10.CAUTION

1. When the temperature is too high, HI will be displayed in the temperature erea to express the room temperature over the display range. When the temperature is too low, LO will be displayed in the temperature erea to express the room temperature blow the display range.
2. Two AAA batteries can be used for one year. When the battery voltage symbol flashes, it means the batteries need to be changed. Please change the batteries sooner.
3. Within the 20 minutes after remove the batteries, time and week will keep running. Please change the batteries in this period.
4. There is preservative on the LCD when out of the factory, users can remove it or not.
5. If you need to remove the preservative, just pull it from the corner and no need to open the thermostat.
6. Don't force to install. When it is hard to connect the pin, move the display panel slightly. After the pin aimed at the port, press the thermostat hard.
7. It is precision electronic products. Don't knock or fall it.
8. Don't let the water, mud into the thermostat.

11.SPECIFICATIONS

Specifications

the display range of temperature.....41℉ to 95℉ (5℃ to 35℃)
the control range of temperature.....44℉ to 90℉ (7℃ to 32℃)
Load rating.....1 amp per terminal, 1.5 amp maximum all terminals combined
Display accuracy .....± 0.5℃
Power source.....18 to 30 VAC, NEC Class II, 50/60 Hz for hardwire (common wire)
Battery power from 2 AAA Alkaline batteries
Operating ambient.....41℉ to +95℉(5℃ to +35℃)
Operating humidity.....90% non-condensing maximum
Dimensions of thermostat.....118mm * 85mm * 25mm

qunda Controller Expert

QD-HVAC11

Programmable Thermostat

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1.Preface

Dear client,
Thanks for choosing QD-HVAC11 thermostat series. It's our best wish to bring you convenience for your daily life. Before using, please read the User's Manual carefully. It will help you to use it correctly.

2.Production Function Overview

2.1 Application

Description	
1 stage Heat and 1 stage Cool	Yes
Gas or Oil Heat	Yes
Electric Furnace	Yes
Heat Pump(NO Aux. or Emergency Heat)	Yes
Heat Only Systems	Yes
Heat Only Systems - Floor or Wall Furnaces	Yes
Cool Only Systems	Yes
Millivolt	Yes

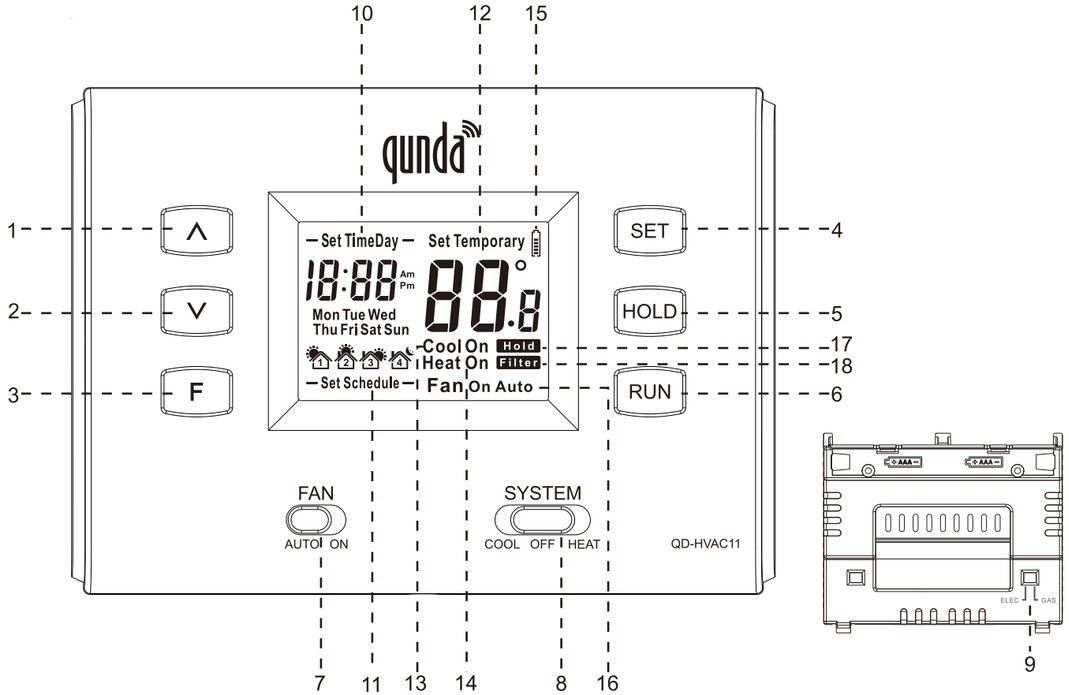
2.2 Feature

- Programmable thermostat
- 5+2 Programmable
- Easy to program
- Easy to install
- Battery power or 24V Hardwire
- Operate on 1 stage Heat and 1 stage cool
- Heat Pump without Aux or Emergency Heat
- Separate heating and cooling swing(cycle rate) adjustments
- 5 minutes compressor delay protection (selectable on or off)
- Gas, Electric or Oil
- Optional temperature display of Fahrenheit or Celsius scale.
- Low Battery Indicator
- Display temperature calibration
- Adjust filter usage counter

A trained, experienced technician must install this product.

Carefully read these instructions. You could damage this product or cause a hazardous condition if you fail to follow these instructions.

3.Diagram and Description

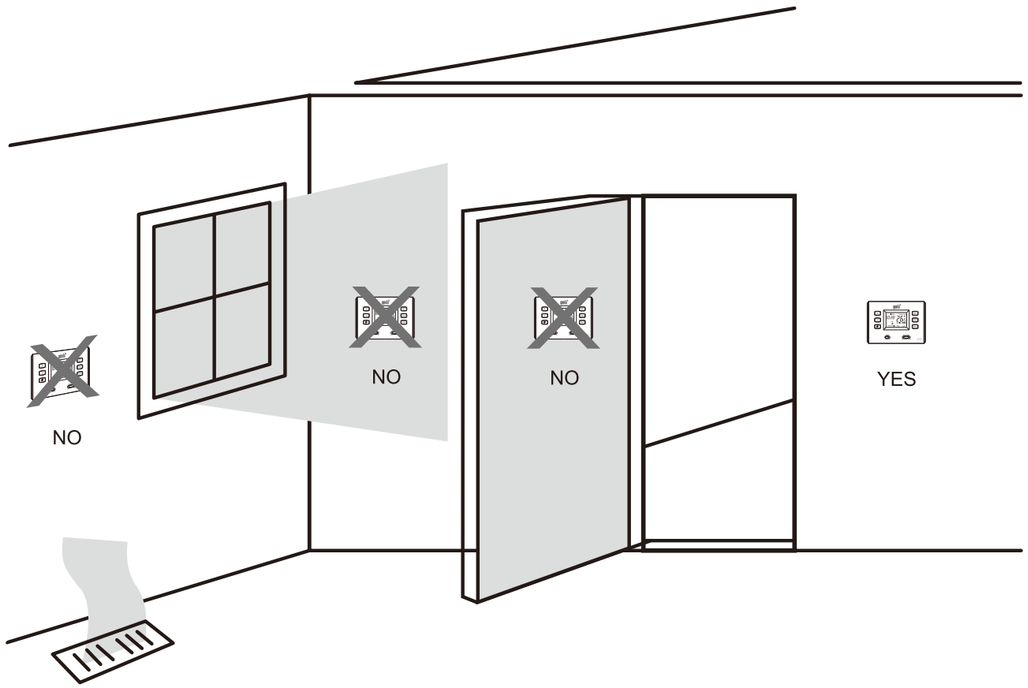


Description

Item	Description
1	Up key: in the cooling/heating mode, it is for raising the setting temperature. When setting the program and changing the system parameter, it is for adjusting the parameter.
2	Down key: in the cooling/heating mode, it is for lowering the setting temperature. When setting the program and changing the system parameter, it is for adjusting the parameter.
3	F key: in the cooling/heating mode,It can be used for inquiry and reset Filter Usage Days。
4	SET key:to enter the parameter changing interface or enter the programming mode
5	HOLD key:In the cool/heat mode,Press it only once,the LCD display "hold",and the thermostat will keep the set temperature,
6	Run key: Press only once,the thermostat operates according to the time programming.After setting the program and changing the system parameter, press the run key to save and exit the setting interface.
7	FAN Switch: For setting fan speed.
8	SYSTEM Switch :For setting mode.
9	Fan Operation Switch:Electric or Gas Setup.
10	Clock/Week: Display the current system time and week.
11	Program setting: it shows the system is in the setting process
12	Temperature:Display the room temperature or setting temperature.
13	Cool symbol: The cooling relay start to work when the symbol displayed. The symbol flashing means the cooling relay is in the set-up delay process.
14	Heat symbol: The heating relay start to work when the symbol displayed. The symbol flashing means the heating relay is in the set-up delay process.
15	Battery symbol: it means low power when the symbol displayed, so please change the battery in time.
16	Fan: display the current mode of the fan.
17	Hold symbol:when the symbol displayed,the setting temperature will be kept,and won't follow the setting program.
18	Filter symbol:when the symbol displayed,it means the number of filter usage days reach the set interval time.

4.Wall locations

The thermostat should be installed approximate 4 to 5 feet above the floor.
Select an area with average temperature and good air circulation.



Do not install thermostat at following places:

- Close to hot or cold air ducts
- With direct sunlight
- With an outside wall behind the thermostat
- The areas that do not require conditioning
- Where there are dead spots or drafts (in corners or behind doors)
- Where there might be concealed chimneys or pipes

Installation Tip

Pick an installation location that is easy for the user to access. The temperature of the location should be representative of the building.

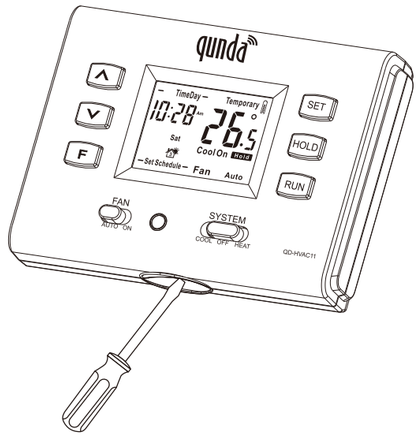
5.SUBBASE INSTALLATION

Caution:
Electrical Hazard

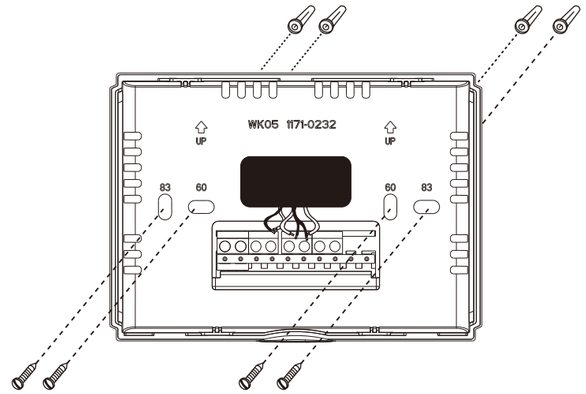
Failure to disconnect the power before beginning to install this product can cause electrical shock or equipment damage.

Caution:
Equipment damage hazard

Do not operate the cooling system if the outdoor temperature is below 50°F (10°C) to prevent possible compressor damage.



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



For horizontal mount put one screw left and one screw right.

6.WIRING

Caution: Electrical Hazard

Failure to disconnect the power before beginning to install this product can cause electrical shock or equipment damage.

Warning :

All components of the control system and the thermostat installation must conform to Class II circuits per the NEC Code.

Wiring

1.If you are replacing a thermostat. Take notice of the terminal connections on the cases, the wiring connections may not be color coded. For example, the green wire may not be connected to the G terminal.

2.Loosen the terminal block screws. Insert wires then retighten terminal block screws.

3.Place nonflammable insulation into wall opening to prevent drafts.

Caution:
Do not over tighten terminal block screws, as this can damage terminal block, and keep the thermostat fitting on the sub-base correctly or it will cause system operation issues.

Max Torque = 6in-lbs

Terminal Designation

C Common wire from secondary side of cooling system transformer

O Heat pump changeover valve energizes in cooling

B Heat pump changeover valve energizes in heating

W Heat relay

RH Transformer power for heating

RC Transformer power for cooling

G Fan relay

Y Compressor relay

Wiring Tips:

RH & RC terminals
For single transformer systems, leave the jumper wire in place between RH and RC. Remove jumper wire for two transformer systems.

Heat pump systems(with no AUX or Emergency Heat)
If wiring to a heat pump,use a small piece of wire(not supllied)to connect terminals W and Y.

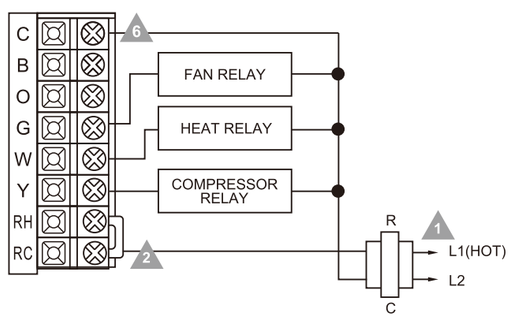
C terminal
The C (common wire) terminal does not have to be connected when the thermostat is powered by batteries.

Wire specifications
Use shielded or nor-shielded 18 - 22 gauge thermostat wire.

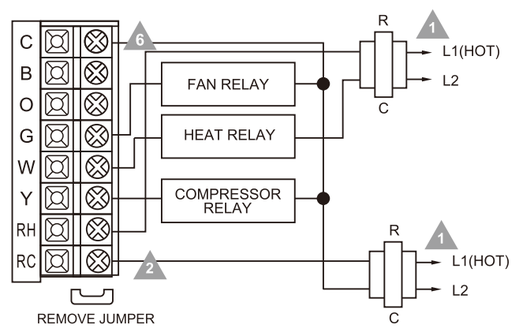
7.WIRING DIAGRAMS

1 Power supply
2 jumper installed on 1-transformer system and removed on 2-transformer system
3 Use either O or B terminals for change over valve
4 Use a small piece of wire (not supplied) to connect W and Y terminals
5 Set fan operation switch to electric
6 Optional 24 VAC common connection when thermostat is used in battery power mode

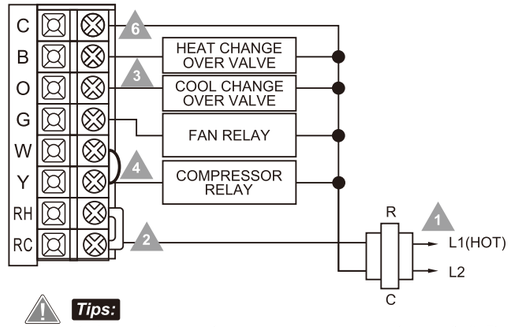
Typical 1H/1C system: 1 transformer



Typical 1H/1C system: 2 transformer

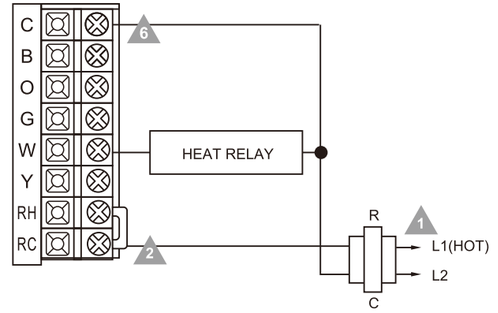


Typical 1H/1C heat pump system

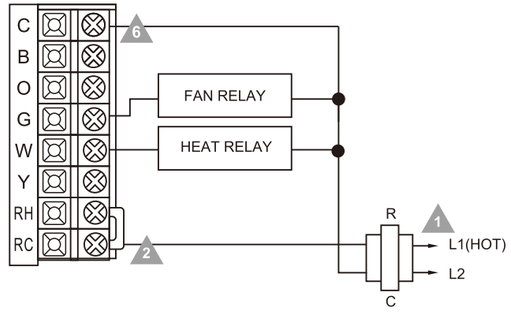


Tips:
1.Please choose the compressor lockout delay(F4=5).

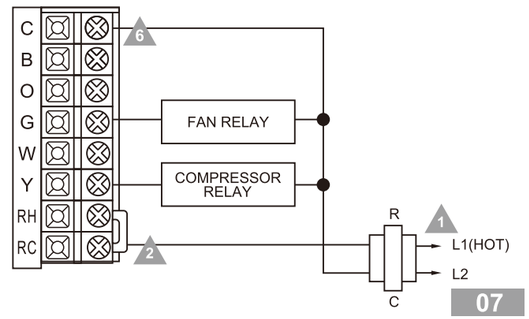
Typical heat-only system



Typical heat-only system with fan



Typical cool-only system



8.Operation

8.1 Operation

(1)SYSTEM switch :use the switch to select system mode:COOL–>OFF–>HEAT

(2)FAN switch:use the switch to select fan mode:AUTO–>ON

(3)Fan Operation switch:use the switch to select the control and choosing for heat fan:If the user uses the Gas or Oil heating system, please choose "GAS"(system controls fan operation). If the user uses the Electric heating system, please choose “ ELEC” (thermostat controls fan operation).

(4)Setting temperature:In the main interface, LCD displays room temperature. When power on, press “ ∧ ” or “ ∨ ” to set the temperature LCD show the set temperature. Press “ ∨ ” to lower the setting temperature, and press “ ∧ ” to raise the setting temperature.there is no any operation with in 5 seconds, the system will back to the main interface.

(5)Hold key: When power on, press the “Hold” key to keep the setting temperature. It won't run the program and display “Hold”. For example: now the setting temperature is 60℉,after pressing the “HOLD”, the system will lock the setting temperature to be 60℉.

(6)Run key: When power on, press the key to run the program what has been set.

(7)F key: In the state of power on, when the users have set the filter function(F6>0), press F key, the clock area will display the remaining time of filter alarm. For example: the clock area displays 128, which means it has 128 days left that the filter net needs to be clean. Press and hold F key for 5 seconds, “FILTER” icon will flash once, which means the filter timer will clear to zero and it will restart.

8.2 Programming setting

When power on(in cool/heat mode),hold “ SET ” for 5 seconds to enter the programming mode:

(1) First is to set the system clock. When the clock area is flashing, press “ ∧ ” or “ ∨ ” to change the clock. And if you hold “ ∧ ” or “ ∨ ” , the adjustment will be faster.

(2) Press “ SET ” again to set the week. When the week flashing, press “ ∧ ” or “ ∨ ” to change the week.

(3) Press “ SET ” again to set the Wake time from Monday to Friday. When the clock area is flashing, press “ ∧ ” or “ ∨ ” to adjust the time.

(4) Press “ SET ” again to set the Wake temperature from Monday to Friday. When the temperature area is flashing, press “ ∧ ” or “ ∨ ”t o adjust the temperature.

(5) Repeat pressing the “ SET ”, then you can set the time and temperature of Leave, Return, Sleep, from Monday to Friday and Saturday, Sunday by turn.

(6) After finished the setting, press the “ RUN ” to cancel the setting interface and save the parameter. (if there's no any operation within 30 seconds when setting, the system will exit the setting interface and abandon the changed parameter.)

EXAMPLE:
Heating/Cooling Schedule Plan(Factory default program setting)

		Weekdays (5 day)		Saturday and Sunday	
Mode	Period	Start Time	Temperature	Start Time	Temperature
Heat	Wake	6:00 AM	21℃	6:00 AM	21℃
	Leave	8:00 AM	17℃	8:00 AM	17℃
	Return	6:00 PM	21℃	6:00 PM	21℃
	Sleep	10:00 PM	17℃	10:00 PM	17℃
Cool	Wake	6:00 AM	24℃	6:00 AM	24℃
	Leave	8:00 AM	28℃	8:00 AM	28℃
	Return	6:00 PM	24℃	6:00 PM	24℃
	Sleep	10:00 PM	26℃	10:00 PM	26℃

8.3 System parameter setting

When power off, hold “ SET ” key for 5 seconds to enter the parameter changing interface.

System clock area displays each symbol of the parameter, and temperature area displays each parameter of the parameter values. Repeat to press “ SET ” key to cycling display the each parameter. Press “ ∧ ” or “ ∨ ” to adjust each parameter. After finished changing, press “ RUN ”key to exit the setting interface and save the set parameter.(if there's no any operation within 30 seconds when setting, the system will exit the setting interface and abandon the changed parameter.)

Code	Parameter function	Setting range	Default settings
F1	Select cooling cycle rate	0/1	0
F2	Select heating cycle rate	0/1	0
F3	Select ℃ cycle ℉ readout	0/1	0
F4	Select compressor lockout delay	0/5	5
F5	Select temperature recalibration	−5° to +5°	0
F6	Set filter usage counter	0 to 12 (months)	0
F7	Intelligent Recovery Option	0/1	0
F8	Backlight setting	0/1	0

1. Select cooling cycle rate
Select “F1 = 0” to produce shorter cooling cycles. Select “F1 = 1” produces a longer cooling cycle. Both settings produce very accurate temperature control and can be set to your personal preference.

2. Select heating cycle rate
Select “F2 = 0” to produce shorter heating cycles. Select “F2 = 1” to produces a longer heating cycle. Both settings produce very accurate temperature control and can be set to your personal preference.

3. Select ℉ or ℃ readout
When F3=0.select ℃ to readout. When F3=1,select ℉ to readout.

4. Select compressor lockout delay
To protect the compressor from short cycling, you can select compressor off-time cycle between **0** or **5** minutes. When the thermostat compressor time delay occurs, the **Cool On** or **Heat On** display will flash during compressor lockout.

5. Select temperature recalibration
This feature allows you to adjust the displayed room temperature up to 5° higher or lower. Your thermostat can be accurately calibrated to match your previous thermostat. The current or adjusted room temperature will be displayed on the display. The default setting is “0”.

6. Select filter usage counter
The filter usage counter is set in step of one month,range from 0-12 months.For example,select “F6=3”, it means the fan works for 3*30=90 days, “FILTER” icon will be shown,which reminds the users to clean the fan filter net. select “F6 = 0 to” disable the filter usage function.

7. Intelligent Recovery Option
The thermostat has an intelligent recovery function that brings your room temperature at exactly the pre-set time by turning on the Heating earlier. Select “F7 = 1” to activate the intelligent recovery function, Select “F7 = 0” to deactivate the intelligent recovery function. The default setting is “0”.

8. Backlight Setting
Select “F8 = 0”, backlight will be 5 seconds delayed off. Select “F8 = 1”, backlight will be always on.

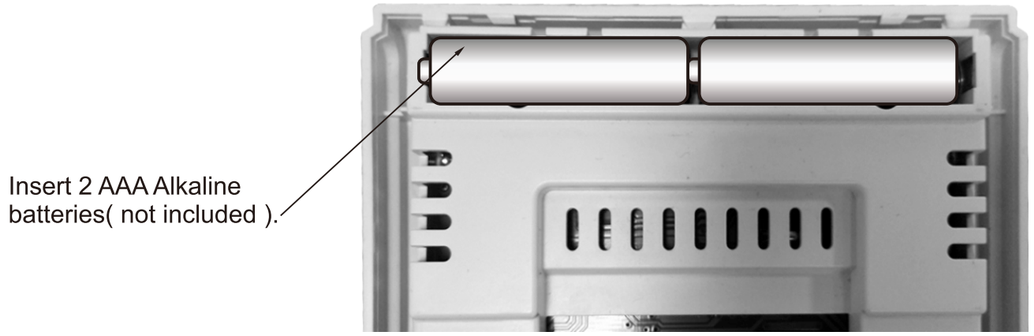
8.4 Restore factory settings

When power off, hold “ F ” key for 5 seconds. Symbol “ dE ” displayed in the temperature area and press “ RUN ” key to confirm and exit.

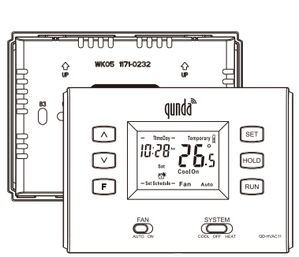
9.MOUNT THERMOSTAT & BATTERY INSTALLATION

Battery Installation

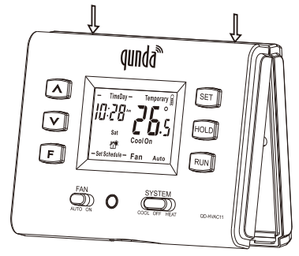
Important :
High quality alkaline batteries are recommended. Rechargeable batteries or low quality batteries do not guarantee 1-year life span.



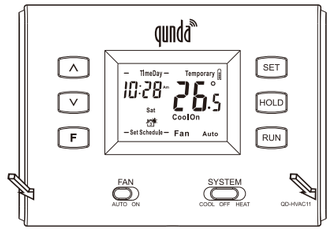
Mount Thermostat



Step 1: Aim at the inner snaps in the higher part of the 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 front display panel to complete the installation.

In Step 3, if the user think it is hard to connect the pin, please move the display panel slightly. Then it will be work.