

# Analog Non-Indication Type PID Temperature Controllers



## TA Series CATALOG

**For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.**

The specifications, dimensions, etc are subject to change without notice for product improvement. Some models may be discontinued without notice.

### Features

- Auto-tuning PID temperature control
- PID and ON/OFF control : toggle via external switch
- Deviation indicators (green, red LED)
- Control output indicator (red LED)
- Stop control output function using analog dial
- Sensor disconnect display function
- Built-in microprocessor

### Ordering Information

This is only for reference, the actual product does not support all combinations. For selecting the specified model, follow the Autonics website .

**T A ① - B 4 ② ③ ④ ⑤**

**① Size**

S: DIN W 48 × H 48 mm  
(8 pin plug type)  
M: DIN W 72 × H 72 mm  
L: DIN W 96 × H 96 mm

**② Control output**

R: Relay  
S: SSR drive

**③ Input sensor**

K: K(CA)  
J: J(IC)  
P: DPT100 Ω

**④ Temperature range for each sensor**  
Refer to 'Input Type and Using Range'.

**⑤ Temperature unit**

C: Celsius (°C)  
F: Fahrenheit (°F)

### Product Components

- Product
- Instruction manual
- Bracket

### Specifications

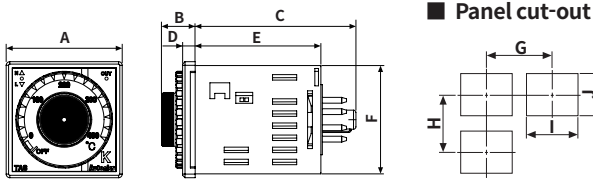
Series	TA Series	
<b>Power supply</b>	100 - 240 VAC ~ 50/60 Hz ± 10%	
<b>Power consumption</b>	≤ 4 VA	
<b>Sampling period</b>	100 ms	
<b>Input specification</b>	<ul style="list-style-type: none"> <li>• RTD: DPT100Ω (allowable line resistance per a wire: ≤ 5 Ω)</li> <li>• Thermocouple: K (CA), J (IC)</li> </ul>	
<b>Control output</b>	Relay	250 VAC ~ 3 A, 30 VDC ≒ 1 A 1c
	SSR	12 VDC ≒ ± 2 V, ≤ 20 mA
<b>Display type</b>	PV deviation, Error display (red, green), LED type	
<b>Setting method</b>	Front dial	
<b>Setting accuracy</b>	<ul style="list-style-type: none"> <li>• At room temperature (23 °C ± 5 °C) Over 100 °C model: F.S. ± 2%, below 100 °C model: F.S. ± 3%</li> <li>• Out of room temperature range Over 100 °C model: F.S. ± 3%, below 100 °C model: F.S. ± 4%</li> </ul>	
<b>Control type</b>	ON/OFF	Hysteresis: 2°C (fixed)
	PID Control	Control cycle: relay output 20 sec / SSR drive output 2 sec
<b>Relay life cycle</b>	Mechanical	≥ 10,000,000 operations (18,000 operations/time)
	Electrical	≥ 100,000 operations (900 operations/time)
<b>Dielectric strength</b>	Between input terminal and power terminal: 2,000 VAC ~ 50/60 Hz for 1 min	
<b>Vibration</b>	0.75 mm amplitude at frequency of 5 to 55 Hz (for 1 min) in each X, Y, Z direction for 2 hours	
<b>Insulation resistance</b>	≥ 100 MΩ (500 VDC ≒ megger)	
<b>Noise immunity</b>	Square shaped noise (pulse width: 1 μs) by noise simulator ± 2 kV R-phase, S-phase	
<b>Memory retention</b>	≈ 10 years (non-volatile semiconductor memory type)	
<b>Ambient temperature</b>	-10 to 50 °C, storage: -20 to 60 °C (no freezing or condensation)	
<b>Ambient humidity</b>	35 to 85%RH, storage: 35 to 85%RH (no freezing or condensation)	
<b>Insulation type</b>	Double or reinforced insulation (mark: □), dielectric strength between the measuring input part and the power part: 2 kV)	
<b>Approval</b>	CE, RoHS, ENEC	
<b>Unit weight (packaged)</b>	<ul style="list-style-type: none"> <li>• TAS: ≈ 69 g (≈ 107 g)</li> <li>• TAM: ≈ 109 g (≈ 171 g)</li> </ul>	• TAL: ≈ 147 g (≈ 232 g)

### Input Type and Using Range

PN	Input type	Using range (°C)	Using range (°F)	
1	Thermocouple	K(CA)	0 ~ 100	32 ~ 212
2			0 ~ 200	32 ~ 392
4			0 ~ 400	32 ~ 752
6			0 ~ 600	32 ~ 1,112
8			0 ~ 800	32 ~ 1,472
C			0 ~ 1,200	32 ~ 2,192
2	J(IC)	J(IC)	0 ~ 200	32 ~ 392
3			0 ~ 300	32 ~ 572
4			0 ~ 400	32 ~ 752
0	RTD	DPT100Ω	-50 ~ 100	-58 ~ 212
1			0 ~ 100	32 ~ 212
2			0 ~ 200	32 ~ 392
4			0 ~ 400	32 ~ 752

## Dimensions

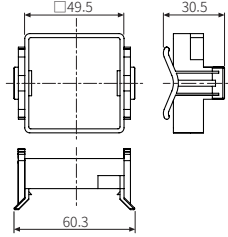
- Unit: mm, For the detailed drawings, follow the Autonics website.



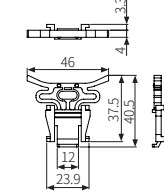
Series	Body						Panel cut-out			
	A	B	C	D	E	F	G	H	I	J
TAS	□48	14	66.7	5.2	52	44.8	≥ 65	≥ 65	45 <sup>+0.5</sup> <sub>0</sub>	45 <sup>+0.5</sup> <sub>0</sub>
TAM	□72	14.7	64.5	6.5	-	-	≥ 90	≥ 90	68 <sup>+0.7</sup> <sub>0</sub>	68 <sup>+0.7</sup> <sub>0</sub>
TAL	□96	14.7	64.5	6.5	-	-	≥ 115	≥ 115	92 <sup>+0.8</sup> <sub>0</sub>	92 <sup>+0.8</sup> <sub>0</sub>

## Bracket

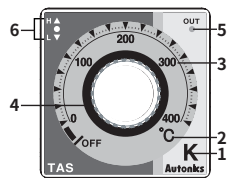
### TAS Series



### TAM, TAL Series



## Unit Descriptions



### 1. Input type of sensor

Temperature can be set within the input range of sensor. Refer to 'Input Type and Using Range'.

### 2. Temperature unit display

### 3. Temperature range display

### 4. SV (setting value) dial

When changing SV, it is applied after 2 sec for the stable input.

### 5. Control output Indicator (OUT)

Turns ON when control output is ON (relay/SSR drive).



### 6. Deviation indicator

Displays deviation of PV (present value) based on SV.

Condition	▲ (Red)	● (Green)	▼ (Red)
Over 10 °C	ON	-	-
2 to 10 °C	ON	ON	-
Under ±2 °C (control output stop)	-	ON	-
-2 to -10 °C	-	ON	ON
Over -10 °C	-	-	ON

### 7. Control type selection switch

Select PID control (front part) or ON/OFF control (rear part) using switch.

TAS	Right side relative to front	 PID ON/OFF
TAM TAL	Left side relative to the front	 ON/OFF PID

## Sold Separately

- 8 pin socket: PG-08, PS-08(N)
- Terminal protection cover: RMA / RLA Cover