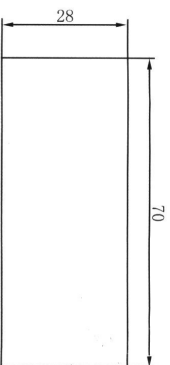


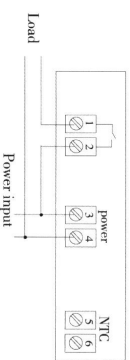
AL8010F The Product Manual of Thermostat

① The opening dimensions of installation:

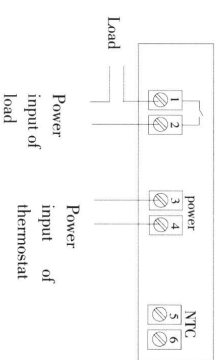


② Wiring diagram:

Load and thermostat use the same power supply



Load and thermostat use the different power supply



- Binding post 1 and 2: Normally open contact of relay
- Binding post 3 and 4: Power connection; please see the specific access voltage on product identification
- Binding post 5 and 6: The temperature sensor connection
- Note: Load refers to the controlled heating or cooling equipment
- ③ Electric property:
 - Temperature measurement range: $-50^{\circ}\text{C} \sim 120^{\circ}\text{C}$
 - Temperature control range: $-50^{\circ}\text{C} \sim 120^{\circ}\text{C}$
 - Temperature measurement error: $\pm 0.5^{\circ}\text{C}$
 - Sensor model NTC (10K/3435)
 - Controlling precision: 1°C
 - Operating voltage: please see the product identification
 - Maximum power consumption: 2W
 - The current of relay contact: AC 10 A/220 V

- Have data storage.
- Operating temperature: $0^{\circ}\text{C} \sim 50^{\circ}\text{C}$
- Storage temperature: $-10^{\circ}\text{C} \sim 60^{\circ}\text{C}$

④ Key description:

1. RST: Press the RST key to switch starting up to shutdown. Press the RST key once to start up in the shutdown state and press the RST key for three seconds to power of 1 in starting up state.

2. SET:

- A: Press the SET key once to enter the temperature control settings and press \blacktriangle or \blacktriangledown to adjust. Press \blacktriangle or \blacktriangledown for three seconds to enter the quick adjustment mode, then, press the SET key once to exit the settings.
- B: Press the SET key for three seconds to enter system menu settings and press \blacktriangle or \blacktriangledown to choose the menu to adjust. Then, press the SET key once to enter the corresponding parameter settings. Press \blacktriangle or \blacktriangledown to adjust the parameter which need to be changed and press the RST key to exit after adjusting or system delay 5 seconds to exit.

3. \blacktriangle : up key
4. \blacktriangledown : down key

⑤ Operation instructions:

Indicator status description: The WORK on the left side of display screen is used as operation indicator lamps and it's flicker means cooling or heating delay, LED keeps on means cooling or heating work. The SET on the left side of display screen is used as settings indicator lamps and LED keeps on means settings state.

Function description:

Press the RST key to start up thermostat and press the RST key more than three seconds to shut down thermostat in operation state.

◆ Cooling, heating function:

Cooling mode: When the measuring temperature is higher than or equal to set point + return difference, the relay closes and activates output. When the measuring temperature is lower than set point, the relay disconnects and turns off output.

Heating mode: When the measuring temperature is higher than or equal to set point, the relay disconnects and turns off output. When the measuring temperature is lower than set point - return difference, the relay closes and activates output.

An example of settings: If set heating mode, the temperature is 25 and return difference is 5. When the measuring temperature is higher than or equal to 25 $^{\circ}\text{C}$, the relay disconnects and turns off output. When the measuring temperature is lower than 20 $^{\circ}\text{C}$, the relay closes and activates output.

An example of settings: If set cooling mode, the temperature is 25 and return difference is 5. When the measuring temperature is lower than 25 $^{\circ}\text{C}$, the relay disconnects and turns off output. When the measuring temperature is higher than or equal to 30 $^{\circ}\text{C}$, the relay closes

and activates output.

◆ Cooling, heating mode settings:

Press the SET key more than three seconds to enter menu. When the screen appears "HC" code, press the SET key to display working mode and then press \blacktriangle or \blacktriangledown to adjust. C

means cooling mode, H means heating mode.

Return difference function: The return difference limits the maximum margin between starting up and shutdown. The minimum interval between starting up and shutdown of this machine is 1 $^{\circ}\text{C}$, the maximum is 15 $^{\circ}\text{C}$.

Return difference settings: Press the SET key more than three seconds to enter menu. Press \blacktriangle or \blacktriangledown to adjust until the screen appears "D" code. Press the SET key to display the return difference value and then press \blacktriangle or \blacktriangledown to adjust parameter.

◆ Temperature correction function:

When the measuring temperature has a deviation with standard temperature, use temperature correction function to make the measuring temperature of the machine accord with standard temperature. Temperature after correction =

Temperature before correction + correction value (correction value can be positive, negative and zero). ◆ Temperature correction settings: Press the SET key more than three seconds to enter menu. Press \blacktriangle or \blacktriangledown to adjust until the screen appears "CA" code. Press the SET key to display the temperature correction value and then press \blacktriangle or \blacktriangledown to adjust parameter.

For example: If the temperature measured by probe is 25 $^{\circ}\text{C}$, when CA is 0, 25 $^{\circ}\text{C}$ is displayed. When CA is 1, 26 $^{\circ}\text{C}$ is displayed. When CA is -1, 24 $^{\circ}\text{C}$ is displayed. This function is used when the probe can not measure the object directly. For example, we put the probe outside a cup to measure the temperature of the water in the cup. The temperature displayed can accord with the temperature of the water because the heat of the cup wastes the CA parameter which we need to adjust.

◆ Delay protection function:

In cooling mode, energizing for the first time, when measured value is higher than set point + return difference, the machine will not immediately start the cooling. The machine can start the cooling after running the settings delay time. When the interval of adjacent two cooling is higher than delay, the machine starts cooling immediately. When the interval of adjacent two cooling is lower than delay, the machine starts cooling after running the rest of delay time. The delay time starts the time when the machine stops. Heating mode is as same as cooling mode.

Explanation: Suggests using the delay start function when the compressor refrigeration equipment is only used. The user who don't need to use the delay start function could set the parameter to 0.

Delay protection settings: Press the SET key more than three seconds to enter menu. Press \blacktriangle or \blacktriangledown to adjust until the screen appears "PT" code. Press the

SET key to display the delay protection set value and then press \blacktriangle or \blacktriangledown to adjust parameter.

◆ Upper and lower limit function:

The settings of HS and LS limit the range of temperature control point. For example, set HS to +15, set LS to -10, so the temperature can be adjusted from -10 to +15. When the temperature is adjusted to -10, press \blacktriangledown and the delay value remains -10 without declining. When the temperature is adjusted to +15, press \blacktriangle and the delay value remains +15 without rising. The set point need to be adjusted out of this range, you must change the value of HS and LS.

◆ Upper and lower limit setting:

Press the SET key more than three seconds to enter menu. Press \blacktriangle or \blacktriangledown to adjust until the screen appears "PT" or "LS" code. Press the SET key to display the delay upper and lower limit set value and then press \blacktriangle or \blacktriangledown to adjust parameter. HS means upper limit and LS means lower limit.

For example: Upper and lower limit are used to limit the settings range of temperature control. For example, LS is 10, HS is 20, so the temperature can change from 10 to 20 by pressing the SET key once.

Choice of menu code:

Symbol	Detailed description	Set range	Factory settings	Unit
HC	Heating/Cooling	H/C	C	
D	Return difference	1 ~ 15	5	$^{\circ}\text{C}$
LS	Lowest set limit	-50 ~ -50	-50	$^{\circ}\text{C}$
HS	Higher set limit	-50 ~ 120	120	$^{\circ}\text{C}$
CA	Temperature calibration	-5 ~ +5	0	$^{\circ}\text{C}$
PT	Delay time	0 ~ 10	1	Minute

⑥ Fault prompt:

- 1) When the sensor disconnects, the screen displays "----", and heating wire is closed.
 - 2) When the temperature detected by the sensor is lower than -50°C , the screen displays LL.
 - 3) When the temperature detected by the sensor is higher than 120°C , the screen displays HH.
- Notes of use:
- ◆ Cooling and heating load must not be more than the capacity of output contacts, otherwise, the machine will be damaged and the life can be caused.
 - ◆ All kinds of connecting wires should be connect to the binding post well, otherwise, the reliability of the machine will decline.
 - ◆ Please separate power supply, relay and sensor when connect the wire, otherwise, the machine will be damaged.