Digital AC Gateway Stand-alone

Instruction Manual



HDL-MAC.S-B27

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

Document Version: C

◇◆ Overview

1. Support the indoor unit of multiple brands of VRV/VRF or duct air conditioning systems, such as Daikin, Hitachi, Gree, Mitsubishi Heavy Industries, Midea, Hisense, Toshiba, York, Haier, etc.

2. It can be independently connected to air conditioning or coexist with the original panel.① When coexisting with the original panel, master-slave adaptation does not require manual setting. It can also support to connect the third-party panel to replace original panel.

3. Support wired centralized control.

4. Equipped with Bluetooth upgrade function, firmware upgrade can be carried out according to on-site requirements.

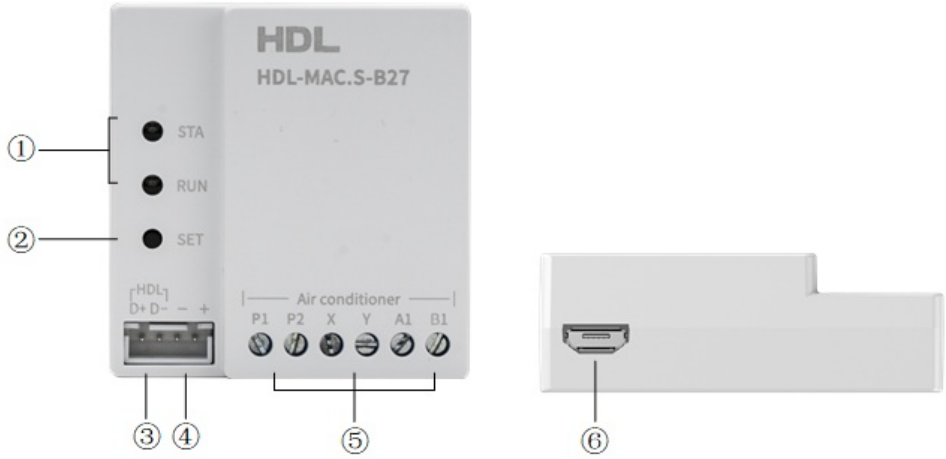
5. Provide a dedicated Bluetooth mini program for air conditioning control testing, obtaining air conditioning operating parameters, fault codes etc.

6. Support remote fault diagnosis function, can quickly analyze and resolve problems, and fast service response.

✱Note 1： This function requires the air conditioning itself to support the master-slave panel.

◇◆ Technical Data

Product Parameters	
Power supply	AC indoor unit
Average power consumption	0.5W
Dimension	51mm x 53mm x 17mm
Installation	Behind the panel or AC maintenance port
Working environment	-20℃ - +60℃, 0-90%RH
Output power	DC8.5V, MAX 0.7W



1. LED indicator: Air conditioning and the product's working status indicator light. Please refer to the LED instructions for details.

2. SET button: Reserved.

3. Panel port(A2 B2): HDL Data+ HDL Data-.

4. Power output port (- +): Provide power for third-party panel. The output power of this port is DC8.5V and MAX 0.7W (if there is a built-in third-party module, the module power consumption needs to be subtracted).

5. AC port: AC connection port.

6. MicroUSB: Reserved.

Note: The power output port should not be connected to HDL buspro.

◇◆ Installation

1 Product Installation and Supported Brands

1.1 Preparation before installation

(1) Confirm all indoor and outdoor units are powered on.

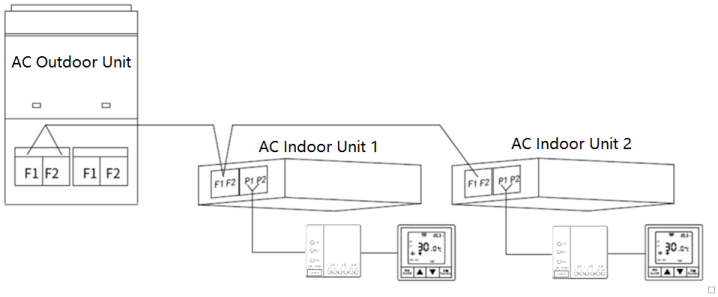
(2) Confirm that AC system has been debugged and operated successfully by the AC manufacturer without any alarm or abnormality.

(3) Confirm that the air conditioning communication line has been connected to the corresponding port of this product.

(4) Confirm that the third-party panel has been connected to the corresponding interface of this product (if necessary).

1.2 Installation Environment and Wiring Diagram

This product needs to be installed indoor, such as an AC indoor unit maintenance port or the smart control box.



1.3 List and Description of Supported Brands

The supported air conditioning brands and wiring are shown in the table below, and more brands are gradually supporting

Brand List	Wiring Description		Polarity	Cable	Coexistence with original panel	Special communication line
	Gateway wiring Port	AC wiring Port				
DAIKIN MX Duct Unit (four-core)	A1, B1, X, Y	S21	Y	4-core	N	Y
DAIKIN VRV (two-core)	P1, P2	P1, P2	N	2-core	Y	N
DAIKIN Duct Unit CN2(five-core)	A1, B1, X, Y	CN2	Y	4-core	N	Y
TOSHIBA VRF (two-core)	X, Y	A, B	N	2-core	Y	N
TOSHIBA Duct Unit (four-core)	A1, B1, X, Y	CN21	Y	4-core	N	Y
FUJITSU Duct Unit (three-core)	A1 and B1 short circuit, X, Y	CN14	Y	4-core	N	Y
GREE VRF (two-core)	P1, P2	H1, H2	N	2-core	Y	N
GREE Duct Unit (two-core)	A1, B1	COM_MANUAL 3, 2Pin	Y	2-core	Y	Y
GREE Duct Unit (four-core)	A1, B1, X, Y	CN5 or CN6 (A, B, +12V, GND)	Y	4-core	N	Y

Guangzhou YORK VRF (four-core)	A1, B1, X, Y	TB1(A1, B1, 12V, 0)	Y	4-core	N	Y
Haier WIFI (four-core)	A1 and B1 short circuit, X, Y	CN34/WIFI	Y	4-core	Y	Y
Haier VRF (three-core)	X, Y, B1	CN22 (A, B, C)	Y	3-core	Y	Y
Haier Duct Unit REMOTE(three-core)	A1 and B1 short circuit, X, Y	CN4 REMOTE (SIG, +12V, GND)	Y	4-core	Y	Y
Haier Duct Unit (three-core)	A1 and B1 short circuit, X, Y	CN1/CN2 CONTROLLER (C, B, A)	Y	4-core	N	Y
Hisense WIFI(four-core)	A1, B1, X, Y	WIFI	Y	4-core	Y	Y
Hisense VRF (two-core)	P1, P2	A, B	N	2-core	Y	N
Carrier Duct Unit (four-core)	A1 and B1 short circuit, X, Y	CN24 or CN26	Y	4-core	Y	Y
KELON WIFI (four-core)	A1, B1, X, Y	WIFI	Y	4-core	Y	Y
Midea CN20 (five-core)	A1, B1, X, Y	CN20 NET	Y	4-core	Y	Y
Midea CN40 (four-core)	A1, B1, X, Y	CN40	Y	4-core	Y	Y
Midea COLMO (two-core)	A1, B1	CN24(W1, W2)	N	2-core	N	Y
Midea W1W2(two-core)	A1, B1	CN24(W1, W2)	N	2-core	N	Y
Midea X1X2 (two-core)	A1, B1	X1, X2	N	2-core	Y	N
EK VRF (four-core)	A1, B1, X, Y	SLM	Y	4-core	N	Y
EK Duct Unit (four-core)	A1, B1, X, Y	Wired-X970	Y	4-core	N	Y
HITACHI VRF (two-core)	P1, P2	A, B	N	2-core	Not coexisting with the original infrared remote controller	N
HITACHI Duct Unit (four-core)	A1, B1, X, Y	CN2	Y	4-core	N	Y
HITACHI Duct Unit (two-core)	P1, P2	A, B	N	2-core	Not coexisting with the original infrared remote controller	N

Mitsubishi Electric VRF（four-core）	A1, B1, X, Y	CN105	Y	4-core	Y	Y
Mitsubishi Heavy VRF（two-core）	P1, P2	CNB outer 2 pins	N	2-core	Y	Y
Mitsubishi Heavy VRF（three-core）	A1 and B1 short circuit, X, Y	CNB	Y	4-core	Y	Y
Panasonic wall-mounted HK（five0core）	A1, B1, Y（XY connect to 5V power supply）	CN-CNT	Y	4-core	Y	Y
Panasonic VRF（two-core）	X, Y	A, B	N	2-core	Y	N
Panasonic Duct Unit（four-core）	A1, B1, X, Y	CN-GMD	Y	4-core	N	Y
YORK VRF（two-core）	P1, P2	A, B	N	2-core	Y	N
YORK Duct Unit（four-core）	A1, B1, X, Y	Wired-X970	Y	4-core	N	Y

Attentions for wiring operation:

（1） The polarity of different air conditioning communication interfaces may vary. If the polarity of the cable wiring is incorrect, the air conditioning equipment may not be found. At this time, it is necessary to change the cable sequence.

（2）If the wiring is wrong, the product may be damaged.

（3）It is necessary to cut off power supply of gateway and air conditioner during wiring operation, otherwise may cause damage.

（4）Please pay attention to avoid parallel wiring between signal lines and power line, otherwise misoperation may occur due to mutual interference of signals.

（5）If parallel wiring cannot be avoided, please keep the distance between the communication line related to gateway product and the communication line of AC system is at least 15cm, and other wiring distances at least 30cm. Or connect the cable into the iron protective tube and ground one end of the protective tube.

（6）If the power line is connected to the signal terminal by misoperation, the fuse will be burned. If this happens, please contact the manufacturer. It is strictly prohibited to disassemble and repair without permission.

◇◆ Operation

- **LED Indicator Description**

Indicator flashes quickly: turn on for 0.25s and turn off for 0.25s.

Indicator flashes slowly: turn on for 0.5 seconds and turns off for 0.5 seconds.

Name	Status	Description
RUN	Constant light	Successfully found the air conditioning, operating normally
	Flash quickly	Searching the air conditioning
	Off	Air conditioning not found

STA	Constant light	Air conditioning on
	Flash quickly	Air conditioning abnormality
	Flash slowly	Third-party panel abnormality
	Off	Air conditioning off
RUN+STA	Flash quickly 3 times	Bluetooth connect successfully

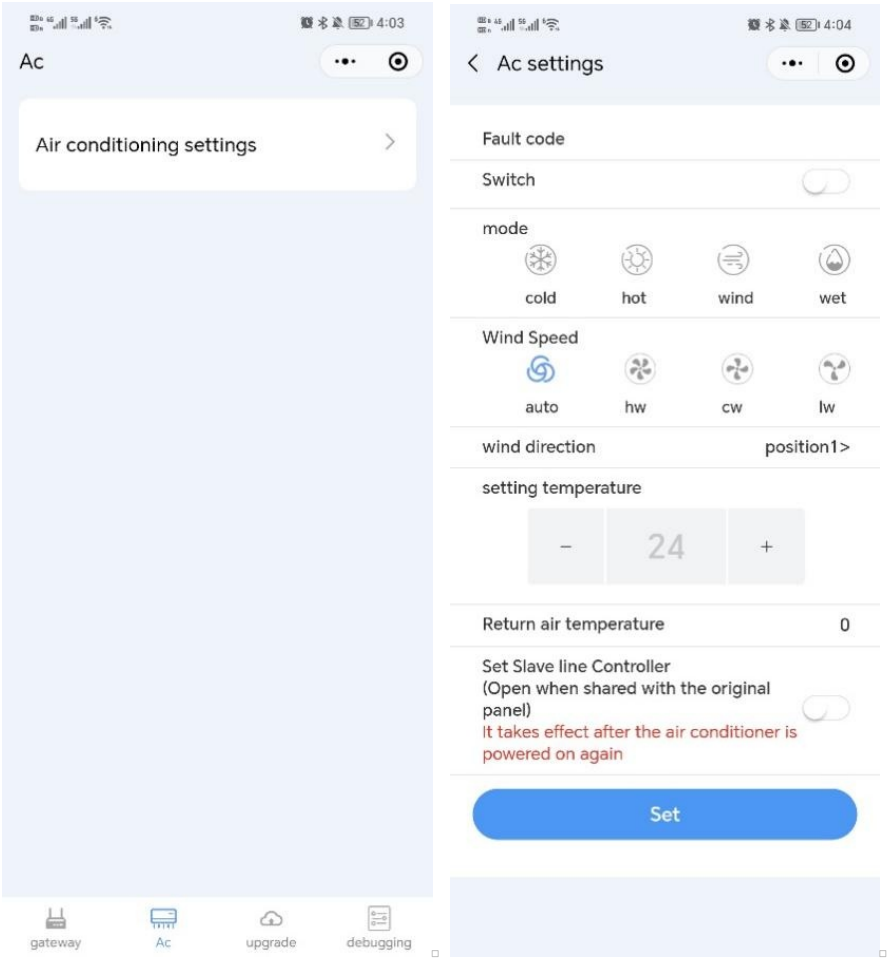
◇◆ Commissioning

1 Firmware Upgrade and Control Testing

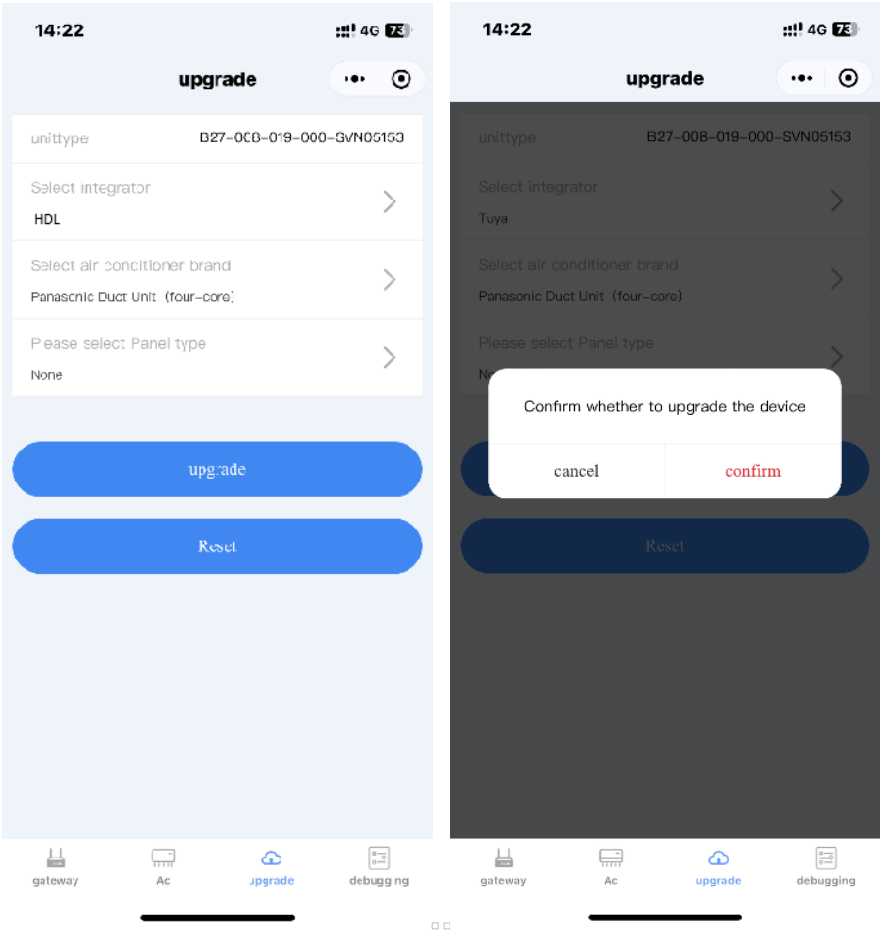
(1) Turn on the Bluetooth of your mobile phone, use WeChat to scan below figure and enter the mini program，or scan the QR code to download the Android APP . Select the gateway device to be connected.

WeChat Mini Program　　Android APP

(2) In the following interface, you can select "Air Conditioning Settings" to achieve air conditioning control testing.



(3) Firmware upgrade: In the Upgrade interface, select needed integrator, air conditioning brand and panel type for firmware upgrade.



2 Control Testing

Please use HDL Studio to test whether the device can be properly controlled by the intelligent system.

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Version	Update Information	Date
V1.0	Initial release	July 25 , 2024

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Instruction Manual

Digital AC Gateway Stand-alone
Model: HDL-MAC.S-B27

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