

5-Channel Digital Temperature Indicators



T4WM Series PRODUCT MANUAL

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

- Digital temperature indicators
- High accuracy measurement and display : $\pm 0.5\%$
- 5-channel temperature display
- Auto/manual channel switching

Safety Considerations

- Observe all 'Safety Considerations' for safe and proper operation to avoid hazards.
- ⚠ symbol indicates caution due to special circumstances in which hazards may occur.

⚠ Warning Failure to follow instructions may result in serious injury or death

- 01. Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss.**(e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)
Failure to follow this instruction may result in personal injury, economic loss or fire.
- 02. Do not use the unit in the place where flammable/explosive/corrosive gas, high humidity, direct sunlight, radiant heat, vibration, impact or salinity may be present.**
Failure to follow this instruction may result in explosion or fire.
- 03. Install on a device panel to use.**
Failure to follow this instruction may result in electric shock.
- 04. Do not connect, repair, or inspect the unit while connected to a power source.**
Failure to follow this instruction may result in fire or electric shock.
- 05. Check 'Connections' before wiring.**
Failure to follow this instruction may result in fire.
- 06. Do not disassemble or modify the unit.**
Failure to follow this instruction may result in fire or electric shock.
- 07. Since Lithium battery is embedded in the product, do not disassemble or burn the unit.**
Failure to follow this instruction may result in fire.

⚠ Caution Failure to follow instructions may result in injury or product damage

- 01. When connecting the power input and relay output, use AWG 20 (0.50 mm²) cable or over and tighten the terminal screw with a tightening torque of 1.0 N m.**
When connecting the sensor input without dedicated cable, use AWG 28 to 16 cable and tighten the terminal screw with a tightening torque of 1.0 N m.
Failure to follow this instruction may result in fire or malfunction due to contact failure.
- 02. Use the unit within the rated specifications.**
Failure to follow this instruction may result in fire or product damage.
- 03. Use a dry cloth to clean the unit, and do not use water or organic solvent.**
Failure to follow this instruction may result in fire or electric shock.
- 04. Keep the product away from metal chip, dust, and wire residue which flow into the unit.**
Failure to follow this instruction may result in fire or product damage.

Cautions during Use

- Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
- Check the polarity of the terminals before wiring the temperature sensor. For RTD temperature sensor, wire it as 3-wire type, using cables in same thickness and length. For thermocouple (CT) temperature sensor, use the designated compensation wire for extending wire.

- Keep away from high voltage lines or power lines to prevent inductive noise. In case installing power line and input signal line closely, use line filter or varistor at power line and shielded wire at input signal line. Do not use near the equipment which generates strong magnetic force or high frequency noise.
- Install a power switch or circuit breaker in the easily accessible place for supplying or disconnecting the power.
- Do not use the unit for other purpose (e.g. voltmeter, ammeter), but temperature controller.
- Make a required space around the unit for radiation of heat. For accurate temperature measurement, warm up the unit over 20 min after turning on the power.
- Make sure that power supply voltage reaches to the rated voltage within 2 sec after supplying power.
- Do not wire to terminals which are not used.
- This unit may be used in the following environments.
 - Indoors (in the environment condition rated in 'Specifications')
 - Altitude Max. 2,000 m
 - Pollution degree 2
 - Installation category II

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	4	W	M	-	N	3	N	①	②	C
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① Input sensor

P: DPT100 Ω

J: J (IC)

K: K (CA)

② Using temperature Range

0: -99.9 to 199.9

4: 0 to 399

5: 0 to 500

C: 0 to 1,200

Product Components

- Product
- Instruction manual
- Bracket ×2

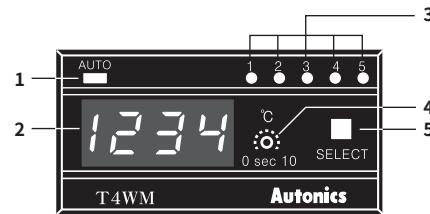
Specifications

Series		T4WM Series
Power supply		110 / 220 VAC ~ 50/60 Hz
Power consumption		≤ 3 VA
Input specification	Thermocouple	DPT100 Ω (Allowable line resistance per a wire: ≤ 5 Ω)
	RTD	K (CA), J (IC) (Input line resistance: ≤ 100 Ω)
Display accuracy		F.S. ±0.5% rdg ±1digit
Display type		7 Segment (red), LED type
Connectible sensors		5 (Thermocouple, RTD are not used as mixed)
Channel switching		Auto / Manual selection
Auto switching time		1 to 10 sec (Volume switch)
Dielectric strength		Between input terminal and power terminal: 2,000 VAC ~ 50/60 Hz for 1 min
Vibration		0.75 mm amplitude at frequency of 10 to 55 Hz (for 1 min) in each X, Y, Z direction for 1 hour
Malfunction vibration		0.5 mm amplitude at frequency of 10 to 55 Hz (for 1 min) in each X, Y, Z direction for 10 min
Shock		300 m/s ² (≈ 30 G) in each X, Y, Z direction for 3 times
Malfunction shock		100 m/s ² (≈ 10 G) in each X, Y, Z direction for 3 times
Insulation resistance		≥ 100 MΩ (500 VDC= megger)
Noise immunity		±1 kV square shaped noise (pulse width 1 μs) by noise simulator
Memory retention		≈ 3 month (full charged)
Ambient temperature		-10 to 50 °C, storage: -25 to 65 °C (no freezing or condensation)
Ambient humidity		35 to 85%RH, storage: 35 to 85%RH (no freezing or condensation)
Approval		ERC
Body weight		≈ 322 g

Input Type and Using Range

Input type		Display	Using range (°C)
Thermocouple	K (CA)	ℰℰRH	0 to 1,200
	J (IC)	JℰℰH	0 to 500
RTD	DPT100 Ω	ℰℰ5	-99.9 to 199.9
			0 to 399

Unit Descriptions



1. Channel auto switching indicator [AUTO]

Turns ON during auto channel switching

2. PV display part

3. Channel indicator

Turns ON the number which is displayed on PV display part

4. Auto switching time control volume

Setting range: 1 to 10 sec

5. Channel switching selection key [SELECT]

Refer to 'Channel Switching'.

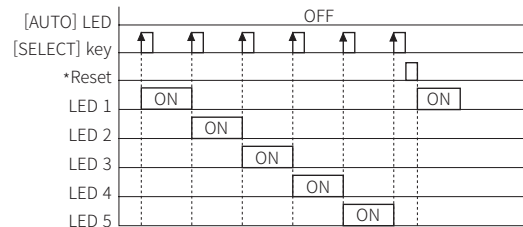
Channel Switching

■ Auto/Manual switching selection

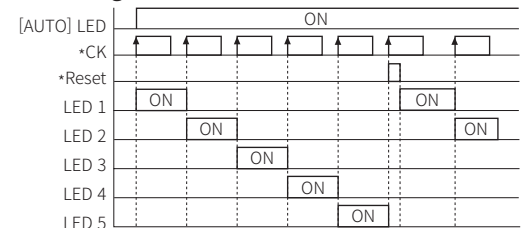
It is possible to select auto/manual switching when pressing [SELECT] key over 3 sec. When selecting auto switching, it turns ON [AUTO] indicator.

■ Manual switching

[AUTO] indicator is turned ON sequentially when press [SELECT] key, and PV of the channel is displayed.



■ Auto switching



• *Reset: Automatic reset by DIP switch

• *CK: Setting time of 'Auto switching time control volume'.

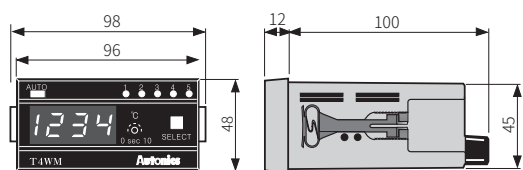
Internal DIP Switch:The Number of Input Sensor Selection

The Number of Input Sensor	2	3	4	5
DIP switch setting	ON OFF 3 2 1	ON OFF 3 2 1	ON OFF 3 2 1	ON OFF 3 2 1

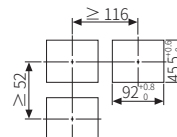
• Thermocouple, RTD are not used as mixed

Dimensions

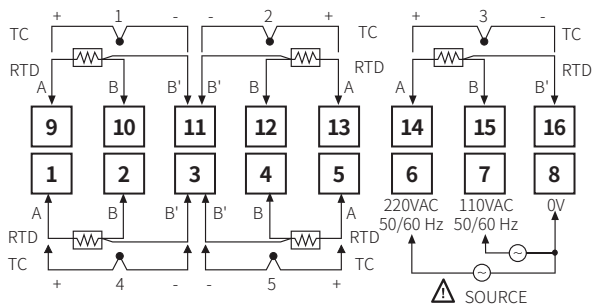
- Unit: mm, For the detailed drawings, follow the Autonics website.



■ Panel cut-out

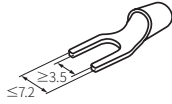


Connections

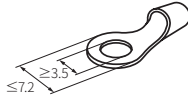


Crimp Terminal Specifications

- Unit: mm, Use the crimp terminal of follow shape.



Fork crimp terminal



Round crimp terminal

Segment Table

The segments displayed on the product indicate the following meanings. It may differ depending on the product.

7 Segment				11 Segment				12 Segment				16 Segment			
0	0	I	I	0	0	I	I	0	0	I	I	0	0	I	I
1	1	J	J	1	1	J	J	1	1	J	J	1	1	J	J
2	2	K	K	2	2	K	K	2	2	K	K	2	2	K	K
3	3	L	L	3	3	L	L	3	3	L	L	3	3	L	L
4	4	M	M	4	4	M	M	4	4	M	M	4	4	M	M
5	5	N	N	5	5	N	N	5	5	N	N	5	5	N	N
6	6	O	O	6	6	O	O	6	6	O	O	6	6	O	O
7	7	P	P	7	7	P	P	7	7	P	P	7	7	P	P
8	8	Q	Q	8	8	Q	Q	8	8	Q	Q	8	8	Q	Q
9	9	R	R	9	9	R	R	9	9	R	R	9	9	R	R
A	A	S	S	A	A	S	S	A	A	S	S	A	A	S	S
B	B	T	T	B	B	T	T	B	B	T	T	B	B	T	T
C	C	U	U	C	C	U	U	C	C	U	U	C	C	U	U
D	D	V	V	D	D	V	V	D	D	V	V	D	D	V	V
E	E	W	W	E	E	W	W	E	E	W	W	E	E	W	W
F	F	X	X	F	F	X	X	F	F	X	X	F	F	X	X
G	G	Y	Y	G	G	Y	Y	G	G	Y	Y	G	G	Y	Y
H	H	Z	Z	H	H	Z	Z	H	H	Z	Z	H	H	Z	Z