TZ4 SERIES

atc Digitec Division

PID Temperature Controllers



c UL us

FEATURES

- **Function options are all front panel selectable including sensor input. Only output must be ordered by model.**
- **2 temperature set values can be entered. Operator can then manually select between the two separate set values.**
- **Fast or slow PID response selectable — In slow response overshoot eliminated.**
- **2 independent alarm outputs, each with 9 operating modes.**
- **Universal Input:**
  100-240 VAC 50/60 Hz
  100-240 VDC
- **Powerful but inexpensive**
- **Indicating accuracy of ±0.3% Full Scale**
- **Diverse outputs include Relay, SSR driver, and 4-20mA analog.**
- **Multi-input type selectable 15 kinds of input modes.**

PROCESS APPLICATIONS

- **Temperature**
- **Level**

DESCRIPTION

The TZ4 Series of PID controllers offer front panel selection of all operating functions except output type. Programming flexibility includes selection of a second temperature set value, sensor type and all PID function parameters.

Another unique selectable feature is fast or slow PID response. When set in the slow response (PIDS) mode, very little, if any overshoot will occur. If selected, Auto-tune control will monitor the system output response and after 3 response cycles will automatically calculate and replace the PID constants with optimal process control parameters.

Standard TZ4 temperature controllers are equipped with two (2) alarm outputs. Some OEM customers prefer a single alarm output because it simplifies wiring and lowers costs. If you have a need for single alarm TZ4 temperature controllers, please specify model number TZ4SP-14R (See Ordering Information Chart)

STANDARD TZ4 FEATURES
5 MODELS IN SIZES FROM 1/16 TO 1/4 DIN

Two Alarm Outputs Standard Each With Nine Selectable Alarm Functions

Dual Display Process Value and Set Value

2 Temperature Set Values

C-UL Recognized

One Button Auto-Tuning

ON-OFF or PID Control

Programmable Input (15 Selections)

Thermocouple, RTD, Voltage or Current



Selectable Fast or Slow Response PID

Slow Response Eliminates Overshoot

Programmable For Fahrenheit or Centigrade

Loop Break Alarm

Programmable For Heating or Cooling Control

Non-Volatile EEPROM Memory

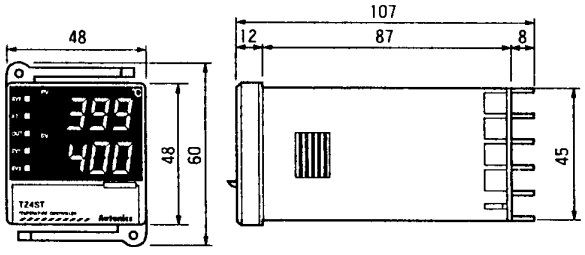
Universal Voltage Input 100-240VAC/DC

Relay, SSR Driver or Current Outputs

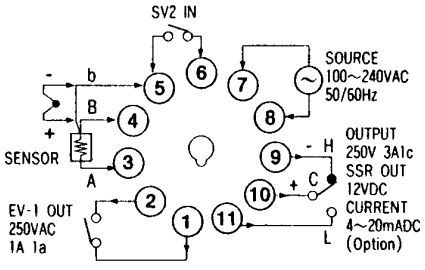
DIMENSIONS AND WIRING TZ4ST AND TZ4SP — 1/16 DIN

Millimeters

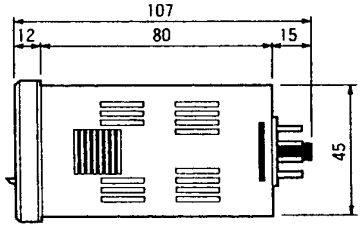
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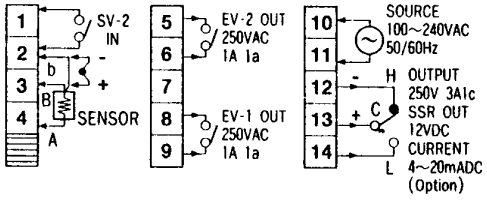
- TZ4SP



- TZ4SP

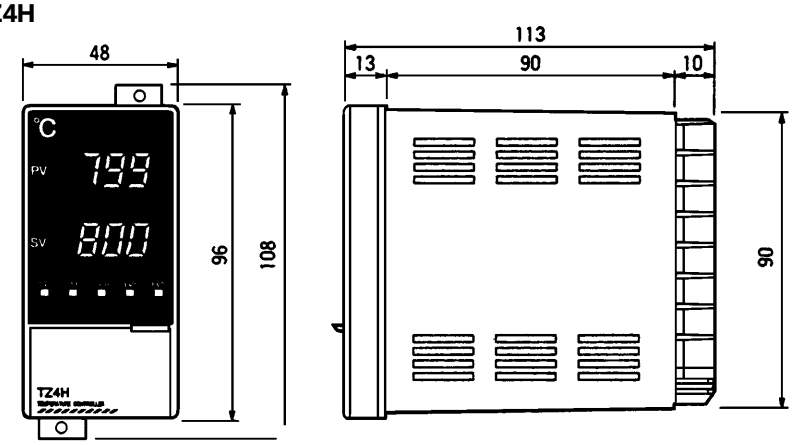


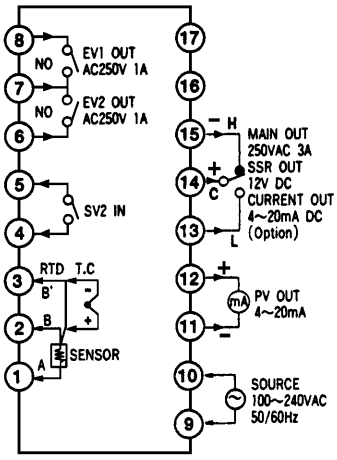
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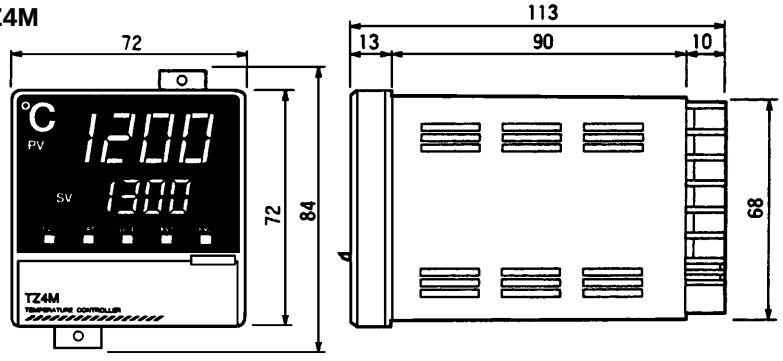
PID CONTROLLERS

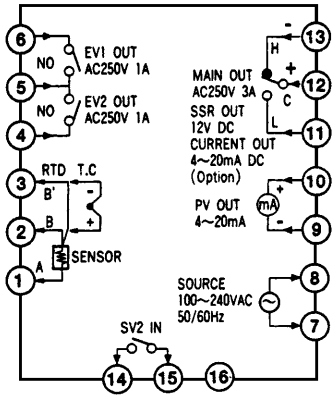
TZ4H



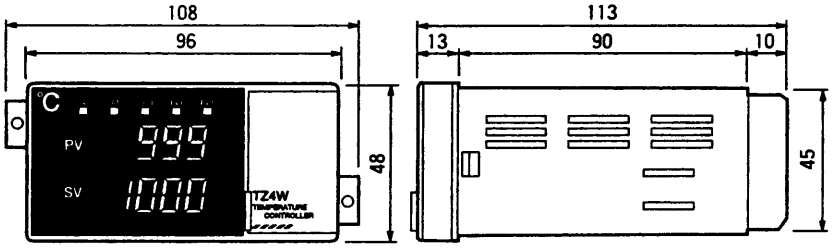


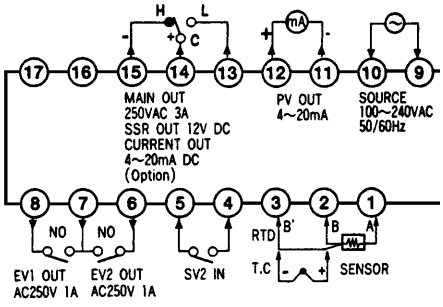
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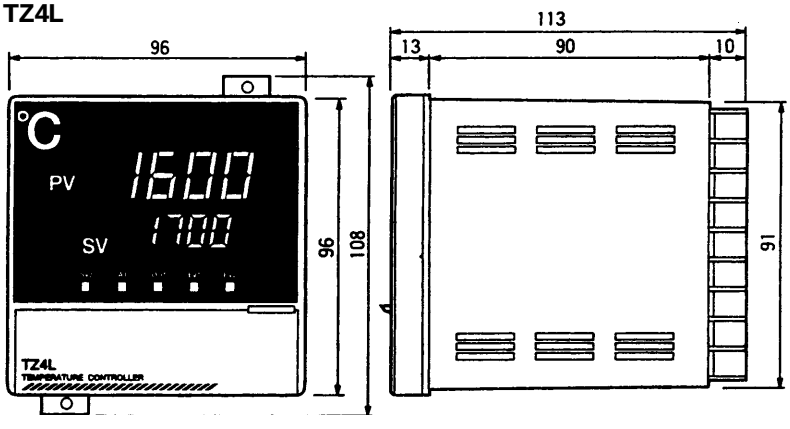


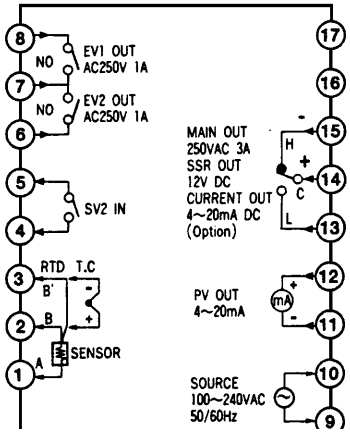
TZ4W





TZ4L





PID CONTROLLERS

SPECIFICATIONS

INPUTS

Thermocouple:	J, K, R, E, T, S, N, W
3 Wire RTD:	DIN Pt 100, JIS Pt 100
Voltage:	1 to 5VDC, 0 to 10VDC
Current:	4 to 20mA DC

ACCURACY SETTING & INDICATION

±0.3% of Full Scale ± 1 digit

SAMPLING TIME

500 milliseconds

OPERATING VOLTAGE

100 to 240VAC, 50/60Hz, 100 to 240VDC

POWER CONSUMPTION

5VA @ 120 VAC

SETTING METHOD

Front Panel Keypad

FRONT PANEL DISPLAYS

Set Value - 4 Digit Green LED
Set Value 2 - Indication - Red LED
Process Value - 4 Digit Red LED
Output Relay Indication - Red LED
Auto-Tune Indication - Red LED
Event 1 & 2 (Alarm) - Red LED

OUTPUT

Relay:	SPDT, 3A @ 240VAC Resistive
SSR Driver:	0-12VDC, ± 2V, 30mA Max.
Current:	4-20mA, DC, <600 Ohms Max.

ALARM OUTPUTS

Relay; SPST, 1A @ 240 VAC Resistive

MEMORY

Non-Volatile, 10 Year Retention

MOUNTING

Front Panel

TERMINATION

Screw Rear-Mounted

OPERATING TEMPERATURE

-10 to +50 °C

HUMIDITY

35% to 85% RH

RETRANSMISSION (OPTIONAL)

TZ4L, TZ4W, TZ4H, TZ4M, Only

PROGRAMMABLE FUNCTIONS

Input Sensor Type (15 options)
Reverse (Heating) or
Direct (Cooling) Action
Upper/Lower Temp Limit Alarm Setting
Input Offset Compensation
Display Selection of °C or °F
Auto-Tuning
Proportional or ON/OFF Control
Integral Time
Derivative
Control Period Time

PID Response:	PIDF, Fast Response, PIDS, Slow Response, for Minimum Overshoot of SV
Event 1 (Alarm)	Selection of 9 alarm modes
Event 2 (Alarm)	Selection of 9 alarm modes

High and Low Temp Operation Limits
Keypad Lockout

FRONT PANEL DIMENSIONS

TZ4ST: 48 × 48mm, TZ4M:72 × 72mm
TZ4L: 96 × 96mm, TZ4H: 48 × 96mm
TZ4W: 96 × 48mm

ORDERING INFORMATION

Model Number	Size	Output
TZ4ST-14R	48 x 48 mm	Single Relay
TZ4ST-24C	48 x 48 mm	4-20 mA
TZ4ST-24R *	48 x 48 mm	2 Relay
TZ4ST-24S	48 x 48 mm	SSR Driver Output
TZ4L-14R	96 x 96 mm	Single Relay
TZ4L-24C	96 x 96 mm	4-20 mA
TZ4L-24R	96 x 96 mm	2 Relay
TZ4L-24S	96 x 96 mm	SST Driver Output
TZ4M-14R	72 x 72 mm	Single Relay
TZ4M-24R	72 x 72 mm	2 Relay
TZ4SP-14R	72 x 72 mm	Single Relay
TZ4H-14R	48 x 96mm Up right	Single Relay
TZ4H-24C	48 x 96mm	4-20 mA
TZ4H-24R	48 x 96 mm	2 Relay
TZ4H-24S	48 x 96 mm	SSR Driver Output
TZ4W-14R	96 x 48 mm Wide	Single Relay
TZ4W-24R	96 x 48 mm	2 Relay

***Available in 11-Pin, 1 Alarm Output, Socket Mount — TZ4SP-14R**