

# KNX VRV/VRF Indoor Unit Gateway

## Datasheet



MHVACSGW-KT.13



Please scan the QR code above to check the latest version of datasheet!

Before using this product, please read this datasheet carefully and keep it properly!

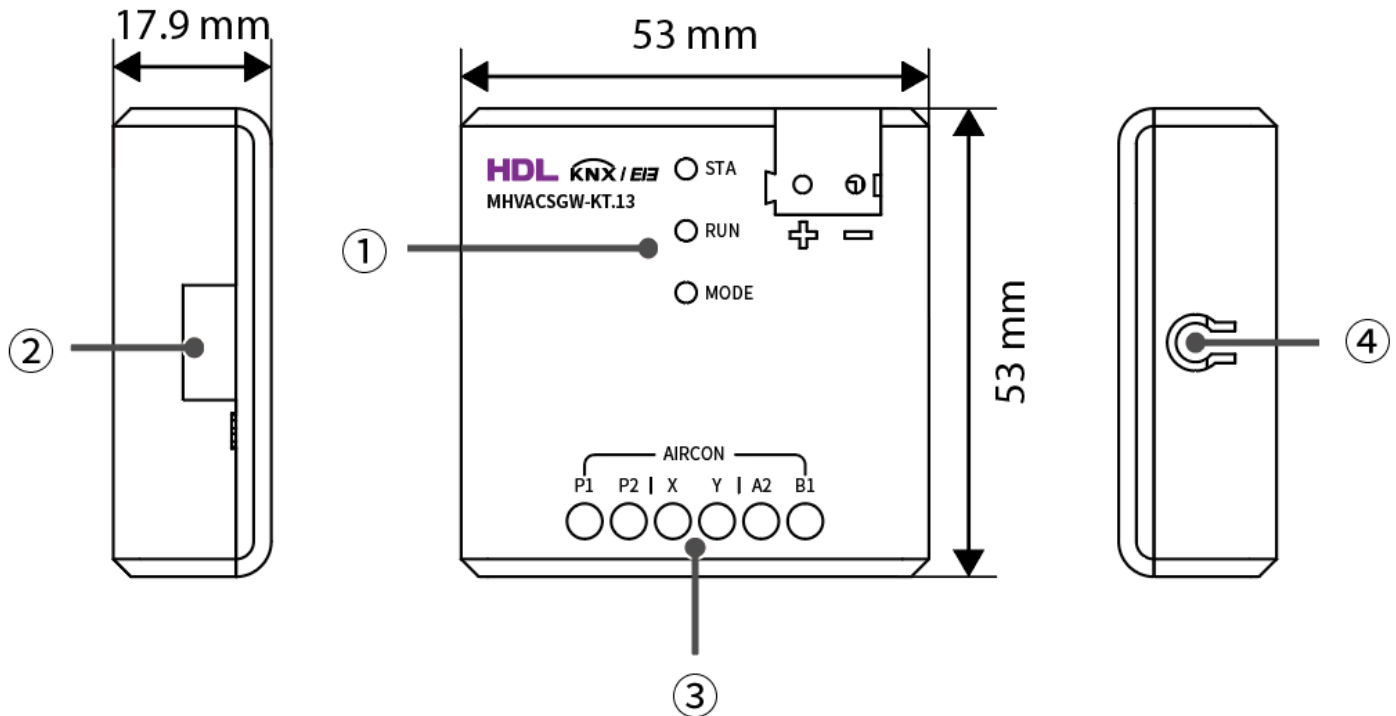
Document Version: C

## ◆◆ Overview

KNX VRV/VRF Indoor Unit Gateway (Model: MHVACSGW-KT.13) , connects multi-split or unitary air conditioners to the KNX system, enabling intelligent monitoring and control.

## ◆◆ Appearance

### Product Appearance:



### Port Indication:

- ① LED Indicators (STA/RUN/MODE): Device operating status indicators.
- ② 485 (AB/ + - ): Reserved.
- ③ AIRCON (P1P2/XY/A1B1): Communication terminals for connecting to indoor air conditioning units (e.g. Daikin, Hitachi, Toshiba, Mitsubishi Electric, Hisense, Haier, York, Mitsubishi Heavy Industries, Midea, Gree, etc.).
- ④ Button: KNX programming and download button.

## ◆◆ Technical Data

Item	Parameter
Power supply mode	Powered by indoor AC unit
Power	0.5 W

## ◆◆ Specifications

Item	Parameter
Dimensions (W X H X D)	53*53*17.9mm
Net weight	48g
Installation	Desktop placement
Housing material	Plastic

## ◆◆ Safety Precaution

- Each unit of this device shall be connected to one indoor air conditioner unit.
- Do not use in high-temperature, humid, flammable, explosive, toxic or hazardous areas.
- Unauthorized modification or repurposing of the product is strictly prohibited.
- Do not operate with wet hands. Never allow water to enter the device interior; otherwise, it may cause electric shock and equipment damage.
- The installation and testing for the product must be carried out by HDL Automation Co., Ltd. (hereinafter referred to as HDL) or its appointed service agencies. The electric construction shall comply with local laws and safety regulations.
- HDL will not be responsible for any consequence caused by the inexpert or faulty installation and wiring methods, which are not in accordance with the instructions contained in this datasheet.
- Please do not privately disassemble or replace any parts of the product. Otherwise, it may cause mechanical fault, electric shock, fire or personal injuries.
- Please contact HDL after-sales departments or our designated service agencies for your maintenance service. Product failures caused by private disassembly are not subject to the warranty.

## ◆◆ Wiring

Connection to the indoor unit of the air conditioning system shall be established using 2×0.75 mm<sup>2</sup> cable or the dedicated multi-core shielded cable supplied with the product.

Communication between this product and the host control system shall also be established using a 2×0.75mm<sup>2</sup> shielded cable. Incorrect connection of the power cable to the signal terminals will result in permanent device damage. In such cases, contact the manufacturer directly; disassembly or repair by unauthorized personnel is strictly prohibited.

Always disconnect power to the gateway and air conditioning system before wiring. Do not perform live operations to prevent personal injury or equipment damage.

Avoid routing communication cables parallel to high-voltage power cables, as this may cause signal interference and

unintended operation. If parallel routing is unavoidable, maintain a minimum distance of 30 cm between communication cables and high-voltage power cables.

## ◆◆ Operation

### 1. Commissioning Preparation

Ensure all air conditioners are powered on and commissioned by the manufacturer, with no fault alarms or abnormalities.

Inspection Method: Using the original wired controller, power on the air conditioner and set to Cooling or Heating mode.

(Cooling: set temperature below room temperature; Heating: set temperature above room temperature) Set fan speed to maximum and run for at least 12 minutes. Verify normal operation of indoor and outdoor units, and no fault codes on the original controller.

### 2. Port Commissioning

(1) Wire KNX VRV/VRF Indoor Unit Gateway (hereinafter referred to as the Gateway.) to the air conditioner according to the **Product Wiring Port Selection and Communication Matching Table (see Table 1)**.

Brand	Wiring Method		Wiring Polarity	Cable	Coexistence with Original Remote Controller
	Gateway Wiring Port	AC Unit Wiring Port			
Daikin VRF System (2-core)	P1, P2	P1, P2	No	2-core	Supported
Daikin Ducted Unit MX (4-core)	X, Y, A1, B1	S21	Yes	4-core	Not supported
Daikin Fresh Air Unit (2-core)	P1, P2	P1, P2	No	2-core	Supported
Hitachi VRF/Ducted Unit (2-core)	P1, P2	A, B	No	2-core	Supported
Hitachi Ducted Unit (4-core)	X, Y, A1, B1	CN2	Yes	4-core	Not supported
Hisense VRF System (2-core)	P1, P2	A, B	No	2-core	Supported
Haier Ducted Unit (WiFi 4-core)	X, Y, A1, B1	Wi-Fi Terminal	No	4-core	Supported
Kelon (WiFi 4-core)	X, Y, A1, B1	Wi-Fi Terminal	Yes	4-core	Supported
York VRF System (2-core)	P1, P2	A, B	No	2-core	Supported
York Ducted Unit (4-core)	X, Y, A1, B1	Wired-X970	No	4-core	Not supported
York Ducted Unit (WiFi 4-core)	X, Y, A1, B1	Wi-Fi Terminal	No	4-core	Supported
LG VRF System (3-core)	X,Y, A1 & B1 in parallel	CN-REMO Terminal	Yes	3-core	Not supported
LG VRF System (CN_CC 4-core)	X,Y, A1, B1	CN-CC Terminal	No	4-core	Supported
Carrier/Genwei/Chigo (3-core)	X,Y, A1 & B1 in parallel	CN27 or CN35	Yes	3-core	Not supported
Toshiba VRF System (3-core)	X,Y, A1 & B1 in parallel	WCN1 or WCN2	No	3-core	Supported
Toshiba VRF System (2-core)	X, Y	A, B	No	2-core	Supported
Toshiba Ducted Unit (2-core)	X, Y	A, B	No	2-core	Supported
Toshiba Ducted Unit (3-core)	X,Y, A1 & B1 in parallel	WCN1 or WCN2	Yes	3-core	Supported

Panasonic VRF System (2-core)	X, Y	R1,R2	No	2-core	Supported
Panasonic Ducted Unit (4-core)	X, Y, A1, B1	CN-GMD	Yes	4-core	Not supported
Mitsubishi Heavy VRF System (2-core)	P1, P2	X, Y	No	2-core	Supported
Mitsubishi Heavy VRF System (3-core)	X, A1 & B1 in parallel, Y	X,Y,Z	Yes	3-core	Supported
Mitsubishi Heavy Ducted Unit (3-core)	X, A1 & B1 in parallel, Y	X,Y,Z	No	3-core	Supported
Mitsubishi Heavy Ducted Unit (2-core)	P1, P2	X, Y	No	2-core	Supported
Gree VRF/Ducted Unit (2-core)	P1, P2	H1, H2 (Panel models: XC70, XC71, etc.)	No	2-core	Supported
Gree Ducted Unit (4-core)	X, Y, A1, B1	cn6	Yes	4-core	Not supported
Gree Ducted Unit (XK111 2-core)	A1, B1	H1, H2	Yes	2-core	Supported
Haier VRF System (3-core)	X, Y, B1	CN22 Terminal (A, B, C)	Yes	3-core	Supported
Haier Ducted Unit (3-core)	X,Y, A1 & B1 in parallel	Controll/CN42 (A, B, C)	Yes	3-core	Not supported
Haier VRF System (2-core)	P1,P2	X,Y	No	2-core	Supported
Haier Ducted Unit (REMOTE)	Y, X,A1 & B1 in parallel	CN4, REMOTE Terminal	Yes	4-core	Supported
Mitsubishi Electric (CN105 4-core)	X, Y, A1, B1	CN105	Yes	4-core	Supported
Midea CN20 (5-core)	X, Y, A1, B1	CN20	Yes	4-core	Supported
Midea CN40 (Non-coexisting 4-core)	X, Y, A1, B1	CN40	Yes	4-core	Not supported
Midea CN40 (Coexisting 4-core)	X, Y, A1, B1	CN40	Yes	4-core	Supported (not supported when the gateway 485 port is occupied).
COLMO (W1W2 2-core)	A1,B1	W1,W2	No	2-core	Supported
Midea VRF/Ducted Unit (X1X2 2-core)	A1,B1	X1,X2	No	2-core	Supported
Samsung VRF System (4-core)	X, Y, A1, B1	V1, V2, F3, F4	Yes	4-core	Supported
Fujitsu VRF System (3-core)	X,Y, A1 & B1 in parallel	Y1,Y3,Y2	Yes	3-core	Not supported

Table 1

- When using this product, wiring is required for some 4-core air conditioners.
- Wiring colors: X — Red, Y — Black, A1 — Yellow, B1 — Green.
- Perform on-site wiring and device connection in accordance with the air conditioner brand and the table above.

Note: If “Coexistence with Original Remote Controller” is shown as **Not supported** in the table, the original remote controller must be removed before using this product. If it is shown as **Supported**, set the air conditioner to “**Slave**” on the air conditioner settings page in the Bluetooth debugging mini-program before use.

The specific method is: on the Air Conditioner Management page of the Bluetooth debugging mini-program, enable the Set as Slave Controller button at the bottom. A power cycle is required for the settings to take effect. For other special settings

Involving the original panel, please contact HDL Technical Support.

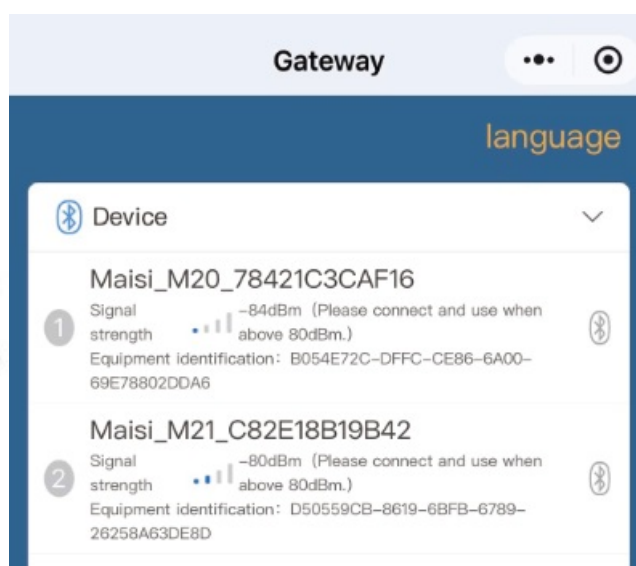
(2) After the gateway is powered on, all indicators remain on for 5 seconds. Then the RUN indicator starts flashing, and the gateway begins searching for the air conditioner. When the RUN indicator stays lit, it means the air conditioner has been detected. Please enter the Bluetooth debugging mini-program for commissioning. (see Table 2)

Name	Device	LED Status	Description
STA	Gateway Indicator	Off	Power off
		Green	Powered on, not connected to network
		Orange flashing	KNX and gateway communication normal
		Orange on for 5 seconds	KNX Programming mode (activated by long-pressing the key for 5 seconds)
RUN	AC Search Indicator	Off	Power off
		Flashing	Searching for air conditioner
		Solid on	Air conditioner detected
MODE	AC Mode Indicator	Off	Fan mode / Air conditioner off
		Red solid on	Heat mode
		Green solid on	Cool mode
		Orange solid on	Dry mode
		Orange flashing	Air conditioner fault / No air conditioner found

Table 2

(3) Scan the QR code below with WeChat, then select **Common Tools > Bluetooth Configuration** to access the Bluetooth debugging mini-program. Bring your phone close to the gateway, select the one with the strongest signal to connect. Upon successful connection, you will enter the gateway debugging page as shown below.

If the gateway cannot be detected, check the permission: **WeChat > Settings > Permissions & Privacy > Permissions > Nearby devices > Allow**.

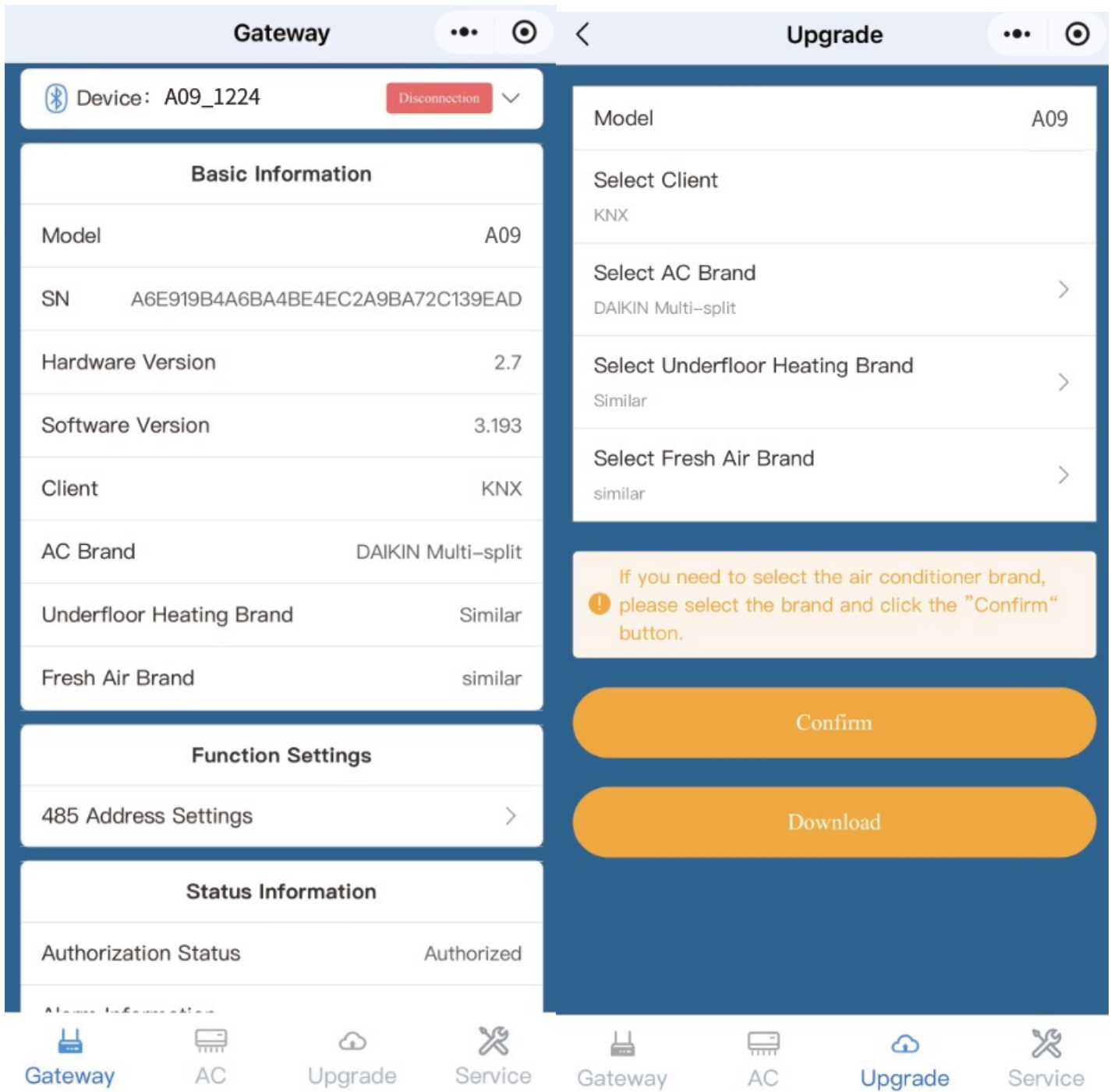


(4) If the STA indicator is on, the RUN indicator off, and the MODE indicator flashing orange, check that the AC brand

displayed in the Bluetooth debugging mini-program matches the actual unit on-site.

If not, use the mini-program to upgrade the gateway to the matching brand.

**Procedure:** Upgrade → Select client and AC brand → Brand upgrade.



(5) After completing the above steps, power off the gateway and restart it. Observe the gateway indicators.

Check the gateway indicators:

- **STA & RUN indicators solid on:** Normal communication between gateway and air conditioner.
- **STA indicator solid on, RUN off, MODE flashing orange** Abnormal communication.

For indicator definitions, see Table 2 above or check the AC interface in the Bluetooth debugging mini-program:

- **255-255** under AC Settings: Communication failed.
- **1-1** under AC Settings: Communication successful.

Conduct a control test on **AC Setting** interface: select **Mode / Fan speed** and tap **Set** (as shown below). Tap **Set** for each control command.

AC

- AC Settings >
- Group Settings >
- Underfloor Heating Settings >
- Fresh Air Settings >

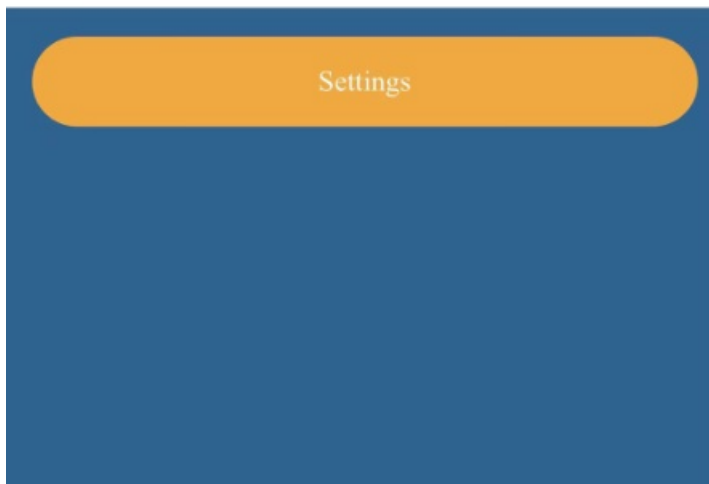
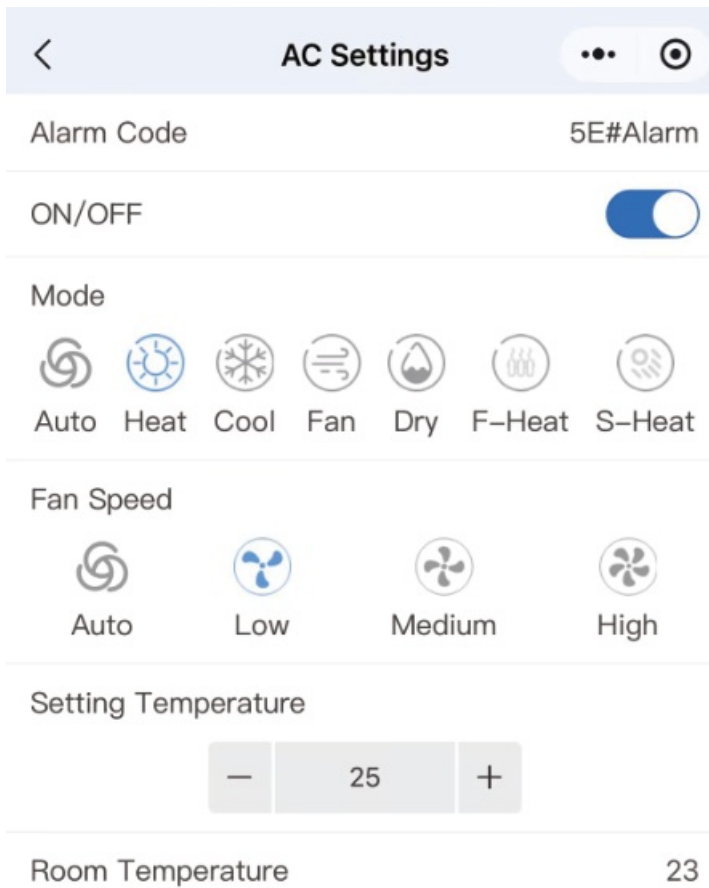
AC List

Number of internal units searched: 6units

Settings 0units

Select All

<p>25°C <input checked="" type="checkbox"/></p> <p>Room Temperature 23°C</p> <p>Heat Low</p> <p>1-1</p>	<p>19°C <input type="checkbox"/></p> <p>Room Temperature 23°C</p> <p>Fan Medium</p> <p>1-2</p>
<p>19°C <input type="checkbox"/></p> <p>Room Temperature 23°C</p> <p>Fan Medium</p> <p>1-3</p>	<p>19°C <input type="checkbox"/></p> <p>Room Temperature 23°C</p> <p>Fan Medium</p> <p>1-4</p>
<p>19°C <input type="checkbox"/></p> <p>Room Temperature 23°C</p>	<p>19°C <input type="checkbox"/></p> <p>Room Temperature 23°C</p>



## ◆◆ Packing List

- KNX VRV/VRF Indoor Unit Gateway\* 1

Note: After unpacking, please check if the product and the parts are complete.

## ◆◆ Warranty

Warranty period (three years from the date of invoice), if the product fails in normal use, the user can go to the nearest authorized institution with a valid warranty card to obtain free maintenance.

In the following cases, HDL regards the user as giving up the relevant services promised under the warranty and the user shall bear the corresponding responsibility and shall not be entitled to the free warranty:

- Failure of the device caused by force majeure factors.
- The user has placed the device in a transportation or use environment that does not comply with the statements in the product instructions or technical manuals.
- Unauthorized disassembly of the product by the user.
- Promises not made officially by HDL to the user that are beyond the scope of the warranty are the responsibility of the promisor.

HDL reserves the right to update or change the product without prior notice to the user, please visit the HDL website for answers to your questions and the latest product information.

The final interpretation right of the warranty regulations belongs to HDL.

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Update History:

The form below contains the information of every update. The latest version contains all the updates of all former versions.

Version	Update Information	Date
V1.0	Initial release	February 28, 2026

## ◆◆ Technical Support

E-mail: [hdltickets@hdlautomation.com](mailto:hdltickets@hdlautomation.com)

Website: <https://www.hdlautomation.com>