1.Preface

Dear customers:
Thank you for choosing QUNDA HVAC series thermostats. It's our biggest wish to bring convenience to your daily life. Before using this product, please read the user's manual carefully, which will help you use it correctly.
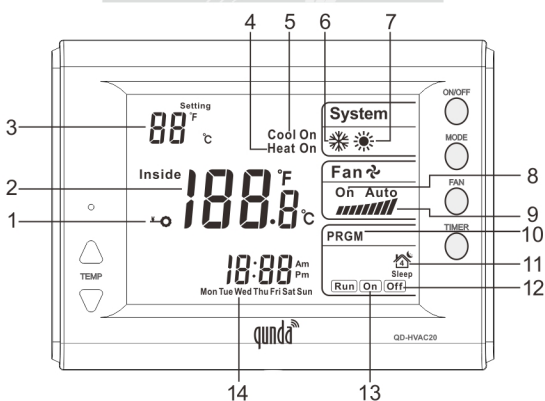
2.Function Overview

2.1 Application

QD-HVAC20 can control two two-way electric valves or two three-way electric valves.
QD-HVAC20 is applicable to two-pipe and four pipe water system or air system. It can control the working condition of FCU(fan coil unit) or electric valve through comparing the environmental temperature and setting temperature, which can help to achieve the purpose of comfortable temperature and energy efficiency.
QD-HVAC20 adopts to industrial-grade micro-computer technology with the touching key and large LCD display. It is easy in operation, stable and reliable.

2.2 Features

► Control two two-way valves or two three-way valves.
► Wide operating voltage: AC100V-240V.
► 6.8 sq. Inch large LCD display panel.
► Optional for Celsius degree or Fahrenheit degree
► Three working modes: cooling, heating, ventilation.
► Four fan speeds: high, middle, low, auto.
► Sleep function and timer function.
► Temperature calibration function.
► Optional for the fan working modes.
► Frost prevention when power off.
► Auto restart function.
► Key lock function.
► IR remote control(Optional and purchasing it separately).

3. Diagram and Description

NO.	Description
1	Key locked symbol. Displaying means keys are locked, and only "ON/OFF" key can be used. No displaying for the symbol means keys are unlocked.
2	Room temperature: Display the room temperature. It will show "E1" when the temperature sensor is abnormal.
3	Setting temperature: Display the setting temperature.

4	Heat On: It appears when the heating valve is opened.
5	Cool On: It appears when the cooling valve is opened.
6	Cooling: Current working mode is cooling mode.
7	Heating: Current working mode is heating mode.It will be ventilation mode when cooling or heating symbol didn't display on the screen.
8	Fan working condition symbol: It appears when the fan is working.
9	Fan speed: Low fan ▟▟▟ , middle fan ▟▟▟▟▟ , high fan ▟▟▟▟▟▟▟ , auto fan **Auto** .
10	Weekly timer symbol: It appears after setting weekly timer function.
11	Sleep function symbol: It appears when the sleep function is working.
12	Timer off symbol: It appears when the timer off function is working.
13	Timer on symbol: It appears when the timer on function is working.
14	System time: Display the system time.

4. Basic operation

4.1 ON/OFF: Control the thermostat power on and power off. The screen will show the room temperature when power off, and it will close the fan coil unit, electric valve, electric ball valve and electric wind valve.
4.2 MODE： Switch the mode among cooling, heating, ventilation orderly. The first time to press key will show the current mode and be flashing. Press the "**MODE**" key repeatedly, displaying " ❄ " means cooling mode, displaying " ☀ "means heating mode. No displaying for both of them means ventilation mode.
4.3 FAN: Switch the fan speed among low, middle, high, auto orderly. It will display the current fan speed and flash for the first time to press the key. Press "FAN" key to select the required fan speed.
Remarks: In auto fan mode, it will choose high speed wind automatically when the difference between room temperature and setting temperature is over 3℃; It will choose middle speed wind automatically when the difference between room temperature and setting temperature is from 2℃ to 3℃. It will choose low speed wind automatically when the difference between room temperature and setting temperature is only 1℃. When the room temperature reaches setting temperature, the fan will stop working and it can work in low speed by setting the parameters.
4.4 TIMER: When power on, press "TIMER" key once to show " 🏠 Sleep " and it will be flashing. Press the "TIMER" key again to set timer off for 1 hour, and press "TIMER" key repeatedly, the time is increasing, and when the time is over 16 hours, it will cancel the timer off function. If you have set the sleep function or timer off function, pressing "TIMER" key can cancel these two functions.
When power off, press "TIMER" key once to show timer on for 1 hour and it will be flashing. Press the "TIMER" key repeatedly, the time will be increasing, and when the time is over 16 hours, it will cancel the timer on function. If you have set the timer on function, you can cancel this function by pressing "TIMER" key.
4.5 TEMP: Adjust the setting temperature. For the first time to press the "TEMP" key, it will show the current setting temperature and flash. Press and hold " △ " key for 3 seconds , the temperature will rise quickly. Press and hold " ▽ "key for 3 seconds, the temperature will drop quickly.
Remarks: when setting temperature, fan speed, mode and timer function, the corresponding symbol will be flashing, which means it is under the setting operation. The setting will be confirmed if you don't press the key for 5 seconds.In setting process of 5 seconds' flashing, the thermostat will work according to the previous seting.
4.6 Locked and unlocked key: In any situation, press "**ON/OFF**" key for

5 seconds to lock the key, " ⊷O "will appear. Press "**ON/OFF**" key for 5 seconds again to unlock the key, " ⊷O " will disappear.
4.7 Clock setting: When power off, press and hold the "▲"key for 5 seconds to adjust the time, the week begin to flash. Press "▲ ▼"to adjust the week. Press "mode" key, the hour will be flashing, press "▲ ▼"to adjust the hour. Press the mode key again, the minute will be flashing, press "▲ ▼"to adjust the minute. Press "MODE" key again, the week will be flashing again. Press "**ON/OFF**" again to keep the set system time.
4.8 5+2 days weekly timer function: When power off, press and hold "TIMER " for 5 seconds to cancel the weekly timer function when it had been set or to enter into the weekly timer setting mode when it had not been set before. The temperature of timer on from Monday to Friday will display and flash on the screen. You can press "▲ ▼"to adjust the temperature.
Press "**MODE**" key, the time of timer on from Monday to Friday will display and flash on the screen. You can press "▲ ▼"to adjust the time.
Press "**MODE**" key again, the time of timer off from Monday to Friday will display and flash on the screen. You can press "▲ ▼" to adjust the time.
Press "**MODE**" key again, the temperature of timer on for Saturday and Sunday will display and flash on the screen. You can press "▲ ▼"to adjust the temperature.
Press "**MODE**" key again, the time of timer on for Saturday and Sunday will display and flash on the screen. You can press "▲ ▼" to adjust the time.
Press "**MODE**" key again, the time of timer off for Saturday and Sunday will display and flash on the screen. You can press "▲ ▼" to adjust the time.
Press "**MODE**" key to confirm and exit from the weekly timer setting mode.
4.9 Other functions:
Backlight function: When power off, the backlight will be off. When operating it, the backlight will be on. The backlight will be off when there is no operation after 5 seconds.
Buzzer prompt function: There is a buzzer sound when using the remote to control the thermostat.
Remote control function(purchase it separately): You can operate the thermostat through remote control.

5. Control for Electric Valve and Fan

5.1 Electric valve control
5.1.1 Two-pipe water system(F1=1)
In cooling(heating) mode, when the room temperature is 1℃ higher (lower) than the setting temperature, the electric valve will be opened. When the room temperature reaches the setting temperature, the electric valve will be closed.
5.1.2 Four-pipe water system(F1=2)
In cooling mode, when the room temperature is 1℃ higher than setting temperature, the cold water valve will be opened. When the room temperature is lower than setting temperature, the cold water valve will be closed. The hot water valve will be always closed in cooling mode. In heating mode, when the room temperature is 1℃ lower than setting temperature, the hot water valve will be opened. When the room temperature is higher than setting temperature, the hot water valve will be closed. The cold water valve will be always closed in heating mode.
5.2 Fan control: It has 3 outputs for the fan speed: high, middle, low. The fan has two working modes, and you can choose the

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working mode by setting the parameter F3.
(A) F3=1: When the room temperature reach the setting temperature , the fan will stop working.
(B) F3=2: When the room temperature reach setting temperature, the fan will work in low speed.

6. Factory parameter setting

Through setting the factory parameters, users can change the parameters and increase the thermostat function.
6.1 Enter into the factory parameter setting
6.1.1 When power off, press and hold "FAN" key for 5 seconds, the LCD setting temperature area will display "F1", and the room temperature area will show the related parameters, then the thermostat enters into parameter setting mode.
6.1.2 Press "FAN" to switch from F1 to F7, and press"▲ ▼"to adjust the corresponding parameters.
6.1.3 Press "ON/OFF" key to keep the parameters and exit. If there is no operation in 5 seconds, it will exit from the parameter setting and keep the parameters before setting.

6.2 Factory Parameters

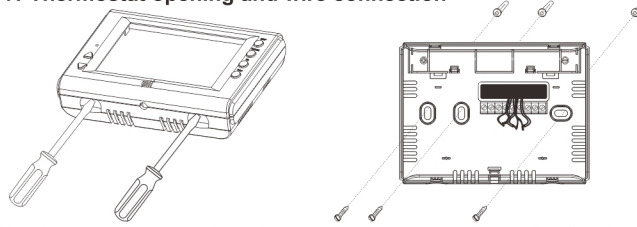| Code	Parameter function	Setting range	Parameter description	Default settings
F1	System type	1-2	1: two-pipe system 2: four-pipe system	1
F2	Temperature correction	-9~+9℃	Adjust the temperature deviation	0℃
F3	Fan mode	1-2	1: when temperature reaches the setting value, the fan will be stopped. 2:when temperature reaches the setting value, the fan will work.	1
F4	Low temperature protection	1-2	1: OFF 2: ON	1
F5	Auto restart function	1-2	1: OFF 2: ON	1
F6	Coversion between Celsius degree or Fahrenheit degree	1-2	1: Celsius degree 2: Fahrenheit degree	1
F7	Key lock function	1-2	1: OFF 2: ON	1

6.3 Factory Parameters Description
6.3.1 F1: two-pipe system and four-pipe system.
6.3.2 F2: temperature calibration function. There will be a temperature deviation because of different installation places. You can adjust the room temperature from -9 ~ 9℃ through the temperature calibration function.
6.3.3 F3: fan mode setting. Please refer to 5.2 fan control.
6.3.4 F4: low temperature protection. Set F4 to 2, if the thermostat is off and the room temperature is lower than 5℃, the thermostat will be turned on automatically in heating mode, showing the symbol " ☀ ". The fan will work at high speed automatically and the electric valve (the hot water valve) will be opened. When the room temperature raise to 7℃, the thermostat will be turned off automatically.
6.3.5 F5: auto restart function. Set F5 to 2, the thermostat will keep all the settings before power failure and restore all the settings when power on again.
6.3.6 F6: to select Celsius degree or Fahrenheit degree.
6.3.7 F7: key lock function. Set F7 to 2, after setting lock function, except "ON/OFF" key, other keys can not be used.
6.4 Restore factory settings
When power off, press and hold "MODE" key for 5 seconds, the LCD screen will display " ʤEF ", then release "MODE" key and press "ON/OFF" key, the thermostat will restore factory settings.
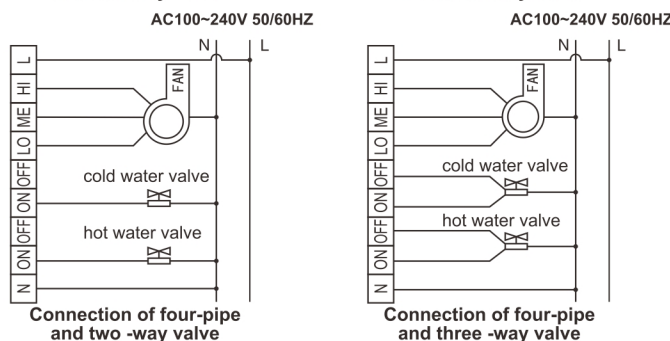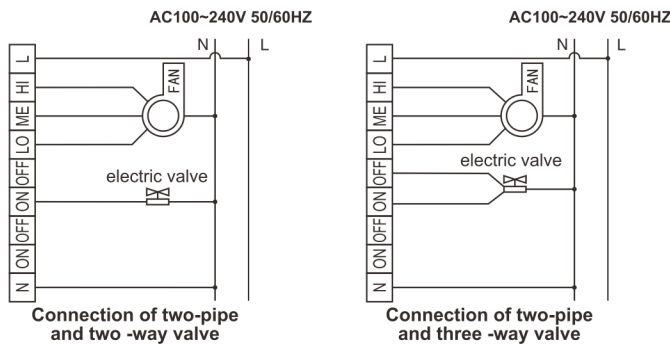
7. Installation and wiring diagram

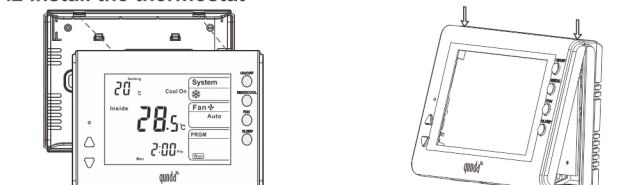### 7.1 Thermostat opening and wire connection

Step 1: Insert the awl into the slot and pry up the front part of the panel to open it.

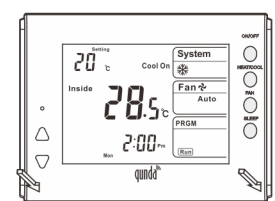Step 2: For horizontal installation, put 1 screw left and 1 screw right.

AC100~240V 50/60HZ

Connection of two-pipe and two -way valve

AC100~240V 50/60HZ

Connection of two-pipe and three -way valve

AC100~240V 50/60HZ

Connection of four-pipe and two -way valve

AC100~240V 50/60HZ

Connection of four-pipe and three -way valve

Step 3:Connect the thermostat according to the wiring diagram above.

7.2 Install the thermostat

Step 1: aim at the two inner snaps on the higher part of thermostat.

Step 2: Hang the two hooks of the front part at 30°right to the snaps.

Step 3: Press the lower part of the panel to complete the installation.

8. Trouble shooting

Problems	Solutions
Can not turn on	1.Check L,N and the wire connection. 2.Check whether "ON/OFF" key can work well or not. 3.Replace the main control board, if it still doesn't work, then replace the power supply board.
Normal displaying but no regular output	1.Check the wire connection between main control board and power supply board. 2.Replace the main control board, if it still doesn't work, then replace the power supply board.
"E1" displayed on the LCD screen	1.Sensors' failure and replacing the main control board.

⚠ Please recruit the professionals to install the thermostat, and power-on test is a must before installation.

9. Technical parameters

Temperature control precision	± 1℃
Temperature displaying range	0~50℃
Temperature setting range	5~35℃
Supply voltage	AC100~240V,50/60HZ
The current of electric wind valve relay	3A
The current of electric valve relay	3A
Working temperature	0℃~40℃
Working humidity	5~90%RH(no defrost)
Dimension	118mm X 88mm X 30mm
Color	White

10. Package

Inner box	1
Thermostat	1
Manual	1
Screw	2

11. Company information

QUNDA Control Technology(Jiangsu)Co.,Ltd.
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Post code: 215200   **Web site:** www.qunda.com

★ Reseved the right of final explanation.Any alteration on the design and model will not be further notified.