Autonics

Temperature Indicator
T3/T4 SERIES

INSTRUCTION MANUAL

Thank you for choosing our Autonics product.
Please read the following safety considerations before use.

■ Safety Considerations

※Please observe all safety considerations for safe and proper product operation to avoid hazards.

※Safety considerations are categorized as follows.
⚠**Warning** Failure to follow these instructions may result in serious injury or death.
⚠**Caution** Failure to follow these instructions may result in personal injury or product damage.

※The symbols used on the product and instruction manual represent the following
⚠ symbol represents caution due to special circumstances in which hazards may occur.

⚠ Warning

1. **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 fire, personal injury, or economic loss.
2. **Install on a device panel to use.**
   Failure to follow this instruction may result in electric shock or fire.
3. **Do not connect, repair, or inspect the unit while connected to a power source.**
   Failure to follow this instruction may result in electric shock or fire.
4. **Check 'Connections' before wiring.**
   Failure to follow this instruction may result in fire.
5. **Do not disassemble or modify the unit.**
   Failure to follow this instruction may result in electric shock or fire.

⚠ Caution

1. **When connecting the power input and relay output, use AWG 20(0.50mm²) cable or over and tighten the terminal screw with a tightening torque of 1.0N·m.**
   When connecting the sensor input and communication cable without dedicated cable, use AWG 28~16 cable and tighten the terminal screw with a tightening torque of 1.0N·m.
   Failure to follow this instruction may result in fire or malfunction due to contact failure.
2. **Use the unit within the rated specifications.**
   Failure to follow this instruction may result in fire or product damage.
3. **Use dry cloth to clean the unit, and do not use water or organic solvent.**
   Failure to follow this instruction may result in electric shock or fire.
4. **Do not use the unit in the place where flammable/explosive/corrosive gas, humidity, direct sunlight, radiant heat, vibration, impact, or salinity may be present.**
   Failure to follow this instruction may result in fire or explosion.
5. **Keep metal chip, dust, and wire residue from flowing into the unit.**
   Failure to follow this instruction may result in fire or product damage.

■ Specifications

Series		T3NI	T4YI	T4WI	T3SI	T3HI	T4MI	T4LI
Power supply		12-24VDC⎓	100-240VAC~ 50/60Hz					
Allowable voltage range		90 to 110% of rated voltage						
Power consumption		Max. 1W	Max. 3VA					
Display method		7 segment(red) LED method						
Character size(W×H)		3.8×7.6mm	8.0×14.2mm		3.8×7.6mm	6.0×10.0mm		8.0×14.2mm
Input type	RTD	DPt100Ω(Allowable line resistance max.5Ω per a wire)						
	TC	K(CA), J(IC)					K(CA), J(IC), R(PR)	
Display accuracy※1	RTD	●At room temperature(23ºC ± 5ºC): (PV ± 0.5% or ±1ºC, select the higher one)±1 digit						
	TC	●Out of room temperature range: (PV± 0.5% or ±2ºC, select the higher one)±1 digit						
Dielectric strength		1,000VAC 50/60Hz for 1min.(between input terminal and power terminal)	2,000VAC 50/60Hz for 1min. (between input terminal and power terminal)					
Vibration		0.75mm amplitude at frequency of 10 to 55Hz(for 1 min.) in each X, Y, Z directions for 2 hours						
Insulation resistance		Min. 100MΩ (at 500VDC megger)						
Noise		Square-wave noise by noise simulator(pulse width 1μs) ±500V R-phase and S-phase	Square-wave noise by noise simulator(pulse width 1μs) ±2kV R-phase and S-phase					
Environment	Ambient temp.	-10 to 50ºC, storage: -20 to 60ºC						
	Ambient humi.	35 to 85% RH, storage: 35 to 85% RH						
Weight※2		Approx. 48g (Approx. 25g)	Approx. 181g (Approx. 123g)	Approx. 231g (Approx. 140g)	Approx. 120g (Approx. 80g)	Approx. 203g (Approx. 137g)	Approx. 202g (Approx. 137g)	Approx. 274g (Approx. 185g)

※1: In case of the T3NI, T3SI Series and the decimal point display models
At room temperature(23ºC±5ºC): (PV ±0.5% or ±2ºC, select the higher one)±1 digit
Out of room temperature range: (PV ±0.5% or ±3ºC, select the higher one)±1 digit
※2: The weight is with packaging and the weight in parentheses is only unit weight.
※Environment resistance is rated at no freezing or condensation.

※**The above specifications are subject to change and some models may be discontinued without notice.**
※**Be sure to follow cautions written in the instruction manual and the technical descriptions (catalog, homepage).**

■ Ordering Information

T 3 S I - N 4 N P 4 C - N

Upgrade	N	New type
Unit	C	℃
Temperature range※2	0	-99.9 to 99.9, -99 to 199℃, -99.9 to 199.9℃
	1	0 to 99.9℃
	2	0 to 200℃
	4	0 to 400℃
	5	0 to 500℃
	8	0 to 800℃
	A	0 to 999℃
	C	0 to 1200℃
	F	600 to 1600℃
Input type※2	P	DPt100Ω
	J	J(IC)
	K	K(CA)
	R	R(PR)
Control output	N	Indicator
Power supply	X	12-24VDC
	4	100-240VAC 50/60Hz
Control method	N	Indicator
Alarm/Sub output	I	Indicator
Size	N	DIN W48×H24mm
	Y	DIN W72×H36mm
	W	DIN W96×H48mm
	S	DIN W48×H48mm(8-pin plug type)※1
	H	DIN W48×H96mm
	M	DIN W72×H72mm
	L	DIN W96×H96mm
Digit	3	999(3 digit)
	4	9999(4 digit)
Item	T	Temperature Controller

※1: Socket(PG-08, PS-08(N)) is sold separately.
※2: Input type and temperature range by Series

Input type			Series / Model	T3NI	T4YI, T4WI	T3SI	T3HI	T4MI, T4LI
TC	K(CA)	0 to 200℃	2	●	–	–	–	–
		0 to 400℃	4	●	–	–	–	–
		0 to 800℃	8	●	–	●	–	●
		0 to 999℃	A	●	–	–	●	–
		0 to 1200℃	C	–	●	–	–	●
	J(IC)	0 to 200℃	2	●	–	–	–	–
		0 to 400℃	4	●	–	●	●	●
		0 to 500℃	5	●	●	–	–	–
	R(PR)	600 to 1600℃	F	–	–	–	–	●
RTD	DPt 100Ω	-99.9 to 99.9℃	0	●	–	–	–	–
		-99.9 to 199.9℃	0	–	●	–	–	●
		-99 to 199℃	0	–	–	–	●	–
		0 to 99.9℃	1	●	–	●	–	–
		0 to 200℃	2	●	–	–	–	–
		0 to 400℃	4	●	●	●	●	●

■ Display When Power Is ON

When power is supplied, whole display parts turn ON for 1 sec. It displays model type (digits, size, alarm/sub output and control output, sensor, temp. range, unit). Afterward, it returns to RUN mode.

Whole parts turn ON → Displays digits, size, alarm/sub output → Displays control output, sensor, temp. range, unit → RUN mode

When input sensor break/sensor is not connected: oPEn

Normal operation: 200

When input sensor break/sensor is not connected, it displays [oPEn]. In case of normal operation, it displays the present input temperature.

■ Error Display

Display	Description	Troubleshooting
oPEn	Flashes when a temperature sensor is broken or not connected.	Check the status of the temperature sensor. When the sensor is connected correctly, it is clear.
HHHH	Flashes when the measured input value is higher than the temperature range of the sensor.	When the measured temperautre is within the temperature range of the sensor, it is clear.
LLLL	Flashes when the measured input value is lower than the temperature range of the sensor.	

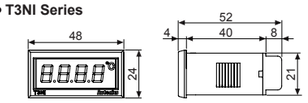
■ Cautions during Use

1. Follow instructions in 'Cautions during Use'. Otherwise, It may cause unexpected accidents.
2. 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.
3. 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.
4. Install a power switch or circuit breaker in the easily accessible place for supplying or disconnecting the power.
5. Do not use the unit for other purpose (e.g. voltmeter, ammeter), but temperature controller.
6. 12-24VDC power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
6. 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.
7. Install a surge absorber at each end of inductive load coil when controlling high-capacity power relay or inductive load (e.g. magnet).
8. Make sure that power supply voltage reaches to the rated voltage within 2 sec after supplying power.
9. Do not wire to terminals which are not used.
10. This unit may be used in the following environments.
    ①Indoors (in the environment condition rated in 'Specifications') ②Altitude max. 2,000m
    ③Pollution degree 2 ④Installation category II

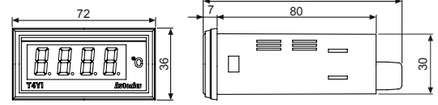
■ Dimensions

(unit: mm)

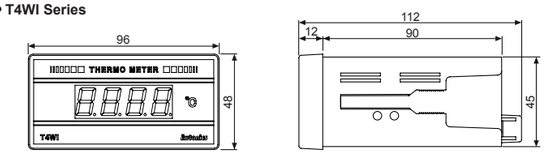
● T3NI Series



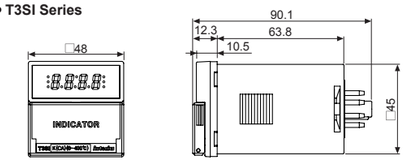
● T4YI Series



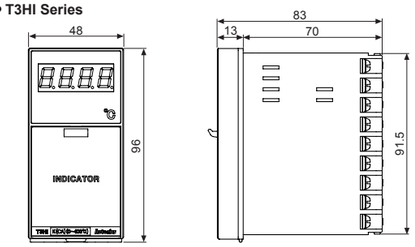
● T4WI Series



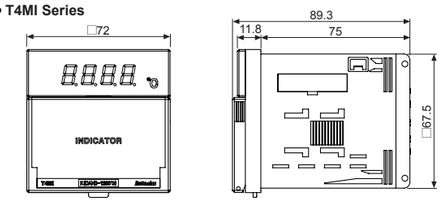
● T3SI Series



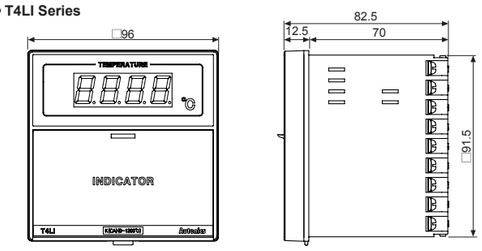
● T3HI Series



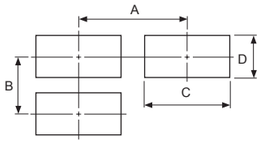
● T4MI Series



● T4LI Series



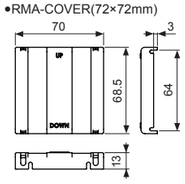
● Panel cut-out



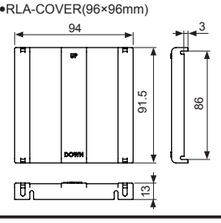
Series / Size	A	B	C	D
T3NI	Min. 55	Min. 37	45 +0.5 0	22.2 +0.3 0
T4YI	Min. 91	Min. 40	68 +0.7 0	31.5 +0.6 0
T4WI	Min. 116	Min. 52	92 +0.8 0	45 +0.6 0
T3SI	Min. 65	Min. 65	45 +0.6 0	45 +0.6 0
T3HI	Min. 65	Min. 115	45 +0.6 0	92 +0.8 0
T4MI	Min. 90	Min. 90	68 +0.7 0	68 +0.7 0
T4LI	Min. 115	Min. 115	92 +0.8 0	92 +0.8 0

● Terminal cover(sold separately)

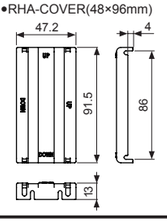
●RMA-COVER(72×72mm)



●RLA-COVER(96×96mm)

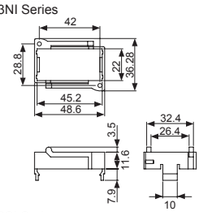


●RHA-COVER(48×96mm)

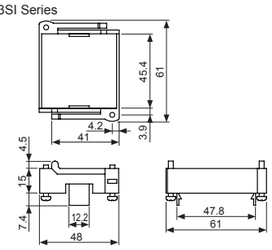


● Bracket

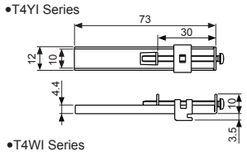
●T3NI Series



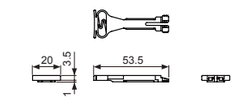
●T3SI Series



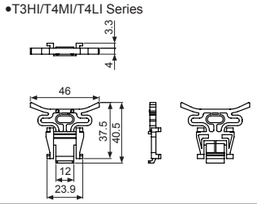
●T4YI Series



●T4WI Series

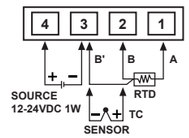


●T3HI/T4MI/T4LI Series

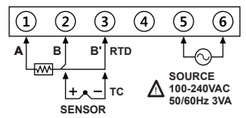


■ Connection

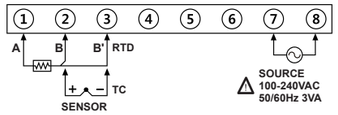
● T3NI Series



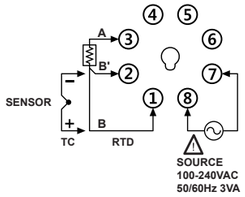
● T4YI Series



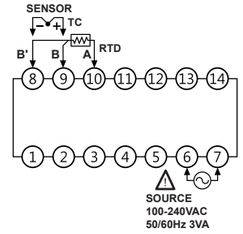
● T4WI Series



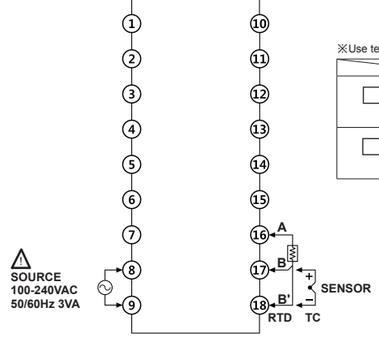
● T3SI Series



● T4MI Series



● T3HI, T4LI Series



※Use teminals of size specified below.

	a	b
<Round>	Min. 3.5mm	Max. 7.2mm
<Forked>	Min. 3.5mm	Max. 7.2mm

■ Major Products

- Photoelectric Sensors
- Fiber Optic Sensors
- Door Sensors
- Door Side Sensors
- Area Sensors
- Proximity Sensors
- Pressure Sensors
- Rotary Encoders
- Connector/Sockets
- Switching Mode Power Supplies
- Control Switches/Lamps/Buzzers
- I/O Terminal Blocks & Cables
- Stepper Motors/Drivers/Motion Controllers
- Graphic/Logic Panels
- Field Network Devices
- Laser Marking System (Fiber, Co_2, Nd: YAG)
- Laser Welding/Cutting System
- Temperature Controllers
- Temperature/Humidity Transducers
- SSRs/Power Controllers
- Counters
- Timers
- Panel Meters
- Tachometer/Pulse (Rate) Meters
- Display Units
- Sensor Controllers

Autonics Corporation
http://www.autonics.com

■ **HEADQUARTERS:**
18, Bansong-ro 513beon-gil, Haeundae-gu, Busan, South Korea, 48002
TEL: 82-51-519-3232
■ **E-mail:** sales@autonics.com