

Autonics Temperature Indicator T3/T4 SERIES

M A N U A L



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 personal injury, fire, or economic loss.

2. **The unit must be installed on a device panel before use.**

Failure to follow this instruction may result in electric shock.

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.

4. **Check the terminal numbers before connecting the power source.**

Failure to follow this instruction may result in fire.

5. **Do not disassemble or modify the unit. Please contact us if necessary.**

Failure to follow this instruction may result in electric shock or fire.

▲ Caution

1. **Do not use the unit outdoors.**

Failure to follow this instruction may result in shortening the life cycle of the unit, or electric shock. Use the unit indoors only. Do not use the unit outdoors, where it may be affected out external environmental factors.

2. **When connecting the power input and relay output cables, use AWG20 (0.05mm²) cables and make sure to tighten the terminal screw bolt above 0.74N·m to 0.90N·m.**

Failure to follow this instruction may result in fire due to contact failure.

3. **For crimp terminal, select the following shaped M3.5 terminals.**



4. **Use the unit within the rated specifications.**

Failure to follow this instruction may result in shortening the life cycle of the unit, or fire.

5. **Do not use loads beyond the rated switching capacity of the relay contact.**

Failure to follow this instruction may result in insulation failure, contact melt, contact failure, relay broken, or fire.

6. **Do not use water or oil-based detergent when cleaning the unit. Use dry cloth to clean the unit.**

Failure to follow this instruction may result in fire or explosion.

7. **Do not use the unit where flammable or explosive gas, humidity, direct sunlight, radiant heat, vibration, or impact may be present.**

Failure to follow this instruction may result in fire or explosion.

8. **Keep dust and wire residue from flowing into the unit.**

Failure to follow this instruction may result in fire or product damage.

9. **Check the polarity of the measurement input contact before wiring the temperature sensor.**

Failure to follow this instruction may result in temperature measurement error.

■ 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)		K(CA), J(IC), R(PR)			
Display accuracy ^{※1}	RTD	●At room temperature(23°C±5°C): (PV±0.5% or ±1°C, select the higher one)±1 digit		●Out of room temperature range: (PV±0.5% or ±2°C, 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 50VDC 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 50°C, storage: -20 to 60°C	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(23°C±5°C): (PV±0.5% or ±2°C, select the higher one)±1 digit

Out of room temperature range: (PV±0.5% or ±3°C, 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.

■ Ordering Information

T	3	S	I	-	N	4	N	P	4	C	-	N	
Upgrade												N	New type
Unit												C	°C
Temperature range ^{※2}												0	-99.9 to 99.9, -99 to 199°C, -99.9 to 199.9°C
												1	0 to 99.9°C
												2	0 to 200°C
												4	0 to 400°C
												5	0 to 500°C
												8	0 to 800°C
												A	0 to 999°C
												C	0 to 1200°C
												F	600 to 1600°C
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

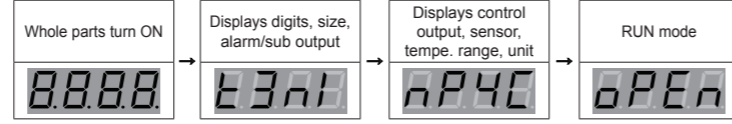
※1: Socket(PG-08, PS-08(N)) is sold separately.

※2: Input type and temperature range by Series

Input type	Series Model	T3NI	T4YI, T4WI	T3SI	T3HI	T4MI, T4LI
K(CA)	0 to 200°C	●	—	—	—	—
	0 to 400°C	●	—	—	—	—
	0 to 800°C	●	—	—	—	—
	0 to 999°C	●	—	—	●	—
J(IC)	0 to 200°C	●	—	—	—	—
	0 to 400°C	●	—	—	●	—
	0 to 500°C	●	—	—	—	—
R(PR)	600 to 1600°C	—	—	—	—	●
	—99.9 to 99.9°C	●	—	—	—	—
RTD	-99.9 to 199.9°C	—	●	—	—	—
	-99 to 199°C	—	●	—	—	—
	0 to 99.9°C	—	●	—	—	—
	0 to 200°C	—	●	—	—	—
DPT 100Ω	0 to 99.9°C	—	—	—	—	●
	0 to 400°C	—	—	—	—	●

■ Display When Power Is ON

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



■ Error Display

Display	Description	Troubleshooting
oPE n	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 temperature 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.	When the measured temperature is within the temperature range of the sensor, it is clear.

■ Caution During Use

- Please use separated line from high voltage line or power line in order to avoid inductive noise.
 - Please install power switch or circuit-breaker in order to cut power supply off.
 - The switch or circuit-breaker should be installed near by users.
 - This unit is designed for temperature controlling only. Do not apply this unit as a voltage meter or a current meter.
 - In case of using RTD sensor, 3-wire type must be used. If you need to extend the line, 3-wire must be used with the same thickness as the line. It might cause temperature difference if the resistance of line is different.
 - In case of making power line and input signal line close, line filter for noise protection should be installed at power line and input signal line should be shielded.
 - Keep away from the high frequency instruments. (high frequency welding machine & sewing machine, big capacitive SCR controller.
 - This unit may be used in the following environments.
 - ① It shall be used indoor.
 - ② Altitude up to 2,000m.
 - ③ Pollution degree 2.
 - ④ Installation category II.
- ※Failure to follow these instructions may result in product damage.

■ Dimensions

• 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 ^{+0.4}	22.2 ^{+0.3}	
T4YI	Min. 91	Min. 40	68 ^{+0.4}	31.5 ^{+0.4}	
T4WI	Min. 116	Min. 52	92 ^{+0.4}	45 ^{+0.4}	
T3SI	Min. 65	Min. 65	45 ^{+0.4}	45 ^{+0.4}	
T3HI	Min. 65	Min. 115	45 ^{+0.4}	92 ^{+0.4}	
T4MI	Min. 90	Min. 90	68 ^{+0.4}	68 ^{+0.4}	
T4LI	Min. 115	Min. 115	92 ^{+0.4}	92 ^{+0.4}	

• Terminal cover(sold separately)

- RMA-COVER(72×72mm)
- RLA-COVER(96×96mm)
- RHA-COVER(48×96mm)

• Bracket

• T3NI Series

• T4YI Series

• T4WI Series

• T3SI Series

• T3HI/T4MI/T4LI Series

■ Connection

• T3NI Series

• T4YI Series

• T4WI Series

• T3SI Series

• T4MI Series

• T3HI, T4LI Series

■ 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, CO₂, Nd:YAG)
- Laser welding/cutting system
- Temperature controllers
- Temperature/Humidity transducers
- SSR/Power controllers
- Counters
- Timers
- Panel meters
- Tachometer/Pulse/Rate) meters
- Display units
- Sensor controllers

Autonics Corporation
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