
### ● TOL, TDL



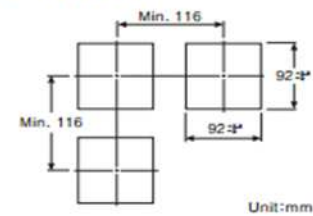
### ● Panel cut-out



### ● TOL, TDL



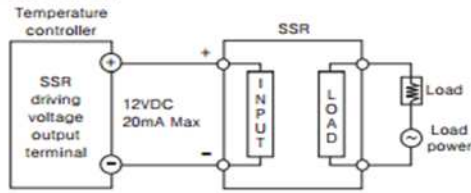
### ● Panel cut-out



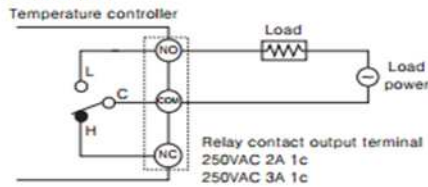
## ■ Proper usage

### ○ Application of temperature controller and load connection

#### ● SSR output



#### ● Relay output



### ○ 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)

### ○ 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.

Note) Several models require changing control mode by jump line or solder.



### ○ Indicating LED deviation

The price of digital indicating type is high and non-indicating type has a problem with catching actual temperature.

In this case indicating deviation type is useful. LED deviation indicator is a temperature controller having the function of lighting or putting out light.

\* The shipping specification is 10°C per one LED. Extending temperature deviation is available with additional order