Kaysun

Installation & Owner's Manual

Wired Controller KCT-04.2 SR

Original instructions
Please read this manual carefully and keep it for future reference.
All the pictures in this manual are for illustrations purpose only.

- This manual gives detailed description of the precautions that should be brought to your attention during operation.
- In order to ensure correct service of the wired controller please read this manual carefully before using the unit.
- For convenience of future reference, keep this manual after reading it.

CONTENTS

1 GENERAL SAFETY PRECAUTIONS

1.1 About the documentation

- The original documentation is written in English. All other languages are translations.
- The precautions described in this document cover very important topics, follow them carefully.
- All activities described in the installation manual must be performed by an authorized installer.

1.1.1 Meaning of warnings and symbols

⚠ **CAUTION**

It indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

♡ **NOTE**

Indicates a situation that could result in equipment or property damage.

ⓘ **INFORMATION**

Indicates useful tips or additional information.

1.2 For the user

- If you are not sure how to operate the unit, contact your installer.

- The appliance is not intended for use by persons, including children, with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children must be supervised to ensure that they do not play with the product.

⚠ CAUTION

Do NOT rinse the unit. This may cause electric shocks or fire.

⚡ NOTE

- Do NOT place any objects or equipment on top of the unit.

- Units are marked with the following symbol:

This means that electrical and electronic products may not be mixed with unsorted household waste. Do not try to dismantle the system yourself: the dismantling of the system, treatment of the refrigerant, of oil and of other parts must be done by an authorized installer and must comply with applicable legislation. Units must be treated at a specialized treatment facility for reuse, recycling and recovery. By ensuring this product is disposed of correctly, you will help to prevent potential negative consequences for the environment and human health. For more information, contact your installer or local authority.

2 BASIC PARAMETERS

Items	Description
Rated voltage	18 V DC
Wiring size	RVVP-0.75 mm^2 × 2
Operating environment	-5 °C ~ 43 °C
Humidity	≤ RH90 %

3 ACCESSORIES LIST

No.	Name	Quantity
1	Wired controller	1
2	Philips head screw, M4×25	2
3	Installation and Operation Manual	1
4	Plastic support bar	2
5	Bottom cap of the wired controller	1
6	Round head screw ST4X20	3
7	Plastic expansion pipe	3

4 INSTALLATION

4.1 Installation precautions

- To ensure correct installation, read the "Installation" section of this manual.

- The content provided here covers warnings, which contain important information about safety that must be followed.

⚠ CAUTION

Entrust a local distributor or local service agent to appoint a qualified technician to perform the installation. Do not try to install the unit by yourself.

Do not knock, throw, or randomly disassemble the wired controller.

The wiring must be compatible with the wired controller current.

Use the specified cables, and do not place any heavy object on the wiring terminals.

The wired controller line is a low-voltage circuit, which cannot come into direct contact with the high voltage line or be laid in the same wiring tube together with the high voltage line. The minimum spacing of wiring tubes is 300 to 500 mm.

Do not install the wired controller in corrosive, flammable and explosive environments or places with oil mist (such as a kitchen).

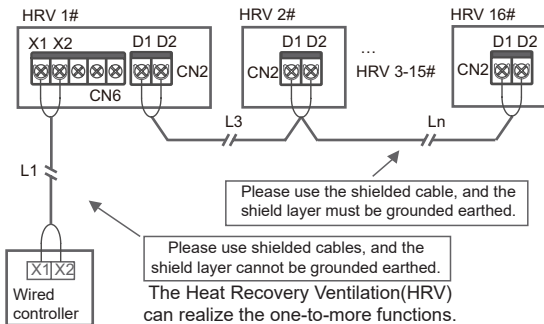Do not install the wired controller in a wet place and avoid direct sunlight.

Do not install the wired controller when it is powered on.

Please install the wired controller after painting the wall; otherwise, water, lime and sand may enter the wired controller.

## 4.2 Installation method

4.2.1 Wiring requirements

One-to-more(Supported on V8 series models only)

HRV 1#

X1 X2 | D1 D2

CN6 | CN2

HRV 2#

D1 D2

CN2

… HRV 3-15#

HRV 16#

D1 D2

CN2

L3 | Ln

Please use the shielded cable, and the shield layer must be grounded earthed.

Please use shielded cables, and the shield layer cannot be grounded earthed.

The Heat Recovery Ventilation(HRV) can realize the one-to-more functions.

L1

X1 X2

Wired controller

The one-to-more function must be set for the wired controller. After the communication between the wired controller and HRV lasts 3 minutes and 30 seconds, the control can be implemented.

One-to-one

- Applicable to bi-directional communication between wired controller and HRV.

- One-to-one: One wired controller controls one HRV. The parameters displayed on the wired controller are updated in real time according to changes in the parameters of the HRV.

- The permissible longest wiring length of the system is 200 m.

- Communication cables between the HRV and the wired controller (X1, X2) may be connected in reverse order.
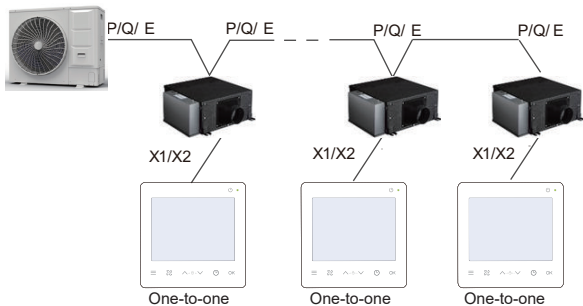
4.2.2 Installlation of bottom cap of the wired controller

Screw hole installed on 86 Electrician box, use two Philips head screw, M4×25
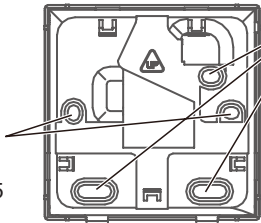
Screw hole installed on the wall Use three round head screw ST4X20 and plastic expansion pipe

When installed on 86 Electrician box:

Adjust the lengths of the two plastic support bars in the accessory package. Ensure that the bottom cap of the wired controller stays level with the wall when installed on the screw post of electrical box.
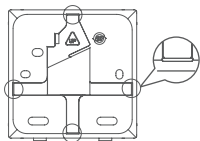

Screw post of the electrical box
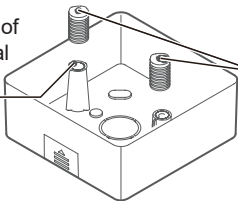
Use a cutting tool to adjust the lengths of the two plastic support bars
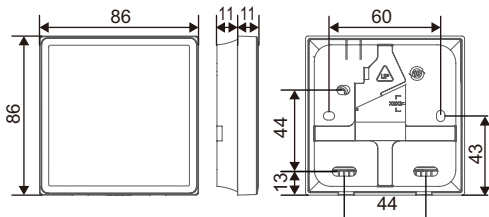
When installed on the wall:

The wire can be placed outlet or inside. Wire outlet have four side to select.
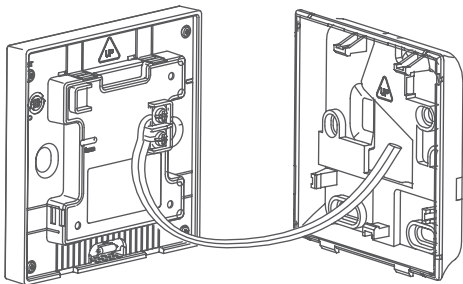

Cutting place of up,down,left and right side wire outlet

Installation Dimensions:

4.2.3 Lead the 2-core shielded cable through the wiring hole in the bottom cap of the wired controller, and use screws to reliably fasten the shielded cable onto terminals X1 and X2. Then fix the bottom cap of the wired controller onto the electrical box by using pan head screws.

○ **NOTE**

Do not perform wiring operations on energized parts.
Make sure that you remove the wired controller before
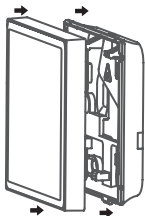proceeding. Otherwise, the wired controller may be
damaged.

Do not overtighten the pan head screws; otherwise,
the bottom cap of the wired controller may deform and
cannot be levelled on the wall surface, which makes it
difficult to install or not securely installed.
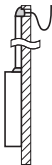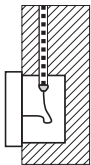
86Electrician box   wires inside   wires outlet

Avoid the water enter into the wired remote controller, use trap and putty to seal the connectors of wires during wiring installation.

4.2.4 Buckle the wired controller and the rear cover as shown in the following figure.

When they are correctly buckled
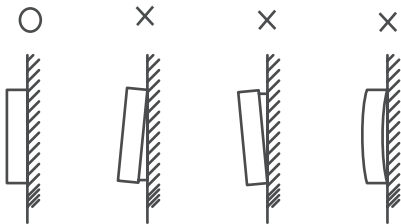
○ **NOTE**

Make sure that no cables are clamped when buckling the wired controller and bottom cap.

The wired controller and bottom cap should be installed correctly. Otherwise, they may get loose and fall apart.

5 OPERATION INSTRUCTIONS

5.1 User interface overview

Fan speed

On/Off

Operating indicator

Locked by host

Interlock

(A) Auto

Room temp.

OFF ON

1↓ Bypass

Later OFF ON

HEAT EX.

Hold Cancel

Supply air

Outdoor temp.

Operating mode

Exhaust air

Aux heater

Hold OK Cancel

Cold draft prevention

Heat draft prevention

Dusty

PM2.5 μg/m³

CO2 ppm

HCHO mg/m³

Remote signal receiving area

Mode Fan speed Adjustment button Timer Confirm
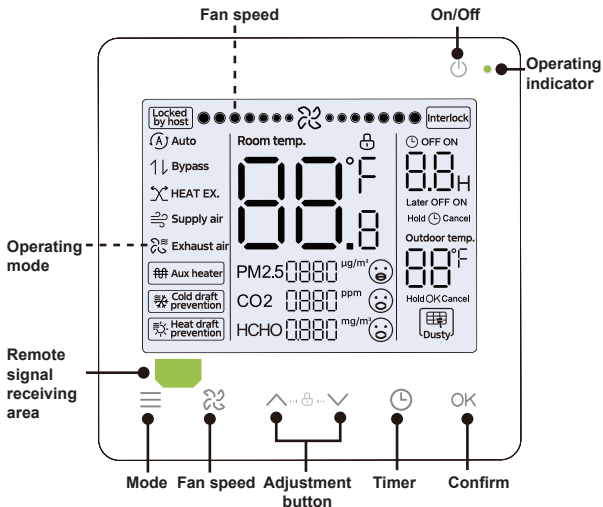
5.2 Icon explanation

NO.	Icon	Name	Description
1	Locked by host	Centralized control locking	It will be lightened when the HRV is locked by the centralized control.
2	Interlock	Linkage mode	It will be lightened when HRV is in the linkage mode.
3	Cold draft prevention	Cold draft prevention	It will be lightened when the outdoor air inlet temperature triggers the cold air protection function
4	Heat draft prevention	Heat draft prevention	It will be lightened when the outdoor air inlet temperature triggers the hot air protection function
5	PM2.5	PM2.5 concentration indication	It will display the concentration of PM2.5 in the air, when the concentration value is less than 35, the expression next to it is a smiling face, which means "excellent", when the concentration value is greater than or equal to 35 and less than 75, the expression next to it is calm, which means "good", and when the density value is greater than or equal to 75, the expression beside it is unhappy, which indicates "poor".

NO.	Icon	Name	Description
6	co2 □□□ᵖᵖᵐ ☺	CO_2 concentration indication	It will display the concentration of CO_2 in the air, when the concentration value is less than 1000, the expression next to it is a smiling face, indicating "excellent", and when the density value is greater than or equal to 1000, the expression next to it is unhappy,which indicates "poor".
7	HCHO□□□ᵐᵍ/ᵐ³☺	HCHO concentration indication	It will display the concentration of HCHO in the air, when the concentration value is less than 0.1, the expression next to it is a smiling face, indicating "excellent", and when the density value is greater than or equal to 0.1, the expression next to it is unhappy,which indicates "poor".

5.3 Operation instructions

On/Off

Press " ⏻ " to turn on or off the HRV.

⏻

ⓘ INFORMATION

The screen and operating indicator get dimmed when the unit is powered off.

Mode Selection

≡

Each time " ≡ " is pressed, the operating mode changes according to the order shown below (Auto mode is specific to some HRVs;):

➡ Auto Bypas ➡ Heat EX
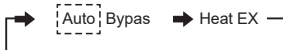
Up and down keys

∧ ∨

Used for timing settings.
Set the operation key.

5.3.1 Fan speed

Adjust fan speed   Press " ⚙ " to adjust fan speed, which can be set to switch between low, medium and high wind speeds as well as automatic wind speed .

➡ •⚙• ➡ ••••⚙•••• ➡ ●●●●●●●⚙●●●●●●●● ➡ Auto Fan
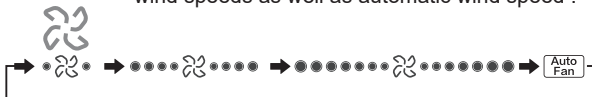
ℹ INFORMATION

While ensuring efficiency, the HRV may adjust fan speeds depending on the indoor temperature. Therefore, it is normal if the real-time fan speed differs from the set fan speed or the fan stops.

After the fan speed is set, it takes time for the HRV to respond. It is normal if the HRV does not respond to the setting immediately.

5.3.2 Timer setting

Timer On setting:

Timer On

⏱ ➡ **0.0** ➡ ∧ ∨ ➡ **0.5** ➡ By pressing "⏱" or if no operation is performed for 5s, the timer is confirmed.

hours later On
Press and hold ⏱
to cancel

Timer On

hours later On
Press and hold ⏱
to cancel

Timer Off setting:

Timer Off

⏱ ➡ **0.0** ➡ ∧ ∨ ➡ **0.5** ➡ By pressing "⏱" or if no operation is performed for 5s, the timer is confirmed.

hours later Off
Press and hold ⏱
to cancel

Timer Off

hours later Off
Press and hold ⏱
to cancel
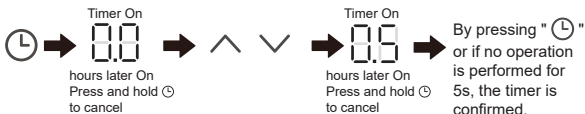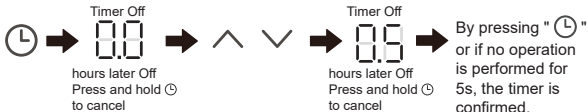
Cancelling timer function:

⏱ ➡ Press and hold "⏱" or change the time to "0.0" ➡ Cancel timer
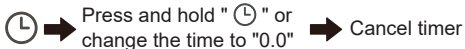
ⓘ INFORMATION

Timer Off can be set when the HRV is on and Timer On can be set when the HRV is off.

5.3.3 Auxiliary heater on/off

Auxiliary heater on: Under "Auto", "Heat EX"and"Bypass" modes, the electric auxiliary heating function is controlled by the HRV by default, which is controlled by the automatic opening mode.Under automatic control, the on/off status of auxiliary electric heating is displayed in real time. When the auxiliary electric heating load is turned on, the auxiliary electric heating icon is on. When the auxiliary electric heat load is turned off or "Auto", "Heat EX" or "Bypass" is on, the icon is off.

$$\wedge \; + \; OK \; \Rightarrow \boxed{\text{AXU-heater}}$$

Holding both for 3 seconds

Auxiliary heater off:

$$\wedge \; + \; OK \; \Rightarrow \boxed{\text{AXU-heater}}$$

Holding both for 3 seconds

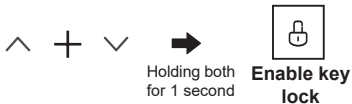The auxiliary heater is an additional heating component to the HRV unit, but it increases power consumption after it starts working.

5.3.4 Key lock setting
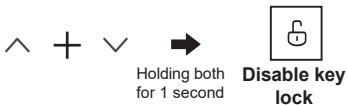
Enable key lock:

∧ + ∨ ➡ 🔒 **Enable key lock**

The wired controller doesn't respond when buttons are pressed and " 🔒 " flashes.

Holding both for 1 second

Disable key lock:

∧ + ∨ ➡ 🔓 **Disable key lock**

Holding both for 1 second

5.3.5 Clean filer reminder

Filter reminder function is divided into timing reminder and differential pressure reminder, and the priority of differential pressure reminder is higher than that of timing reminder.

The filter screen timing reminder function can be set through parameter N27. When the timer is reached and the filter screen cleaning reminder icon " ▦ " is displayed, press and hold the "OK" key for 3 seconds or change the filter screen cleaning reminder duration to eliminate the " ▦ " reminder icon.

The filter screen differential pressure reminder function can be set through parameter N22. When the filter screen cleaning reminder icon " ▦ " is displayed, press and hold the "OK" key for 3 seconds or change the filter screen reminder mode to time reminder to eliminate the " ▦ " reminder icon.

5.3.6 Indoor temperature display
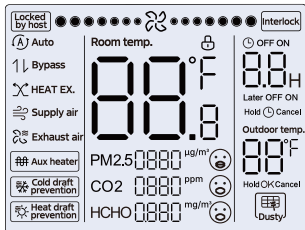
- Press any button on the screen to return to the previous page.

◯ **NOTE**

The display of the room temperature in degrees Fahrenheit or Celsius can be set by the controller.

5.4 Engineering settings

5.4.1 Restore factory settings

- Holding " ⅋ ", " ☉ " and " OK " at the same time for 5 seconds can restart and reset the Parameter settings of wired controller.

5.4.2 Automatically identifying models

- The wired controller can automatically identify the model of the HRV, based on which, the wired controller automatically updates the information, such as the spot check condition and error code of the HRV.

5.4.3 HRV address query

- If the HRV has no address, the wired controller will display U38 error.

- Press and hold " $\wedge$ " and " $\oplus$ " at the same time for 5s to enter HRV address query interface. Press " $\oplus$ " to exit the interface.

- Once you are on the address query page, the wired controller displays the current address if the HRV has an address.

- Addresses can be set to allow control of one HRV by one controller or two controllers (can be set with the main wired controller, not any secondary wired controller). Press and hold " $\oplus$ " and " $\wedge$ " for 5s to enter HRV address query and setting interface. Then press " OK " and the number area begins flashing. Press " $\wedge$ " and " $\vee$ " to change address and press " OK " to confirm your changes. The wired controller will automatically exit the address setting page if no operation is performed for 60s, or you can press " $\oplus$ " to exit the address setting page.

5.4.4 Parameter settings of the wired controller

- Parameters can be set in the power-on or power-off state.

- Hold " OK " and " ≡ " for 3 seconds to enter the parameter setting interface.

- After entering the parameter setting interface, the ODU displays u00, the HRV displays n00-n63, and the wired controller displays CC. Press " ∧ " and " ∨ " to switch the parameter code. Set parameters according to the Table of Parameter Settings. Press "Swing" to enter the parameter setting interface. Then press " ∧ " and " ∨ " to change parameter value and press " OK " to save changes.

- Press the " ⏱ " button to return to the previous page until exiting the parameter setting or exiting the parameter setting after 60s without any operation.

- When it is in the parameter settings page, the wired controller does not respond to any remote control signal.

- When it is in the parameter settings page, the mode, fan speed, and switch buttons are invalid.

Parameter Code	Parameter Name	Parameter Range	Default Value	Remarks
C00	Whether the wired controller drops or not Electric memory setting	00: No 01: Yes	Domestic sales 00, export sales 01	For a two-way wired controller, this parameter is used to rememberThe state of the portable feeling setting.
C01	The filter screen of the wired controller is clear wash reminder time	00/01/02/03/04/05/06/07	01	Hours:/ None/1250h/2500h/5000h/10000h/ 100h/200h/Differential pressure Note: only for V6 protocol
C02	Wired controller LED Switch indicator	00: close 01: open	01	When ON is selected, the LED only indicates the switch status of the HRV; when OFF is selected, the LED indicator is off and cannot be lit.
C03	0.5 degree display setting	00/01	01	00: No 0.5 degree display 01: 0.5 degree display
C04	Wired controller key light settings	00/01	01	00:close 01:open
C05	Send the configuration parameters stored when the wired controller is powered on with one key			Send the latest configuration parameters after 2 hours of power-on or changing the configuration parameters of the wired controller.Note: ① One control and one scenario are applicable ② V6 protocol has this function, while V8 protocol does not.
C06	Whether the wired controller buzzer	00/01	01	00: No 01: Yes
C07	Backlight time	00/01/02	00	00: 15s 01: 30s 02: 00s

5.4.5 HRV parameter settings (V6 protocol)

Parameter Code	Parameter Name	Parameter Range	Default Value	Remarks
N00	Static pressure gear	00/01/02/03/04/05/06/07/08/ 09/~/19/FF	00	00 Low pressure/01 High pressure Note: All other settings are based on 01.
N01	Whether the HRV has power failure memory	00/01	01	00: No; 01: Yes
N02	Whether the buzzer of the HRV rings	00/01	01	00: No 01: Yes
N07	Unit of temperature	00/01	00	00: Centigrade 01: Fahrenheit
N10	Whether the HRV has electric auxiliary heating	00/01	00	00: No 01: Yes
N16	Electric auxiliary heating switch	00/01/02	00	00: Auto 01: Force on 02: Force off
N18	Whether the silent mode is on	00/01	00	00: No 01: Yes
N21	Linkage enable(1)	00/01	00	00: close 01: open
N22	Whether the differential pressure switch is set	00/01	00	00: No 01: Yes
N23	CO_2 Air Mass Sensor Replacement	00/01/02	00	00: Without CO_2 sensor 01: With CO_2 sensor 02: Replace CO_2 sensor

(1): The linkage between the HRV total heat exchanger and the air conditioner is to change the on-off state of the total heat exchanger mainly based on the identification of whether to open the linkage flag.

○ **NOTE**

V6 power-down memory includes power on/off, mode and windshield, and others are not power-down memory.

5.4.6 HRV parameter settings (V8 protocol)

Parameter Code	Parameter Name	Parameter Range	Default Value	Remarks
N00	Static pressure gear	00/01/02/03/ 04/05/06/07 /08/ 09/~/19/FF	00	00 Low pressure/01 High pressure Note: All other settings are based on 01.
N01	Whether the HRV has power failure memory	00/01	01	00: No; 01: Yes
N03	Remote off port logic	00/01	00	00: Close remote off 01: Open remote off Note: In case of remote closing, the V8 wired controller nixie tube displays d6, but V6 does not.
N04	Remote OFF Delay Settings	00/01/02/03 /04/05/06	01	00: no delay 01: delay 1min 02: 2min 03: 3min 04: 4min 05: 5min 06: 10min.
N07	Unit of temperature	00/01	00	00: Centigrade 01: Fahrenheit
N08	Mode switching interval in automatic mode	00/01/02/03	02	00: 15min 01: 30min 02: 60min 03: 90min
N10	Whether the HRV has electric auxiliary heating	00/01	00	00: No 01: Yes
N16	Electric auxiliary heating switch	00/01/02	00	00: Auto 01: Force on 02: Force off
N18	whether the silent mode is on	00/01	00	00: No 01: Yes
N19	Positive and negative pressure[1]	00/01/02	02	0: Positive pressure mode 1: Negative pressure mode 2: Balance mode
N20	Stand-alone mode/online mode	00/01	00	00: Online mode 01: Stand-alone mode
N21	Linkage enable	00/01	00	00: close 01: open
N22	Whether the differential pressure switch is set[2]	00/01	00	00: No 01: Yes

30

Parameter Code	Parameter Name	Parameter Range	Default Value	Remarks
N23	CO2 Air Mass Sensor Replacement[3]	00/01/02	00	00: Without CO2 sensor 01: With CO2 sensor 02: Replace CO2 sensor
N24	Formaldehyde Air Quality Sensor Replacement	00/01/02	00	00: Without Formaldehyde sensor 01: With Formaldehyde sensor 02: Replace Formaldehyde sensor
N25	PM2.5 Air Quality Sensor Replacement	00/01/02	00	00: Without PM2.5 sensor 01: With PM2.5 sensor 02: Replace PM2.5 sensor
N27	Reminder time for cleaning filter screen of wired controller	00/01/02/03/ 04/05/06/08	00	00: Invalid 01: 500 02:1000 03: 1250 04:1500 05:1750 06:2000 07:2500 08:5000

(1): When the positive pressure mode is set, the indoor air pressure will be greater than the outdoor air pressure; when the negative pressure mode is set, the indoor air pressure will be less than the outdoor air pressure; when the balanced mode, HRV will not cause a pressure difference between the indoor and outdoor air pressures.

(2): The differential pressure switch is only used to judgewhether the filter screen is dirty or blocked.

(3): When the PM2.5, CO2 and HCHO air quality sensors need to be replaced, the setting item can be set to "02", "00"and"01" are used to automatically detect whether the sensor exists, not the setting item.

5.4.7 Query operations of wired controller
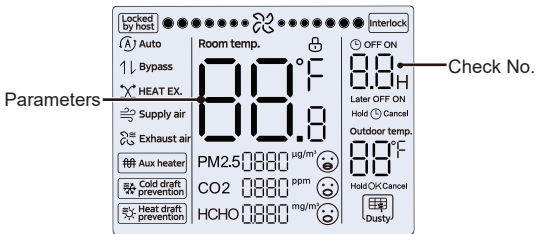
- On the home screen, press and hold " ≡ " and " ∧ " at the same time for two seconds to enter the query interface, and n00-n63 indicates HRVs, and CC indicates the wired controller. Press " ∧ " and " ∨ " to switch the parameter code. Press "Swing" to enter the parameter query page.

- Press " ⊕ " to exit the query page. The parameter query page automatically closes if no button is pressed within the next 60 seconds.

- Press " ∧ " or " ∨ " to query the parameters, and the parameters can be queried cyclically.

- On the top of the query page, the "Timing area" displays the check list serial number, and the "Temperature area" displays the check list parameters.

- Check list query information is listed as follows: Other indoor units and outdoor units cannot be checked, and only their own parameters can be checked.

Check list content:

1. Query of wired controller address

| Parameter Code	Parameter Name	Remarks
1	Query of active HRV addresses for wired controller (one-to-more)	Each address is displayed for 1.5s. Addresses are alternatively displayed. To clear historical addresses, restore the wired controller to factory settings.
2	Historical record query of HRV addresses for wired controller (one-to-more)	
3	Wired controller program version No.	

3. V8 HRV Spot Check Items

Serial number	Spot check item	Remark
1	Communication address of indoor and outdoor units (display the current address of HRVs every 0.5s)	Displays the address
2	Total heat exchanger air volume section	Display the corresponding value according to the corresponding relationship between dial code and air volume
3	T1 Indoor Ambient Temperature	Displays the actual temperature
4	T4 Indoor Ambient Temperature	Displays the actual temperature
5	Ta Indoor Ambient Temperature	Displays the actual temperature
6	H1 Indoor Ambient Temperature	Displays the actual temperature
7	Operation mode	3. Heat exchange 4.Bypass 5.Automatic mode
8	Version number of main control software[1]	Display the main control software version
9	Fan drive version number	Display fan drive version
10	Error code	Last error code displayed
11	———	Display "———"

(1): When the version is displayed, the main version and the sub-version are distinguished. When the software version V49.4 is displayed in three digits, the display digit 494 is displayed; when the software version V49.4 is displayed in two digits, the display digit 49 is displayed; when the software version is V49, the three-digit display panel displays 491.

5.4.8 Error display

Error code — (pointing to temperature area)

HRV address — (pointing to upper right display)
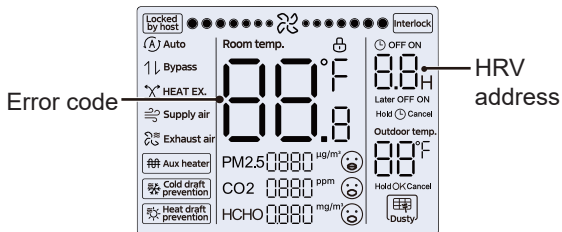
- In case of equipment fault, the wired controller set temperature area will display the fault code.
- In case of communication failure between the wired controller and the equipment, the wired controller will report "E9".The device address is displayed in the device fault timing area, and the fault code is displayed in the temperature area.
- After 2 minutes of power-on, the sensor value is 0 × 7FFF, and if there is a sensor, the sensor fault is reported.

35

○ **NOTE**

The error code of the HRV shall be subject to that transmitted in the protocol.

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