### **Hisense HVAC**

# Hisense

Qingdao Hisense HVAC Equipment Co., Ltd. Addr.: 09 & 010, IHDP Business Park, Sector 127, Noida, Uttar Pradesh - 201304







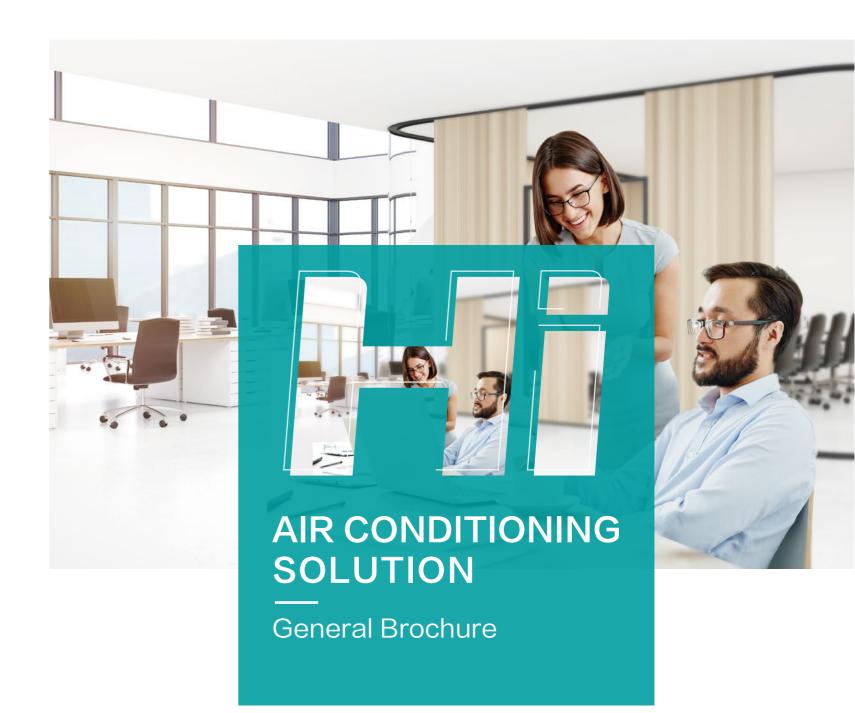








\* Design and specifications are subject to change without notice. Pictures and diagrams are for reference only and are subject to change without notice. All rights reserved by Qingdao Hisense HVAC Equipment Co.,Ltd.



Reimagine your solution



# **Hisense** SINCE 1969

Hisense is a well-known large-scale electronic information industrial group. With strong emphasis on technology and innovation, its efficient technological innovation system firmly grounds Hisense at the forefront of its peers. At present, Hisense brand family has expanded to include multiple famous brand Hisense, Toshiba, Gorenje and ASKO.

## BUSINESS LAYOUT

#### Multimedia •

TV and Display Devices Internet TV Operation Mobile Communication Devices Optical Communication Devices Chip

# Household Appliances

Refrigerator Freezer Air-conditioner Washing Machine Kitchen Appliance

#### IT Smart Systems •----

Smart City Smart Community Smart Transportation Smart Business Medical Electronic Devices Smart Home System and Service

# Real Estate & Modern Services

Real Estate High-end Plaza Chains Mould Design and Manufacturing Finance Trade









# GLOBAL HISENSE SINCE 1969

Hisense has started a long-term sports marketing strategy to increase brand awareness worldwide. After the successful sponsorship of **UEFA EURO 2016&2020** and **FIFA WORLD CUP 2018**, Hisense has made clear its focus on football. Hisense also is the official partner of **FIFA WORLD CUP 2022**.





# Hisense VRF MANUFACTURING BASE

Qingdao Hisense HVAC Equipment Co. Ltd. is a leading manufacturer of heating, ventilation, air conditioning and other HVAC equipments, integrated with the product development, manufacturing, sales and after-sales service as a whole.

Hisense HVAC always regards product technology research and development as the most important value. With strong ability of technological innovation, Hisense HVAC has participated in the formulation and revision of 86 national standards, industry standards and association standards, and boasts 1440 authorized patents in the field of CAC and heat pump products. With the great support of all shareholders and customers, Hisense HVAC is expected to become the leading brand in the industry.

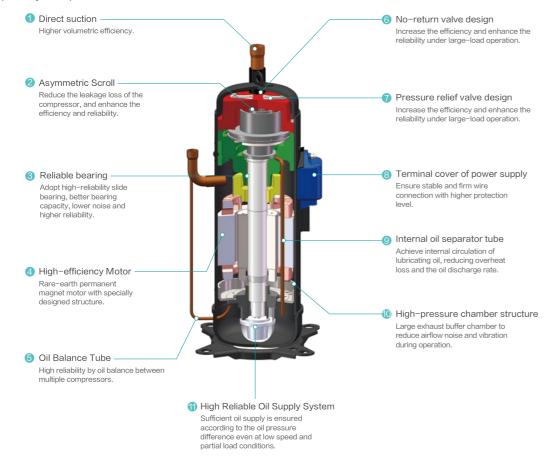
Note: The above data is as of Dec. 31th, 2022.





#### **High-efficiency Compressor**

Hi-FLEXi S mavo+ series adopts a new generation of scroll compressor, and it has an excellent mechanism called as FCM (Frame Compliant Mechanism) which will optimally increase the performance of the whole compressor, especially for operation under low load.

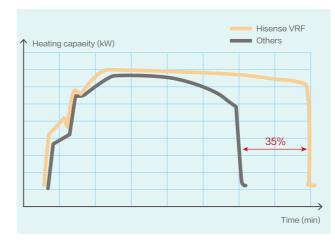


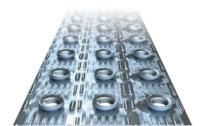
#### **New Advanced Corrugated Fin design**

The heat exchanger of outdoor unit adopts the new advanced corrugated fin design\*. With this new design, larger amount of fins can be allocated into the heat exchanger, increasing 20% heat exchange surface area maximally compared with the last generation fin and the heating capability increase 10% averagely.

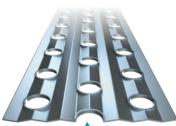
\*Certain outdoor units

#### Long-time Stable Heating Performance





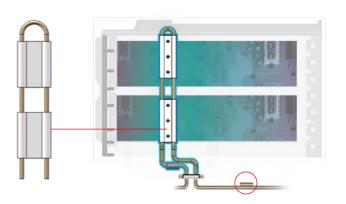
Last generation fin



Latest corrugated fin

# Patented 360° Fitted Refrigerant Cooling Technology

Hisense VRF uses refrigerant cooling technology to cool the electrical control box. It overcomes the poor heat dissipation and high ambient temperature issues to maintain efficient operation even at harsh environment. Compared with air-cooled technology, the temperature inside the electrical box can be reduced by up to 20%\*. Moreover, the refrigerant cooling kit adds a temperature sensor, which could be more precise to control the refrigerant cooling temperature and ensure the whole reliability.

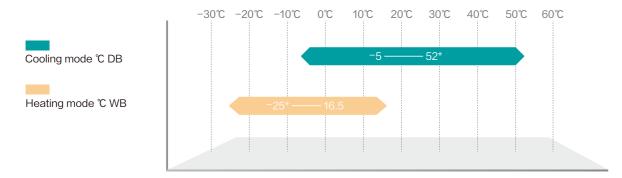


#### Note

1. \* The data is based on the S mavo unit under low fan speed operation. 2. Temperature sensor is only available for S mavo series.

#### **Wider Operation Range**

Extended operation range creates wider application potential, in cooling mode the operation range is from  $-5^{\circ}$ C DB to  $52^{\circ}$ C DB and in heating mode the operation range is from  $-25^{\circ}$ C WB to  $16.5^{\circ}$ C WB, which adapts to extreme conditions.

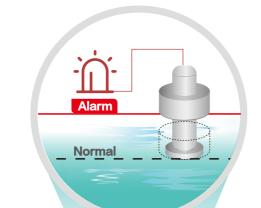


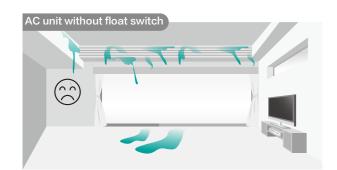
#### Note

- 1. When the temperature is in  $48^{\circ}$ C $^{\circ}$ 2 $^{\circ}$ 2 and  $-20^{\circ}$ C $^{\circ}$ - $-25^{\circ}$ C, the module is in intermittent operation.
- 2. The dry temperature range of heating operation mode is from −25°C to 26°C.
- 3. Please refer to the specification table of each series for detailed operation range.
- 4. Hi-FLEXi S+ High Ambient Model works till 55°C.

# **Condensate Water Leakage Protection**

Indoor units have build-in water-leakage float switches. Alarming warnings will be displayed on controllers when condensate reaches a certain level. Saving your ceilings and carpets from being soaked in time when drain pipes are clogged or drain pump breakdowns.

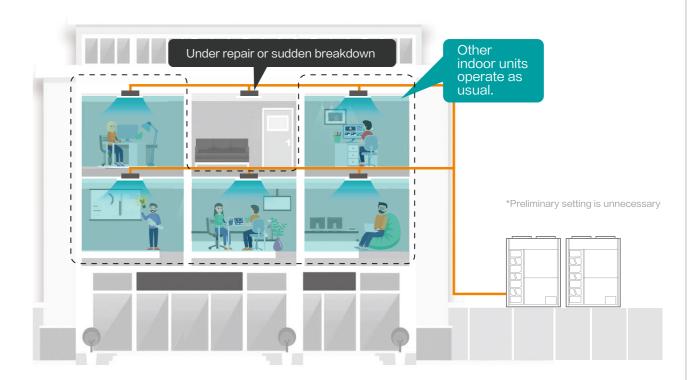






#### **Emergency Power-off without Disturbance**

To maintain the whole system's continual operation even when there is a breakdown occur within a system, Hisense VRF is capable to isolate the malfunction unit from the others while conducting restoration and maintaining continuous operation of other units simultaneously. Especially practical for retail shops or offices where multiple indoor units share the same system, there is a breakdown or powered cut-off during renovation of a shop does not affect shops of the same system from routine business operation.



#### **Hisense Anti-corrosion Solution**

In order to adapt industrial environment with corrosive chemical gases, the components are treated with effective treatments, for example, black fin /copper fin heat exchangers; steel panel galvanized; steel electrical box galvanized...

Outdoor units that have been treated with anti-corrosion can resist 27 years of

simulated severe corrosion under a salt contaminated traffic environment

Test Standard:

ISO 21207:2015

Corrosion tests in artificial atmospheres – Accelerated corrosion tests involving alternate exposure to corrosion-promoting gases, neutral salt- spray and drying.









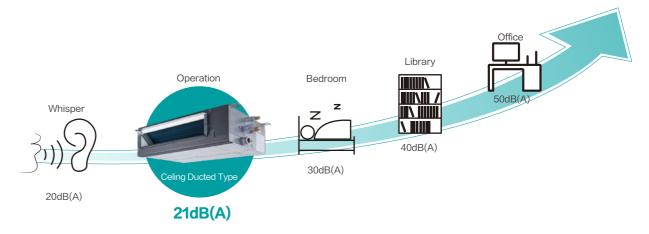
#### **VIP Mode**

Hisense VRF offers VIP mode to give priority to the specific room, keeping them comfortable and satisfied as fast as possible and 5 indoor units can be set as VIP mode at the same time. Such function is exclusively practical for hotel application, where AC unit in the presidential suite is often set to VIP mode.



#### **Lower Noise for Indoor Units**

Hisense VRF offers indoor units with sound pressure level as low as 21dB(A). Perfectly blends into library, auditorium and hospital room where require sound level lower than 25dB(A).

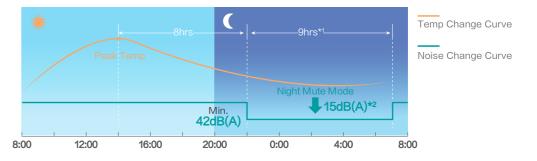


The data was measured in an anechoic chamber, the DC ceiling ducted type (AVE-05HJFDL) in low air flow mode achieves 21dB.

#### **Outdoor unit noise control**

#### Auto night quiet mode

When outdoor conditions call for special low noise requirements, like in cases where outdoor units are installed in indoor equipment rooms with poor soundproof walls or continuous night operating conditions. The night mode reduces sound pressure levels upto 30% routinely with flexible time intervals to meet different customer needs.



- $^{11}$ : The night mute mode can last for 8hrs, 9hrs or 10hrs according to the setting.  $^{12}$ : Take the unit AVWT-96HKFSEA of S mavo+ series as an example.

#### Low noise mode

Low noise mode can be set by operating the DIP in the PCB. There are multiple levels by set different frequencies of compressor and fan motor speed. What's more, the low noise mode can be achieved by external input signal. The noise can be reduced by up to 14dB(A).

#### 3D Air-flow Panel

The 3D air-flow panel with luxurious appearance is available for the low-height ceiling ducted indoor units (optional). The 3D airflow panel can offer even airflow and wide airflow coverage to keep every corners of your room cool or warm. It also has three wind setting, normal mode, 3D mode and super long distance mode, flexible for you choice.





#### **Humidity Sensor**

To keep up with the indoor quality requirements, Hisense VRF offers auto dehumidification function and it can be achieved by choosing a humidity sensor, and the control range is from 35% to 90%.







#### **AirPure**

Hisense VRF indoor unit equipped with AirPure kit can release lots of negative ions, about 20 million pcs/cc.

These negative ions are carried throughout the room with air-conditioned air flow whereby obtaining air conditioning and air purification simultaneously. With the AirPure kit, the indoor unit has got the Tick Mark certification which is an authentication for air-conditioning sterilization products.





Scan the QR code to view the production video.





Odor Removal





Formaldehyde

PM2.5 Purification



\*Take AVE-09HCFRL as the test sample.

#### Note

4-way Cassette, Mini 4-way Cassette, Console, Ceiling Ducted can be equipped with the AirPure kit (optional).

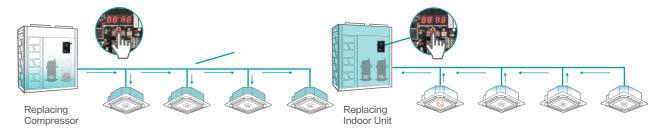


#### One-touch Recycle Refrigerant

Hisense VRF has one-touch refrigerant recycle function. Just with a press of the button on the PCB, the refrigerant can be recycled directly, it is very helpful and convenient when the indoor units or the compressor are under repair.

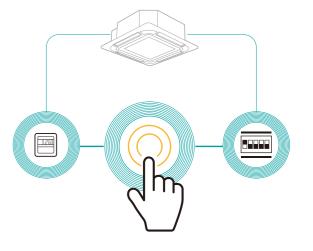


Scan the QR code to view the detailed introduction



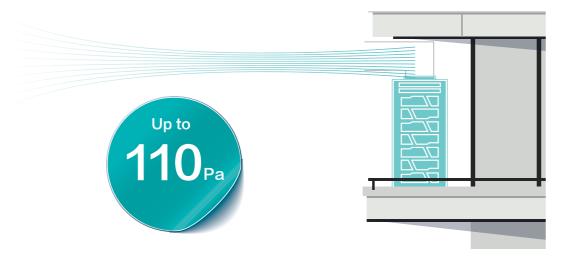
#### **One-touch Test Run**

Test run is one of the essential part in testing and commissioning to make sure the HVAC system in a building works steadily and safely before hand over or soft opening. To make test run as simple as possible, Hisense VRF systems are capable to conduct test runs with just a button away wherever installers are, both indoors and outdoors.



#### **Adaptive Fan Static Pressure Technology**

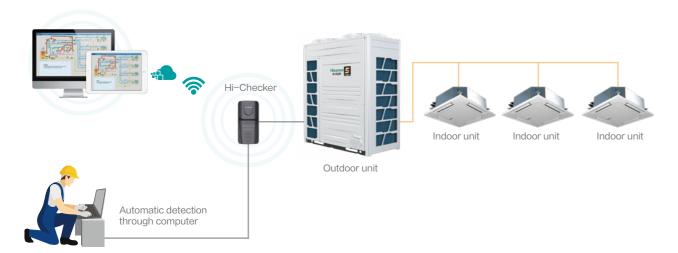
External static pressure is essential to determine the air discharge and duct connection distance. Hisense VRF's outdoor unit external static pressure is reachable upto 110Pa compare to the conventional 80Pa. Allowing longer ducting connection for better air discharge when are installed in the equipment platform that is not easy to exhaust.



Note The initial setting is 80Pa. Can be set to 110Pa from the PCB on site.

#### **Accurate Intelligent System Diagnosis**

Exclusive Hi-Checker is a super service tool for system diagnosis, which can provides easy access to service parameters. Detail operation status and recent error history can be checked and analyzed by using Hi-Checker. Moreover, remote monitoring and diagnosis is also available, very convenient to maintenance.





#### **Intelligent Control System**

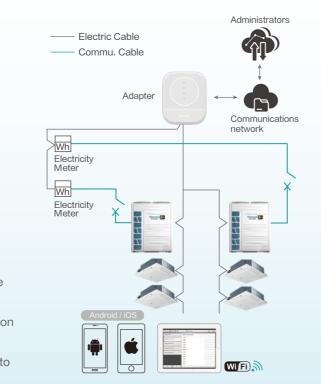


Receiver Kit

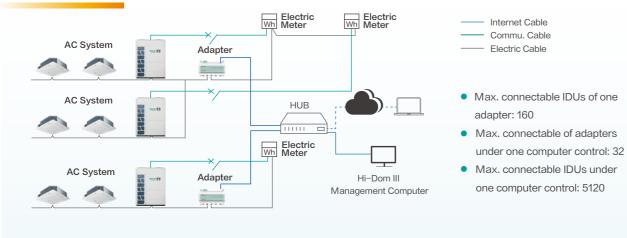
#### Hi-Mit II

#### **Features**

- Remote control
- On/off, mode, temperature, fan speed, louver setting
- 7x24 Schedule setting
- Energy management
- Customized scenes setting
- 2 permission levels
- Supporting online repair report
- Up to 64 IDUs and 64 ODUs can be connected to one Hi-Mit II adapter
- 3 Hi-Mit II adapters are available in one communication bus system
- One user account of APP can control 8 adapters, up to 512 IDUs



#### Hi-Dom III

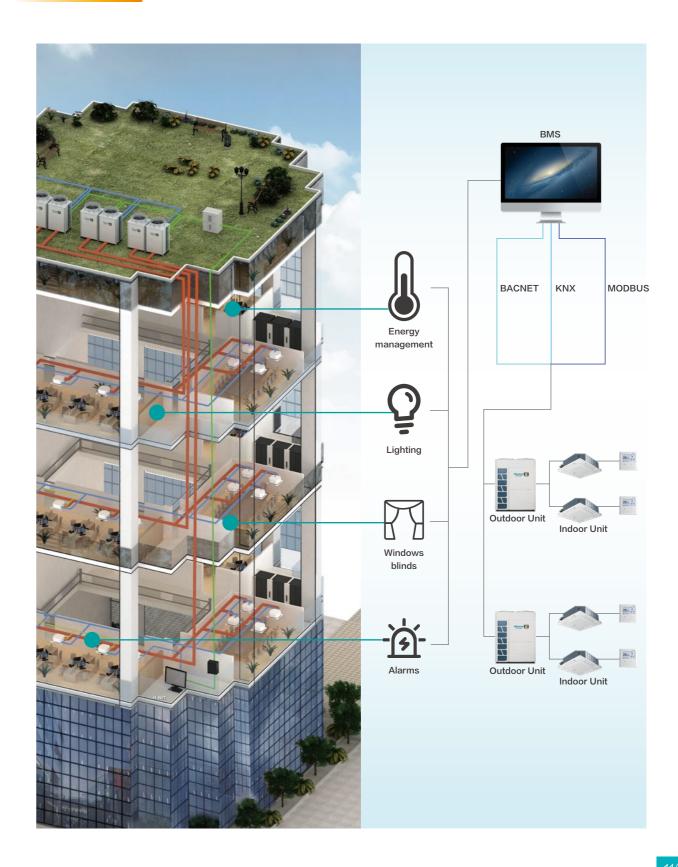


#### **Features**

- Remote control available
- Multilevel user management
- AC control (on-off, mode, temp, air flow)
   AC locked control (running forbidden control,
- the max. and min. temp and cooling/heating locked)
- Running according to timer
- Malfunction history check

- Running record display
- Data synchronize
- Supporting for external I/O
- 2D navigation
- Electricity consumption allocation
- Multiple languages available
- Standard with Modbus RTU port

#### **Building Management System**





Hisense Hi-FLEXi and Hi-Smart series provide a wide selection of outdoor units for different cooling and heating requirements and spaces, creating complete VRF solution and personalized living space.





Hi–FLEXi S series is the latest large combined module product, and its capacity ranges from 8HP to 112HP with 2HP increments. It adopts the new generation of enhanced vapor injection scroll compressor, which can output powerful heating performance and ensure high energy efficiency. Key characteristics include:

- Full DC large module design, max. 112HP combination
- G-type heat exchanger, more efficient
- EVI scroll compressor with rapid and strong heating performance
- Patented 360° fitting refrigerant cooling technology
- Heat recovery, cooling, heating and supplying domestic hot water simultaneously
- (only for heat recovery type)

### Hi-FLEXi S mavo+ SERIES



Hi–FLEXI S mavo+ series is a newly updated product aiming at higher efficiency. Several key design are newly developed with strictly test by R&D and the performance is highly enhanced. With max. 112 HP capacity, it is committed to suppling powerful and competitive air conditioning solution to the world.

- Patented 360° fitted refrigerant cooling technology
- New advanced corrugated fin design
- Triple backup operation
- One-touch recycle refrigerant function

# Hi-FLEXi S mavo cooling only **SERIES**



Hi-FLEXi S mavo cooling only is a product launched for Southeast Asia and other markets that only have demand for cooling. With high quality and good performance, it's widely welcomed by the local market.

- Max. 200% of connection ratio
- Patented 360° fitted refrigerant cooling technology
- New advanced corrugated fin design
- Triple backup operation
- One-touch recycle refrigerant function
- Voltage protector reserved (Optional)

# Hi-FLEXi S+ High Ambient SERIES



Hi-FLEXi S+ Series High Ambient is specially designed for high ambient regions.

- Wide operation range −5°C to 55°C (cooling)
- Patented 360° fitted refrigerant cooling technology
- New advanced corrugated fin design
- Triple backup operation
- One-touch recycle refrigerant function

### Hi-FLEXIW SERIES



Hi–FLEXi W series is water cooled combined module product, with max. 20HP of single module, and max. 60HP of 3 modules combined. Also it can realize simultaneously cooling and heating within one system. Besides, a new switch box is designed to connect with it, with convenient piping installation.

- Simultaneous cooling and heating
- Convenient installation
- 360° fitted refrigerant cooling technology

## Hi-Smart H SERIES



Hi-Smart H series, front flow product, is designed and developed with state-of-the art technologies. It's focusing on customers' various requirements and comfort.

- High reliability with twin rotary compressor
- Patented 360° fitted refrigerant cooling technology
- Aviation level design of grilling
- Flexible piping connection
- New refrigerant pipe connection with flare-nut branch pipe

### Hi-Smart H+ High Ambient SERIES



Hi-Smart H+ Series High Ambient is specially designed for high ambient regions. And it is designed and developed with state-of-the-art technologies, supplying a high reliable, high-efficiency air condition solution.

- Wide operation range −5°C to 55°C (cooling)
- High reliability with twin rotary compressor
- Patented 360° fitted refrigerant cooling technology
- Aviation level design of grilling
- Flexible piping connection

### **Extensive Lineup of Indoor Units**

Hisense Hi-FLEXi & Hi-Smart series provide a wide selection of indoor units for indoor decoration and create a personalized living space.

HP	0.6	0.8	1.0	1.3	1.5	1.6	1.8	1.9	2.0	2.3	2.5	3.0	3.3	4.0	5.0	6.0	8.0	10.0
kBtu/h	5	7	9	12	14	15	17	18	19	22	24	27	30	38	48	54	76	96
4-Way Cassette Type			•	•		•			•	•	•	•	•	•	•	•		
Mini 4-Way Cassette Type	•	•	•	•		•	•		•									
1-Way Cassette Type		•	•	•	•			•			•							
2-Way Cassette Type		•	•	•	•			•			•	•	•	•	•	•		
Console Type	•	•	•	•		•	•											
Ceiling Ducted Type (AC Low-height)	•	•	•	•		•	•		•	•	•							
Ceiling Ducted Type (DC Low-height)	•	•	•	•		•	•		•	•	•							
Ceiling Ducted Type (DC High Static Pressure)		•	•	•		•			•		•		•	•	•	•	•	•
Ceiling Ducted Type (High Static Pressure)		•	•	•		•			•	•	•	•	•	•	•	•	•	•
Ceiling Ducted Type (Low Static Pressure)		•	•	•		•			•	•	•	•	•	•	•	•	•	•
Wall Mounted Type	•	•	•	•		•		•			•	•						
Ceiling & Floor Type							•	•		•	•	•	•	•	•			
Floor Concealed Type			•		•			•			•							

Note: More specific capacity information, please refer to the introductions of each indoor unit.

#### Fresh Air Systems

All E	All Fresh Air Indoor Unit	-1-	Capacity (kW)	9.0	14.0	22.4	28.0	33.5	45.0	56.0	56.0
			Air Flow Rate (m³/h)	660	1080	1680	2100	3000	4000	5000	6000
Tot	al Heat		A:= Fl D=t= (2/l= )	150	250	350	500	650	800	1000	1500
Exchanger		Air Flow Rate (m³/h)	2000	2500	3000	4000	5000				

#### **AHU Connection KIT**

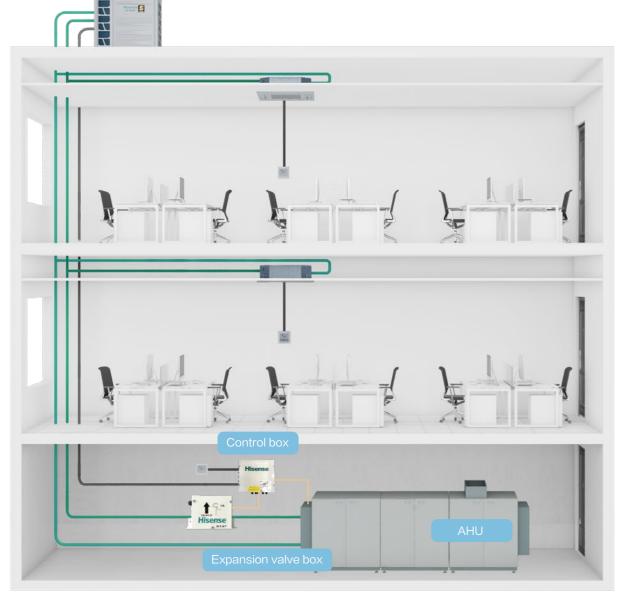
#### **Main Function**

- ON/OFF Control
- Capacity Demand
- Temperature Setting
- Operation Mode

— Communication wire

—— Sensor signal

Refrigerant pipe



# REFERENCE PROJECTS













# REFERENCE PROJECTS













# REFERENCE PROJECTS









