



## Temperature Control Panel Instructions Model: TCK-1B

KEGCO  
8520 Miralani Dr. San Diego, CA 92126

- Split design for easier installation

### Technique Specification

The basic technical specifications of RC-3211HJ as follows:

Power Supply	110VAC±10% 50/60Hz 220VAC±10% 50/60Hz
Rated power	≤5W
Relay Capacity	5A 10A 20A
Sensor type	NTC, 25°C(Resistance=10kΩ)
Waterproof Rate	Ip65
Work or Storage	-10 ~ 60°C, RH < 90% no condensation
Temp. range	-50 ~ 110°C
Product size	179×32×19(mm)
Installation size	172×26(mm)

### Function & Parameter Parameter and default values:

Code	Function	Setting Range	Default	Unit
F01	Set lower temp. limit	-45~the set temp.	-5	°C
F02	Set upper temp. limit	the set temp.~50	15	°C
F03	Differential temp.	0 ~ 20	4	°C
F04	Compressor delayed start	0 ~ 20	3	Min
F05	High temp. alarm	the set temp.+1~50	40	°C
F06	Low temp. alarm	-45~the set temp.-1	-40	°C
F07	Temp. Correction	-10 ~ 10	0	°C
F08	Defrost cycle	0 ~ 24	6	H
F09	Defrost time	0 ~ 60	20	Min
F10	Dripping time	0 ~ 10	2	Min
F11	Temp. display during defrosting	00: real-time temp. 01: the temp. before defrost 02: display DEF	01	/
F12	Display delay time of temp. after defrosting (F11: in 01 mode)	0 ~ 99	20	Min

### Product Introduction



This type of thermostat is specially developed for high-end air-cooled refrigeration system. 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. The new user-friendly operation interface makes the operation more concise and convenient.

### Feature

- LED digital display
- Key sound

Code	Function	Setting Range	Default	Unit
F13	Fan mode	00: fan and compressor work and stop at the same time, turn off when defrost; 01: work continuously, turn off when defrost. 02: fan and compressor work and stop at the same time, turn on when defrost; 03: work continuously, turn on when defrost	03	/
F14	Delay start down time of fan	0 ~ 10	0	Min
F15	Over temp. alarm delay time	0 ~ 99	45	Min

#### ① Temperature control:

##### Parameters of temperature control: F01, F02

●F01: The set temp. lower limit, refers to the set lower limit of the stop temperature value.

●F02: The set temp. upper limit, refers to the set upper limit of the stop temperature value.

F01 ≤ the stop temp. value ≤ F02.

stop temp. can only be set between F01 and F02.

#### Differential temperature : F03

Measuring Temp. ≥ Stop Temp.(ST)+Diff(F03), and meet the compressor delay protection time, compressor will startup;

Measuring Temp. ≤ Stop Temp.(ST), compressor will stop.

#### ② Compressor protection: F04

In order to protect the compressor away from damage due to frequently startup and stop.

Method: time of first power on or time of compressor from stop to startup ≥ F04.

#### ③ Over temperature alarm: F05 F06

When the actual temperature ≥ the high temp. alarm setting, the buzzer will sound and display HHH;

When the actual temperature is ≤ the low temp. alarm setting, the buzzer will sound and display LLL.

This over-temp. alarm needs to run for a refrigeration cycle before it turns on.

#### ④ Temperature measuring:

##### 1) Temp correction: F07

When there is a deviation between the measuring temperature and the actual standard temperature, it

can be corrected through the F07 menu. Method : F07 setting value=actual temperature-measuring temperature , and other functions are implemented with the corrected temperature.

#### ⑤ 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

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, affect refrigeration effect.

#### ⑥ Temperature display during defrosting: F11

00: display the real-time temperature;

01: display the temperature before defrost.

02: display DEF

#### ⑦ Display delay time of temperature after defrosting: F12

In the F11: 01 mode, the temperature before defrosting is still displayed after defrosting and dripping is completed, and the normal temperature display is restored when the refrigeration temperature drops to (temperature before defrosting + 1°C). Or after defrosting, the temperature display time ≥ (F11) value, and the normal temperature display is restored. Both, whichever comes first.

#### ⑧ Fan mode: F13

00: fan and compressor work and stop at the same time, turn off when defrost;

01: work continuously, turn off when defrost.

02: fan and compressor work and stop at the same time, turn on when defrost;

03: work continuously, turn on when defrost.

#### ⑨ Delay start down time of fan: F14

When 00 and 02 modes are selected in the F13 menu, the fan will not stop immediately, but will stop until the delay time reaches the F14 setting value.

#### ⑩ Over temperature alarm delay time: F15

There is no immediate alarm in case of overtemperature, and the high temperature alarm output is activated

after the alarm delay time has elapsed.  
(Default: activated after one cooling cycle)

User interface and installation functions

1.Display area:



Please refer to

Code	Meaning	Work status		
		Display	Not display	Flash
1	Light indicator	Light on	Light off	/
2	Compressor indicator	work status	not work	delay protection
3	Fan indicator	work status	not work	/
4	Defrost indicator	Defrost state	non-defrosting state	defrosting dripping

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2.Key operation:

Key	Operation	Function	Status
⏻	Press once	Turn on	OFF state
	Press and hold for 3 seconds	Turn off	ON state
	Press once	Save the value and exit	Setting State
SET	Press and hold for 3 seconds	Enter into menu settings	Work state
	Press once	Enter setup or save and return to previous level	Setting State
▲	Press once	Switch the menu	Menu setting status
	Hold on	Adjust the value rapidly	Parameter setting status
▼	Press once	Switch the menu	Menu setting status
	Hold on	Adjust the value rapidly	Parameter setting status
💡	Press once	Turn off the lights	On light status
		Turn on the lights	Off light status
❄️	Press and hold for 3 seconds	Forced defrost	Non defrosting state
		Stop defrosting	Defrost state

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3.Setting Method

① Set downtime temperature: user settings

Under normal conditions, press the set key (set icon flashes), the original set shutdown temperature value is displayed and flashes. At this time, press the up or down arrow 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 15 seconds, it will automatically save and exit, and return to normal temperature display.

② Parameter setting (F01-F15): factory settings

In the non-setting state , hold on SET key for 5 seconds, displaying F01, enter the parameter setting state (the set icon flashes), displaying F01, and then pressing the SET key 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~F15) according to the above steps, you can press ⏻ to save or automatically save

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without any key operation for 15 seconds to restore the normal temperature display.

1) on/off key

In the startup state, hold down the ⏻ key for 3 seconds to enter the shutdown state, and the interface displays OFF;  
In the shutdown state, press the ⏻ key to directly enter the boot state.

2) light key

In the non-setting state, the light is a point control, press the 💡 key to turn on the light, then press the 💡 key to turn off the light.

3) defrost key

In the non-set state, long press the ❄️ key for 3 seconds to enter the forced defrosting, and directly enter the defrosting drip after the defrosting time is completed. After the defrosting drip (if the defrosting drip is set to 0, it is to cancel the defrosting drip), switch to normal cooling. In the state of forced defrosting, you can also long press the ❄️ key for 3 seconds to cancel forced defrosting.

4) Forced cooling(For testing)

In the non-setting state, press the ▲ key for 10 seconds

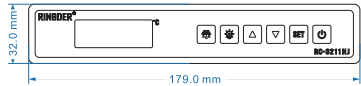
to enable forced refrigeration, and the forced refrigeration output is displayed alternately. The output duration is 30 minutes, after which it returns to normal working state. In the forced refrigeration state, press the ▲ key for 10 seconds to exit the forced refrigeration and restore the normal display (if the measured temperature is higher than the shutdown temperature, the refrigeration will be normal and restore the normal display).

5) Restore factory settings

In the non-setting state, press SET key + ▼ key for 5s at the same time, it displays **Lo** 2 seconds, the factory setting is restored successfully, the normal temperature display is restored, and the controller works by the factory parameters.

size

Product size:



Installation size:



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Assembly and Installation

Assembly:

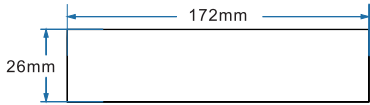
The controller must be connected by trained electricians according to the user manual strictly, and avoid installing in the below environments:

- Relative humidity higher than 90% and with condensate,
- With flammables or explosives,
- Exposed to continuing water fogs,
- Exposed to corrosive or polluted air, for example, gas with sulfur or ammonia, smoke or salt spray,
- Strong shake or knock,
- Environment lower than -10°C or higher than 60°C,
- Exposed to dust,
- Wireless electromagnetic interference or strong magnetic field, for example around transmitting antennas or power distribution room.

Installation:

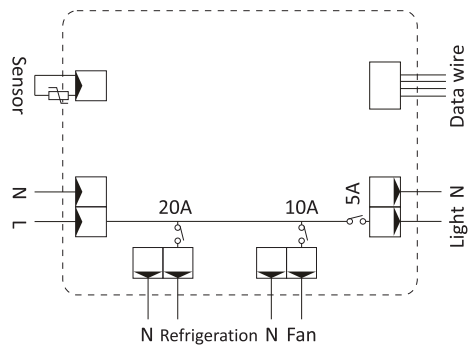
Firstly , according to the requirements of the installation position in the equipment to cut out a hole,

the size as below:



Then, align the back shell of the product with the hole and buckle it in.

Wiring Diagram



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Connect the wires strictly according to the diagram, the voltage must within 220VAC±10%.  
The current of the load must: inductive load or filament lamp≤10% of the current on the wiring diagram; resistive load≤60% of the current on the wiring diagram. other functions are implemented with the corrected temperature.

Alarm fault and fault resolution

1. Alarm failure and troubleshooting

Code	Fault cause	Solution
EEH	sensor short circuit	Check whether the sensor has shorted circuit
EEL	sensor open circuit	Check whether the sensor has opened circuit
EHH	exceed the upper limit range	Check the ambient temperature where the sensor is placed
ELL	exceed the lower limit range	Check the ambient temperature where the sensor is placed

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Code	Fault cause	Solution
HHH	High temp.alarm	Check whether the output of refrigeration equipment is normal, or adjust to F05 reasonable value
LLL	Low temp.alarm	Check whether the output of refrigeration equipment is normal, or adjust to F06 reasonable value

## 2.Non-alarm faults and solutions

Problem	Fault cause	Solution
Not display compressor and defrost icon, compressor don't work.	Wrong settings	Check the setting temp. value ,F03 and modify
Disply compressor and defrosticon, 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

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### ⚠ warning

When alarming, press any key to mute the alarm, but the icon will keep flashing, and the fault code will keep displaying until trouble removal.

## I Accessory

Sensor\*1pc

User manual\*1p

**Adopt NTC semiconductor component.c**

### ⚠ warning

The controller can be installed as far as about 100m but the cross section of the shielded wire must above 1mm<sup>2</sup>, No exposed inner metal wires, no oxide layer.

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