

RC-3105H

User manual

Product presentation:



This type of thermostat is specially developed for high-end air-cooled refrigeration system, LED digital display

It is mainly used in air-cooled refrigerators, beverage cabinets, cold storages, air curtain cabinets and other types of air-conditioning

Equipment and occasions of cold refrigeration system.

On the basis of absorbing the experience and achievements of previous controllers, it combines new and innovative elements,

The new generation of anycontrol Ruyi series products are more beautiful, more reliable, and more energy-saving.

The new user-friendly operation interface makes the operation more concise and convenient.

Product advantages and features

Proprietary private mode digital display

Each load indicator adopts an easy-to-understand image icon, which makes the interface more full and visible.

Elephant, more humane.

Button sound

After the button is triggered, there will be a sound to make the operation easier and simpler.

Technical specifications

Power supply	12VAC±10% 50/60HZ OR 110VAC±10% 50/60HZ OR 220VAC±10% 50/60HZ OR 10~16VDC±10%
Rated power	X≤3W
Relay capacity	5A,16A,20A
SENSOR type	NTC,25℃ (Resistance=10kΩ)
Product protection level	IP65
Operating storage environment	-10 ~ 60℃ , humidity≤90% no condensation
Temp.measurement and control range	-50~110℃
Sensor cable length	Max 100M

FUNCTIONS AND PARAMETERS

code	function	Set range	default	unit
F01	Set lower temperature limit	-45~the set temperature	-5	°C
F02	Set the upper temperature limit	The set temperature~50	10	°C
F03	Temperature control divergence	0~20	4	°C
F04	Compressor delay	0~20	3	minute
F05	high temp. alarm	The set temperature+0~50	40	°C
F06	low temp. alarm	-45~The set temperature	-40	°C
F07	Temperature correction	-10~10	-1	°C
F08	Defrost t cycle	0~99	4	hour
F09	defrost time	0~99	20	minute
F10	Dripping time	0~9	2	minute
F11	Defrost display	00:real-time temp. 01:the temp. Before defrost	01	/
F12	Fan mode	00: fan and compressor work and stop at the same time. turn on when defrost; 01:work continuously, turn off when defrost.	00	

① TEMP. CONTROL:

The following parameters participate in temperature control: F01, F02

- F01 start-up temperature, which is the minimum temperature required to start refrigeration, is used to adjust the start frequency of refrigeration equipment and the accuracy of temperature control. It is the buffer termination point for restarting refrigeration equipment after shutdown.
- F02 shutdown temperature, namely.

● F01 The set temperature lower limit <refers to the set lower limit of the shutdown temperature value.

● F02 Set temperature upper limit "refers to the set upper limit of the shutdown temperature value.)

$F01 \leq \text{the shutdown temperature value} \leq F02$

shutdown temperature CAN ONLY BE SET between F01 and F02

Temperature control divergence: F03

When the temperature measurement value is greater than or equal to the shutdown temperature (ST) + control hysteresis (F03), and the compressor delay protection time is met, the refrigeration relay is switched on and the compressor starts;

When the temperature measurement value is < Shutdown temperature (ST), the refrigeration relay is disconnected and the compressor is turned off.

② compressor protection: F04

The controller is designed with a delayed start to prevent frequent start and stop damage to the compressor. It is protected by F04 parameter.

The method is as follows: the time interval between compressor stop and start during the first power-on or during operation $\geq F04$.

③ Over temperature alarm: F05 F06

When the actual temperature is greater than or equal to the high temperature alarm setting, the buzzer will sound and display HHH;

When the actual temperature is less than the set value of low temperature alarm, the buzzer will sound and display LLL. This over-temperature alarm needs to run for a refrigeration cycle before it turns on.

④ temp. Measuring:

1) Temperature correction (F07)

When there is a deviation between the displayed temperature measured by the controller and the actual standard temperature, it can be corrected through the F06 menu. The correction method refers to this formula:

F06 needs to set value=actual temperature-controller measured temperature, and other functions are implemented by referring to the corrected temperature display value.

2) Sampling period The sampling period of the controller is a fixed value, usually 2 second, other values can be customized.

⑤ Defrost management: F08 F09 F10

The following parameters participate in defrost management:

F08 defrost cycle: the time interval between two defrosts;

F09 defrosting time: the duration of defrosting;

F10 Defrosting dripping water: the buffer period left for dripping water after defrosting, to prevent refrigeration from re-freezing the unrefined water into ice, which will continue to form ice block, reducing the defrosting effect and affecting the r

⑥ temperature display,when defrosting(F11)

F10 defrost mode:

00 display the real -time temperature

01 :display the temperature before defrost.

F11 defrost display: 00 real-time temperature (the actual temperature in the cabinet during defrosting)

01 Temperature before defrosting (the temperature in the cabinet before defrosting starts) F12 Defrosting stop

temperature: During the defrosting process, if the evaporator temperature is too high and exceeds the set value of this function, the defrosting will be stopped forcibly. The following parameters participate in the defrost management:

When the actual temperature $\geq$ the starting temperature value + the high temperature alarm setting value, the buzzer will sound; when the actual temperature $\leq$ the shutdown temperature value-the low temperature alarm setting value, the buzzer will sound. This over-temperature alarm is turned on after a cooling cycle has been completed.

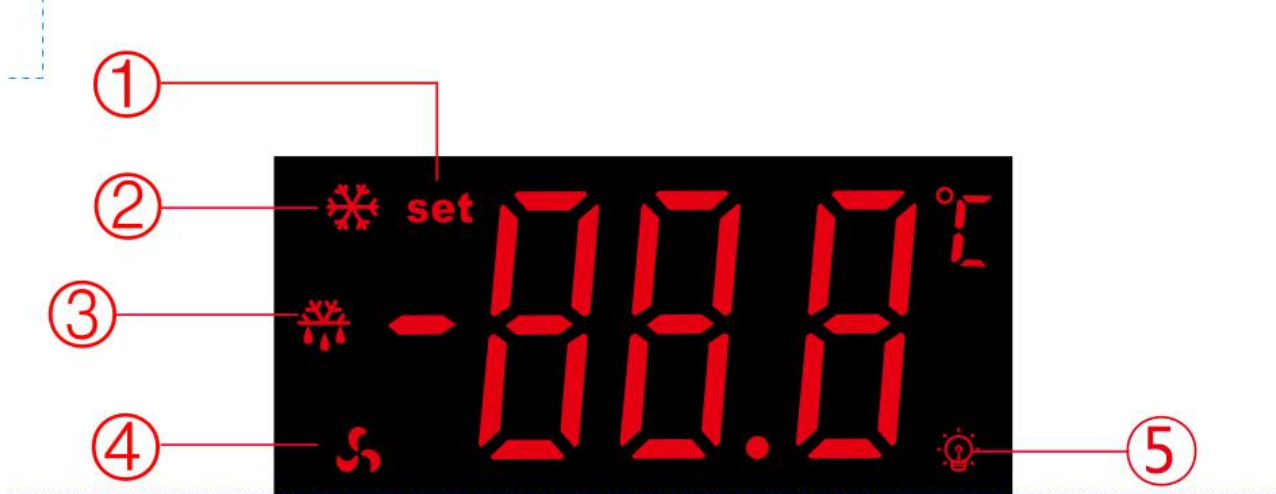
3 Product size diagram Fan mode F10 F11 F12 F13 Defrost mode Defrost display Defrost stop temperature 00: Electric heating 01: Hot steam 0 0: Real-time temperature 01: Temperature before defrosting

⑦ Fan mode: F12

00: Fan and compressor start and stop at the same time, open when defrosting

01: The fan keeps running and turns off when defrosting

please show me the picture of the refrigerator that equipped this controller



1. status indicator, if displays, means the controller is in setting status; if not display, controller is in non- setting status.
2. Compressor indicator,if displays, means compressor is working;if not display, compressor is not working; if flashes, means compressor is in delaying protect status.
3. Defrost in dicator, if displays means contrloller is defrosting; if flashes, means controller is in defrost dripping status.if no display, means the controller is not in defrost status.
4. Fan indicator, if display, means fan is working, if not display, means fan is not working.
5. 5.light indicator, if display, means light is working, if not display, means light is not working.

Keys functuion:



: when thecontroller is off, press once, turn on the controller; when the controller is on,press and hold for 3 seconds, turn off the controller.



: in normal woking status, press and hold for 3seconds,enter into function menu to qadjust parameters;if in setting status, press it can switch to next parameter or enter into parametr setting.

Up arrow: press once to adjust the parameter's valueup ward;if press and hold it, adjust the parameter's valueup wardradly.

Down arrow: samilar as up arrow button.



: light on/off button.



: press and hold for 3 secondswhen contrller in normal working status toforced defrost; if contrller is in defrost status, will turn off defrost.

③ Setting method:

1. Setting shutdown temperature value): user can set

Under normal conditions, press the set button (set icon flashes), the original set shutdown temperature value is displayed and flashes. At this time, press theup or down arrown key to modify it to the required shutdown temperature value. After the modification is completed, press the set key or If there is no key operation within 15seconds, it will automatically save and exit, and return to normal temperature display.

2. Parameter setting (F01-F12): factory setting

In the non-setting state, press and hold the Set button for 5 seconds to enter the parameter setting state (the set icon flashes), displaying F01, and then pressing the set button to display the original setting value of F01. At this time, press

the up or down arrow key to modify it to the required value. Press the set key again to return to F01, at this time press the up arrow key once to enter F02, press the set key again to display the original setting value of F02, and press up or down arrow key to adjust to the required value. After setting all the parameters (F01~F12) according to the

above steps, you can press  to save or automatically save without any key operation for 15 seconds to restore the normal temperature display.

Alarm, fault and fault resolution

. Alarm failure and troubleshooting

error code	cause of issue	Solution
EE1	ROOM SENSOR error	Check the condition of the sensor and repair it
EE2	Defrost sensor error	Check the condition of the sensor and repair it
HH1	High temperature alarm	Find out the cause of high temperature and super-eye, and solve it
LL1	low temperature alarm	Find out the cause of low temperature and super-eye, and solve it.

② Non-alarm faults and solutions

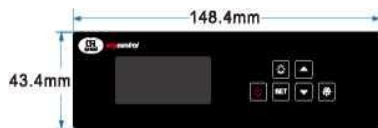
problem	cause	solution
Not display compressor and defrost icon, compressor don't work.	Wrong settings	Check F01F02, proceed Targeted correction
display compressor and defrost icon, compressor don't work.	Wiring error or The relay does not output	First check the wiring, if connected Confirm that the line is correct and return to the factory for repair
Not display compressor and defrost icon, compressor Continuous outputs	Wiring error or relay damaged	First check the wiring, if connected Confirm that the line is correct and return to the factory for repair

pleaseNote:

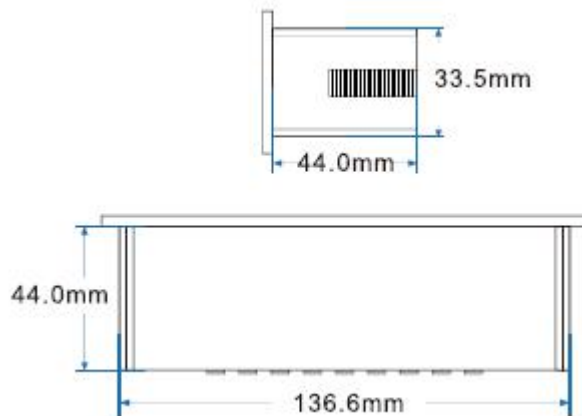
During a fault alarm, press any key to cancel the alarm tone, but / still flashes, and the alarm indication code will still be displayed until the fault is removed.

Product size chart

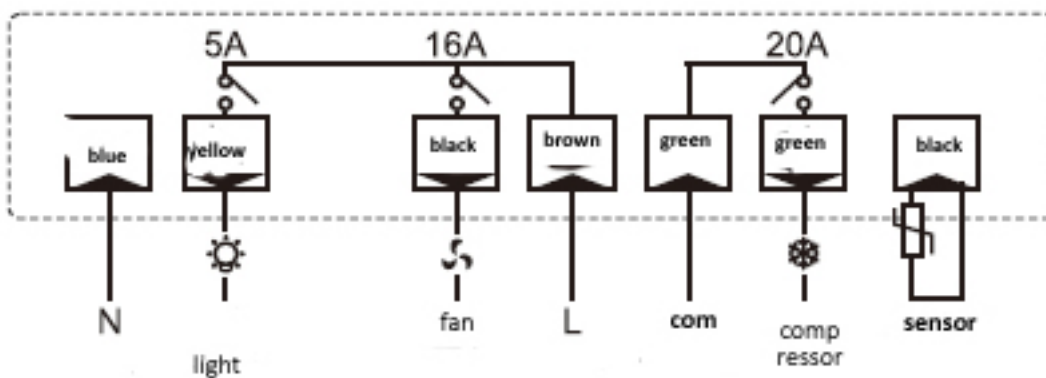
Machine size:



Size of the opening:



Product wiring diagram



Assembly and installation.

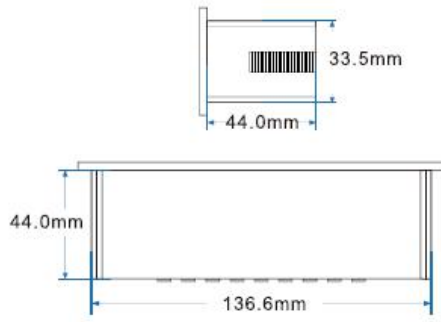
1. Assembly

The electrical wiring must be strictly operated by a professional electrician in accordance with the wiring instructions, and avoid installing the controller in the following environment:

- the relative humidity is greater than 90%,
- Where there is condensation.
- Places containing flammable and explosive materials;
- Exposure to continuous water spray;
- Exposure to corrosive and polluting gases((Such as: gas containing sulfur and ammonia, smoke, salt spray));
- Places containing flammable and explosive materials;
- Relative humidity is greater than 90%, where there is condensation; strong vibration or knocking;
- Places where the ambient temperature is lower than -10 degrees or higher than 60 degrees; exposed to dust;
- Wireless electromagnetic interference or strong magnetic field (such as: near the transmitting antenna, near the power distribution room);

2. Installation

First, open an opening size drawing at the installation location of the equipment as required:



Matching accessories

1,manual 1 copy

2,Sensor

All sensors that meet the standards of Ruide can be used. Ruide uses the injection molding process for the sensor probe, and the wire is made of PPE, which has better water resistance and higher reliability. The following are some relevant parameters of the sensor:

Some relevant parameters:

Wire specification: 4.5mm*1.5mm *2m;

Probe size: 6mm*5mm*17mm;

caution:

The sensor can be installed up to 100 meters away, but it is required that the cross section of the lengthened part of the wire exceeds 1mm (use shielded wire as much as possible), and neither end of the wire can be grounded.

The temperature control of this model adopts NTC sensor, there is no distinction between positive and negative polarity, so there is no requirement for the wiring sequence.

Choose the appropriate wire for the wire link, and check whether the wire is tight after installation.

This product has passed the EU CE system certification and complies with the ISO9001 total quality management system certification standard.