



* Image may differ

DISCONTINUED

TZ4W-24S

- Display method : 4-digit 7-segment LED
- Control method : ON/OFF control, P, PI, PD, PIDF, PIDS control
- Input specification : Thermocouple: K(CA), J(IC), E(CR), T(CC), R(PR), S(PR), N(NN), W(TT)
RTD: DPt100Ω, JPt100Ω
Analog: 1-5VDC $\overline{\text{---}}$, 0-10VDC $\overline{\text{---}}$, DC4-20mA
- Sampling cycle : 500ms
- Control output : SSR drive(12VDC $\overline{\text{---}}$) [ON/OFF]
- Power voltage : 100-240VAC~ 50/60Hz



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Data sheet

Display method	4-digit 7-segment LED
Control method	ON/OFF control, P, PI, PD, PIDF, PIDS control
Input specification	Thermocouple: K(CA), J(IC), E(CR), T(CC), R(PR), S(PR), N(NN), W(TT) RTD: DPt100Ω, JPt100Ω Analog: 1-5VDC $\overline{\text{---}}$, 0-10VDC $\overline{\text{---}}$, DC4-20mA
Sampling cycle	500ms
Control output	SSR drive(12VDC $\overline{\text{---}}$) [ON/OFF]
Option output	Event 1/2

Power voltage	100-240VAC~ 50/60Hz
Display accuracy	F.S ± 0.3% or 3°C, select the higher one
Alarm output hysteresis	1 to 100°C (0.1 to 100.0°C) variable
Proportional band	0.0 to 100.0%
Integral time	0 to 3,600 sec
Derivative time	0 to 3,600 sec
Control period	1 to 120 sec
LBA setting	1 to 999 sec
Ramp setting	Ramp Up, Ramp Down: 1 to 99 min each
Environment_Ambient temperature	-10 to 50°C, storage: -20 to 60°C
Environment_Ambient humidity	35 to 85% RH, storage: 35 to 85% RH
Weight	Approx. 365g(approx. 246g)

*The weight includes packaging. The weight in parenthesis is for unit only.

*Environment resistance is rated at no freezing or condensation.

Downloads

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Instruction manuals

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TZ/TZN Series

Language...

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TZ/TZN Series

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Communication manuals

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- Do not use the unit for other purpose (e.g. voltmeter, ammeter), but temperature controller.
- When changing the input sensor, turn off the power first before changing. After changing the input sensor, modify the value of the corresponding parameter.
- Do not overlapping communication line and power line. Use twisted pair wire for communication line and connect ferrite bead at each end of line to reduce the effect of external noise.
- 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 .

TZ / TZN 4 ① - ② 4 ③

① Size

S: DIN W 48 × H 48 mm (TZN Series)
SP: DIN W 48 × H 48 mm (11 pin type, TZ Series)
ST: DIN W 48 × H 48 mm (TZ Series)
M: DIN W 72 × H 72 mm
H: DIN W 48 × H 96 mm
W: DIN W 96 × H 48 mm
L: DIN W 96 × H 96 mm

③ OUT1 Control output

R: Relay output
S: SSR drive output
C: Current Output

② Option output

PN	Option output 1	Option output 2
1	Event	-
2	Event	Event
R	Event	PV Transmission
T	Event	Communication
A	Event	Event + PV Transmission
B	Event	Event + Communication

Manual

For proper use of the product, refer to the manuals and be sure to follow the safety considerations in the manuals.
Download the manuals from the Autonics website.

Software

Download the installation file and the manuals from the Autonics website.

■ DAQMaster

DAQMaster is comprehensive device management program. It is available for parameter setting, monitoring.

Product Components

- Product, bracket × 2
- Instruction manual
- [TZ4SP, TZ4ST, TZN4S] Product (+ bracket)
- Unit sticker

Sold Separately

- 11 pin socket: PG-11, PS-11 (N)
- Communication converter: SCM Series

Specifications

Series		TZ/TZN Series
Power supply		100 - 240 VAC ~ 50/60 Hz ± 10%
Power consumption		≤ 6 VA, TZ4SP, TZ4ST, TZN4S: ≤ 5 VA
Sampling period		500 ms
Input specification		Refer to 'Input Type and Using Range'
Display accuracy		F.S. ± 0.3% or 3°C higher one
Control output	Relay	250 VAC ~ 3 A, 30 VDC ~ 3 A 1c
	SSR	12 VDC ~ ± 3 V, ≤ 30 mA
	Current	DC 4-20 mA, load resistance: ≤ 600 Ω
Option output	Event 1/2	250 VAC ~ 1A 1a
	PV Transmission Comm.	DC 4 - 20 mA, load resistance: ≤ 600 Ω
Display type		7 Segment (red, green), LED type
Control type		ON/OFF, P, PI, PD, PIDF, PID control
Alarm output Hysteresis		1 to 100 (0.1 to 100.0) °C
Proportional band (P)		0.0 to 100.0%
Integral time (I)		0 to 3,600 sec
Derivative time (D)		0 to 3,600 sec
Control cycle (T)		1 to 120 sec
LBA setting		1 to 999 sec
RAMP setting		Ramp Up, Ramp Down: 1 to 99 min
Relay life cycle	Mechanical	• Control output: ≥ 10,000,000 operations • Option output: ≥ 20,000,000 operations
	Electrical	• Control output: ≥ 100,000 operations (load resistance: 250 VAC ~ 3 A) • Option output: ≥ 500,000 operations (load resistance: 250 VAC ~ 1 A)
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 55Hz (for 1min) in each X, Y, Z direction for 2 hours
Malfunction vibration		0.5 mm amplitude at frequency of 10 to 55Hz (for 1min) in each X, Y, Z direction for 2 hours
Insulation resistance		≥ 100 MΩ (500 VDC ~ megger)
Noise immunity		± 2 kV square shaped noise by noise simulator (pulse width 1 μs) R-phase, S-phase
Memory retention		≈ 10 years (non-volatile semiconductor memory type)
Ambient temperature		-10 to 50 °C, storage: -20 to 60 °C (no freezing or condensation)
Ambient humidity		35 to 85%RH, storage: 35 to 85%RH (no freezing or condensation)
Approval		CE, RoHS, ENEC
Unit weight (packaged)	• TZ4SP: ≈ 144 g (≈ 205 g)	
	• TZ4ST: ≈ 162 g (≈ 218 g)	
	• TZ4M: ≈ 228 g (≈ 360 g)	
	• TZ4W: ≈ 246 g (≈ 365 g)	
	• TZ4H: ≈ 246 g (≈ 365 g)	
	• TZ4L: ≈ 304 g (≈ 474 g)	
	• TZN4S: ≈ 164 g (≈ 226 g)	
	• TZN4M: ≈ 246 g (≈ 355 g)	

Communication Interface

■ RS485

Comm. protocol	BCC
Application standard	EIA RS485 compliance with
Maximum connection	31 units (address: 01 to 99)
Synchronous method	Asynchronous
Comm. method	Two-wire half duplex
Comm. effective range	≤ 1,200 m
Comm. speed	2,400 / 4,800 / 9,600 bps (parameter)
Start bit	1 bit (fixed)
Data bit	8 bit (fixed)
Parity bit	None
Stop bit	1 bit (fixed)
EEPROM life cycle	≈ 1,000,000 operations (Erase / Write)

Input Type and Using Range

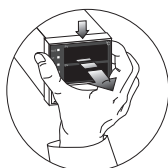
The setting range of some parameters is limited when using the decimal point display.

Input type		Decimal point	Display	Using range (°C)	Using range (°F)
Thermo- couple	K (CA)	1	ELRH	-100 to 1300	-148 to 2372
	K (CA)	0.1	ELRL	-100.0 to 999.9	-
	J (IC)	1	JICH	0 to 800	32 to 1472
	J (IC)	0.1	JICL	0.0 to 800.0	-
	R (PR)	1	PRR	0 to 1700	32 to 3092
	E (CR)	1	ECRH	0 to 800	32 to 1472
	E (CR)	0.1	ECRL	0.0 to 800.0	-
	T (CC)	1	TCH	-200 to 400	-328 to 752
	T (CC)	0.1	TCL	-199.9 to 400.0	-
	S (PR)	1	SPR	0 to 1700	32 to 3092
RTD	N (NN)	1	NN	0 to 1300	32 to 2372
	W (TT)	1	WTT	0 to 2300	32 to 4172
	JPt100Ω	1	JPETH	0 to 500	32 to 932
	JPt100Ω	0.1	JPEHL	-199.9 to 199.9	-199.9 to 391.8
	DPt100Ω	1	DPEH	0 to 500	32 to 932
Analog	Voltage	0 - 10 VDC=	R - - 1	-1999 to 9999 (Display range will vary depending on the decimal point.)	
		1 - 5 VDC=	R - - 2		
	Current	DC4 - 20 mA	R - - 3		

Input Type Setting

Please configure the internal switches before supplying power.
After supplying power, configure the 'Input type' as same value.

Detaching the case

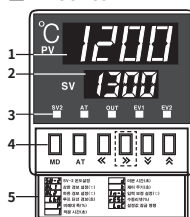


Press the front case then pull the case to detach the case from the body.
Configure the internal switches as input type.

Input type	S/W 1	S/W 2
Thermocouple		
RTD		
Analog		

Unit Descriptions

TZ Series



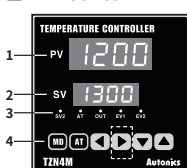
1. PV Display part (red)

- RUN mode: Displays PV (present value)
- Setting mode: Displays parameter name

3. Indicator

Display	Name	Description
SV2	SV2 operation	Turns ON during SV2 operation
AT	Auto tuning	Flash during auto tuning
OUT	Control output operation	Turns ON when the control output is ON. Not operate when control output is current output.
EV1	Event 1 output	Turns ON when Event 1/2
EV2	Event 2 output	Output is ON

TZN Series



2. SV Display part (green)

- RUN mode: Displays SV (setting value)
- Setting mode: Displays parameter setting value

4. Control key

Display	Name
[MD]	Mode key
[AT]	Auto tuning execution key
[<], [>], [▲], [▼]	Setting value control key • The key in dotted line ([<] [>]) is only for TZ4M, TZ4N4M, TZ4L, TZ4N4L Series

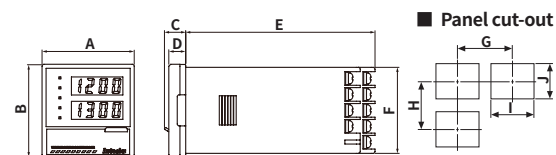
5. Key adjustment order chart

Errors

Display	Description	Troubleshooting
oPE n	Flashes at 0.5 sec interval when the sensor is break or disconnected.	Check input sensor status.
HHHH	Flashes when PV is higher than input range.	When input is within the rated input range, this display disappears.
LLLL	Flashes when PV is lower than input range.	
Err D	Flashes when internal chip is damaged by strong noise (> 2,000 VAC~).	Locate the source of the noise and devise countermeasures. Please contact our technical support.
-	If there is no output in RUN mode	If the control output indicator is not working, check parameter settings. If the control output indicator is working, disconnect the wiring from the output terminal of the temperature controller and check the output (replay contact, SSR drive, current)

Dimensions

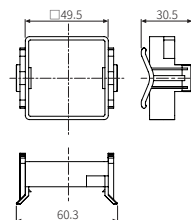
- Unit: mm, For the detailed drawings, follow the Autonics website.
- Below is based on TZ4ST Series.



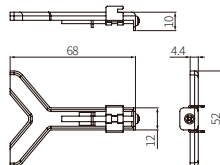
	Body						Panel cut-out			
	A	B	C	D	E	F	G	H	I	J
TZ4SP	48	48	11.1	8.8	97	□44.8	≥ 65	≥ 65	45 ^{+0.6} ₋₀	45 ^{+0.6} ₋₀
TZ4ST	48	48	11.1	8.8	98.6	□44.8	≥ 65	≥ 65	45 ^{+0.6} ₋₀	45 ^{+0.6} ₋₀
TZN4S	48	48	10	-	90	□45	≥ 65	≥ 65	45 ^{+0.6} ₋₀	45 ^{+0.6} ₋₀
TZ4M	72	72	15	13.2	100	□67	≥ 74	≥ 91	68 ^{+0.7} ₋₀	68 ^{+0.7} ₋₀
TZN4M	72	72	10	-	85	□67	≥ 91	≥ 91	68 ^{+0.7} ₋₀	68 ^{+0.7} ₋₀
TZ4W	96	48	14.9	13	100	45	≥ 112	≥ 50	92 ^{+0.8} ₋₀	45 ^{+0.6} ₋₀
TZN4W	96	48	13	-	100	45	≥ 112	≥ 50	92 ^{+0.8} ₋₀	45 ^{+0.6} ₋₀
TZ4H	48	96	15.3	13	100	90	≥ 50	≥ 102	45 ^{+0.6} ₋₀	92 ^{+0.8} ₋₀
TZN4H	48	96	13	-	100	90	≥ 50	≥ 102	45 ^{+0.6} ₋₀	92 ^{+0.8} ₋₀
TZ4L	96	96	14	13	100	□90	≥ 98	≥ 106	92 ^{+0.8} ₋₀	92 ^{+0.8} ₋₀
TZN4L	96	96	13	-	100	□90	≥ 98	≥ 106	92 ^{+0.8} ₋₀	92 ^{+0.8} ₋₀

Bracket

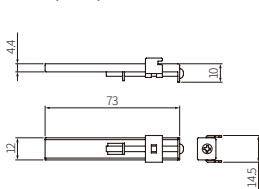
TZ4ST, TZ4SP, TZN4S Series



TZN4M Series

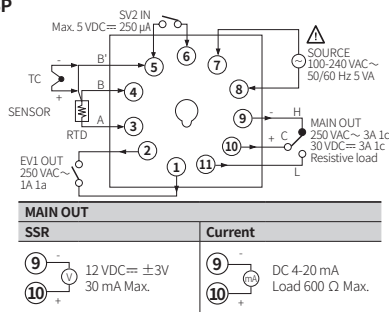


TZ4L, TZN4L, TZ4M, TZ4H, TZN4H, TZ4W, TZN4W Series

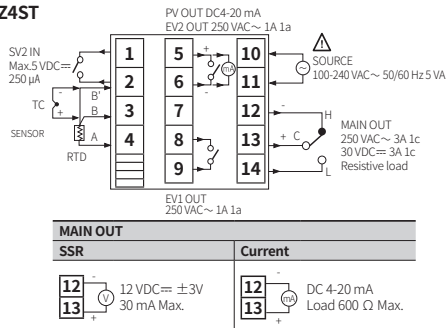


Connections

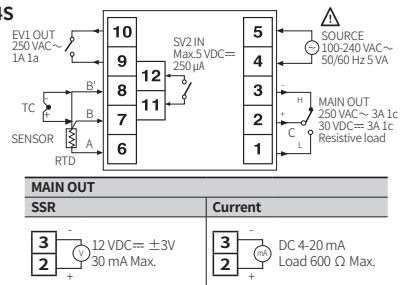
TZ4SP



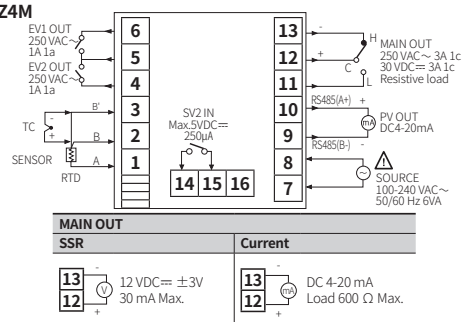
TZ4ST



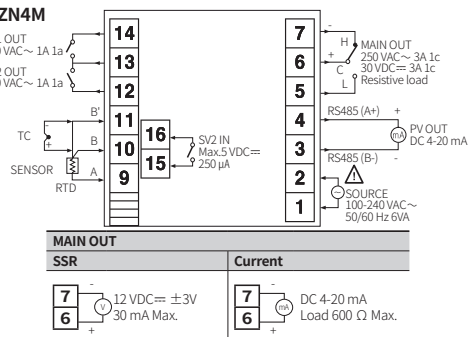
TZN4S



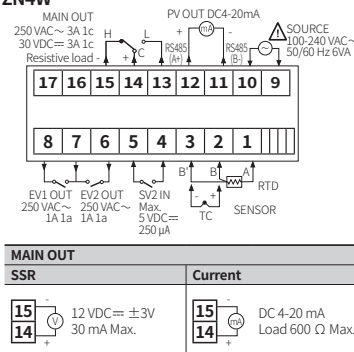
TZ4M



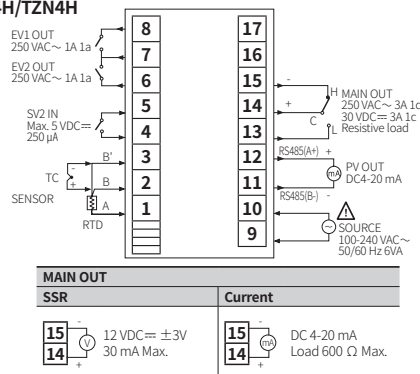
TZN4M



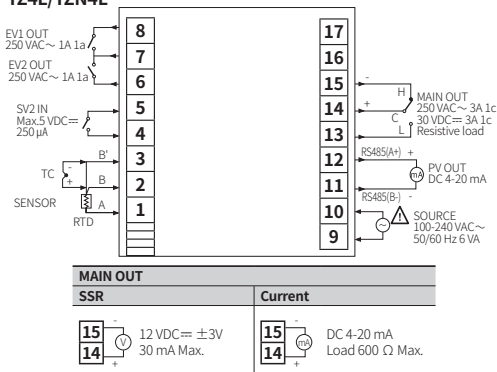
TZ4W/TZN4W



TZ4H/TZN4H



TZ4L/TZN4L

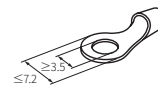


Crimp Terminal Specifications

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

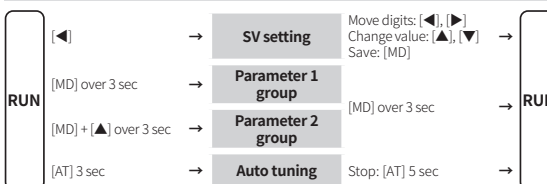


Fork crimp terminal



Round crimp terminal

Mode Setting





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PRODUCT: TZ4W-24S / TZ Series Dual-Speed PID Temperature Controller with Protection Cover

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