

# 48 mm TEMPERATURE CONTROLLER(Z-48)

DATA SHEET

PYE

The Z-48 electronic temperature controller was developed to achieve economy, high reliability, compactness and light weight. It is an easy-to-use instrument which reflects Fuji's long experience and achievements in the field of temperature control.

## FEATURES

- Top priority placed on compactness and economy.
- A number of models are available according to the combination of setting and indicating methods.
  - Digital setting, digital indicating type DD
  - Digital setting, analog deviation indicating type DA
  - Digital setting, non-indicating type DY
  - Analog setting, non-indicating type AY
 Especially for digital setting, the meter deviation indicating type is the first of its kind in this class.
- A variety of input specifications, and a burnout circuit are incorporated in thermocouple input.
- Several of these instruments can be mounted closely together, so the panel area and number of mounting holes can be reduced.
- The instrument can be mounted on a panel with a one-touch fixture, minus screws.
- Fuji's digital timer and dimensional design have been made uniform, and the mounting socket is commonly used.

## SPECIFICATIONS

Input signal, measuring range:

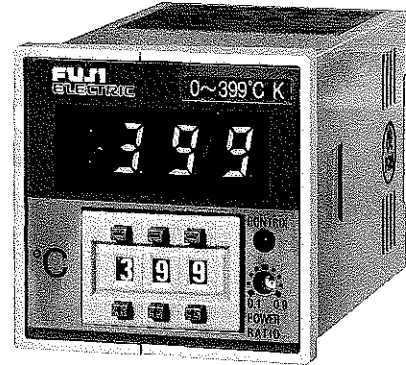
Input	With digital setting (Model 2)	With analog setting (Model 1)
J (IC) thermocouple	0 to 199°C, 0 to 399°C	0 to 200°C, 0 to 300°C, 0 to 400°C
K (CA) thermocouple	0 to 199°C, 0 to 399°C 0 to 999°C	0 to 200°C, 0 to 300°C, 0 to 400°C, 0 to 600°C, 0 to 1000°C, 0 to 1200°C
Pt100Ω resistance bulb	0 to 99.9°C, 0 to 199°C, 0 to 399°C, -99 to 99°C	0 to 50°C, 0 to 100°C, 0 to 150°C -50 to 50°C

Setting and indicating accuracy:

Better than ±1.5% (0 to 399°C thermocouple input)  
 Better than ±1.0% (0 to 399°C Pt input)  
 In the case of ±99°C Pt;  
 Better than ±1.5% (-50 to 0°C)  
 Better than ±3% (-99 to -50°C)

Allowable external resistance:

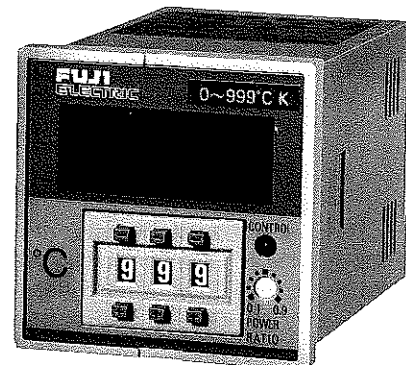
100Ω or less with thermocouple input



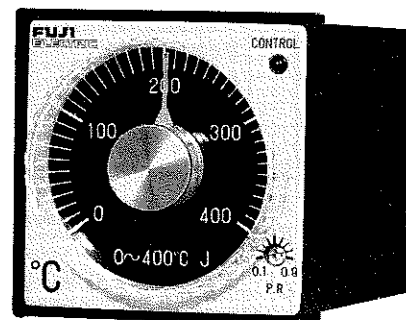
DD



DA



DY



AY

**Allowable wiring resistance:**  
10Ω or less per wire with Pt input

**Indicating method:**  
DD; 3 digits using 7-segment LED  
DA; meter deviation indication ±10%

**Output signal (with contact output):**  
Control action code; A, B, C, D  
Output contact; 1c contact  
Contact capacity; AC 220V, 3A or less (resistive load)  
Contact action; non-excited action

**Output signal (with voltage output, SSR drive output):**  
Control action code; L, M  
Output voltage; OFF 0.5V or less, ON 10 to 25V  
Load resistance; 1.2kΩ or less

**Control action:** upper or lower limit, 2 position action  
upper or lower limit, proportional action

**Power supply:** AC100/110V or AC200/220V, 50/60Hz allowable voltage variation within ±10%

**Power consumption:** approx. 3VA

**Ambient temperature:** -10 to 55°C

**Ambient humidity:** 35 to 85% RH

**Enclosure:** plastic housing

**Outer dimensions:** 48(H) X 48(W) X93(D) mm

**Socket outer dimensions:** see on three page

**Weight:** 200 g

**Finish color:** Model 1: black (N1.2)  
Model 2: beige (Munsell 5Y 8/1)

**Scope of delivery:** Controller, mounting fixture, and socket when specified

**Mounting method:** Flush on panel or on surface

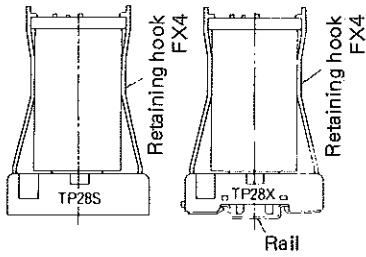
2 position	Proportional					
Dead band	Proportional band	Proportional cycle				
ca. 0.4%/FS (fixed)	ca. 3%/FS (fixed)	<table border="1"> <tr> <th>Contact output</th> <th>Voltage output</th> </tr> <tr> <td>ca. 20 sec</td> <td>ca. 2 sec</td> </tr> </table>	Contact output	Voltage output	ca. 20 sec	ca. 2 sec
Contact output	Voltage output					
ca. 20 sec	ca. 2 sec					

**CODE SYMBOLS**

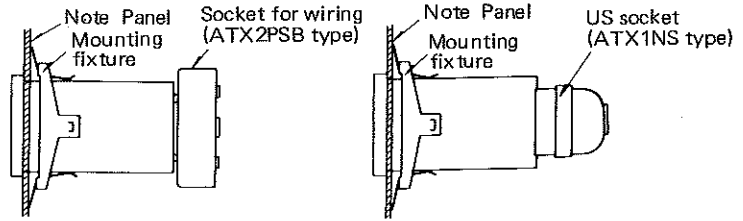
P	Y	E					Description
A							<b>Configuration</b> Analog setting, non-indicating
B							Digital setting, non-indicating
C							Digital setting, analog deviation indication
D							Digital setting, digital indication
F							<b>Input signal</b> Thermocouple input
H							Pt resistance bulb input
A						} Contact output	<b>Control action</b> Upper limit 2 position action
B							Lower limit 2 position action
C							Upper limit proportional action
D							Lower limit proportional action
L							Upper limit 2 position action
M						} Voltage output (SSR drive output)	Upper limit proportional action
1							<b>Power supply</b> AC 100/110V, 50/60Hz
3							AC 200/220V, 50/60Hz
1						} Model number	Analog setting
2							Digital setting
Y						} Mounting socket	No socket
A							ATX2PSB
B							ATX1NS
C							TP28S
D						TP28X	Attached with surface mounted type

# SOCKET AND MOUNTING METHOD

- With surface mounting (figures)

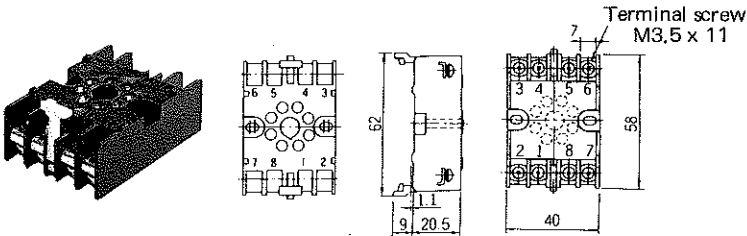


- With panel flush mounting (figures)

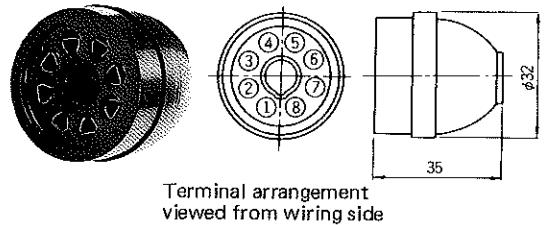


Note) Applicable panel thickness for mounting is 1.0 to 3.2mm. Use US socket (type ATX1NS) for close mounting of instruments. Wiring socket (type ATX2PSB) cannot be used. To use wiring socket, detach the hook portion.

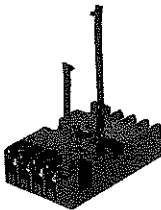
- Type ATX2PSB (socket for rear surface wiring)  
(\* Detach hook for use.)



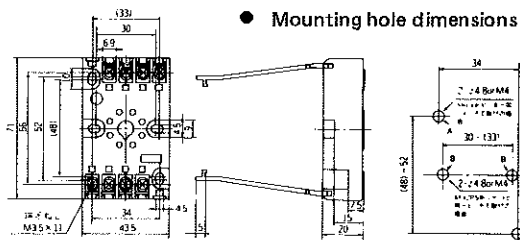
- Type ATX1NS (US socket) (figure)



- Type TP28S (socket for front surface wiring)  
(\*Use retaining hook with FX4 attached to main unit.)

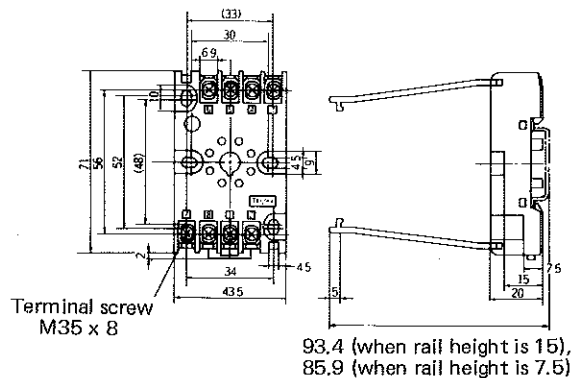
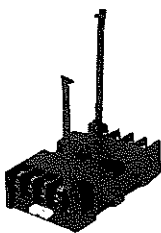


- Mounting hole dimensions ( (A) or (B) )

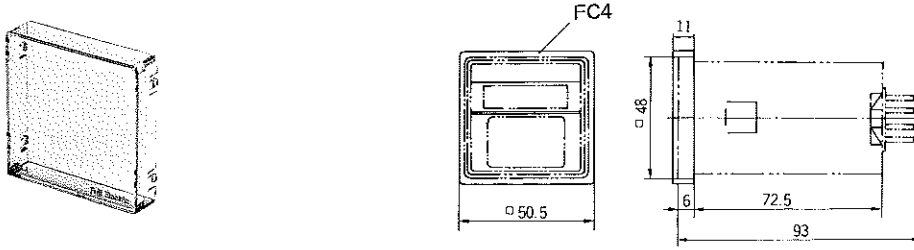


For attaching type TP28S front surface socket to the panel, attach the socket to the panel after replacing the hook with FX4. Depending on the socket mounting position, the hook may not be attached after attaching the socket to the panel.

- Type TP28X (socket for wiring with rail mounting type)  
(\*Use retaining hook with FX4 attached to main unit.)



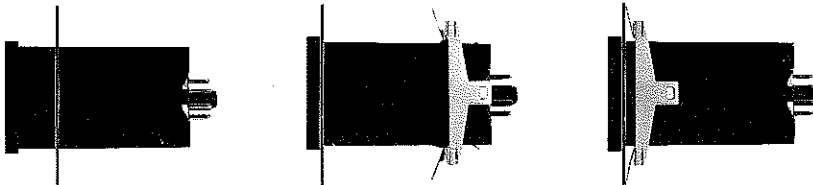
● Type FC4 front cover (sold separately)



Note) Cannot be attached to analog setting temperature controller (type AY).

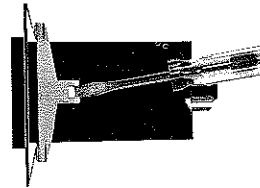
● Mounting

- ① Insert the temperature controller in the panel cutout.
- ② Install the mounting fixture on the controller from the rear of the panel.
- ③ Push the fixture toward the panel until it fits in the grooves on both sides of the controller.
- ④ Applicable panel thickness for mounting is 1.0 to 3.2 mm.

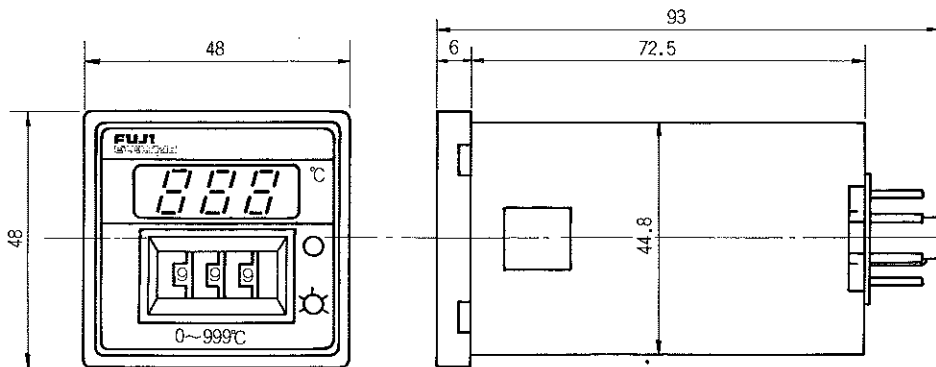


● Detaching

- ① Remove the fixture hook from the grooves of the controller with a screwdriver or the like.
- ② Remove the fixture from the controller.
- ③ Remove the controller from the panel.

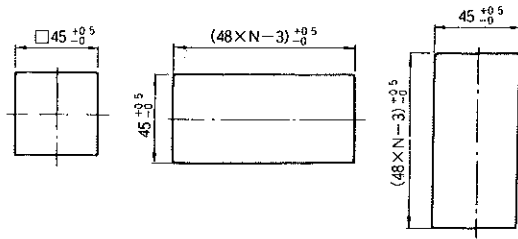


● Outer dimensions (figures)



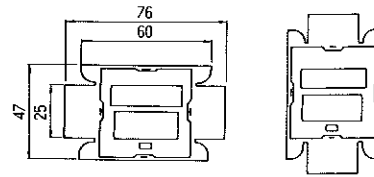
● Panel cutout for flush mounting

- For mounting one unit
- For mounting several units closely horizontally
- For mounting several units closely vertically



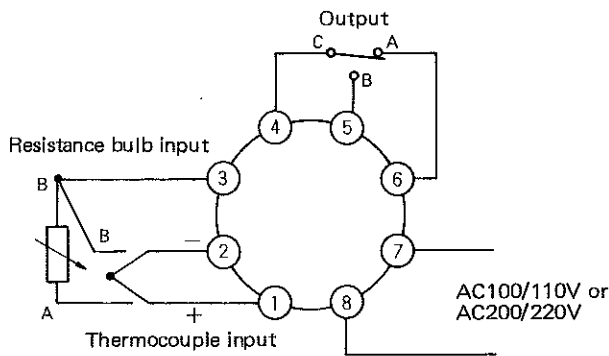
● Fixture for flush mounting (attached to controller when shipped)

- When mounting several units closely horizontally
- When mounting several units closely vertically



Note) Use ATX1NS socket for mounting several units closely vertically.

● Connection diagram (figure)



● Lamp and output terminal status (figure)

Contact output type

Type	Lamp and output terminal status		Output terminals
	Power ON	Power OFF	
Upper limit 2 position action P Y E □ □ A Lamp ● Setting ○	Terminals 4-6 OFF, 4-5 ON MIN  -----  MAX	4-6 ON, 4-5 OFF	4-6 : ON 4-5 : OFF
Lower limit 2 position action P Y E □ □ B Lamp ○	Terminals 4-6 ON, 4-5 OFF MIN  -----  MAX	4-6 OFF, 4-5 ON	
Upper limit proportional action P Y E □ □ C Lamp ●	Terminals 4-6 OFF, 4-5 ON MIN  -----  MAX Proportional band	OFF-ON, ON-OFF, OFF	
Lower limit proportional action P Y E □ □ D Lamp ○	Terminals 4-6 ON, 4-5 OFF MIN  -----  MAX Proportional band	ON-OFF, OFF-ON, ON	

Lit ● Extinguished ○ Flashing ◐