1. Product parameters:

Power supply voltage: HW-299A DC12V, HW-299B DC24V, HW-299C AC110V~220V ,

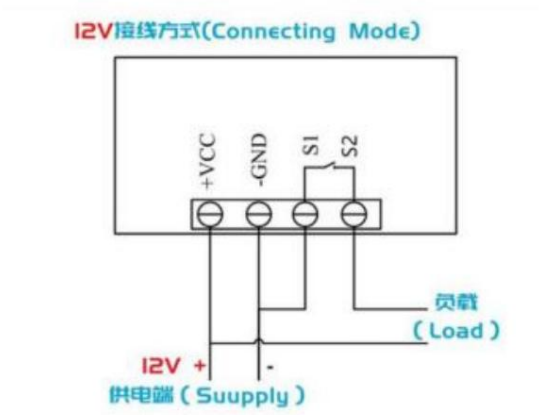
HW-299D DC5Vÿ

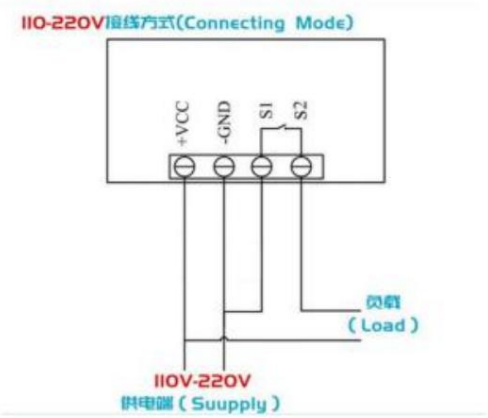
Temperature control range: -55°C to 120°C; Temperature control accuracy: 0.1°C; Hysteresis accuracy: 0.1°C; Refresh rate: 0.32s; Environmental requirements: -10°C to 60°C.

C. Humidity: 20%-85%; Probe type: NTC10K/B3950; Dimensions: 79mm*43mm*26mm

Output: 1 relay (20A/12VDC, 5A/240VAC)

2. Wiring method:





3. Instructions for Use: Indicator Light Status: Flashing indicates a delay before cooling or heating starts; solid light indicates the relay is closed; no light indicates...

The relay is off. If a timeout is enabled, the light will flash during the timeout period, indicating that the relay is off.

Digital tube: 1PV. The digital tube is red and displays the actual measured temperature value. An error message will appear if an anomaly occurs.

The corresponding abnormal indicators are: "LL1" indicates a sensor open circuit, and "HHH" indicates a forced disconnection relay.

If the measured temperature exceeds the product's maximum measuring range, the temperature controller will forcibly disconnect the relay and display "0" to indicate a high-temperature alarm.

The high-temperature alarm code is displayed after exceeding the set maximum value. The 2SV digital tube is a blue display, showing the value of the relay.

To display the on/off temperature value of the device, press the "sET" button once. The digital display will flash. You can then use the up arrow "ÿ" and the down arrow "ý" to navigate.

Use the "ÿ" arrow to add or subtract values.

Main menu settings: Press and hold the "SET" button for 3 seconds to enter the main menu settings. Press "SET" again to switch between P0-P8 modes.

Press the up arrow "ÿ" or the down arrow "ý" to set the corresponding mode. Press and hold the "SET" button for 3 seconds, or if no button is pressed within 8 seconds.

The key action will automatically confirm and return.

Switch: Press and hold "Restart" for 1.5 seconds to turn off the display and relay; press "Restart" again for 1.5 seconds to turn on the display.

Show.

ÿ Heating mode example

Example: To control a radiator to heat to 60°C and then stop, and after cooling to 50°C and restarting, a heating mode needs to be set.

The formula, with a temperature hysteresis value of 10 degrees, should be set as follows:

1. When the temperature is displayed normally, press the "SET" button once to stop the temperature flashing and set the stop temperature value to 60°C.

2. Press and hold the "SET" button for more than 3 seconds until the PO display shows that the working mode is set to H.

3. Set the hysteresis value of P1 to 10.

ÿExample of cooling mode

Example: Control the refrigerator to stop cooling at -5°C, and start cooling again when the temperature rises to 0°C.

It needs to be set to cooling mode with a hysteresis value of 5°C. It should be set as follows:

1. When the temperature is displayed normally, press the "SET" button once to stop the temperature flashing and set the stop temperature value to -5°C.

4. Press and hold the "SET" button for more than 3 seconds until the PO display shows that the working mode is set to C.

2. Set the hysteresis value of P1 to 5.

1. Special Notes

代码	项目	设置范围	出厂设置
P0	加热/制冷	H/C	C
P1	回差	0.1℃~30℃	2℃
P2	温度设置上限	-55℃~120℃	120℃
P3	温度设置下限	-55℃~120℃	-55℃
P4	温度校正	0~10℃	0℃
P5	延时启动	0~10分钟	0分钟
P6	高温警告	-55℃~120℃	120℃
P7	数据锁定	ON/OFF	OFF
P8	恢复出厂设置	ON/OFF	OFF

Regarding temperature parameter settings, P2 and P3 modes have the highest priority and are considered the highest priority settings.

How to set the stop temperature

After pressing the "SET" button, the SV digital display will flash. You can then use the "ÿ" and "ÿ" arrows to navigate.

Numerical addition and subtraction. How to access internal settings?

Press and hold the SET button for more than 3 seconds.

How to restore factory settings

Prerequisite: Item P8 is in the OFF position. Before powering on the product, press and hold both the "ÿ" and "ÿ" buttons simultaneously; the screen will display "888".

It will flash rapidly. Release the button and wait 2 seconds to restore factory settings.

PO: Work Mode

Press and hold the SET button for more than 3 seconds to enter the P0 menu interface. Press "ÿ" or "ÿ" to switch [H] for heating.

[Mode] and [C is cooling mode] After setting, press and hold the SET button for 3 or 8 seconds without any button press, and the control will be activated.

The controller automatically returns confirmation and stores the data after power failure.

In cooling mode: When [temperature measurement value PV ÿ temperature set point SV], the cooling relay disconnects and the cooler shuts off; when [temperature...], the cooler...

When the measured value PV is greater than or equal to the temperature set point SV + hysteresis, the refrigeration relay is activated and the refrigerator starts working.

In heating mode: When [temperature measurement value PV ÿ temperature set point SV - hysteresis], the heating relay engages and the heater starts;

When the measured temperature value PV is greater than or equal to the set temperature value SV, the heating relay disconnects and the heater shuts off.

P1: Hysteresis Setting

Press and hold the SET button for more than 3 seconds to enter the P0 menu interface, and press the SET button briefly to switch to the P1 interface.

Use the "ÿ" or "ÿ" keys to set the hysteresis to 0.1~30.0ÿ. After setting, press and hold the SET button for 3 seconds or...

If there is no button press for 8 seconds, the controller will automatically return a confirmation and power off to store the information.

In cooling mode: When the measured temperature value PV ÿ the set temperature value SV, the cooling relay disconnects, and the cooling system is activated.

cold

The refrigerant shuts off; when the measured temperature value PV ÿ temperature set point SV + hysteresis, the refrigeration relay shuts off.

When the electrical components engage, the cooler begins to function.

For example, if the ambient temperature is 30ÿ, the setpoint is 25ÿ, the hysteresis is set to 2ÿ, and the relay is activated after power-on...

When the refrigerator closes, the cooler starts. When the temperature reaches 25°C, the relay disconnects and the cooler shuts off.

At this point, because the cooler has been disconnected, the temperature begins to rise. When it rises to 27°C, the relay...

The refrigerator is shut down and restarted, and this cycle is repeated to control the temperature between 25ÿ and 27ÿ.

In heating mode: When the measured temperature value PV ÿ the temperature set point SV - hysteresis, the heating relay will activate.

Heater starts; heating relay activates when [temperature measurement value PV ÿ temperature set point SV].

The device is disconnected, and the heater is turned off.

For example, if the ambient temperature is 20ÿ, the setpoint is 25ÿ, the hysteresis is set to 2ÿ, and the relay is activated after power-on...

When the device closes, the heater starts; when it heats to 25°C, the relay disconnects and the heater shuts off.

At this point, the heater is disconnected, and the temperature begins to drop. When it drops to 23°C, the relay...

The heater is closed and then restarted, and this cycle is repeated to control the temperature at [23ÿ~25ÿ].

P2: Maximum temperature setting (non-temperature control)

To prevent accidental overheating and potential hazards caused by unauthorized operation, this thermostat has upper and lower limits for setting the temperature.

This function limits the range of the highest temperature setpoint controlled by the thermostat.

Press and hold the SET button for more than 3 seconds to enter the P0 menu interface, and press the SET button briefly to switch to the P2 interface.

Press "ÿ" or "ÿ" to set the [maximum temperature setting upper limit], the range is [minimum temperature setting lower limit] +5~120.

After setting, press and hold the SET button for 3 or 8 seconds without any button press. The controller will automatically return to confirmation and...

Power-off memory

storage.

For example: if set to 60, the highest temperature setpoint can only be set to 60°C. If a higher temperature setpoint is desired...

To expand the scope, the upper limit setting needs to be adjusted first.

Special Note: The [Maximum Temperature Setting Upper Limit] will always be 5 degrees Celsius or more higher than the [Minimum Temperature Setting Lower Limit], and will not...

Human error caused the [maximum temperature setting limit] to be less than the [minimum temperature setting limit] +5.

P3: Minimum temperature setting lower limit (non-temperature control)

To prevent accidental operation that could cause the set temperature to be too low and lead to ice blockage, this thermostat has minimum and upper/lower setting limits.

Yes, it limits the range of the minimum temperature setpoint controlled by the thermostat.

Press and hold the SET button for more than 3 seconds to enter the P0 menu interface, and press the SET button briefly to switch to the P3 interface.

noodle.

Press "ÿ" or "ÿ" to set the lower limit of the minimum temperature setting, ranging from -55 to -5 of the upper limit of the maximum temperature setting.

After setting, press and hold the SET button for 3 or 8 seconds without any button press, and the controller will automatically return to confirmation.

And power failure memory

storage.

For example: Setting it to 2 means the lowest temperature setpoint can only be set to 2ÿ. If you want a lower temperature setpoint...

Fan

To expand the range, the lower limit setting needs to be adjusted first.

Special Note: The lower limit of the minimum temperature setting is always 5 degrees lower than the upper limit of the maximum temperature setting.

meeting

Human error caused the minimum temperature setting lower limit to be less than the maximum temperature setting upper limit by 5.

P4: Temperature Correction

If there is a deviation between the measured temperature and the standard temperature, or if there are special requirements due to the user's hardware, it can be...

Using this function for correction, the corrected temperature = original temperature + correction value. The effective range is -10.0 to 10.0.

Press and hold the SET button for more than 3 seconds to enter the P0 menu interface, and press the SET button briefly to switch to the P4 interface.

noodle.

Use the "ÿ" or "ÿ" arrow keys to set the temperature calibration value. After setting, press and hold the SET button for 3 or 8 seconds.

bell

If no button is pressed, the controller will automatically return a confirmation and power off to store the information.

For example, the normal display is 25 degrees; when the temperature correction is 0, it displays 25 degrees; when the temperature correction is 1.5, it displays...

Show 26.5

Temperature; when the temperature correction is -1.5, it displays 23.5.

P5: Delayed Startup Time (Unit: minutes)

When a delay is required for the operation of a cooler or heater, the delay function can be activated to protect the lifespan of the equipment.

In cooling mode: Upon first power-on, if the current temperature is greater than or equal to the set value plus hysteresis, the cooler will not immediately...

start

Automatic cooling requires a set delay before it can start.

In heating mode: Upon first power-on, if the current temperature is less than or equal to the set value minus the hysteresis, the heater will not immediately...

start

Automatic heating requires a set delay before it can be activated.

When the downtime between two consecutive starts of the refrigeration unit or heater is greater than the set value of the delayed start time, the refrigeration unit will stop operating.

The unit starts immediately. The shutdown interval between two consecutive starts of the cooler or heater is less than the delayed start time.

constant value

When restarting, the equipment can only start after the set cooler delay start time has elapsed. (Delay time...)

From stop

The machine begins calculations instantly.

For example, in cooling mode, the delay is set to 5 minutes. After powering on, the cooler starts with a 5-minute delay before activating.

When the cooler reaches the desired temperature, it stops, and a timer begins. The timer ends when the cooler restarts.

Work can begin immediately upon completion of the timer; if the timer is not yet finished, work can only begin after the timer has ended.

The LED indicator flashes during the delay. After the delay ends, if the conditions for opening the relay are met, the LED indicator will flash again.

lamps are always

The LED light illuminates and the relay is activated. If the conditions for activating the relay are not met, the LED indicator turns off and the relay is deactivated.

Electrical appliances.

Setting the delay start setting to 0 is equivalent to disabling the delay function.

P6: High Temperature Alarm

Set a high-temperature alarm value. When the temperature exceeds this value, the screen will display "---" to indicate an alarm, and the system will shut down.

Following

Appliance. The setting range is -55ÿ to 120ÿ. It will display "OFF" when the temperature exceeds 120ÿ, thus disabling this function.

able.

P7: Data Lock Function ON/OFF

This is a secondary protection function added to prevent accidental changes to the data settings after they have been configured.

Once the data lock function is enabled, a short press of the SET button will enter the internal menu Px (x=0~8 interface).

Other data

None of these can be changed via buttons. The rest can only be changed via buttons when the P7 is in the OFF state.

data.

Special note: If you cannot change the data by pressing the buttons, check if the data lock function is enabled.

P8: Factory Reset Function ON/OFF

This is an additional secondary protection measure to prevent accidental power-on operations after data setup from restoring factory settings.

Functionality. Once the P8 is set to ON, pressing and holding both the "ÿ" and "ÿ" buttons simultaneously before powering on will not restore it to its original state.

Factory value.