

TTM-J4/J5 SERIES USER'S MANUAL DIGITAL TEMPERATURE CONTROLLER

Thank you for purchasing model TTM-J4/J5 SERIES Digital Temperature Controller.
Please go through this Instruction Manual carefully and use the unit in proper manner.

NOTICE/WARNING BEFORE OPERATION USE

- When having the purchased controller at hand, please be sure that its unit is a correct model (See the following "Model Configuration").
- The following symbol marks \triangle provide to prevent incident or damage. Kindly refer to the details of the WARNING/CAUTION when using for the first time.

	WARNING	Due to mishandling, serious dangers may occur to the operator such as death, electrocution and a skin burn.
	CAUTION	Owing to mishandling, it may cause some damage to the unit or the operator getting slight injury.

- Please put this user's manual aside for your reference, when operating the unit.
- Copy or reprint of this manual, wholly or partially, is not allowed.
- The contents of this manual may change without notice in future.

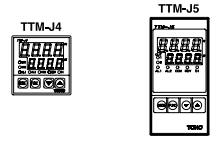
CAUTION

- For prevention of its malfunction, do not push the front key with sharp points.
- Spare terminal must not be used for other purposes.

WARNING

- Make sure the correct wiring connection before turning on electricity.
- Never modify the unit to prevent damage or incident such as malfunction and fire etc.

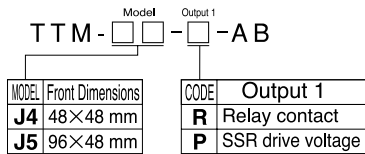
PARTS INDICATION



PV	Process value, character for setting mode display.
SV	Setting value, input value for setting mode display.
OUT1	Lights ON when output 1 turn ON
OUT2	Lights ON when output 2 turn ON
AL1	Lights ON when Event output 1 turn ON
AL2	Lights ON when Event output 2 turn ON
RDY	Lights ON under Ready
MODE KEY	For change of display
FUNC KEY	For action of function setting
\blacktriangle KEY	Up down key for change of setting value. Holding the up down keys are the value at a rapid rate.

ACCESSORY & CONFIGURATION

- 1) Please be sure that the unit enclosed in packing carton is a right model before using.
- 2) Kindly check the following accessory being contained in that carton box.
 - Installation Attachment
 - This user's manual : 1 copy
- 3) Model Configuration



- * "A" (EV1:Alarm1) and "B" (EV2:Alarm2 or OUT2:Relay contact) equipped as standard specifications.
- * Output 2 is equally used as EV2, but both not activated simultaneously.

SPECIFICATIONS

Power Supply Voltage	100 to 240V AC, 50/60Hz
Power Consumption	Below 10 VA
Memory Element	EEPROM
Input of Sensor	Thermocouple, R.T.D. (Changeable by front key)
Control Output	Relay contact, SSR drive voltage
Control Method	Two kinds of PID, ON/OFF
Operation Environment	0 to 50°C, 20 to 90%RH (Avoid making dew)
Storage Environment	-25 to 70°C, 5 to 95%RH (Avoid making dew)
Weight	TTM-J4 Less than 180g, TTM-J5 Less than 300g.
Location of the Unit Setting	Keep away from the followings. <ul style="list-style-type: none"> • Gas of corrosion, dust and oily smoke. • The electric noise of generator. • The influence of electromagnetic field. • Mechanical vibration and shock. • The direct sunlight.
Installation condition	Installation category II

CAUTION

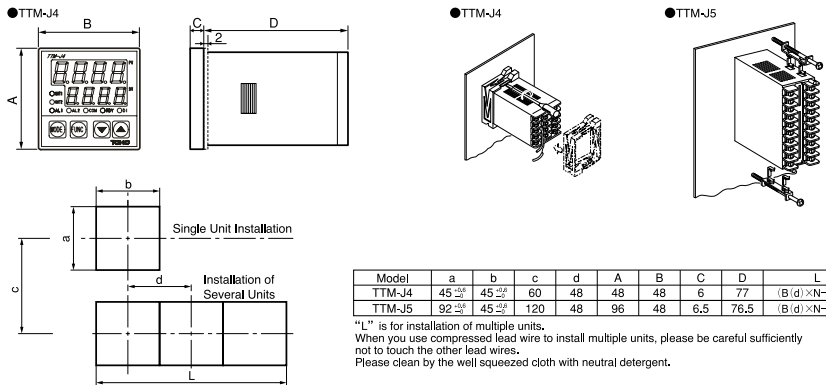
CAUTION BEFORE CONTROL

- Setting program is stored after power OFF, as non-volatile memory is equipped with TTM-J4/J5 SERIES controllers for setting storage.
- Either thermocouple or R.T.D.(Pt 100/JPt 100) is selectable input type. For suitable application, please select most appropriate input type and adjust input setup.
- PID or ON/OFF control is selective for the optimal performance and each detail of features is specified in the table on the right side.

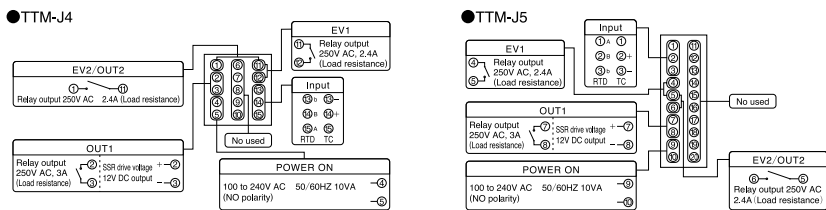
INSTALLATION AND WIRING

Unit : mm

Outer Dimensions and Panel Cutout



Wiring



CAUTION

For prevention of electric shock, please do wiring connection only after turning power off and don't touch the terminal part under power on.

	PID Control	ON/OFF Control
Merit	Better control result is achieved as opposed to that of ON/OFF control.	Life span of relay is generally longer, as it is ON when temperature is below SV and it is OFF when temperature is over SV (For heating control).
Demerit	Life span of relay is shorter, as output exists frequently with relay contact.	Control value is worse in comparison with that of PID control.

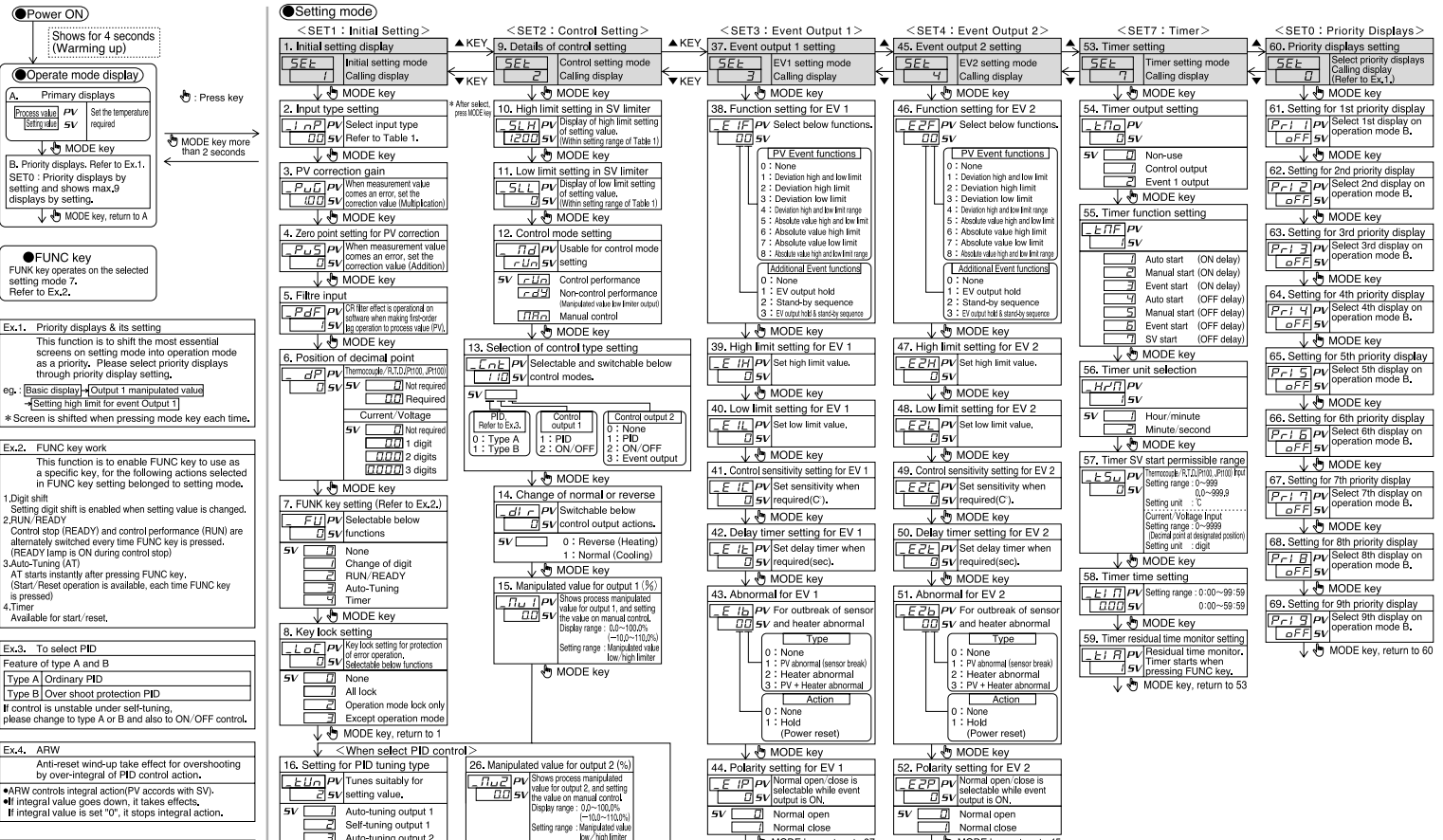
※ PID constants are automatically reckoned up to write in, when control begins or SV is altered on self-tuning.



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OPERATION FLOW AND SETTING MENU

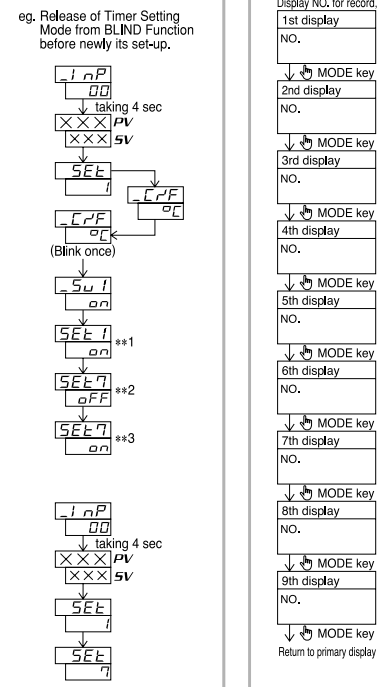
There are menus not displayed by the selected options and models.



CAUTION ERROR MESSAGES AND TROUBLE SHOOTING

How to release BLIND Function

- Power ON Automatically
- Initial Display Automatically
- Operation Mode Press MODE Key (10 sec)
- Immediately after the "Blink", press FUNC Key, and quickly press MODE Key.
- Press MODE Key (3 sec)
- Press UP Key (Δ) for 1→7
- Press FUNC Key for OFF → ON
- Power OFF
- Power ON Automatically
- Initial Display Automatically
- TIMER Setting Mode (OPERATION Mode) Press MODE Key (2 sec)
- Press UP Key (Δ) for 1→7
- Go on TIMER Setting Press MODE Key consecutively



*1 Please select an appropriate character (eg. Timer Setting etc) being of BLIND Function effect for the demanding release.
*2 Character selected for TIMER Setting.
*3 BLIND Function for "SELECTION DISPLAY (Timer Setting Mode)" is released.

(Display)	(Description)	(Trouble Shooting)
---	Shown whenever input value exceeds the high limit of display range. Also displays when the wire thermocouple, ABb terminal of R.T.D is snapped off.	Check the snapping of thermocouple and R.T.D. input.
---	Shown whenever input value exceeds the low limit of display range.	Check short circuit of input lines between A-B and A-b R.T.D.
Err0	Display of memory error.	In case this indication shows after the re-input of power, replace unit if it persists.
Err1	Display of A/D converter error or incorrect sensor connection with selectable input.	Ditto
Err2	Display of auto-tuning error.	Check sensor connection or change to other tuning.
LoL	Displayed when parameter is changed in key-lock condition.	Discontinue to change parameter.
RL	Alternately this and SV/PV display are shown.	Normality
Func	Displayed when making setting value change in control display while function key is on RUN/READY.	Discontinue to change setting value
Time	Displayed when altering setting value in control display while being on timer.	