

TE-W Series Temperature Controller

User Manual



Features:

- ⊙ TC/RTD universal input,
- ⊙ With display and control function,
- ⊙ Advanced Two freedom degree PID arithmetic,
- ⊙ With heating control Auto-tuning function,
- ⊙ Relay output or SSR output can be choosed,
- ⊙ One alarm, multi-alarm modes

For your safe, please read the below content carefully before you use the temperature controller!

■ Safe Caution

※	Please read the manual carefully before you use the temperature controller.
※	Please comply with the below important points.
⚠	Warning An accident may happen if the operation does not comply with the instruction.
⚠	Notice An operation that does not comply with the instruction may lead to product damage.
※	The instruction of the symbol in the manual is as below.
⚠	An accident danger may happen in a special condition.

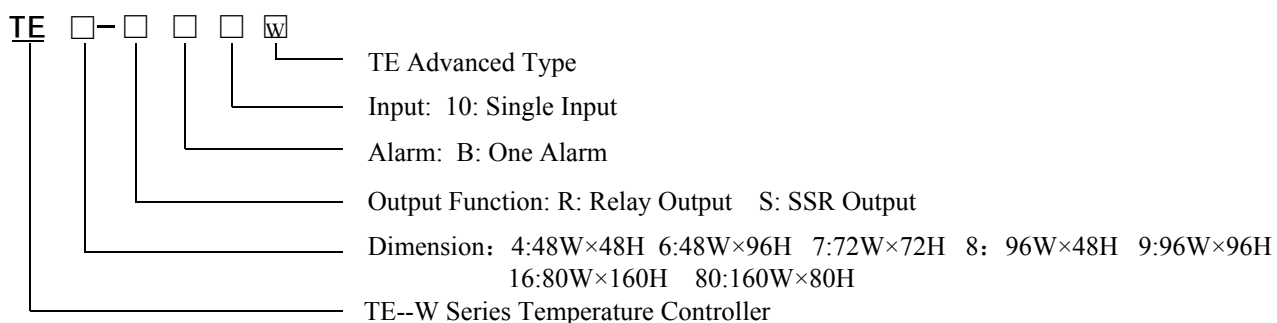
⚠ Warning

1. A safty protection equipment must be installed or please contact with us for the relative information if the product is used under the circumstance such as nuclear control, medical treatment equipment, automobile, train, airplane, aviation and equipment etc. Otherwise, it may cause serious loss, fire or person injury.
2. A panel must be installed, otherwise it may cause creepage (leakage).
3. Do not touch wire connectors when the power is on, otherwise you may get an electric shock.
4. Do not dismantle or modify the product. If you have to do so, please contact with us first. Otherwise it may cause electric shock and fire.
5. Please check the connection number while you connect the power supply wire or input signal, otherwise it may cause fire.

⚠ Caution

1. This product cannot be used outdoors. Otherwise the working life of the product will become shorter, or an electric shock accident may happen.
2. When you connect wire to the power input connectors or signal input connectors, the moment of the No.20 AWG (0.50 mm²) screw tweaked to the connector is 0.74n.m - 0.9n.m. Otherwise the connectors may be damaged or get fire.
3. Please comply with the rated specification. Otherwise it may cause electric shock or fire, and damage the product.
4. Do not use water or oil base cleaner to clean the product. Otherwise it may cause electric shock or fire and damage the product.
5. This product should be avoid working under the circumstance that is flammable, explosive, moist, under sunshine, heat radiation and vibration. Otherwise it may cause explosion.
6. In this unit it must not have dust or deposit, otherwise it may cause fire or mechanical malfunction.
7. Do not use gasoline, chemical solvent to clean the cover of the product because such solvent can damage it. Please use some soft cloth with water or alcohol to clean the plastic cover.

1. Model Illustration



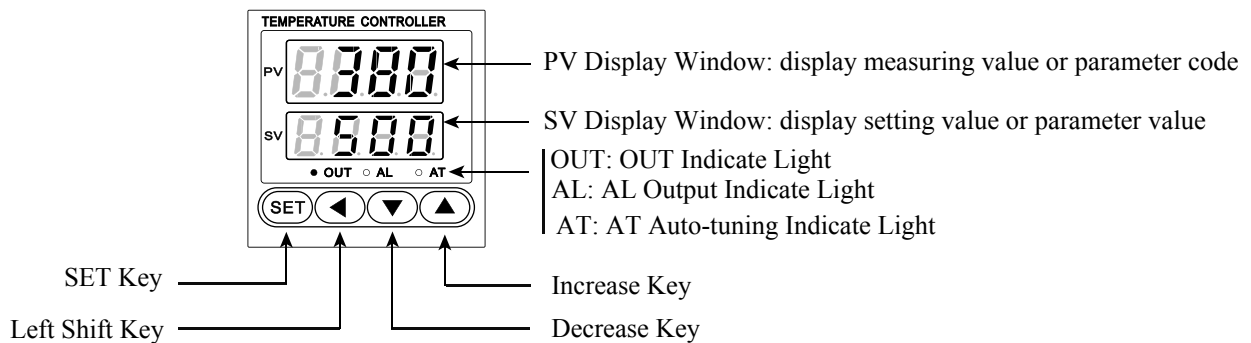
2. Ordering Model

Model	Control Output Function	Alarm
TE□-RB10W	Relay Output	One
TE□-SB10W	SSR Output	One

3. Mail Technical Specification

Resolution	TC: 1℃ RTD: 0.1℃.
Output Function and Capacity	Relay Output: Capacity 3A/250VAC
	SSR Output: (TE6/7/8/9/80/16: 12V Voltage, Load 30mA), (TE4: 24V Voltage Load 30mA)
Power Supply	TE6/7/8/9/80/16: AC 110/220V±10% TE4: AC/DC 100-240V
Total Current	<30mA (AC 220V)
Working Condition	0-50℃ 45-85%RH

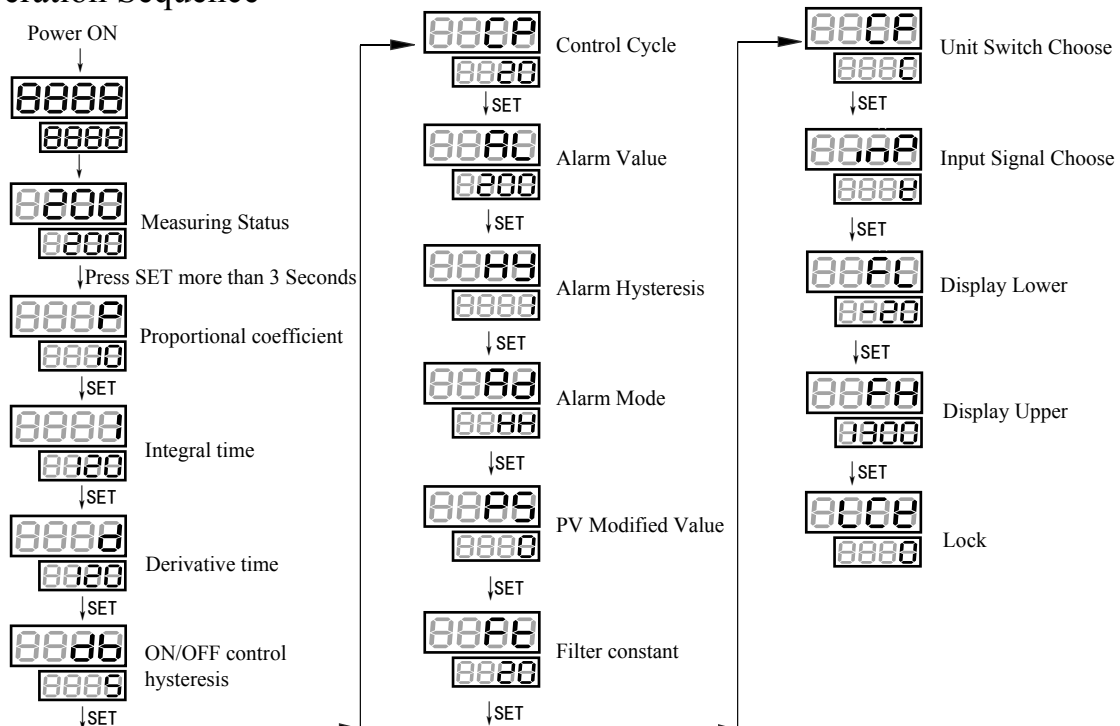
4. Panel Illustration



5. Panel Key Operation

- (1). SET Key: In normal display status, press ◀Key to enter into SV modification status, SV value flicker; press SET key for a few seconds to enter into setting menu.
- (2). “▲” ”▼” Key: Shortly press can set value in SV menu or setting menu.
- (3). ▲ Under the status of modify SV value, press this key without move can increase SV value or menu parameter value.
- (4). ▼ Under the status of modify SV value, press this key without move can decrease SV value or menu parameter value.
- (5). All the parameter after modify should press SET Key for confirmation.
- (6). ◀ Under normal display status, press ◀ Key more than 3 seconds, the meter will enter into Auto-tuning status.

6. Operation Sequence



7. Setting Menu

Parameter name	Indication	Setting range	Ex-factory setting
P	Proportional coefficient (P=0: ON / OFF control)	0~999	10
I	Integral time	0~3600S	120
D	Derivative time	0~3600S	120
db	ON/OFF control hysteresis (Only ON/OFF control workable)	0~50	5
CP	Control cycle , 1 means SSR control output, 4--255 means Relay control output	1~256	20
RL	Alarm Value	FL~FH	200
HY	Alarm Hysteresis	0~50	1
Rd	Alarm Mode: HL: Absolute value lower, HH: Absolute value upper, DL: Lower deviation, DH: Upper deviation	HL、HH、DL、DH	HH
PS	PV modify value which be used to modify the error that caused in the measuring	-50~50	0
Ft	Filter constant	1~256	20
CF	Display Unit Switch C: °C F: °F	C/F	C
inp	Input signal choose: K, J, E, T, PT100, CU50, CU100	Refer to input signal table	K
FL	Display value Lower	Refer to input signal table	-20
FH	Display value Upper	Refer to input signal table	1300
LLL	Lock menu , If unit's place is "1", the SV value is forbidden to change, if ten's place is "1", other parameters of the menu can not be modified	0~9999	0

Input Signal Table

Input Code	Input Type	Measuring Range	Resolution	Accuracy	Input Resistance
K	K Type	-20~1300°C	1°C	0.5%FS	>100KΩ
J	J Type	-20~1000°C	1°C	0.5%FS	>100KΩ
E	E Type	-20~600°C	1°C	0.5%FS	>100KΩ
T	T Type	-20~400°C	1°C	0.5%FS	>100KΩ
PT100	PT100	-199.9~610.0°C	0.1°C	0.5%FS	(0.2mA)
CU50	CU50	-50.0~150.0°C	0.1°C	0.5%FS	(0.2mA)
CU100	CU100	-50.0~150.0°C	0.1°C	0.5%FS	(0.2mA)

Alarm Function Table

Alarm Code	Alarm Type	Alarm Output
HH	Absolute value upper	
HL	Absolute value lower	
DH	Upper deviation	
DL	Lower deviation	

8. Advanced Function

P,I,D parameter setting and Auto-tuning operation

1. Setting P,I,D parameter manually

There has been a P,I,D parameter, which can suit for usual heating system, be setted before Ex-factory.

For those people who have certain experience on P,I,D control and though the normal P,I,D setting can not meet their needs, they can set the P,I,D value according to their own needs and experience manually.

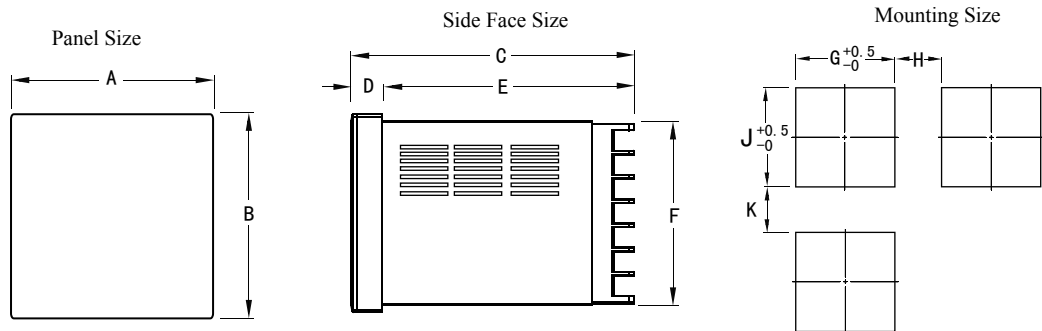
2. Setting P,I,D parameter automatically

If the user do not know how to setting P, I, D parameter, they can use the auto-tuning function of the meter.

Auto-tuning Method: Firstly: Setting a SV value, press ◀ Key for more than 3 seconds; Do not move your hand until "AT" indicate light ON, it shows that the auto-tuning is on process.

In order to make sure the accuracy of auto-tuning, SV value and the parameter of the device do not allow to be changed, after the "AT" indicate light OFF, original P, I, D value will be changed, then the meter can measure the temperature automatically and accurately.

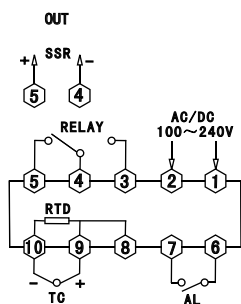
9. Mounting Dimension



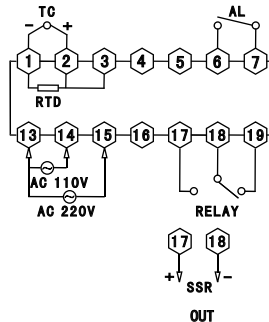
Model	A	B	C	D	E	F	G	H(Min)	J	K(Min)
4:(48*48)	48	48	97.5	3	94.5	45	45.5	25	45.5	25
6:(96*48)	48	96	97.5	3	94.5	89.5	45	25	90	25
7:(72*72)	72	72	97.5	3	94.5	67	67.5	25	67.5	25
8:(48*96)	96	48	97.5	3	94.5	44.5	90	25	45	25
9:(96*96)	96	96	97.5	3	94.5	91.5	92	25	92	25
16:(160*80)	80	160	96	13	83	155	76	30	155.5	30
80:(80*160)	160	80	96	13	83	75.5	155.5	30	76	30

10. Connection Drawing

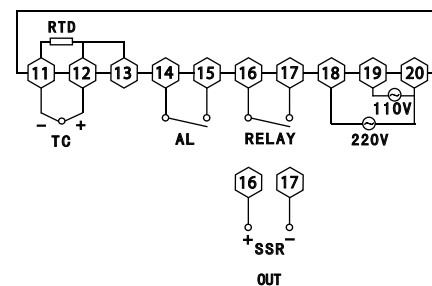
TE4 Power:AC/DC 100-240V
Voltage Output:DC 24V 30mA
Relay Output:AC 250V 3A



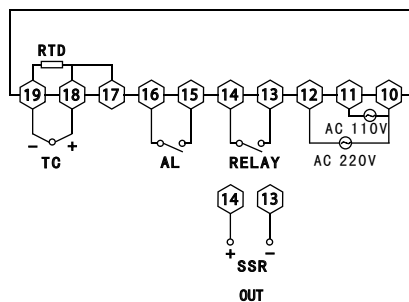
TE7 Power:AC 110/220V±10%
Voltage Output:DC 12V 30mA
Relay Output:AC 250V 3A



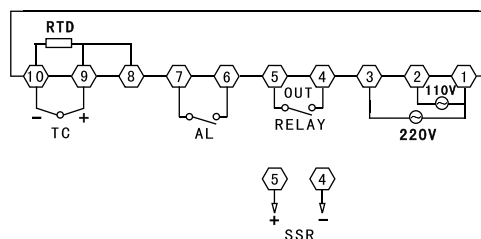
TE6/8 Power:AC 110/220V±10%
Voltage Output:DC 12V 30mA
Relay Output:AC 250V 3A



TE9 Power:AC 110/220V±10%
Voltage Output:DC 12V 30mA
Relay Output:AC 250V 3A



TE16/80 Power:AC 110/220V±10%
Voltage Output:DC 12V 30mA
Relay Output:AC 250V 3A



Note: If there is any change, please subject to the drawing on the meter!

11. Simple Problem Shooting

Display	Shooting Method
Display HHHH or LLLL	<ul style="list-style-type: none"> Checking whether the input is unconnected Checking FH value and FL value Checking the ambient temperature Checking whether the input signal is correct