

XY-ST10 Automatic Timed Heating/Cooling Temperature Controller

1.Description:

XY-ST10 is an automatic timed heating/cooling NTC digital temperature controller module. It can be widely used at smart home,Industrial control,Automatic irrigation,Indoor ventilation,Protection equipment.

XY-ST10 adopts industrial-grade chip with high-precision NTC temperature sensor that can measuring $-40^{\circ}\text{C}\sim 110^{\circ}\text{C}$ or $-40^{\circ}\text{F}\sim 166^{\circ}\text{F}$.

2.Features:

- 1>.Heating/cooling automatic control
- 2>.Celsius and Fahrenheit switch display
- 3>.Automatic control output status
- 4>.Simultaneous temperature detection
- 5>.Automatic recognition working mode
- 6>.High and low temperature automatic alarm
- 7>.Automatic data saving
- 9>.High temperature measuring $-40\text{C}\sim 110\text{C}$ or $-40\text{F}\sim 116\text{F}$
- 9>.ABS standard size housing
- 10>.10A relay switch output
- 11>.HD LCD Display Screen
- 12>.Power saving mode
- 13.Programmable display temperature calibration

3.Parameters:

- 1>.Working Voltage:DC 6V-30V
- 2>.Control Type:Button
- 3>.Sensor(Include):NTC 10K 3980B(2 meter)
- 4>.Sensor(Support):DS18B20(Not Included)
- 5>.Temperature Range: $-40\text{C}\sim 110\text{C}$ or $-40\text{F}\sim 110\text{F}$
- 6>.Temperature Control precision:0.1C/F
- 7>.Output Type:Relay output(It can not output voltage)
- 8>.Load: AC220V/DC30V 10A
- 9>.Additional function:Buzzer Alarm
- 10>.PCB Working Temperature range: $-40^{\circ}\text{C}\sim 85^{\circ}\text{C}$
- 11>.Working Humidity Range:5%-95%RH
- 12>.Module Size:79*43*25mm

4.Functions:

1>.Setting Parameters:

- 1.1>.Set work mode by Cooling mode and Heating mode.
- 1.2>.Set the Start-Temperature and Stop-Temperature.

2>.Heating Mode:

- 2.1>.It works in Heating Mode if the Start-Temperature is less than the Stop-Temperature.
- 2.2>.Relay turn ON and heating equipment starts working if connect load when the Current Temperature is less than the Start-Temperature. LCD will display symbol 'ON'.
- 2.3>.Relay turn OFF and heating equipment stops working if connect load when Current Temperature is greater than the Stop-Temperature. Symbol 'ON' will disappear.

3>.Cooling Mode:

- 3.1>.It works in Cooling Mode if the Start-Temperature is greater than the Stop-Temperature.
- 3.2>.Relay turn ON and cooling equipment starts working if connect load when the Current Temperature is greater than the Start-Temperature. LCD will display symbol 'ON'.
- 3.3>.Relay turn OFF and cooling equipment stops working if connect load when Current Temperature is less than the Stop-Temperature. Symbol 'ON' will disappear.

4>.Emergency Stop:

- 4.1>.Relay turn OFF and display symbol 'ON' keep flashing and load stop work if press emergency stop button.
- 4.2>.Press again to turn ON.

5>.Temperature Alarm:

5.1>.Buzzer will alarm and press anyone button to stop alarm if turn ON this function.

5.2>.High Temperature Alarm OTP: Relay turn OFF and load stop work if Current Temperature is more than High Temperature Alarm Threshold.

5.3>.Low Temperature Alarm LTP: Relay turn OFF and load stop work if Current Temperature is less than Low Temperature Alarm Threshold.

6>.Delay Start Function dLy:

6.1>.It means the load can allow the next heating or cooling after delay time T and the time unit is second if turn ON dLy function.

6.2>.Relay can not turn ON if the heating temperature is met at Heating mode during delay time T if turn ON dLy function.

6.3>.Relay can not turn ON if the cooling temperature is met at Cooling mode during delay time T if turn ON dLy function.

7>.Calibration Temperature OFE:

7.1>.Current Temperature = Detect Temperature + Calibration Temperature.

7.2>.The system works for a long time, and there may be deviations, which can be corrected by this function.

8>.Buzzer Switch BEP:

8.1>.Adjust volume for Buzzer.

5.Set Parameter Method:

1>.Set Start-Temperature and Stop-Temperature Value:

1.1>.**Enter Set Mode:** Press 'SET' button enter into set mode. Then the selected Start-Temperature Value in the left or Stop-Temperature Value in the right will keep flashing.

1.2>.**Set Work Mode:** The Work Mode does not need to be set, it will automatically select Heating Mode or Cooling Mode based on the values of Start-Temperature and Stop-Temperature.

1.3>.**Set the Start-Temperature:** Set this value by default after Enter Set Mode.Then press 'UP' or 'DOWN' to change value.

1.4>.**Set the Stop-Temperature:** Press 'SET' button again and then press 'UP' or 'DOWN' to change value.

1.5>.**Save and Exit:** Keep press 'SET' about 2second to save parameters and exit set mode. It will also automatically save the parameters and exit the setting mode if there is no operation within 5 second.

2>.Set System Parameter:

2.1>.**Enter Set System Mode:** Keep press 'SET' button 2second enter into set system parameter mode.

2.2>.**Set High Temperature Alarm OTP:**

2.2.1>.Symbol 'OTP' is displayed on the last line and flashing '----' or High Temperature Alarm Value after enter set system mode.

2.2.2>.Press 'STOP' button to turn ON or OFF high temperature alarm function. '----' means turn OFF this function, otherwise turn ON this function.

2.2.3>.Press press 'UP' or 'DOWN' to change value if turn ON this function.

2.3>.**Set Low Temperature Alarm LTP:**

2.3.1>.Press 'SET' button again and then symbol 'LTP' is displayed and flashing '----' or Low Temperature Alarm Value.

2.3.2>.Press 'STOP' button to turn ON or OFF low temperature alarm function. '----' means turn OFF this function, otherwise turn ON this function.

2.3.3>.Press press 'UP' or 'DOWN' to change value if turn ON this function.

2.4>.**Set Delay Start Time dLy:**

2.4.1>.Press 'SET' button again and then symbol 'dLy' is displayed and flashing '----' or delay start time. The time unit is second.

2.4.2>.Press 'STOP' button to turn ON or OFF high temperature alarm function. '----' means turn OFF this function, otherwise turn ON this function.

2.4.3>.Press press 'UP' or 'DOWN' to change value if turn ON this function.

2.5>.**Calibration Display Temperature OFE:**

2.5.1>.Press 'SET' button again and then symbol 'OFE' is displayed and flashing calibration temperature value.

2.5.2>.Press press 'UP' or 'DOWN' to set calibration temperature value.

2.5.3>.Its set range is -20 to 20.

2.6>.ON/OFF Buzzer Alarm bEp:

2.6.1>.Press 'SET' button again and then symbol 'bEp' is displayed and flashing 'On' or 'OFF'.

2.6.2>.Press press 'UP' or 'DOWN' to turn ON or OFF this function.

2.7>.Switch Temperature Unit F-C:

2.7.1>.Press 'SET' button again and then symbol 'F-C' is displayed and flashing '-C-' or '-F-'.

2.7.2>.Press press 'UP' or 'DOWN' to change temperature unit.

2.7.3>.'-F-' : Temperature displayed in degrees Fahrenheit °F .

2.7.4>.'-C-' : Temperature displayed in degrees Celsius °C .

2.8>.Note:

2.8.1>.The last two parameters 'Add' and 'bRE' no need to be set.

6.Application:

- 1>.Control cabinet
- 2>.Production workshop
- 3>.Hatching aquaculture control
- 4>.Tobacco industry
- 5>.Printing house
- 6>.Aquarium temperature control
- 7>.Wood fired boiler

7.Note:

1>.It is a relay output mode and cannot be used as a power module. It cannot output voltage. The load needs to be connected to a separate power supply.

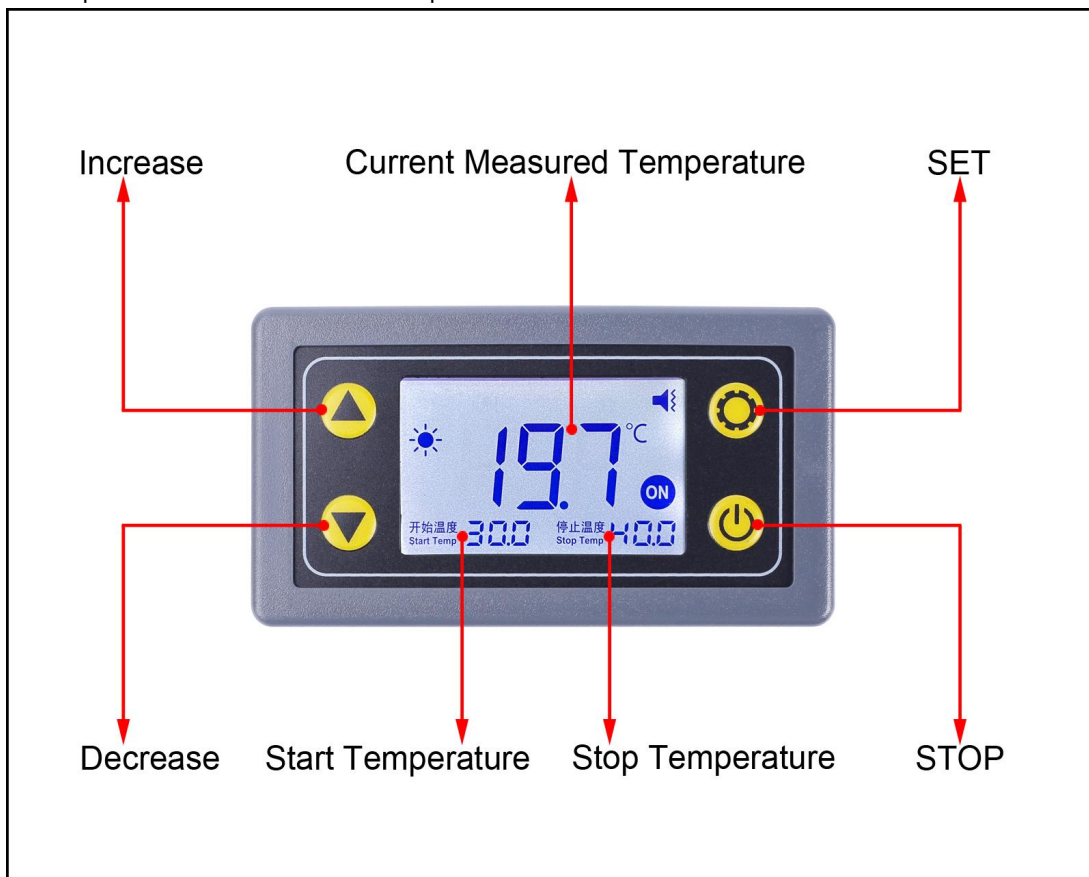
2>.Buzzer will alarm if no sensor was connected.

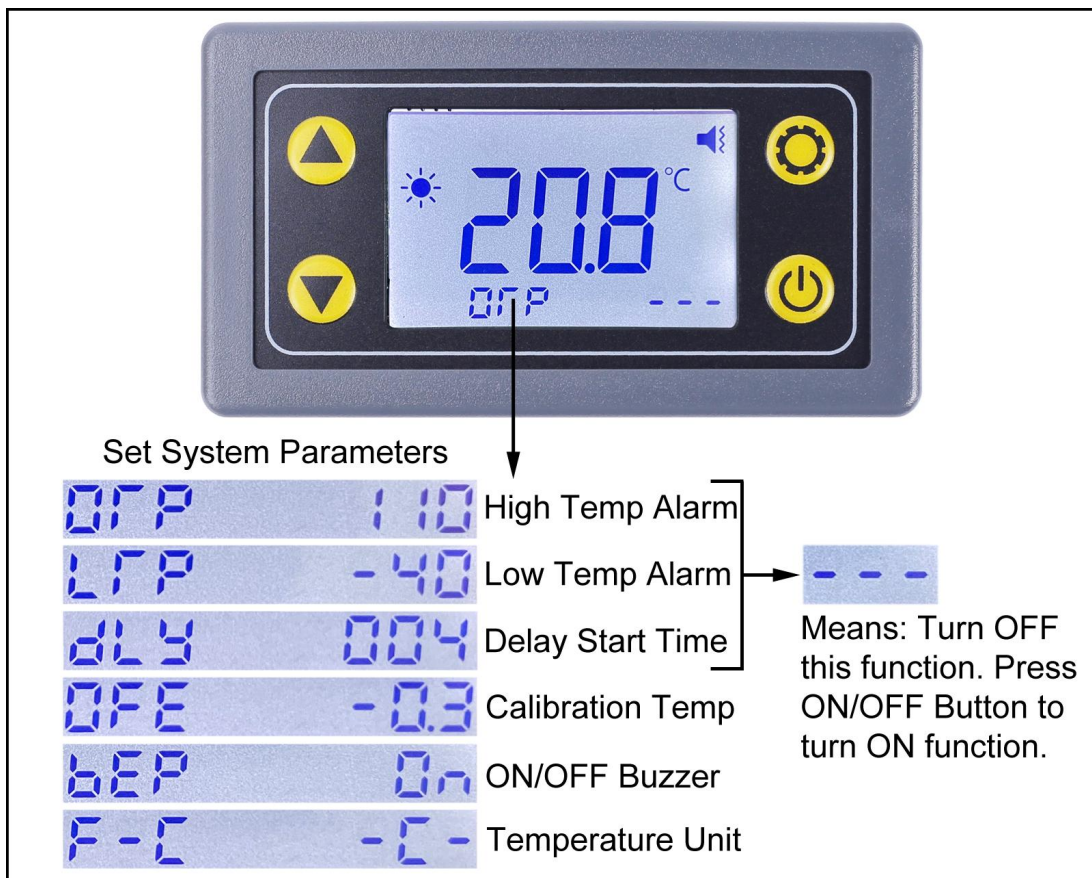
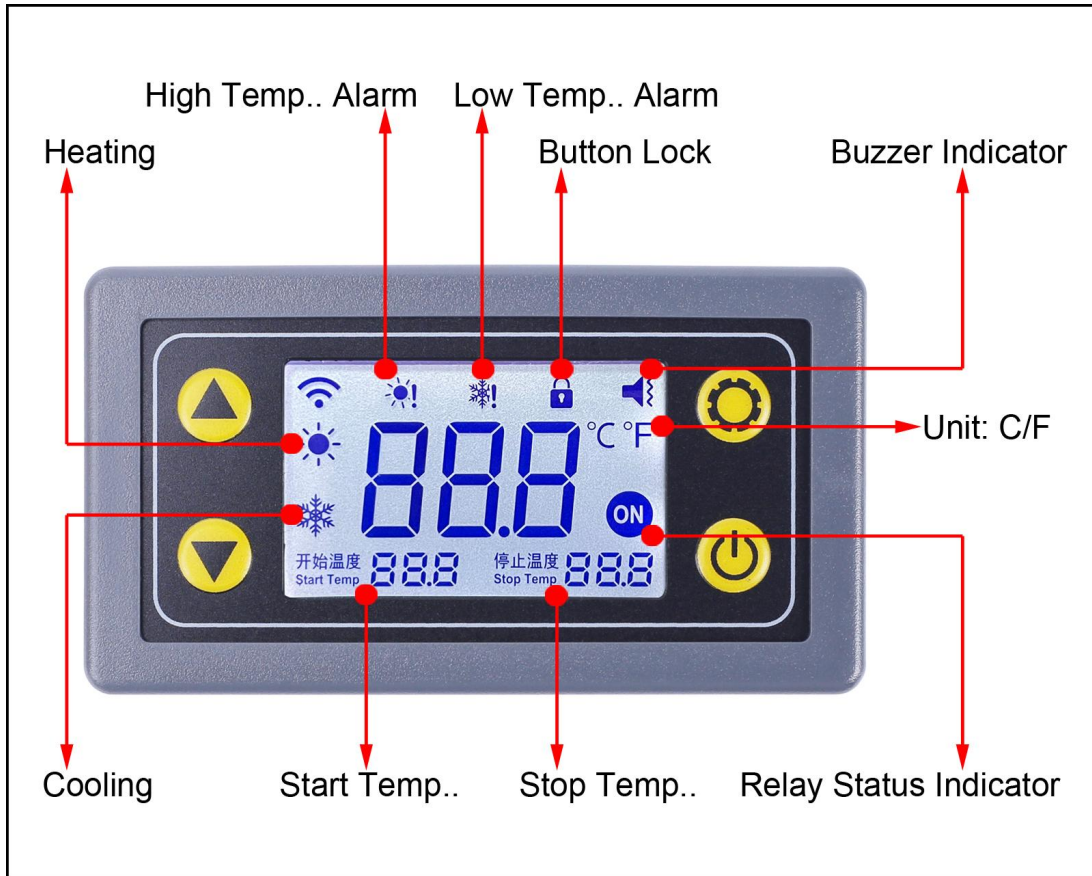
3>.Please read use manual and description before use.

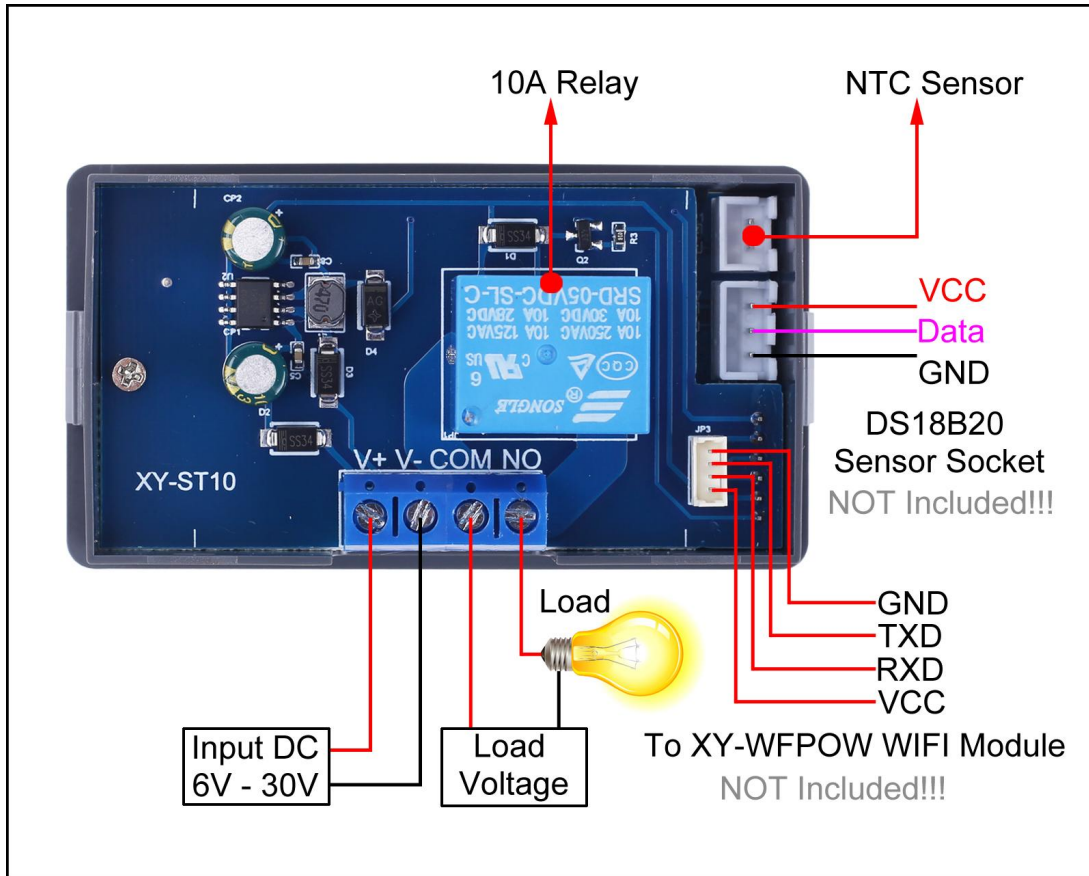
8.Package:

1>.1pcs XY-ST10 Automatic Timed Heating/Cooling Temperature Controller

2>.1pcs 2meter NTC 10K 3980B temperature sensor







Button Operation Instructions

Interface	Normal Display Interface	Set Start/Stop Temp	Set Parameter Interface
Button			
	Short press: Enter Set Start/Stop Temperature set interface. Long press: Enter Set System Parameter set interface.	Short press: Switch modified start or stop temperature value. Long press: Save value and exit.	Short press: Switch modified system parameters. Long press: Save and exit..
	Short press: None. Long press: None.	Short press: Increase parameter value Long press: Increase parameter value continuously/fastly.	Short press: Increase parameter value. Long press: Increase parameter value continuously/fastly.
	Short press: Turn ON or OFF screen backlight. Long press: None.	Short press: Decrease parameter value. Long press: Decrease parameter value continuously/fastly.	Short press: Decrease parameter value. Long press: Decrease parameter value continuously/fastly.
	Short press: Turn ON or OFF emergency stop. Long press: Turn ON or OFF button lock.	Short press: None. Long press: None.	Short press: Turn ON/OFF function OTP, LTP, dLy. Note: '---' means turn OFF this function. Long press: None.