QD63A Programmable control system for air conditioner

1.Preface

Dear users:
    Thank you for choosing our new product QD63A-- the programmable control system for air conditioners. To bring much convenience to your daily life is the greatest wish of all the staff in our company. Please read the manual carefully before using it, which will assist you getting the most from this control system.

2.Production Function Overview

2.1 Application
Suitable for cabinet air conditioner, split unit, ceiling & floor units and ceiling cassette.
For the control of complicated refrigeration system.
For the control of refrigeration house and the greenhouse.

2.2 Feature
▶ Double sockets design for stepper motor, which is convenient for installation.
▶ Being programmable, the customer can set specific parameter in terms of protective time duration for compressor, temperature range etc according to their own preference.
▶ 5+2 days programmable week timer setting function.
▶ Being able to operate variable air con units, for example the compressor units and fan coil units etc.
▶ Password protection functions for the parameter of the control system.
▶ 86 type display panel
▶ Large LCD screen display.
▶ White back-light display function.
▶ IR remote control function.
▶ Five working modes: auto, cooling, dry, ventilation and heating.
▶ Four fan speeds: high, middle, low and auto.
▶ Three sensors design: sensors for room temperature, indoor pipe temperature sensor, outdoor pipe temperature
▶ Two ways for the swing control: stepper motor control and AC motor control for the swing.
▶ High-power electrical heating function.
▶ Prevent cold air in the heating mode.
▶ Sleep function.
▶ Outdoor fan is controlled independently.
▶ Delay protection of the compressor
▶ Restart automatically after power recovery at the blackout accident.

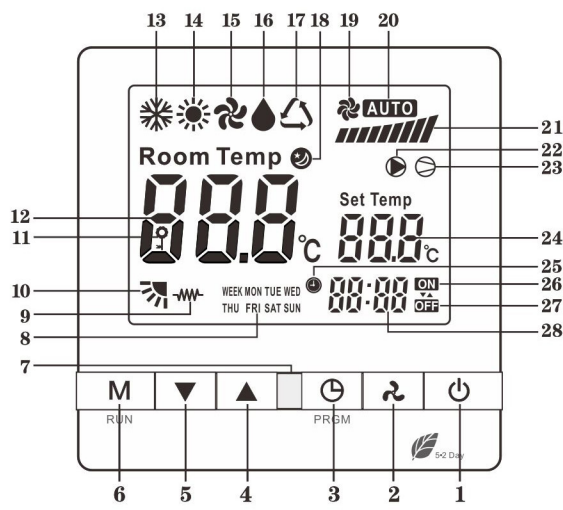## 3.Front and Back Diagram and Description

Diagram Illustration

Item	illustration
1	Power key. To turn on or turn off the air conditioner.
2	Fan speed key. To switch the fan speed (high, middle, low and auto) in the working state; to press and hold a while can turn on or turn off the swing controlled by the AC motor.
3	Clock key. To adjust current time and set week timer. To press and hold for a while to change the parameters of the 5+2 week timer.
4	Up key. To increase the setting temperature in working state; it can also be used to change parameters in the factory mode and in the time setting process.
5	Down key. To decrease the setting temperature in working state; it can also be used to change parameters in the factory mode and in the time setting process.
6	Mode key. To switch between different working mode including cooling, heating, ventilation, dry and auto in the working state; to press and hold for a while to confirm or cancel the week timer function.
7	IR receiver. To receive the order from the remote control.
8	Icon to show the week time.
9	Electrical heating sign. It would appear when the electrical heating is on; otherwise the electrical heating is off.
10	Swing sign. It would appear when the swing is working and disappear when it not working.
11	Lock for the key. It would appear when the key is locked and only the power key works. Otherwise the keys are unlocked.
12	Indoor temperature. To show the room temperature.
13	Sign of cooling. To show the current mode is cooling mode.
14	Sign of heating. To show the current mode is heating mode.
15	Sign of ventilation. To show the current mode is ventilation mode.
16	Sign of dehumidification. To show the current mode is dehumidification mode.
17	Sign of auto. To show the current mode is auto mode.
18	Sign of sleep. It would appear when the sleep mode turns on.
19	Sign to show the working state of fan. The mobile sign shows the fan is in the working state and the still shows the otherwise state.
20	Sign to switch fan speed mode. It shows the fan is in the auto mode.
21	Sign to switch fan speed manually. 3 vertical bar means low, 6 middle and 9 high respectively.
22	Sign to show compressor's working state. It would appear when the compressor is in the working state.
23	Sign to show the defrost status. It would appear in the defrost mode.
24	Sign to show the setting temperature when it is turning on
25	Week timer sign. It would appear when the week timer is setting.
26	Sign of turning on. It would appear when the timer on is setting.
27	Sign of turning off. It would appear when the timer off is setting.
28	Clock. To show time of the system.

4.How to operate

4.1Conventional functions:
(1) Turn on /turn off: Press "⏻" key once to turn on and the screen would display signs of mode and setting temperature. Press "⏻" key once again to turn off, and the screen would display room temperature and clock, meanwhile turn off the compressor, electrical heating, reversing valve, outdoor fan, swing, indoor fan and the stepping motor output.
(2)Temperature setting: when the air conditioner is on, press " ▲ "and " ▼ " to setting the temperature.

The temperature would change 0.5 degree once. To press the key and hold for a while, the temperature changes fast.
(3) Mode selection: when the air conditioner is on, press "M" key to change the mode. The current interface is "❄", which means cooling. Press "M" repeatedly, it would show " ◐ " for dehumidification," ✿ " for ventilation," ☼ " for heating and " △ "for auto in order.
(4)Fan speed selection: when the air conditioner is on, press "↻"key to switch the fan speed. The current interface is "AUTO", which means auto speed. Press "↻"key repeatedly it would be low, middle, high, auto speed.
Notice: In the auto mode, the fan speed changes automatically: when the gap between room temperature and setting temperature is more than 3 degree, it would be high speed; when the gap is 2-3 degree, it would be middle speed; and when the gap is 1 degree, it would be low speed. When the room temperature reaches the setting temperature, the fan stops or you can set the parameter to make it go on working.
(5)Clock key: when the air conditioner is on, press for a short time to adjust the time:
 Press "🕒" once, hour flashes and you can use " ▲ "and " ▼ " to adjust it.
 Press "🕒" once again, minute flashes and you can use " ▲ "and " ▼ " to adjust it.
 Press "🕒" once again, week flashes and you can use " ▲ "and " ▼ " to adjust it.
 Press "🕒" once again to quit the setting.
(6)Swing selection: Press and hold "↻" key to turn on or turn off the swing function.

4.2 5+2 week timer setting function:
(1) To turn on and turn off the 5+2 week timer setting function: Press "M" key for a while to set or cancel the week timer.
(2) 5+2 week timer setting in terms of the change of the parameters: press the "🕒" key for a while and enters the week timer setting mode.
Then the screen shows the flash of the times to turn on the air conditioner from Monday to Friday, you can use " ▲ "and " ▼ " to adjust it:
Press "🕒" once, the screen would show the flash of the setting temperature for turning on the air conditioner from Monday to Friday, you can use " ▲ "and " ▼ " to adjust it.
Press "🕒" key once again, the screen would show the flash of the setting time to turn off the air conditioner from Monday to Friday, you can use " ▲ " and " ▼ " to adjust it;
Press "🕒" key once again, the screen would show the flash of the setting time for turning on the air conditioner on Saturday and Sunday, you can use " ▲ " and " ▼ " to adjust it;
Press "🕒" key once again, the screen would show the flash of the setting temperature for turning on the air conditioner on Saturday and Sunday, you can use " ▲ " and " ▼ " to adjust it;
Press "🕒" key once again, the screen would show the flash of the setting time for turning off the air conditioner on Saturday and Sunday, you can use " ▲ " and " ▼ " to adjust it;
Press "🕒" once again to quit the week timer setting mode.

4.3 Other functions:
(1) Back-light function: the back-light is on all the time. You can turn off the back-light function by changing specific parameter.
(2) Buzzer prompt: when you operate the display panel through the key or remote control, there would be voice prompt from the buzzer.
(3) Remote control function: you can use remote to control the control system.
(4) Single day timer function: the remote control can set the air conditioner to turn on or turn off on every single day. When the week timer is setting, single day timer set is invalid.
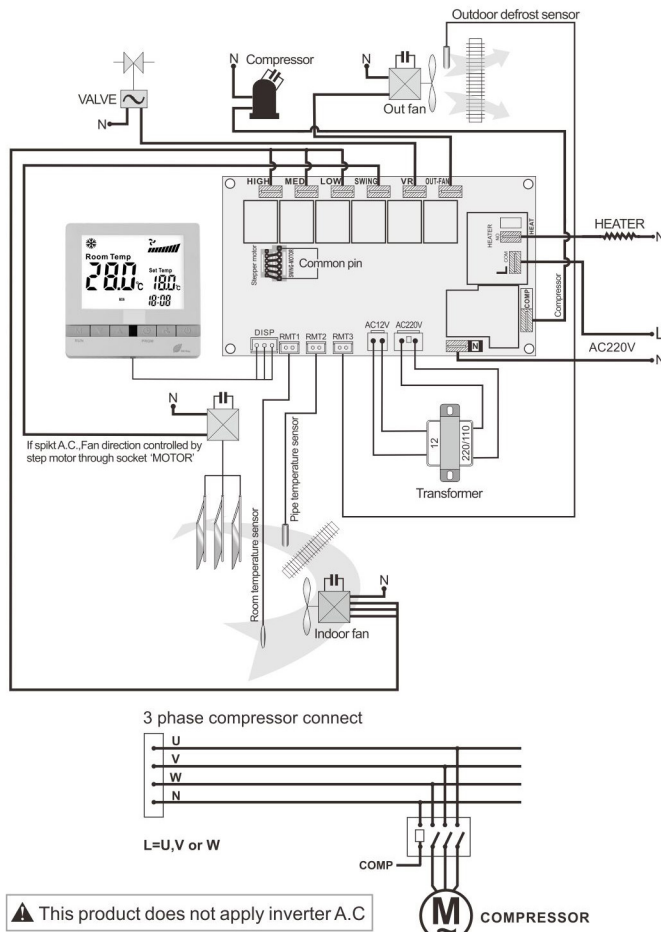
5.Factory parameters setting

5.1 Parameter setting
When the air conditioner turns off, press "M" and "↻" key to come into the parameter setting interface. Then the display panel show the password "--"to change the parameters, to adjust to the correct password by pressing " ▲ " and " ▼ " key (the range is 00-99, and the original is 00). Press "M" key when the correct password appears. Then it enters the parameters setting interface, with the display panel shows the parameter number and the corresponding parameter. Press " ▲ " and " ▼ " key to adjust the parameters. Press "M" key repeatedly to show parameters of F00-F19. Press "⏻" key to save the setting when finishes the setting. (If you don't operate for a long time, the system would auto-quit and give up the changes.)

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5.2 Restore factory settings
When the air conditioner turns off, press "M" and "🕒" key for 5 seconds and it would be the interface of restoring the factory setting, with the screen shows "DEF". Then press "⏻" key to confirm the setting and go back to the working state.
5.3 Attention: Non-professionals are not supposed to change the factory parameters, or the control system may cannot work well.

Number	parameter	About the parameter	unit	range	Default parameters
F00	Indoor temperature sensor	Only for check	degree		
F01	Outdoor temperature sensor	Only for check	degree		
F02	Time delay for compressor	Time duration for compressor to restart	minute	0-10	3
F03	Cooling temperature difference	When room temperature reaches temperature , i.e the set temperature minus the difference value, the compressor would stop	degree	0-20	1
F04	Heating temperature difference	When room temperature reaches temperature , i.e the set temperature plus the difference value, the compressor would stop	degree	0-20	2
F05	Temperature correction for room temperature sensor	Sensor error correction	degree	-10 -- +10	0
F06	Lowest setting temperature	To set the lowest temperature	degree	-9 -- +50	16
F07	Highest setting temperature	To set the highest temperature	degree	0 -- 99	30
F08	Defrost function	0: Without defrost function. 1: with defrost function.		0/1	1
F09	Defrost mode	0:to defrost periodically; 1: to defrost by the temperature from the pipe.		0/1	1
F10	Defrost pipe selection	0:indoor pipe defrost 1: outdoor unit and pipe defrost.		0/1	0
F11	Defrost time duration	Time gap for defrost.	minute	10-99	25
F12	Defrost time	Time duration for defrost.	minute	1-10	5
F13	Temperature to start defrosting for the outdoor pipe		degree	-5 -- +5	-2
F14	Temperature for the outdoor pipe to stop defrosting		degree	0 -- +8	5
F15	Restart function	0: without 1: with		0/1	1
F16	To lock or unlock the key	0:unlock 1: lock		0/1	0
F17	Back-light setting	0: without back-light 1: with back-light		0/1	1
F18	Cooling mode of Indoor fan	0: when it reaches the setting temperature, the fan goes on working; otherwise it stops working.		0/1	0
F19	Password setting		byte	00-99	00

6.Connection diagram

⚠ This product does not apply inverter A.C

3 phase compressor connect

L=U,V or W

1.There should be no strong light before the IR(infra red light receiver).
2.For split A.C.,the stepper motor socket(MOTOR) has 6 pins. Two pins on both sides are common pins(12V).Either of them must be connect with the common pin of the stepper motor plug that has 5 pins. If stepper motor rotating direction is reversed, the common pin of the motor plug should be connect to be other common pin of the motor socket.

7.Error condition display

7.1 In the case of poor communications between the display panel and the control system, the display panel would show "EEE". You may check to see whether the cable between the display panel and the control system is OK or not.
7.2 When the temperature display area shows "NC" or "ER", check the temperature sensor to ensure the cable is well connected.

8.Points for attention

8.1 Non-professionals are not supposed to install, repair or change the parameters of the control system.
8.2 If you intend to connect the compressor, do remember to set the time delay for the compressor to restart for more than 3 minutes to protect the compressor.
8.3 This control system is not suitable for inverter air conditioner.
8.4 If it is the split units with the stepping motor controlling the swing, please select

the SWING-MOTOR plug. The output plug for stepping motor is 6-pin plug, with two sides as common port (12V). IN installation process, the common port of swing motor plug must be inserted into one common port of stepping motor's output plug. If stepping motor works in the wrong direction, change the common port of the swing motor into the other common port of the output plug of the stepping motor.
8.5 Make sure there is no strong light in front of the IR receiver.

9.Technical Parameters

Power	AC220V~240V 50/60HZ
Temperature setting range	-9℃~99℃
Temperature display range	-9℃~99℃
RMT1 testing range	-9℃~99℃
RMT2 testing range	-9℃~99℃
RMT3 testing range	-9℃~99℃
Temperature error range	±1℃
Timer setting range	0~24h
Fuse specifications	5A AC250V
Current of relay for compressor	20A 250V
Current of relay for electrical heating	20A 250V
Current of relay for indoor fan	3A 250V
Current of relay for outdoor fan	3A 250V
Current of relay for the swing controlled by AC motor	3A 250V
Current of relay for reversing valve	3A 250V
Stepping motor output	(DC12V) 5 lines or 6 lines
Remote control with LCD display	DC3V AAA battery ×2
Working temperature	0℃~50℃

10.packing fittings

Packing box	1
Control system	1
Display panel	1
Remote control	1
Transformer	1
Sensor	3
Spare parts package	1
Introduction	1

★ The final explanatory right is reserved this company.Any alteration on the design and model will not be further notified.

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