1，Usage

Once the power supply and equipment are connected, power can be supplied to the controller. At this time, the displayed temperature will be measured. Press the SET button once, and the display screen temperature will flash. Press+- to set the desired temperature (press+- to quickly rise and fall). After the setting is completed, press SET to confirm and return. At this time, the controller will automatically execute the relay on/off according to the setting! The output of the temperature controller is a 20A relay, which meets various high-power loads. Once the control circuit is connected, power can be supplied to the temperature controller. At this time, the display screen shows the ambient temperature,

2、 Explanation of the status of indicator lights, digital tubes, and buzzers

Indicator light: Flashing indicates a delay in starting cooling or heating, and a constant light indicates that the relay is closed

Digital display: LL indicates an open circuit in the sensor. Please follow the instructions to connect the sensor properly; Display HH as exceeding the measurement range. The temperature controller will forcibly disconnect the relay; Display --- is a high temperature alarm

3、 Parameter Function Description

Long press SET for 5 seconds to enter the main menu settings, press+- to switch P0... P6, long press SET or 10 seconds without button action. The controller automatically confirms and returns.

P0 Cooling and heating modes:

Press and hold SET for 5 seconds to display P0, press SET once to set the working mode, press+- to switch between【 H is heating mode 】and【 C is cooling mode 】, press SET once to return, press and hold SET for 10 seconds, and the controller will automatically confirm completion without any button action.

In refrigeration mode: when the temperature measurement value is ≥ the temperature set

point, the refrigeration relay is engaged and the refrigerator starts; When the temperature measurement value is ≤ the temperature set point return difference, the refrigeration relay is disconnected and the refrigeration unit is turned off.

In heating mode: when the temperature measurement value is ≤ the temperature set point, the heating relay is engaged and the heater starts; When the temperature measurement value is ≥ the temperature set point+return difference, the heating relay is disconnected and the heater is turned off.

P1 return difference setting:

Long press SET for 5 seconds to display P0, press+- to switch to P1, press SET once to set the return value, press+- to set the return value to 0.1-15, press SET once to return, long press SET or press for 10 seconds without any button action. The controller automatically confirms completion.

In refrigeration mode: when the temperature measurement value is greater than or equal to the set value, the relay is engaged and the refrigerator starts; When the temperature measurement value is ≤ the set value return difference, the relay will disconnect and the refrigeration unit will shut down.

For example, if the environment is set to 30 ℃ and the temperature difference is set to 25 ℃, the relay will close and the refrigeration unit will start after being powered on. When the cooling reaches 23 ℃, the relay will disconnect and the refrigeration unit will close. At this time, because the refrigeration unit has already been disconnected, the temperature will start to rise. When it reaches the set value of 25 ℃, the relay will close and the refrigeration unit will start again. In this way, the temperature will be controlled repeatedly to not exceed 25 ℃.

In heating mode: when the temperature measurement value is ≤ the set value, the relay is engaged and the heater starts; When the temperature measurement value is ≥ the set value+return value, the relay will disconnect and the heater will shut down.

For example, if the environment is set to 10 ℃ and the temperature difference is set to 25 ℃, the relay will close and the heater will start after being powered on. When the heating reaches 27 ℃, the relay will disconnect and the heater will be turned off. At this time, since the heater has already been disconnected, the temperature will begin to decrease. When the temperature drops to the set value of 25 ℃, the relay will close and the heater will start again. In this way, the temperature will be controlled repeatedly to not be lower than 25 ℃.

P2 high temperature setting upper limit:

To avoid the danger of setting the temperature too high due to misoperation by others, this temperature controller has a high setting upper limit function, which limits the setting range of the high temperature setting point controlled by the temperature controller.

Press and hold SET for 5 seconds to display P0, press+- to switch to P2, press SET once to set the upper limit, press+- to set the high temperature that can be set, with a maximum value of 110. After completion, press SET once to return, press and hold SET for 10 seconds or no button action. The controller automatically confirms completion.

For example, if the temperature set point is set to 60 ° C, it can only be set to 60 ° C. If you want the temperature set point to be higher and the temperature range to be expanded, you need to first adjust the upper limit setting value.

P3 Low temperature setting lower limit:

To avoid the possibility of freezing due to improper operation by others, this temperature controller has a low setting upper and lower limit function, which limits the setting range of the low temperature set point controlled by the temperature controller.

Press and hold SET for 5 seconds to display P0, press+- to switch to P3, press SET once to set the lower limit, press+- to set the lower temperature that can be set, with a low value of -50. After completion, press SET once to return, press and hold SET or press and hold for 10 seconds without any button action. The controller automatically confirms completion.

For example, if the temperature set point is set to 2 ℃, it can only be set to 2 ℃. If you want the temperature set point to be lower and the temperature range to be expanded, you need to first adjust the lower limit setting value.

P4 temperature correction:

When there is a deviation between the measured temperature and the standard temperature or due to special hardware needs of the user, this function can be used for calibration. The corrected temperature=the temperature before calibration+the effective range of the calibration value is -7.0~7.0.

Press and hold SET for 5 seconds to display P0, press+- to switch to P4, press SET once to calibrate, press+- to set the calibration value, press SET once to return, press and hold SET for 10 seconds without any button action. The controller automatically confirms completion.

For example, the normal display is 25 degrees; Display 25 degrees when the temperature is corrected to 0; Display 26.5 degrees when the temperature is corrected to 1.5; When the temperature correction is -1.5, it displays 23.5.

P5 Delay Start Time (in minutes):

When there is a need for a delay in the operation of the refrigerator or heater, the delay function can be activated to protect the equipment's lifespan.

Press and hold SET for 5 seconds to display P0, press+- to switch to P5, press SET once to set the delay start time unit in minutes, press+- to set 0-10 minutes, press SET once to return, press SET or hold for 10 seconds without any button action. The controller automatically confirms completion

In refrigeration mode: When powered on again, if the current temperature is greater than or equal to the set value, the refrigerator will not immediately start cooling and needs to run for the set delay time before starting.

In heating mode: When powered on again, if the current temperature is $\leqslant$ the set value, the heater will not immediately start heating and needs to run for the set delay time before starting.

When the shutdown time between two adjacent starts of the refrigerator or heater exceeds the set value of the delayed start time, the refrigerator will start immediately.

When the shutdown time interval between two adjacent starts of a refrigerator or heater is less than the set delay start time, the equipment can only be started after running the set delay start time of the refrigerator again. The delay time is calculated from the start of shutdown.

For example, in the cooling state, a delay of 5 minutes is set. After turning on the refrigerator, there is a delay in starting it. After 5 minutes, the refrigerator stops when it reaches the desired temperature. At this time, the timer starts, and the next refrigerator start timer is completed. If the timer is not completed, it must wait for the timer to finish before it can work. During the delay, the LED indicator light flashes.

When the delay start is set to 0, it is equivalent to turning off the delay function.