



## STP321 STP322

### Programmable thermostat

#### WARNING

- If failure or error of this instrument could result in a critical accident of the system, install an external protection circuit to prevent such an accident.
- Do not turn on the power supply until all of the wiring is completed. Otherwise electric shock, fire or malfunction might result.
- Use this instrument within the scope of its specifications. Otherwise fire or malfunction might result.
- Do not use this instrument in the places subject to flammable or explosive gas.
- Do not touch high voltage blocks, such as power supply terminals. Otherwise electric shock may result.
- Never disassemble, repair or modify this instrument by yourself. This might cause malfunction.

#### Technical Data

Dimension: 75×33×70mm  
 Sampling time: 2times/sec.  
 Mounting: panel-mounted with drilling template 71x29mm  
 Multi input: K/J/Pt100/4-20mA  
 Output: STP321, one main output (Relay or SSR)  
 STP322, one main output and one alarm output(3A/250V)  
 Control method: ON/OFF control  
 Accuracy: 0.5%F.S.  
 Display: 3 digits 7 segments LED display  
 Consumption: 3VA max. (Mod. 230V)  
 Power supply: 21-30VDC/110-240VAC (defined in order)  
 Working environment: 0-50℃  
 Usage and storage ambient humidity:  
 less than 80%RH(non-condensing)

#### Order code

Please check whether the delivered product is as specified by referring to the following model code list. And please specify the model code when you place the order.

**STP32**

**OUTPUT**

☐ 1 One main control output  
☐ 2 One main control output and one alarm output

**Control action**

☐ H Heating  
☐ C Cooling

**OUTPUT**

☐ 2 Relay output (15A/250V)  
☐ 5 SSR logic output

**ALARM**

☐ N No Alarm  
☐ Alarm active (choose the code, see + Alarm code)

**UNIVERSAL INPUT**

Define factory setting of the Input

☐ 1 K/J  
☐ 2 PT100  
☐ 5 4-20mA  
☐ 8 PT1000

**Supplementary POWER**

☐ N No 12V output  
☐ V With 12V output

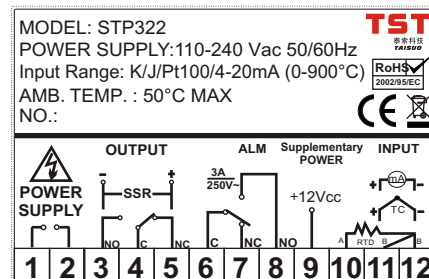
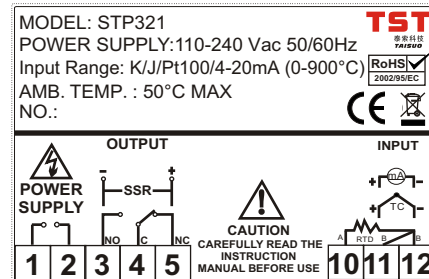
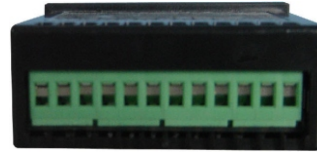
**POWER SUPPLY**

☐ 7 100 to 240Vac  
☐ 1 21 to 30Vac/dc

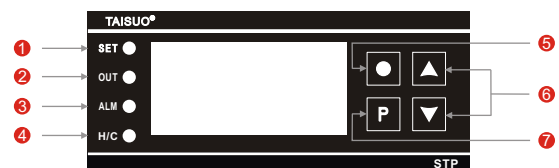
#### +Alarm code

- |                                |                       |
|--------------------------------|-----------------------|
| A Deviation high alarm         | B Deviation low alarm |
| C Deviation high and low alarm | D Band alarm          |
| H Process high alarm           | J Process low alarm   |

#### Wire Connection



#### Front Panel



- 1 Indicating lamp which will be light only when the user is changing the set point.
- 2 OUT Indicating lamp which will be light when the OUT is active.
- 3 ALM Indicating lamp which will be light when the alarm relay is active.
- 4 H/C Indicating lamp which will be light **RED** when the control action is Heating; and light **GREEN** when the control action is Cooling.
- 5 **Quit key**  
Press this key to quit from parameter setting mode.
- 6 **"UP" and "DOWN" Key**  
Press the keys to choose the parameters and set the values. Press "UP" key to show the software version.
- 7 **Function key**  
Press this key 3 seconds to enter set point setting mode. Press this key 6 seconds to enter parameters setting mode.

## Operation

Power on

0

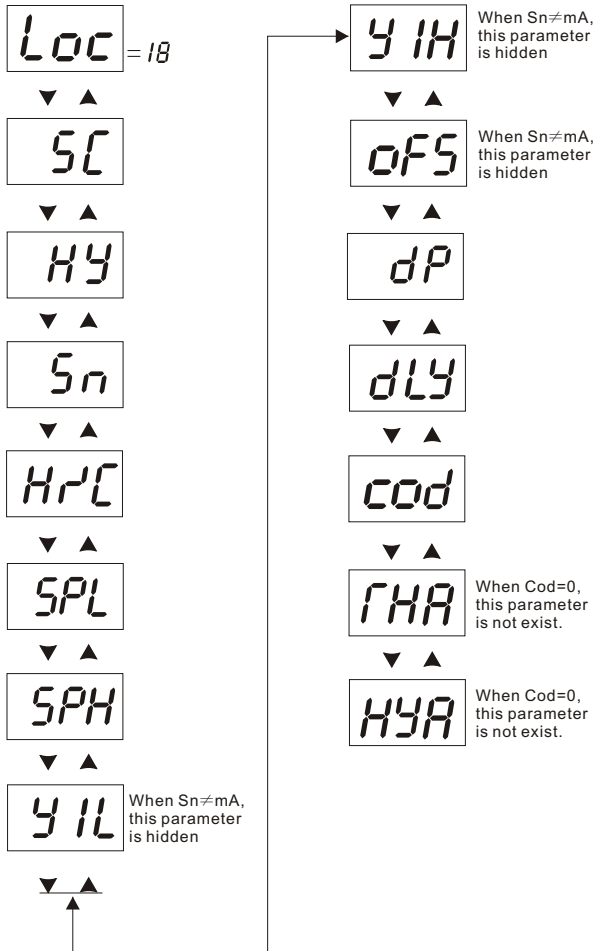
Display 4 seconds

20

Press the function key "P" 3 seconds to enter the set point setting mode. Then you can set the value with up and down key ▲ ▼.

Press the function key "P" 6 seconds, then the window will display the following parameters. Press up and down key ▲ ▼ to choose the parameters.

**Note: When "Loc"=18, all parameters are programmable.**



Sn

Input signal selection.  
Press up or down key to choose the corresponding input sensor.  
Range: K; J; Pt; mA Default: K

HPC

Heating and cooling control action selection.  
Press up or down key to choose the control action.  
Range: heating H and cooling C  
Default: H

SPL

Measurement low range  
Range: -99 to 999℃  
Default: 0

SPH

Measurement high range  
Range: -99 to 999℃  
Default: 900

Y1L

Display value  
When the input signal is mA, Y1L is the value for 4mA or 0mA.  
When Sn ≠ mA, this parameter is hidden

Y1H

When the input signal is mA, Y1H is the value for 20mA.  
When Sn ≠ mA, this parameter is hidden

OFS

Selection of mA input range  
YES = 4-20mA, NO = 0-20mA  
When Sn ≠ mA, this parameter is hidden  
Default: YES

dP

Decimal point  
dp=0, decimal point is inactive;  
dp=1, decimal point is active.  
Default: 0

dLY

Delay time of main control output  
Unit: Second  
OUT indicating lamp should be light when the device is in delay time.  
Default: 0

cod

Alarm mode  
0 No alarm  
1 Deviation high alarm  
3 Process high alarm  
6 Band alarm  
2 Deviation high and low alarm  
5 Deviation low alarm  
7 Process low alarm

rHA

Alarm value

HYA

Dead band of Alarm  
Note: When alarm code is  
C(Deviation high and low alarm) and  
D(Band alarm), this parameter is not exist.

## Parameters Description

Loc

Lock parameter. The first parameter in the list, the default value is 0.  
To set following parameters, please set "Loc"=18.

SC

Compensation of the measuring value.  
User can set this parameter when there is a difference between measuring value and the real temperature.  
Range: -19.9 to 20 degrees Default: 0

HY

Dead band of the control output.  
For example: HY=5; SV=100; then the controller will start heating when the SV=95; and stop heating when SV=105.  
Range: 1-50 degrees  
Default: 1

## Error occurrence

HH

This code will be displayed when the temperature is higher than the high limit of input sensor.

LL

This code will be displayed when the input sensor crashed or the temperature is lower than the low limit of input sensor.

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