



ALPICAIR



VRF5E

2018

VRF INVERTER
MULTI-SYSTEM
AIR-CONDITIONERS





VRF5E DC Inverter Multi-System with its high efficient inverter compressors have four exciting features which are different from those found on traditional inverter air conditioners: excellent energy-saving effect, more reliable and precise operation, smarter network control, providing users with best air conditioning experience.



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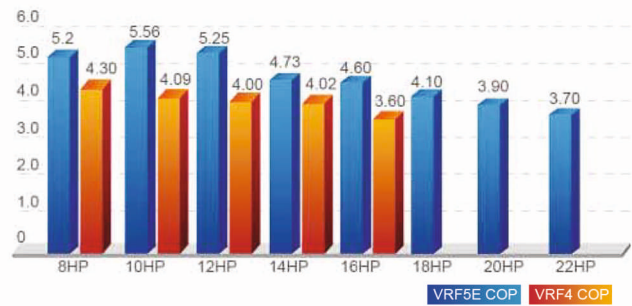
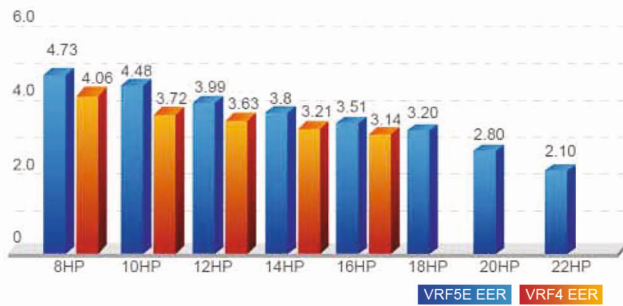
42 CONTROL SYSTEM





HIGH EFFICIENCY AND MORE ENERGY SAVING

Thanks to the advanced all DC inverter technology, optimized system design and accurate intelligent control technology, EER of VRF5E is up to 4.73 while COP is up to 5.56



NEW GENERATION OF ENERGY-SAVING OPERATION CONTROL TECHNOLOGY WITH ENERGY SAVING UP TO 20%

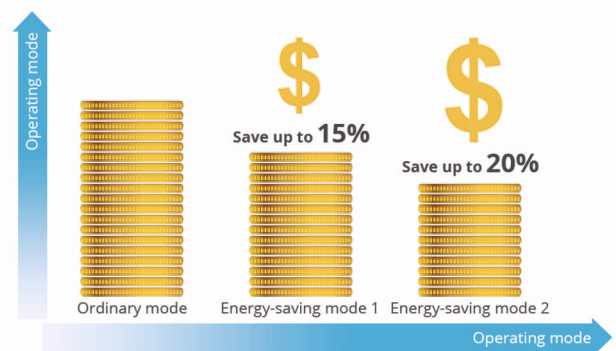
VRF5E system has 2 modes of energy saving, which can be chosen to meet different electricity demands.

Mode 1:

In auto energy-saving mode, the system will self-adjust parameters according to the operation status, thus to lower the cost of electricity. Up to 15% of energy can be saved.

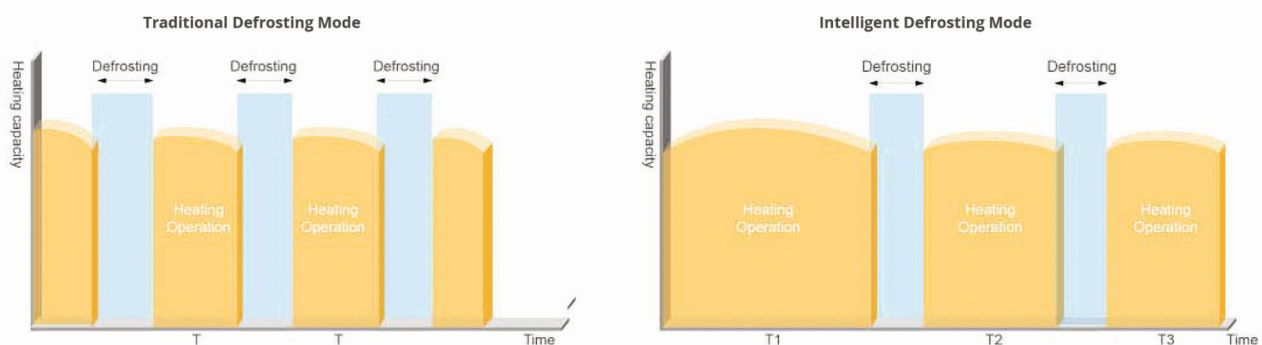
Mode 2:

In compulsory energy-saving mode, the system will limit power output forcibly. Up to 20% of energy can be saved.



INTELLIGENT DEFROSTING CONTROL

During the heating process, the frost status of the unit will be different after affecting by factors of outdoor ambient temperature, load status and operation time. Through real-time detection of operation parameters of the system, it can decide the defrosting time by intelligently estimating the thickness of frost, high pressure of system and blockage status of heat exchanger.



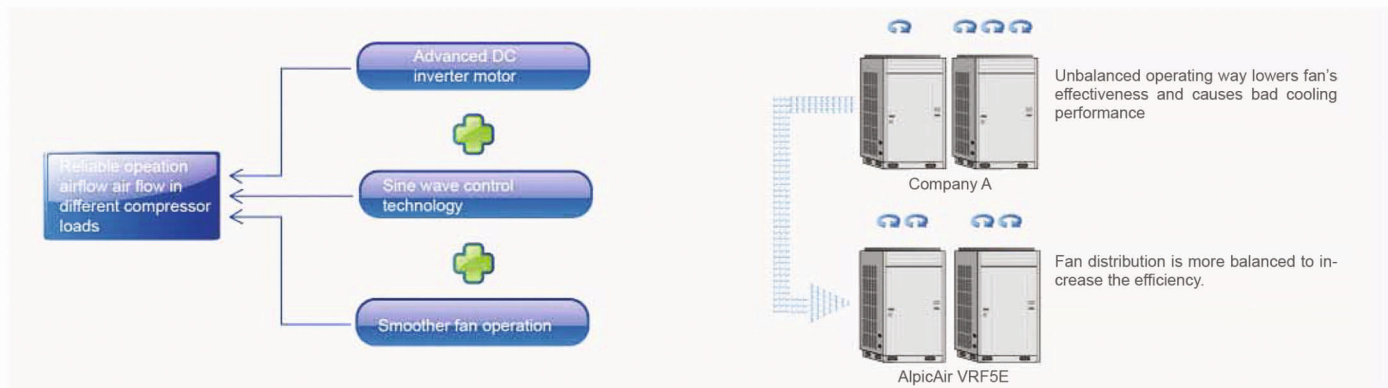
ACCURATE INTELLIGENT ALLOCATION TECHNOLOGY OF CAPACITY AND OUTPUT OF OPTIMAL PORTION TO ENSURE HIGHEST EFFICIENCY

- When total load demands more than 75% of a running system's capacity, one more unit will automatically start;
- When total load demands less than 40% of a running system's capacity, one unit will automatically shut down;
- Therefore, each unit shares 40-75% of the total load;
- Experiments show that an air conditioner costs the least energy when it's operating within 40%-75% of its capacity.

	 Company A	 AlpicAir VRF5E
Allocation Method	10HP (full load) + 2HP (low load)	6HP (partial load) + 6HP (partial load)
Performance Compared	Unit costs more energy and may be soon damaged.	Unit costs less energy and can always be kept in good condition.

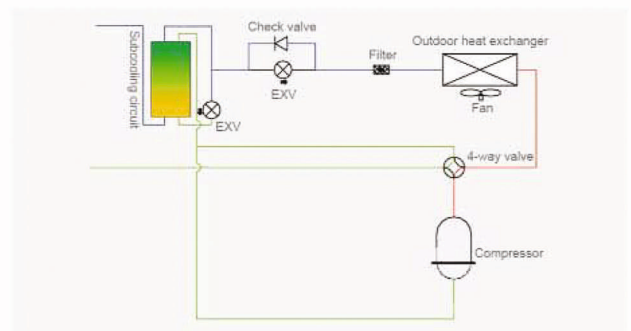
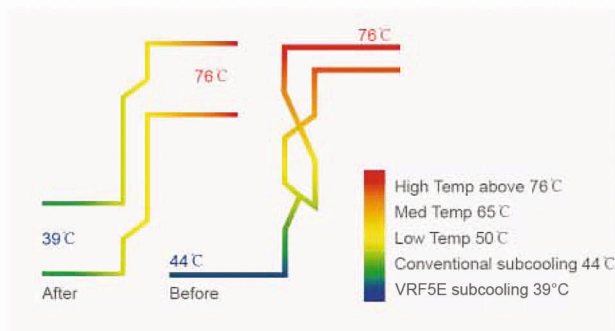
OUTPUT OF OPTIMAL PORTION TO ENSURE HIGHEST EFFICIENCY

The best heating or cooling performance can be realized in the most energy-saving way. DC inverter compressor and DC inverter fan will also be operating in this way to ensure high efficiency.



SUB-COOLING CONTROL TECHNOLOGY TO ENSURE OPTIMAL COOLING AND HEATING

- Heat exchange loop can control the first subcooling process of heat exchanger. Subcooling degree can reach 11°C.
- Subcooling loop can realize 9°C second subcooling to guarantee cooling and heating performance.



TEMPERATURE CONTROLLED BY WIRED CONTROLLER WITH HIGHER EFFICIENCY AND MORE ENERGY SAVING

Through setting temperature lower limit in cooling or dry mode, and setting upper limit in heating or heat supply mode, the system is able to operate in a smaller temperature range so as to achieve energy saving.

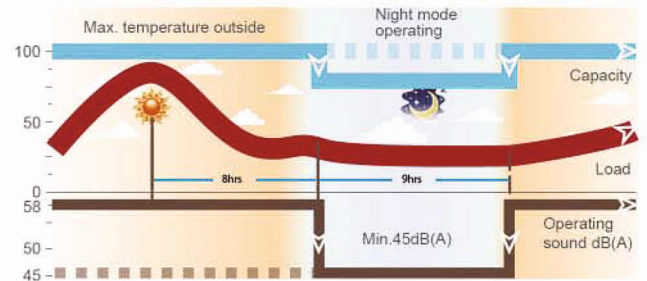
COMFORTABLE DESIGN FOR A BETTER LIFE

VRF5E system has a wide range of working conditions. Whether it's in a cool winter or a hot summer, normal operation is guaranteed with the least noise, making users feel more comfortable.

OUTDOOR UNIT QUIET MODE AND QUIET CONTROL

• Quiet at night

The system can record the highest outdoor temperature. At night, the system will automatically turn to quiet mode. There are 9 quiet modes which can be set according to actual needs.



• Quite in Compulsion

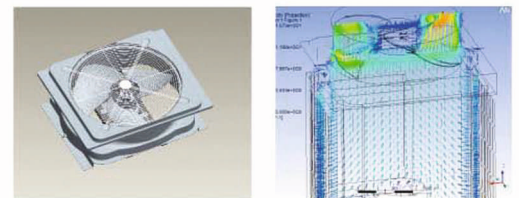
The system can also be set in this mode to ensure low noise as long as it is operating. Noise is as low as 45dB(A).



• Quiet Control

1. Optimized Bossing Design

After many times of CFD tests, a new fan bossing structure has been developed to reduce vibration of fan running. Noise can be reduced by 3dB(A).



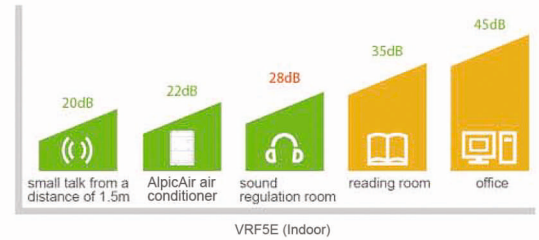
2. Aerodynamics 3D Axial FAN

Compared with conventional fan, it can increase air volume by 12%, improving efficiency as well as lowering noise.



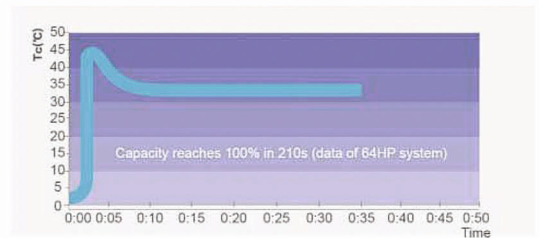
QUIET INDOOR UNIT

The indoor unit of the VRF5E system also adopts DC inverter motors to realize stepless regulation. According to indoor temperature or people's needs, users can set this mode through wired controller. Noise is as low as 22dB(A).



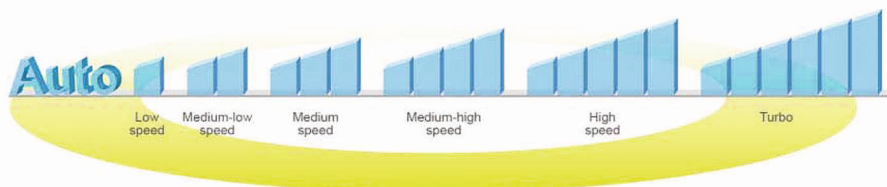
FAST START-UP IN HEATING

DC Compressor is first started to avoid too much electric current. Inverter compressor can operate in high frequency once starts up, so as to produce more heat.



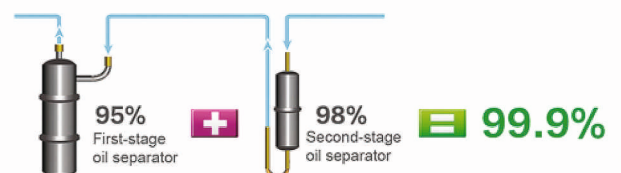
7 LEVELS OF INDOOR FAN SPEED FOR OPTION

Indoor fan speed can be set in 7 levels by wired controller. They are auto, low speed, medium-low speed, medium speed, medium-high speed, high speed and turbo. When the wired controller is on, press "FAN" button to set indoor fan speed circularly as below:



TWO-STAGE OIL SEPARATION CONTROL TECHNOLOGY (PATENTED)

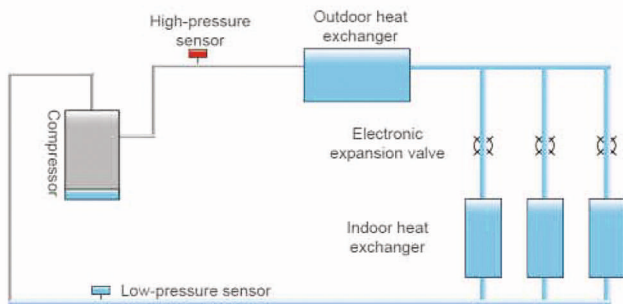
First-stage oil separator adopts a filtration expansion valve with separation efficiency of 98%; Second-stage oil separator will separate the remained 2% refrigerant oil with separation efficiency of 95%. General oil separation efficiency reaches 99.9%.



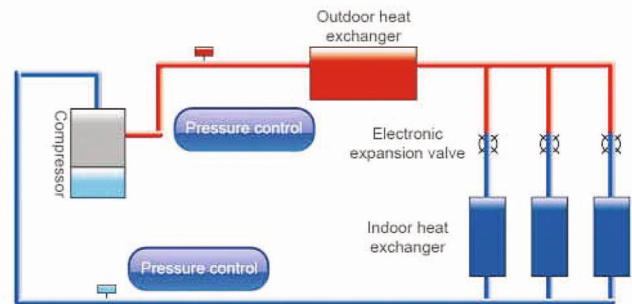
OIL RETURN CONTROL TECHNOLOGY

• New Oil Return Control

AlpicAir new oil return control technology effectively controls system oil return and oil storage status of each compressor, which greatly improves the operation lifespan of compressor.



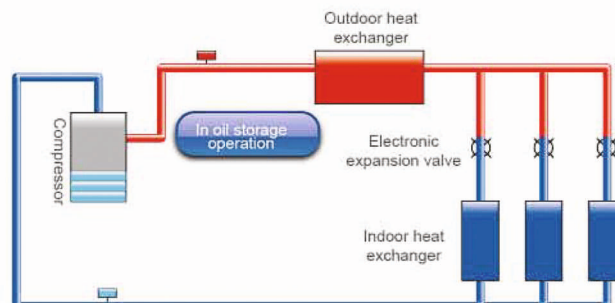
Oil storage status before oil return



Oil return operation

• Specialized Compressor Oil Storage Control

The system applies specialized compressor oil storage technology, which can control the lowest oil level for compressor operation.

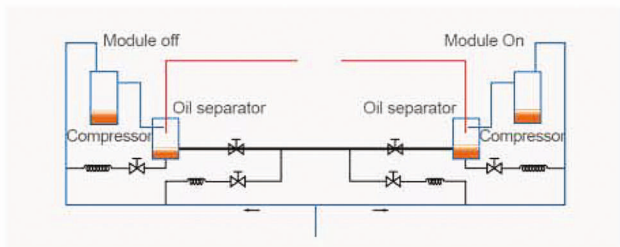


Oil storage operation

OIL BALANCE CONTROL TECHNOLOGY

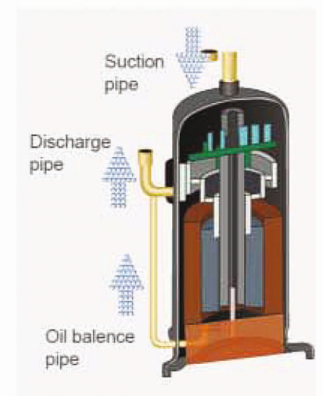
• Oil Balance between Each Module

Based on the actual status of each module and compressor, the system can regulate compressor's operation and realize oil balance of each module.



• Oil Balance between Each Compressor

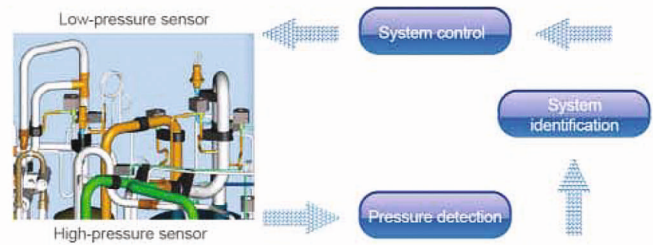
Refrigerant is taken into the compressor by the suction pipe and then runs through the cooling system. It can control the oil level and minimum oil volume required by each compressor so as to realize oil balance between each compressor.



INTELLIGENT DETECTION CONTROL

- Pressure Sensor Detection Control**

Pressure sensor can precisely detect system high pressure and low pressure, and adjust output of fan and compressor, so as to make sure the system can work under the most energy-saving pressure condition.

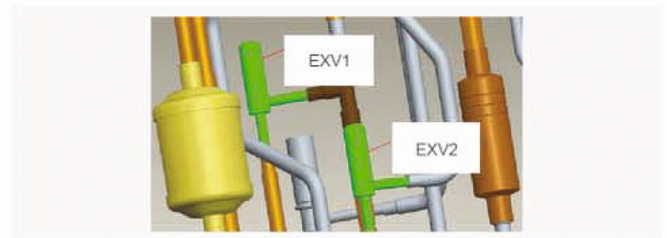


- Temperature Sensor Detection Control**

Various temperature sensors are equipped to detect ambient temperature, indoor temperature and refrigerant's evaporating temperature, from which the operation status can be measured.

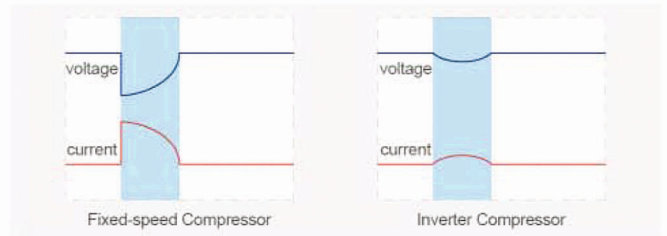
MULTI-ELECTRONIC EXPANSION VALVES CONTROL

Outdoor electronic expansion valve not only has throttling effect, but also control refrigerant flow. The system adopts multi electronic expansion valves control with total 960 grades regulated by two electronic expansion valves, so as to regulate refrigerant flow precisely and ensures reliable operation of system.



SMALLER IMPACT TO POWER GRID

The start-up frequency of inverter compressor is gradually increased from 0Hz to the appointed operation frequency. The start-up current of compressor rotor is decreased by reducing load torque, hence impact to power grid during start-up is reduced and electromagnetic impact to compressor is reduced too.



MODULES ROTATION OPERATING TO MAXIMIZE LIFESPAN

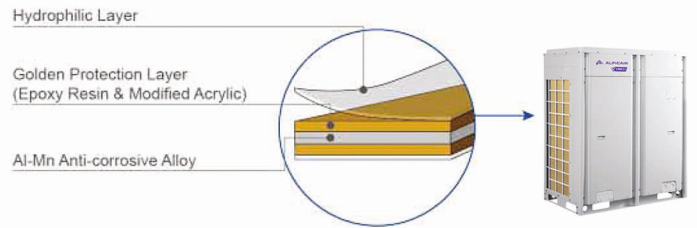
- Modules 8h rotation operating**

The operating priority sequence of the outdoor unit modules will be changed without restart when the system accumulatively operates for 8 hours, which can maximize the service life of the system.



HIGHLY ANTI-CORROSIVE GOLDEN FINNS

The primary material of Golden Fin is Al-Mn (Aluminium-Manganese) anti-rust alloy, which is coated with the Golden Protection Layer (Components: Epoxy Resin & Modified Acrylic, Silicon free), the anti-corrosive performance in salt-spray testing is 200-300% higher than normal Blue Fin.



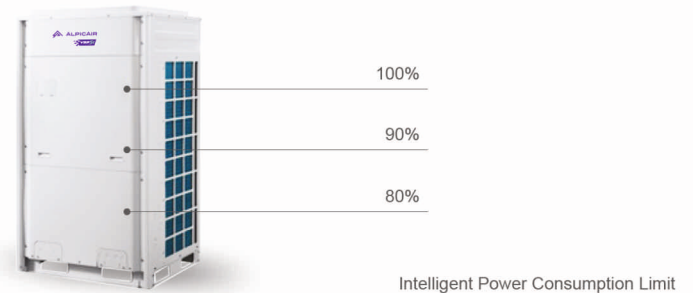
EMERGENCY AUTO-OFF CONTROL

The outdoor unit can be linked with a fire alarm signal. In case of emergency, unit can automatically turn off to avoid risk or further loss.



LOWER POWER CONSUMPTION OPERATION MODE

As for the area with power consumption limited time period, the maximum power consumption can be set for the operation. Basing on the power consumption of unit and user's requirement, power consumption limitation can be set according to 100%, 90% or 80% of the capacity of complete unit. In this case, user can have more selection at the power consumption limited time period.



ELECTRICITY SHORTAGE IDENTIFICATION

The outdoor unit can receive a power signal of electricity shortage. In some places like first-class hotels, if diesel generator is used temporarily for providing electricity, outdoor unit will send the electricity shortage signal to indoor unit. In this case, only VIP rooms can be provided with air conditioning service.



EXCELLENT EMERGENCY OPERATION FUNCTION TO ENSURE RELIABLE OPERATION

- **Emergency Function**

The VRF5E system can realize a combination of 4 outdoor unit modules. When error is occurred to one of the modules, the others will perform the emergency operation to sustain the air conditioning.



- **Emergency Operation of Compressor**

All the compressors in each single module are DC inverter based, when one compressor has error, others will perform the emergency operation.



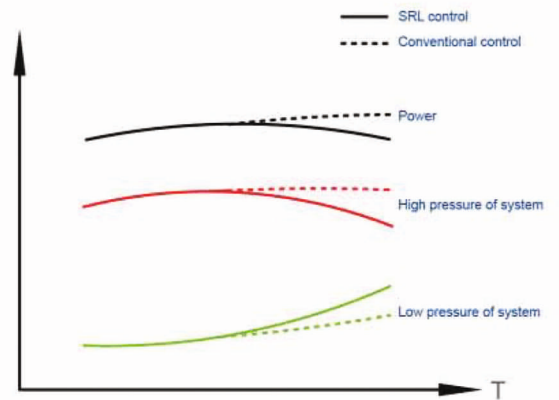
- **Emergency Operation of Fan**

Double-fan design fan ensures that one fan can still work even if the other one has error.



SRL (SELF-REACTION LOAD) SELF-ADAPTIVE CONTROL

SRL (Self-reaction Load) can intelligently detect and control system parameters and automatically adapt to indoor cold/heat load requirement to reducing unit's power and improve the energy efficiency.



HIGH STATIC PRESSURE DESIGN OF OUTDOOR UNIT

System has 4 levels of static pressure that can be set. Up to 82 Pa pressure can be set for an outdoor unit. This design is especially useful when an outdoor unit needs to be placed indoor.



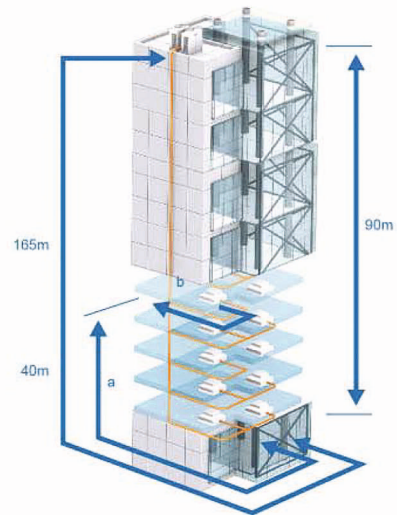
1000 M PIPE DESIGN FOR FLEXIBLE INSTALLATION

VRF5E system can be applied in different types of building construction. One of its advantages is the simple pipe design, which will simplify the installation and reduce installation cost.

- Max total pipe length reaches 1000 m (with limitation)
- Actual pipe length between the outdoor unit and the farthest indoor unit: 165 m
- Max height difference between indoor unit and outdoor unit: 90 m

Note:

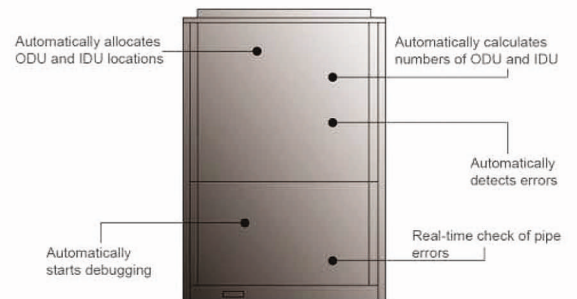
- a. Distance between the first branch and the farthest indoor unit.
- b. Distance between the first branch and the nearest indoor unit.
- a - b ≤ 40 m



ENGINEERING DEBUGGING FOR CONVENIENT CONSTRUCTION

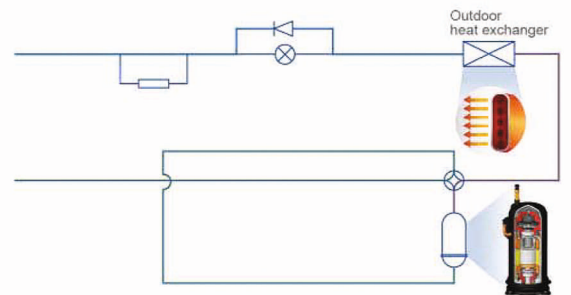
VRF5E has five auto-debugging features:

- Automatic detection of quantity of indoor and outdoor units
- Automatic detection of errors
- Automatic start-up of debugging
- Real-time judgment of pipe errors



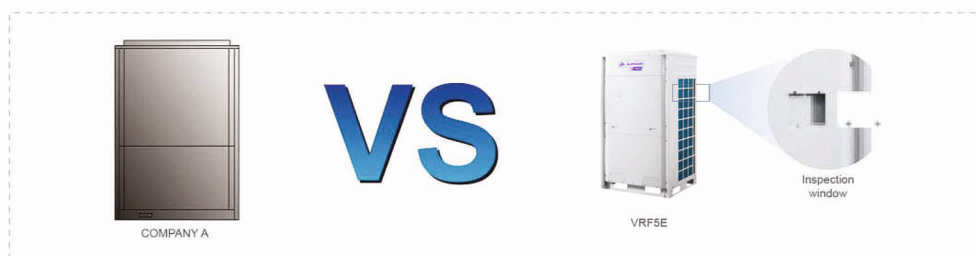
AUTO-REFRIGERANT RECOVERY FOR EASY MAINTENANCE

When auto refrigerant recovery function is set and cut-off valve of liquid pipe is closed during maintenance, the system will automatically operate compressor, EXV, solenoid valve and fan, etc. Taking advantage of compressor power, the refrigerant is recovered at the condensing side of outdoor unit to achieve environmental effect. Meanwhile, system low pressure is displayed simultaneously during refrigerant recovery.



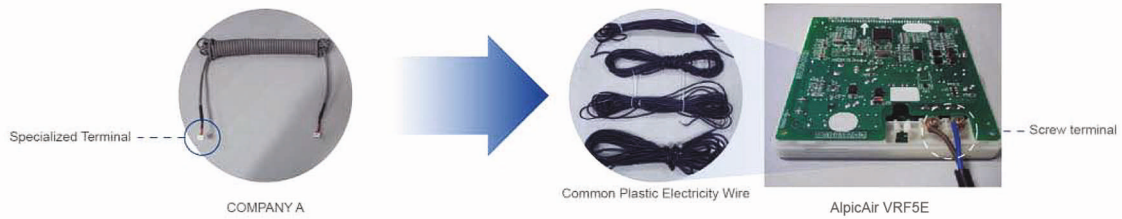
INSPECTION WINDOW FOR CONVENIENT CHECKING

Inspection window is available for quick checking of system operation status. No need to open panel for checking, which will be more time-saving and easier for maintenance.



FLEXIBLE WIRING

Common wire can meet the communication demand with no need of specialized communication wire. Common sheath twisted pair cable can be used as there is no polarity requirement.



AUTO ADDRESSING OF OUTDOOR AND INDOOR UNIT

CAN network is adopted to achieve auto addressing of outdoor and indoor unit. It can allocate addresses of indoor and outdoor units and detect quantity of indoor and outdoor units, which greatly improves construction efficiency.

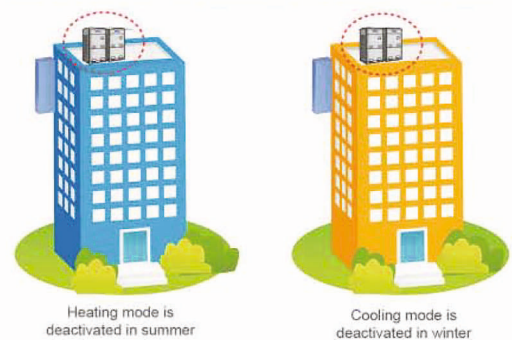


PROFESSIONAL HOTEL FUNCTIONS

AlpicAir VRF5E provides hotels with unique season setting function and key-card control function.

SEASON SETTING

Cooling or heating mode can be deactivated during a certain season to avoid affecting unit's normal operation due to mode conflict.



KEY-CARD CONTROL FOR HOTEL MANAGEMENT

The unit can be turned on or off by inserting or removing the key-card. When the key-card is removed, the system can remember all the setting and stop operation. When the key-card is inserted back, the system will be under standby mode or operate according to the status before removing key-card. It is well suited to hotels, restaurants, etc.



HIGH CAPACITY - THE LARGEST FREE COMBINATION



ODU combination lineup-VRF5E

AOU-224VRDC3B	AOU-280VRDC3B	AOU-282VRDC3B	AOU-335VRDC3B	AOU-400VRDC3B
AOU-450VRDC3B	AOU-451VRDC3B	AOU-504VRDC3B	AOU-560VRDC3B	AOU-615VRDC3B
AOU-680VRDC3B	AOU-730VRDC3B	AOU-785VRDC3B	AOU-850VRDC3B	AOU-900VRDC3B
AOU-960VRDC3B	AOU-1010VRDC3B	AOU-1065VRDC3B	AOU-1130VRDC3B	AOU-1180VRDC3B
AOU-1235VRDC3B	AOU-1300VRDC3B	AOU-1350VRDC3B	AOU-1410VRDC3B	AOU-1460VRDC3B
AOU-1515VRDC3B	AOU-1580VRDC3B	AOU-1630VRDC3B	AOU-1685VRDC3B	AOU-1750VRDC3B
AOU-1800VRDC3B	AOU-1845VRDC3B	AOU-1908VRDC3B	AOU-1962VRDC3B	AOU-2016VRDC3B
AOU-2072VRDC3B	AOU-2128VRDC3B	AOU-2184VRDC3B	AOU-2240VRDC3B	AOU-2295VRDC3B
AOU-2350VRDC3B	AOU-2405VRDC3B	AOU-2460VRDC3B		

1 ODU
 2 ODU
 3 ODU
 4 ODU

SPECIFICATIONS OF MODULAR OUTDOOR UNITS



MODEL	AOU-224VRDC3B	AOU-280VRDC3B	AOU-282VRDC3B	AOU-335VRDC3B	AOU-400VRDC3B
Cooling capacity, kW	22.4	28.0	28.0	33.5	40.0
Heating capacity, kW	25.0	31.5	31.5	37.5	45.0
Power input (cooling), kW	4.7	9.2	6.3	8.4	10.5
Power input (heating), kW	4.8	7.7	5.7	7.1	9.5
Power supply, V/ph/Hz	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50
Efficiency ratio (EER/COP)	4.73 / 5.20	3.05 / 4.10	4.48 / 5.56	3.99 / 5.25	3.80 / 4.73
Refrigerant	R410A	R410A	R410A	R410A	R410A
Sound pressure (L _p), dB(A)	60.0	61.0	61.0	63.0	63.0
Compressor type	Inverter (×1)	Inverter (×1)	Inverter (×1)	Inverter (×1)	Inverter (×2)
Net dimensions (W×H×D), mm	930×1605×765	930×1605×765	930×1605×765	1340×1605×765	1340×1605×765
Pipe connections (liquid/gas), inch	3/8 - 3/4	3/8 - 7/8	3/8 - 7/8	1/2 - 1	1/2 - 1
Max refrigerant pipe length, m	1000	1000	1000	1000	1000
Max pipe length from first branch to the farthest unit, m	40	40	40	40	40
Max height difference (indoor-indoor unit), m	30	30	30	30	30
Max height difference (indoor-outdoor above indoor), m	90	90	90	90	90
Max height difference (indoor-outdoor below indoor), m	90	90	90	90	90
Electrical connections (power), mm ²	5×2,5	5×2,5	5×2,5	5×4,0	5×6,0
Operating conditions in cooling mode, °C	-5 – +52	-5 – +52	-5 – +52	-5 – +52	-5 – +52
Operating conditions in heating mode, °C	-20 – +24	-20 – +24	-20 – +24	-20 – +24	-20 – +24
Max number of indoor units	13	16	16	19	23

MODEL	AOU-450VRDC3B	AOU-451VRDC3B	AOU-504VRDC3B	AOU-560VRDC3B	AOU-615VRDC3B
Cooling capacity, kW	45.0	45.0	50.4	56.0	61.5
Heating capacity, kW	50.0	50.0	50.4	56.0	61.5
Heating capacity (maximum), kW	50.0	50.0	56.5	63.0	69.0
Power input (cooling), kW	12.8	13.4	15.8	20.0	29.3
Power input (heating; nominal), kW	10.9	11.9	12.3	14.4	16.6
Power input (heating; maximum), kW	10.9	11.9	14.1	16.6	18.9
Power supply, V/ph/Hz	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50
Efficiency ratio (EER (nominal))	3.51	3.35	3.20	2.80	2.10
Efficiency ratio (COP (nominal))	4.60	4.20	4.10	3.90	3.70
Efficiency ratio (COP (maximum))	4.60	4.20	4.01	3.80	3.65
Refrigerant	R410A	R410A	R410A	R410A	R410A
Sound pressure (L _p), dB(A)	63.0	63.0	63.0	63.0	64.0
Compressor type	Inverter (×2)	Inverter (×2)	Inverter (×2)	Inverter (×2)	Inverter (×2)
Net dimensions (W×H×D), mm	1340×1740×765	1340×1605×765	1340×1740×765	1340×1740×765	1340×1740×765
Pipe connections (liquid/gas), inch	1/2 - 1 1/8	1/2 - 1 1/8	5/8 - 1 1/8	5/8 - 1 1/8	5/8 - 1 1/8
Max refrigerant pipe length, m	1000	1000	1000	1000	1000
Max pipe length from first branch to the farthest unit, m	40	40	40	40	40
Max height difference (indoor-indoor unit), m	30	30	30	30	30
Max height difference (indoor-outdoor above indoor), m	90	90	90	90	90
Max height difference (indoor-outdoor below indoor), m	90	90	90	90	90
Electrical connections (power), mm ²	5×6,0	5×6,0	5×10,0	5×10,0	5×10,0
Operating conditions in cooling mode, °C	-5 – +52	-5 – +52	-5 – +52	-5 – +52	-5 – +52
Operating conditions in heating mode, °C	-20 – +24	-20 – +24	-20 – +24	-20 – +24	-20 – +24
Max number of indoor units	26	26	29	33	36



MINI & SLIM



COMFORTABLE AND QUIET MODE

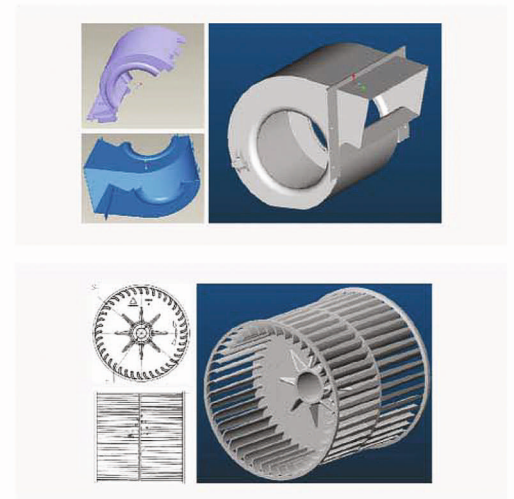
LOW NOISE OF OUTDOOR UNIT

- The advanced sub-cooling control technology is applied to reduce the liquid flow noise of indoor unit in cooling operation.
- Noise of outdoor unit can be as low as 45 dB thanks to noise optimized design or fan system and compressor system, and multiple kinds of quiet modes of outdoor unit.



LOW NOISE OF INDOOR UNIT

- The pioneering and patented high-efficiency centrifugal fan blade and low-noise volute are adopted. Meanwhile, the imported silent valve is adopted to reduce noise of entire unit as low as 22 db(A).
- By adopting the optimal inlet angle of centrifugal fan blade and optimal diameter ratio between internal and external circles of impeller, the air volume is increased and fan noise is decreased greatly.
- The advanced super-cooling control technology and the oil-return technology under heating mode has efficiently solved the problem of liquid flow noise of indoor unit, which improved the sound quality of indoor unit.



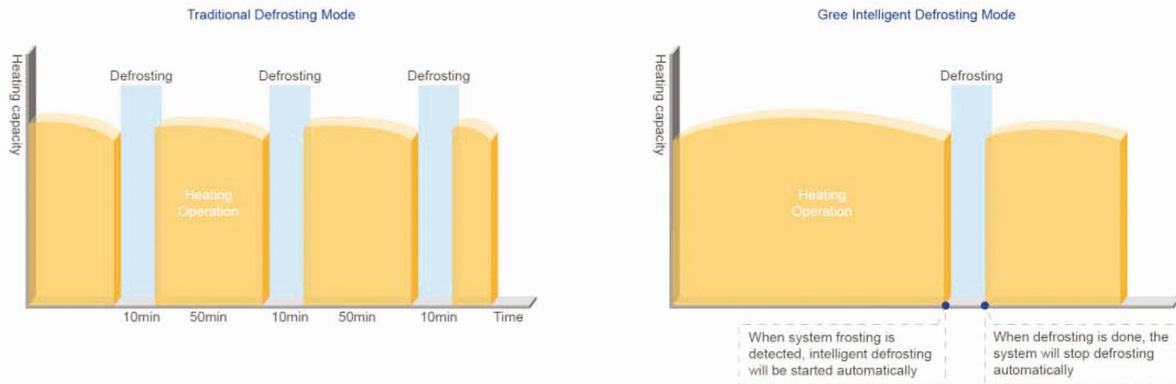
INTELLIGENT TEMPERATURE CONTROL TECHNOLOGY

Intelligent temperature control technology is adopted for superfast cooling or heating, so that indoor temperature will reach set temperature more quickly.



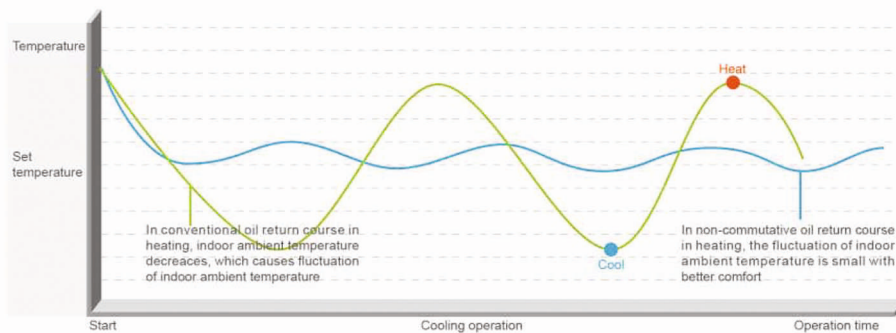
COMFORTABLE HEATING

Advanced intelligent defrosting mode is adopted. AlpicAir advanced intelligent defrosting mode will choose the best defrosting way according to outdoor temperature and operation status to realize intelligent defrosting, effectively improving heating effect and performance. While in traditional defrosting mode, timing defrosting is adopted, which not only affects comfort but also reduces energy efficiency.



NON-COMMUTATIVE OIL RETURN TECHNOLOGY IN HEATING

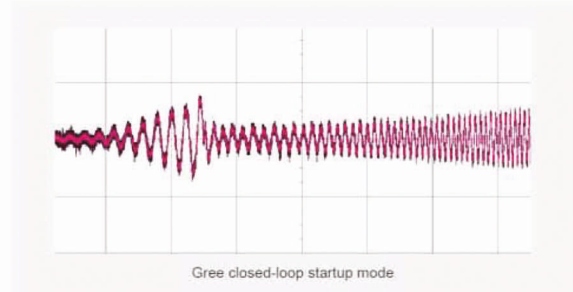
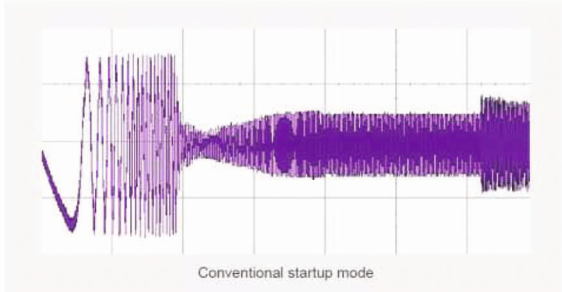
The unit can achieve non-commutative oil return in heating when outdoor ambient temperature is within 0-20 °C. Thanks to this technology, indoor ambient temperature is more stable and comfort is improved in heating mode.



RELIABLE OPERATION

COMPRESSOR CLOSED-LOOP STARTUP TECHNOLOGY WITH MORE RELIABLE STARTUP

The self-innovative closed-loop startup control technology is adopted. Thanks to this technology, the startup current is small and startup is more reliable.



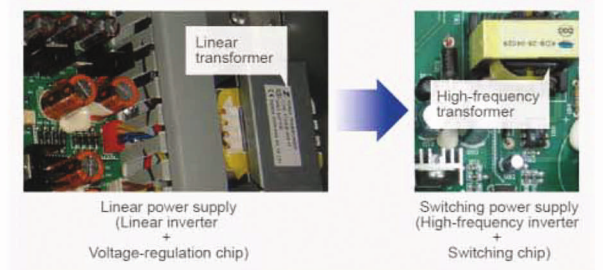
HIGH ANTI-INTERFERENCE ABILITY

The latest CAN bus communication technology is adopted, with non-polar communication and high anti-interference ability. Common communication wire can meet the communication demand with no need of specialized shielded wire. The customers can buy the communication wire by themselves, greatly reducing installation difficulties.



ADVANCED HIGH-FREQUENCY TRANSFORMER WITH MORE STABLE VOLTAGE

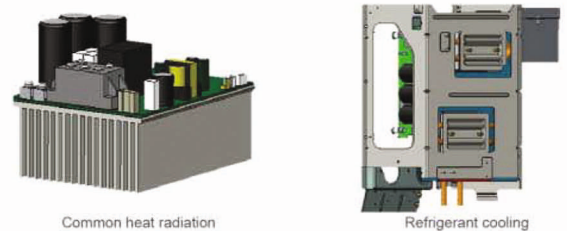
- The advanced switching power supply is adopted with lower power consumption and higher power efficiency.
- Wide voltage-regulation range ensures stable voltage output when the voltage of grid fluctuates.
- Compared with conventional transformer, the size of high-frequency transformer is small and the weight is light.



REFRIGERANT COOLING TECHNOLOGY*

- Usually, air-cooled fins are adopted for heat radiation. Due to large size and passive radiation, heat radiating effect is unsatisfactory; with refrigerant cooling technology, heat radiating effect is much better because of compact structure and active radiation. Module temperature is dropped from 80 °C to 65 °C, which will increase module life and stability.

*: This feature is applicable for VRF5 Slim series only.



EASY INSTALLATION AND TRANSPORTATION

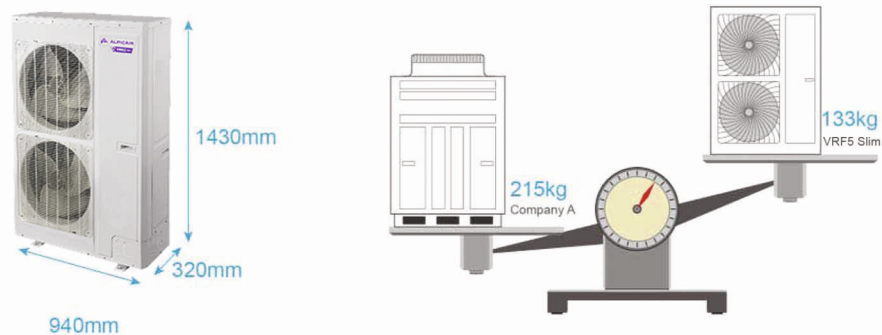
ULTRA-LONG CONNECTION PIPE FOR MORE CONVENIENT CONNECTION

Under the sub-cooling control technology gained by adding sub-cooler, the indoor unit and outdoor unit of VRF5 Mini can operate reliably with longer connection pipe.

	Company A	AlpicAir VRF5 Slim	AlpicAir VRF5 Mini	AlpicAir VRF5 Mini
Total piping length	150m	300m	300m	250m
Equivalent piping length	70m	150m	150m	120m

TOP ADVANCED LIGHT AND COMPACT SIZE

VRF5 Slim adopts small and compact size design. The dimension of the unit is 940(W,mm)×1430(H,mm)×320(D,mm). Compared with the normal product with the same capacity, size and weight are reduced a lot.



EASY INSTALLATION WITH LOWER CONSTRUCTION

The outdoor unit of VRF5 Slim is with small size and light weight. No need fork lifter and crane for movement and installation.



MOVEMENT BY STAIRS AND ELEVATOR

The outdoor unit of VRF5 Slim series is with compact and small size for saving space and easy movement. It can be carried by elevator or stairs.



VRF5 MINI & SLIM LINE UP

MINI LINE UP

HP	MODEL
3	AOU-80VRDC1B
3.5	AOU-100VRDC1B
4	AOU-121VRDC1B



MINI LINE UP

HP	MODEL
4	AOU-120VRDC1B AOU-120VRDC3B
5	AOU-140VRDC1B AOU-140VRDC3B
6	AOU-160VRDC1B AOU-160VRDC3B



SLIM LINE UP

HP	MODEL
8	AOU-226VRDC3B
10	AOU-281VRDC3B
12	AOU-336VRDC3B



MINI

MODEL	AOU-80VRDC1B	AOU-100VRDC1B	AOU-121VRDC1B	AOU-120VRDC1B	AOU-140VRDC1B	AOU-160VRDC1B
Cooling capacity, kW	8.0	10.0	12.1	12.1	14.0	16.0
Heating capacity, kW	9.0	11.0	13.0	14.0	16.5	18.0
Power input (cooling), kW	2.1	2.7	3.5	3.0	3.6	4.8
Power input (heating), kW	1.9	2.5	2.7	3.3	4.0	4.7
Power supply, V/ph/Hz	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50
Efficiency ratio (EER/COP)	3.90 / 4.74	3.70 / 4.40	3.51 / 4.81	3.99 / 4.28	3.90 / 4.18	3.37 / 3.87
Refrigerant	R410A	R410A	R410A	R410A	R410A	R410A
Sound pressure (L _p), dB(A)	56.0	56.0	57.0	57.0	58.0	58.0
Compressor type	Inverter (×1)	Inverter (×1)	Inverter (×1)	Inverter (×1)	Inverter (×1)	Inverter (×1)
Net dimensions (W×H×D), mm	980×790×360	980×790×360	980×790×360	900×1345×340	900×1345×340	900×1345×340
Weight (brutto/neto), kg	90/80	90/80	95/85	123/112	123/112	123/112
Pipe connections (liquid/gas), inch	3/8 - 5/8	3/8 - 5/8	3/8 - 5/8	3/8 - 5/8	3/8 - 5/8	3/8 - 3/4
Operating conditions in cooling mode, °C	-5 - +52	-5 - +52	-5 - +52	-5 - +52	-5 - +52	-5 - +52
Operating conditions in heating mode, °C	-20 - +27	-20 - +27	-20 - +27	-20 - +27	-20 - +27	-20 - +27
Max number of indoor units	4	5	6	7	8	9

MINI

SLIM

MODEL	AOU-120VRDC3B	AOU-140VRDC3B	AOU-160VRDC3B	AOU-226VRDC3B	AOU-281VRDC3B	AOU-336VRDC3B
Cooling capacity, kW	12.1	14.0	16.0	22.4	28.0	33.5
Heating capacity, kW	14.0	16.5	18.0	24.0	30.0	35.0
Power input (cooling), kW	3.0	3.6	4.8	6.1	7.8	9.6
Power input (heating), kW	3.3	4.0	4.7	4.9	6.1	7.1
Power supply, V/ph/Hz	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50
Efficiency ratio (EER/COP)	3.99 / 4.28	3.90 / 4.18	3.37 / 3.87	3.66 / 4.90	3.60 / 4.90	3.50 / 4.90
Refrigerant	R410A	R410A	R410A	R410A	R410A	R410A
Sound pressure (L _p), dB(A)	57.0	58.0	58.0	60.0	62.0	63.0
Compressor type	Inverter (×1)	Inverter (×1)	Inverter (×1)	Inverter (×1)	Inverter (×1)	Inverter (×1)
Net dimensions (W×H×D), mm	900×1345×340	900×1345×340	900×1345×340	940×1430×320	940×1615×460	940×1615×460
Weight (brutto/neto), kg	133/122	133/122	133/122	144/133	183/166	194/177
Pipe connections (liquid/gas), inch	3/8 - 5/8	3/8 - 5/8	3/8 - 3/4	3/8 - 3/4	3/8 - 7/8	1/2 - 1
Operating conditions in cooling mode, °C	-5 - +52	-5 - +52	-5 - +52	-5 - +52	-5 - +52	-5 - +52
Operating conditions in heating mode, °C	-20 - +27	-20 - +27	-20 - +27	-20 - +27	-20 - +27	-20 - +27
Max number of indoor units	7	8	9	13	17	20

HEAT RECOVERY

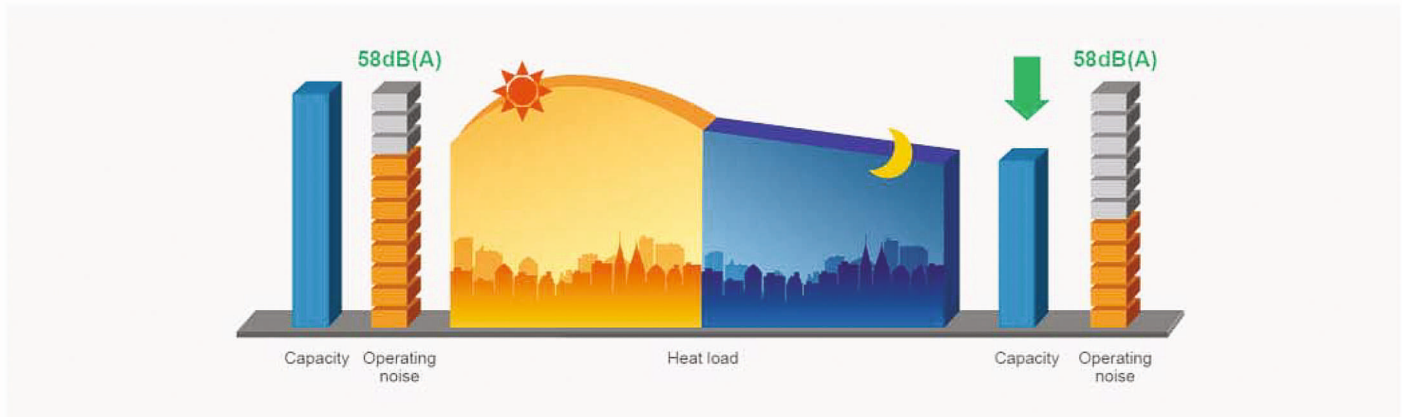


COMFORTABLE DESIGN FOR A BETTER LIFE

INTELLIGENT QUIET FUNCTION AT NIGHT

- **Quiet at night**

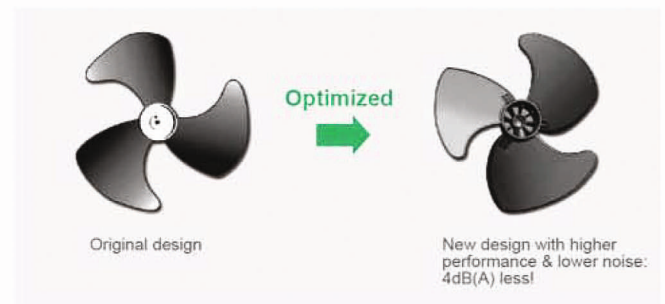
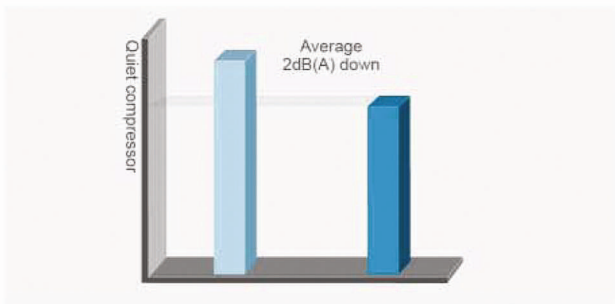
Intelligently adjustment of outdoor fan control can minimize the noise during night time. Up to 8 dB(A) can be reduced and operation noise at night is as low as 50 dB(A).



- **Low noise design**

HP Chamber compressor has lower exhaust pressure fluctuation so that noise is lower.

The optimized design of condensing fan blade. Reduces the air flow turbulence among blades, so that the noise is lower.



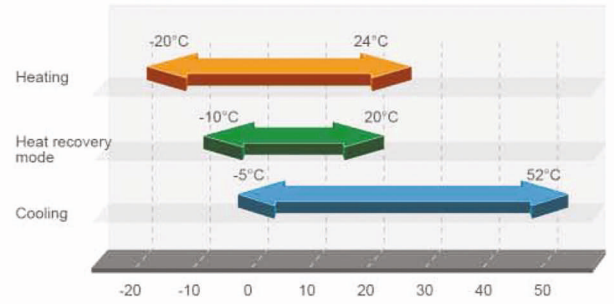
INDIVIDUAL CONTROL FOR MORE ENERGY SAVING

The set temperature of each room may vary by the individual thermostat control of each indoor unit. The cooling and heating operation can be performed at the same time.



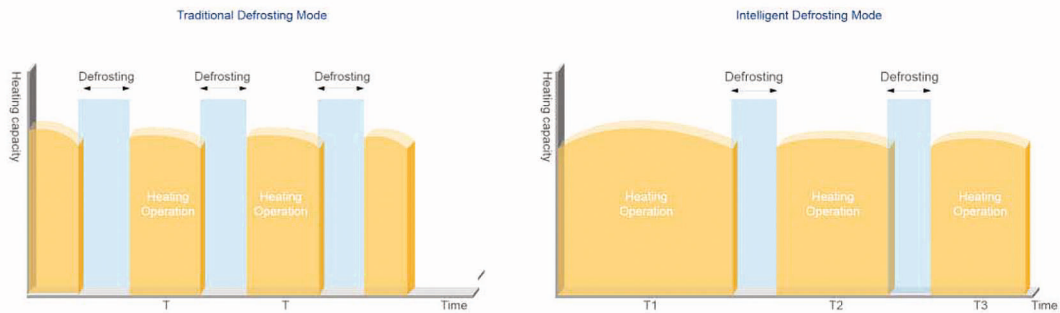
WIDE OPERATION RANGE

The unit can operate in wide range, greatly reducing the ambient temperature limitation.



INTELLIGENT DEFROSTING CONTROL

During the heating process, the frost status of the unit will be different after affecting by factors of outdoor ambient temperature, load status and operation time. Through real-time detection of operation parameters of the system, it can decide the defrosting time by intelligently estimating the thickness of frost, high pressure of system and blockage status of heat exchanger.



EXCELLENT PERFORMANCE ENSURED BY ADVANCED TECHNOLOGY

MODULES ROTATION OPERATING TO MAXIMIZE LIFESPAN

Modules 8h rotation operating

The operating priority sequence of the outdoor unit modules will be changed without restart when the system accumulatively operates for 8 hours, which can maximize the service life of the system.



EXCELLENT EMERGENCY OPERATION FUNCTION TO ENSURE RELIABLE OPERATION

Emergency Function

The VRF5 Heat Recovery system can realize a combination of 4 outdoor unit modules. When error is occurred to one of the modules, the others will perform the emergency operation to sustain the air conditioning.



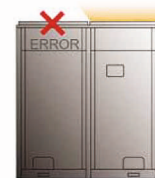
Emergency Operation of Compressor

All the compressors in each single module are DC Inverter based, when one compressor has error, others will perform the emergency operation.



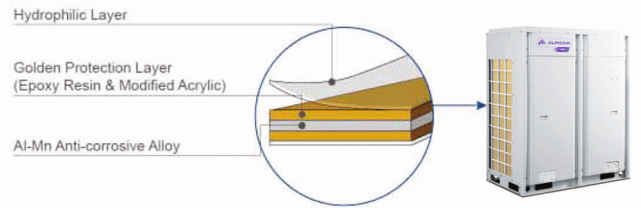
Emergency Operation of Fan

Double-fan design ensures that one fan can still work even if the other one has error.



HIGHLY ANTI-CORROSIVE GOLDEN FINNS

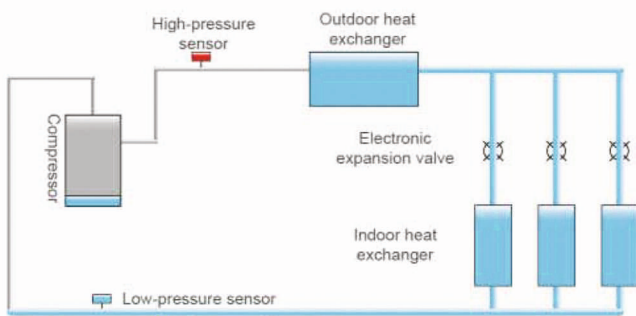
The primary material of Golden Fin is Al-Mn (Aluminium-Manganese) anti-rust alloy, which is coated with the Golden Protection Layer (Components: Epoxy Resin & Modified Acrylic, Silicon free), the anti-corrosive performance in salt-spray testing is 200%-300% higher than normal Blue Fin.



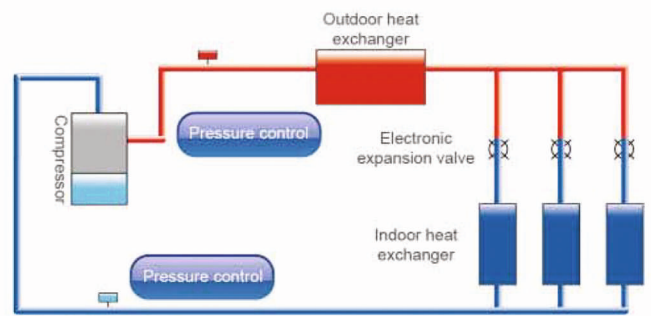
OIL RETURN CONTROL TECHNOLOGY

• New Oil Return Control

AlpicAir new oil return control technology effectively controls system oil return and oil storage status of each compressor, which greatly improves the operation lifespan of compressor.



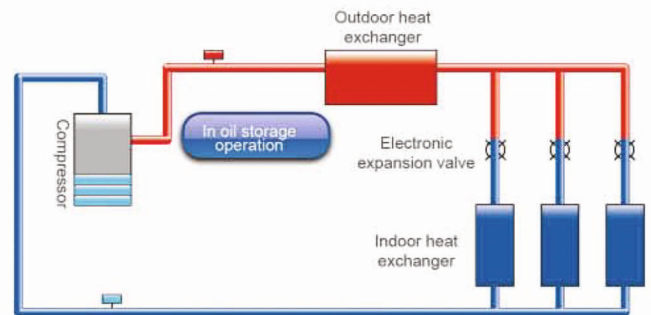
Oil storage status before oil return



Oil return operation

• Specialized Compressor Oil Storage Control

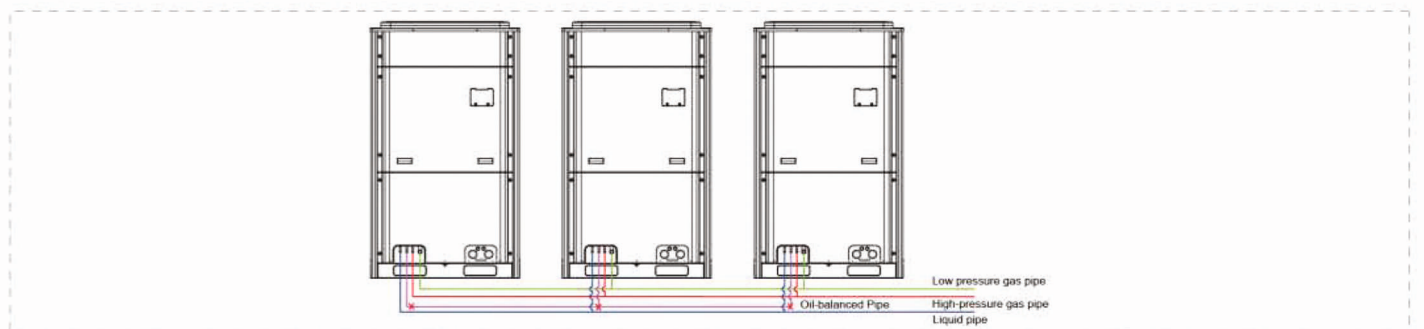
The system applies specialized compressor oil storage technology, which can control the lowest oil level for compressor operation.



Oil storage operation

WITHOUT EXTERNAL OIL-BALANCED PIPE DESIGN

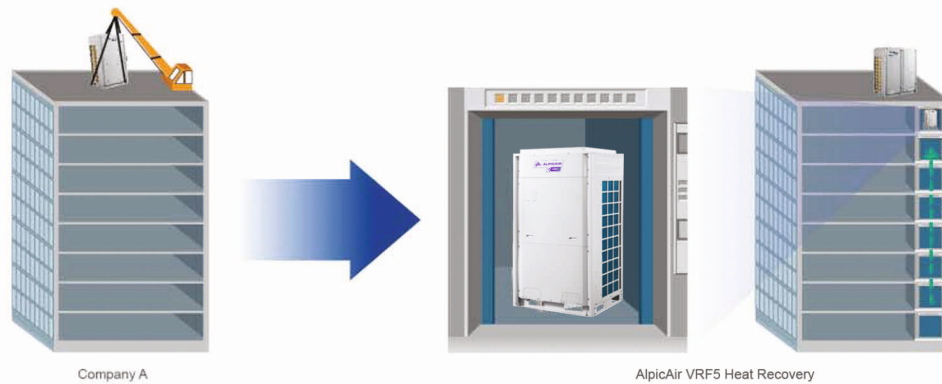
The unit is without external oil-balanced pipe design, reducing system pipeline connection and easy for engineering installation. The system will allocate lubricating oil of each module according to its demand, which is more intelligent, more efficient and more equal.



EASY INSTALLATION AND MAINTENANCE

COMPACT DESIGN

With compact design, the outdoor unit can be carried to the roof of building through elevator, with no need of crane. It is easier for delivery and installation.



EASY TRANSPORTATION

- **Optimized base frame**

Optimized base frame, the locating and fixing of the outdoor unit during installation is more convenient and reliable.



- **Transportable by forklift**



- **Five-way piping connection**

Piping and wiring are available to the front and back, left and right, and bottom. The five-way piping connection reduces installation difficulty and cost, improves the installation efficiency.



EASY MAINTENANCE

- Inspection window is available for quick checking of system operation status. No need to open panel for checking, which will be more time-saving and easier for maintenance.



- **Error Display & Self-diagnostic Function**

Through LED display (different combinations of ON, OFF, or BLINK) on the main board, the malfunction can be judged.



VRF5 HR LINEUP

LINE UP

HP	MODEL	HP	MODEL	MODEL
8	AOU-224VRDC3RB	12	AOU-335VRDC3RB	ACHS1C
10	AOU-280VRDC3RB	14	AOU-400VRDC3RB	ACHS2C
		18	AOU-450VRDC3RB	ACHS4C
				ACHS8C

SPECIFICATIONS AND PARAMETERS

MODEL	ACHS1C	ACHS2C	ACHS4C	ACHS8C
Max input power, W	8	20	44	80
Max branch quantity of connecting indoor unit	1	2	4	8
Net dimensions (W×H×D), mm	388×225×302	468×225×377	587×225×399	987×225×488
Weight (brutto/neto), kg	12.2/9.0	23.4/15.6	24.6/18.6	46.6/37.0

MODEL	AOU-224VRDC3RB	AOU-280VRDC3RB	AOU-335VRDC3RB	AOU-400VRDC3RB	AOU-450VRDC3RB
Cooling capacity, kW	22.4	28.0	33.5	40.0	45.0
Heating capacity, kW	25.0	31.5	37.5	45.0	50.0
Power input (cooling), kW	5.5	8.2	8.3	11.9	14.8
Power input (heating), kW	5.3	7.3	7.7	10.0	12.7
Power supply, V/ph/Hz	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50
Efficiency ratio (EER/COP)	4.09 / 4.75	3.44 / 4.32	4.04 / 4.87	3.36 / 4.50	3.04 / 3.94
Max circuit/fuse current, A	16.3 / 20.0	20.9 / 25.0	24.7 / 32.0	28.8 / 40.0	33.2 / 40.0
Refrigerant	R410A	R410A	R410A	R410A	R410A
Sound pressure (L _p), dB(A)	60.0	61.0	63.0	63.0	63.0
Compressor type	Inverter (×1)	Inverter (×1)	Inverter (×1)	Inverter (×1)	Inverter (×1)
Net dimensions (W×H×D), mm	930×1605×765	930×1605×765	1340×1605×765	1340×1605×765	1340×1605×765
Weight (brutto/neto), kg	243/233	243/233	317/302	361/346	361/346
Pipe connections (liquid/gas), inch	3/8 - 3/4	3/8 - 7/8	1/2 - 1	1/2 - 1	1/2 - 1 1/8
Operating conditions in cooling mode, °C	-5 - +52	-5 - +52	-5 - +52	-5 - +52	-5 - +52
Operating conditions in heating mode, °C	-20 - +24	-20 - +24	-20 - +24	-20 - +24	-20 - +24
Operating conditions during heat recovery, °C	-10 - +20	-10 - +20	-10 - +20	-10 - +20	-10 - +20
Max number of indoor units	13	16	19	23	26

KEY FEATURES OF INDOOR UNITS

4-WAY CASSETTE



- Strong and balanced airflow**
 Unit features auto operation, 4-way airflow, 7 fan speeds and strong circulating airflow.
- Ultra-low noise operation**
 DC inverter motor can realize stepless speed regulation to lower noise. Indoor unit can be set to work under auto quiet mode via wired controller.
- Intelligent drainage device**
 Water height difference up to 1.0m, which can effectively drain out condensing water and save space.
- DC inverter motor**
 With good speed regulation performance, motor efficiency improved by 30% v.s. normal motor.
- Protection function**
 Water overflow protection, anti-freezing protection, temperature sensor malfunction protection, fan motor overload protection, auxiliary electric heating overheat protection (This function is not included in pure heat pump unit).

MODEL	ACMI-28VRDC1A	ACMI-36VRDC1A	ACMI-45VRDC1A	ACMI-56VRDC1A	ACMI-71VRDC1A
Cooling capacity, kW	2.8	3.6	4.5	5.6	7.1
Heating capacity, kW	3.2	4.0	5.0	6.3	8.0
Power supply, V/ph/Hz	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50
Ventilator air flow (Hi/Med/Low), m ³ /h	750/650/550	750/650/550	750/650/550	1000/900/750	1180/950/850
Power consumption, W	48.0	48.0	48.0	59.0	68.0
Sound pressure (L _p) (Hi/Med/Low), dB(A)	36/34/31	36/34/31	36/34/31	37/35/32	38/36/33
Net dimensions Body (W×H×D), mm	840×190×840	840×190×840	840×190×840	840×240×840	840×240×840
Net dimensions Panel (W×H×D), mm	950×65×950	950×65×950	950×65×950	950×65×950	950×65×950
Weight Body (brutto/neto), kg	29,5/22,5	29,5/22,5	29,5/22,5	34,5/26,5	34,5/26,5
Weight Panel (brutto/neto), kg	11,0/7,0	11,0/7,0	11,0/7,0	11,0/7,0	11,0/7,0
Pipe connections (liquid/gas), inch	1/4 - 3/8	1/4 - 1/2	1/4 - 1/2	3/8 - 5/8	3/8 - 5/8

MODEL	ACMI-100VRDC1A	ACMI-125VRDC1A	ACMI-140VRDC1A	ACMI-160VRDC1A
Cooling capacity, kW	10.0	12.5	14.0	16.0
Heating capacity, kW	11.2	14.0	16.0	17.5
Power supply, V/ph/Hz	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50
Ventilator air flow (Hi/Med/Low), m ³ /h	1500/1350/1100	1860/1500/1150	1860/1500/1150	2100/1700/1400
Power consumption, W	98.0	110.0	110.0	130.0
Sound pressure (L _p) (Hi/Med/Low), dB(A)	40/37/35	43/41/38	43/41/38	47/44/42
Net dimensions Body (W×H×D), mm	840×320×840	840×320×840	840×320×840	910×293×910
Net dimensions Panel (W×H×D), mm	950×65×950	950×65×950	950×65×950	1040×65×1040
Weight Body (brutto/neto), kg	40,0/32,5	40,0/32,5	40,0/32,5	56,5/46,5
Weight Panel (brutto/neto), kg	11,0/7,0	11,0/7,0	11,0/7,0	11,5/8,0
Pipe connections (liquid/gas), inch	3/8 - 5/8	3/8 - 5/8	3/8 - 5/8	3/8 - 3/4

COMPACT 4-WAY CASSETTE



- **Compact Design for Easy Installation**

Units maintain the uniform length and width with consistent ceiling opening and panel dimension, convenient for design and installation.

- **Ultra-low noise operation**

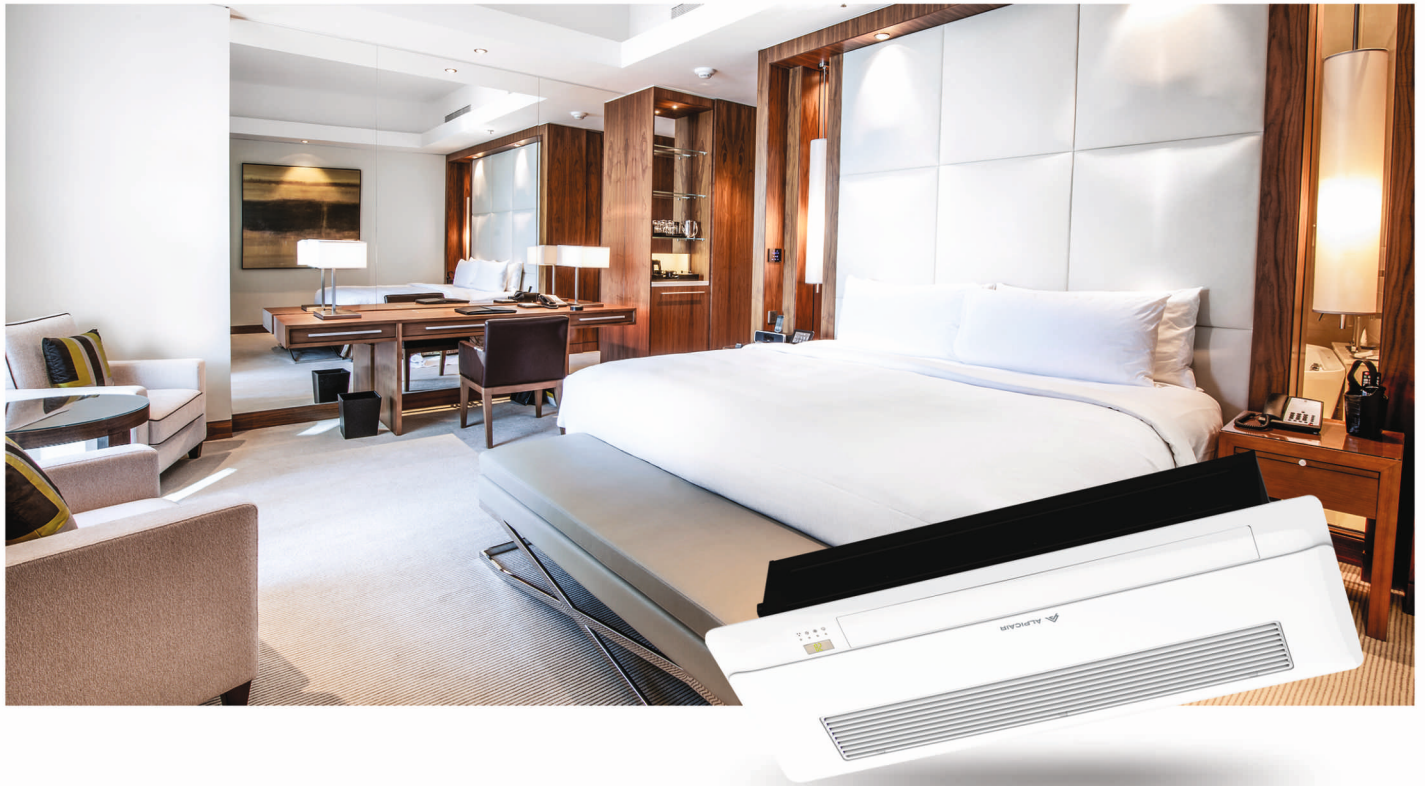
DC inverter motor can realize stepless speed regulation to lower noise. Indoor unit can be set to work under auto quiet mode via wired controller.

- **Intelligent drainage device**

Water height difference up to 1.0m, which can effectively drain out condensing water and save space.

MODEL	ACCMI-22VRDC1A	ACCMI-28VRDC1A	ACCMI-36VRDC1A	ACCMI-45VRDC1A	ACCMI-50VRDC1A	ACCMI-56VRDC1A
Cooling capacity, kW	2.2	2.8	3.6	4.5	5.0	5.6
Heating capacity, kW	2.5	3.2	4.0	5.0	5.6	6.3
Power supply, V/ph/Hz	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50
Ventilator air flow (Hi/Med/Low), m³/h	500/450/400	500/450/400	700/600/480	700/600/480	700/600/480	700/600/480
Power consumption, W	35.0	35.0	35.0	45.0	45.0	45.0
Sound pressure (L _p) (Hi/Med/Low), dB(A)	41/39/35	41/39/35	41/39/35	45/43/38	45/43/38	45/43/38
Net dimensions Body (W×H×D), mm	596×240×596	596×240×596	596×240×596	596×240×596	596×240×596	596×240×596
Net dimensions Panel (W×H×D), mm	670×50×670	670×50×670	670×50×670	670×50×670	670×50×670	670×50×670
Weight Body (brutto/neto), kg	25,5/20,5	25,5/20,5	25,5/20,5	25,5/20,5	25,5/20,5	25,5/20,5
Weight Panel (brutto/neto), kg	5,0/3,5	5,0/3,5	5,0/3,5	5,0/3,5	5,0/3,5	5,0/3,5
Pipe connections (liquid/gas), inch	1/4 - 3/8	1/4 - 3/8	1/4 - 1/2	1/4 - 1/2	1/4 - 1/2	3/8 - 5/8

1-WAY CASSETTE



- **Small installation space**

With 185mm ultra thin design, unit can be installed in the ceiling of 19cm deep.

- **Detachable grille and long life filter**

Grille is detachable for easy cleaning. With long life filter, cleaning cycle is 20 times longer.

- **High drain pump lift**

Drain pump lift reaches 1.0m, which can effectively drain out water.

- **Protection function**

Water overflow protection, anti-freezing protection, fan motor overload protection, temperature sensor malfunction protection, auxiliary electric heating overheat protection(This function is not included in pure heat pump unit).

MODEL	ACQMI-22VRDC1A	ACQMI-28VRDC1A	ACQMI-36VRDC1A	ACQMI-50VRDC1A
Cooling capacity, kW	2.2	2.8	3.6	5.0
Heating capacity, kW	2.5	3.2	4.0	5.6
Power supply, V/ph/Hz	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50
Ventilator air flow (Hi/Med/Low), m³/h	600/500/450	600/500/450	600/500/450	830/600/500
Power consumption, W	30.0	30.0	30.0	45.0
Sound pressure (L _p) (Hi/Med/Low), dB(A)	36/32/28	36/32/28	36/32/28	40/35/30
Net dimensions Body (W×H×D), mm	987×178×385	987×178×385	987×178×385	987×178×385
Net dimensions Panel (W×H×D), mm	1200×55×460	1200×55×460	1200×55×460	1200×55×460
Weight Body (brutto/neto), kg	27,0/20,0	27,0/20,0	27,0/20,0	28,5/21,0
Weight Panel (brutto/neto), kg	6,0/4,2	6,0/4,2	6,0/4,2	6,0/4,2
Pipe connections (liquid/gas), inch	1/4 - 3/8	1/4 - 3/8	1/4 - 1/2	1/4 - 1/2

WALL-MOUNTED



- **Comfortable and balanced airflow, up & down air outlet**

Up air outlet: In cooling, cool air blows out horizontally and then gradually drops. Down air swing: In heating, warm air blows downward and then gradually climbs up.

- **Triple defenders for better purification**

Mildew-proof filter, electrostatic fibre and anti-biotic fibre adopted to remove dust, smell, bacteria and mildew.

- **Cold air prevention design**

During heating in winter, cold air prevention function is enabled so that air won't be blown out until it's warm.

- **Multiple protections**

Anti-freezing protection, temperature sensor malfunction protection, fan motor overload protection, auxiliary electric heating over-heat protection (This function is not included in pure heat pump unit).

MODEL	AWMI-22VRDC1B	AWMI-28VRDC1B	AWMI-36VRDC1B	AWMI-45VRDC1B	AWMI-56VRDC1B	AWMI-71VRDC1B
Cooling capacity, kW	2.2	2.8	3.6	4.5	5.6	7.1
Heating capacity, kW	2.5	3.2	4.0	5.0	6.3	7.5
Power supply, V/ph/Hz	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50
Ventilator air flow (Hi/Med/Low), m³/h	500/420/350	500/420/350	630/550/480	630/550/480	750/600/500	750/600/500
Sound pressure (L _p) (Hi/Med/Low), dB(A)	38/34/30	38/34/30	44/41/38	44/41/38	44/41/38	44/41/38
Net dimensions (W×H×D), mm	843×275×180	843×275×180	940×298×200	940×298×200	1008×319×221	1008×319×221
Weight (brutto/neto), kg	12,5/10,0	12,5/10,0	15,5/12,5	15,5/12,5	18,5/15,0	18,5/15,0
Pipe connections (liquid/gas), inch	1/4 - 3/8	1/4 - 3/8	1/4 - 1/2	1/4 - 1/2	3/8 - 5/8	3/8 - 5/8

FLOOR CEILING TYPE



- **Hoisted or seated, flexible installation**

Unit can be hoisted or seated. When seated, suspended ceiling is not needed.

- **Beautiful appearance**

With beautiful and elegant front panel, it is congenial to the indoor surroundings.

- **Protection function**

Anti-freezing protection, temperature sensor malfunction protection, fan motor overload protection.

- **Horizontal and vertical air swing**

Wider air swing range for your comfortable working and living environment.

MODEL	AFMI-36VRDC1A	AFMI-50VRDC1A	AFMI-63VRDC1A	AFMI-71VRDC1A
Cooling capacity, kW	3.6	5.0	6.3	7.1
Heating capacity, kW	4.0	5.6	7.1	8.0
Power supply, V/ph/Hz	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50
Ventilator air flow (Hi/Med/Low), m ³ /h	650/580/500	950/850/700	1400/1150/1000	1400/1150/1000
Power consumption, W	40.0	50.0	75.0	75.0
Sound pressure (L _p) (Hi/Med/Low), dB(A)	36/34/32	42/38/33	44/42/39	44/42/39
Net dimensions (W×H×D), mm	1220×225×700	1220×225×700	1420×245×700	1420×245×700
Weight (brutto/neto), kg	49,0/40,0	49,0/40,0	58,0/50,0	58,0/50,0
Pipe connections (liquid/gas), inch	1/4 - 1/2	1/4 - 1/2	3/8 - 5/8	3/8 - 5/8

MODEL	AFMI-112VRDC1A	AFMI-125VRDC1A	AFMI-140VRDC1A
Cooling capacity, kW	11.2	12.5	14.0
Heating capacity, kW	12.5	14.0	16.0
Power supply, V/ph/Hz	220-240/1/50	220-240/1/50	220-240/1/50
Ventilator air flow (Hi/Med/Low), m ³ /h	2000/1800/1450	2000/1800/1450	2000/1800/1450
Power consumption, W	160.0	160.0	160.0
Sound pressure (L _p) (Hi/Med/Low), dB(A)	51/46/42	52/48/45	52/49/45
Net dimensions (W×H×D), mm	1700×245×700	1700×245×700	1700×245×700
Weight (brutto/neto), kg	68,0/60,0	68,0/60,0	68,0/60,0
Pipe connections (liquid/gas), inch	3/8 - 5/8	3/8 - 5/8	3/8 - 5/8

DUCT TYPE



- **Low static pressure, low noise**

Especially suitable for rooms of compact structure or small installation space. Also, it provides you with a comfortable and quiet living environment.

- **Safety design**

With ceramic PIC electric heating, it features safe operation, high heat exchange efficiency, quick temperature rising, no oxygen consumption, constant temperature, etc.

- **Convenient installation**

Tab type plastic filter, detachable fan motor, independent water pump assembly and electric box assembly, all for convenient maintenance.

- **Protection function**

Water overflow protection, anti-freezing protection, fan motor overload protection, temperature sensor malfunction protection.

MODEL	ATMI-22VRDC1A	ATMI-28VRDC1A	ATMI-36VRDC1A	ATMI-45VRDC1A	ATMI-56VRDC1A
Cooling capacity, kW	2.2	2.8	3.6	4.5	5.6
Heating capacity, kW	2.5	3.2	4.0	5.0	6.3
Power supply, V/ph/Hz	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50
Ventilator air flow (Hi/Med/Low), m³/h	450/350/250	450/350/250	550/450/350	700/600/450	1000/800/600
Power consumption, W	35.0	35.0	43.0	52.0	99.0
Standard ESP, Pa	30/15	30/15	30/15	30/15	30/15
Sound pressure (L _p) (Hi/Med/Low), dB(A)	31/28/25	31/28/25	32/30/27	33/31/28	35/33/30
Net dimensions (W×H×D), mm	700×200×615	700×200×615	700×200×615	900×200×615	1100×200×615
Weight (brutto/neto), kg	27,0/22,0	27,0/22,0	28,0/22,0	33,0/27,0	38,0/31,0
Pipe connections (liquid/gas), inch	1/4 - 3/8	1/4 - 3/8	1/4 - 1/2	1/4 - 1/2	3/8 - 5/8

MODEL	ATMI-71VRDC1A	ATMI-90VRDC1A	ATMI-112VRDC1A	ATMI-140VRDC1A
Cooling capacity, kW	7.1	9.0	11.2	14.0
Heating capacity, kW	8.0	10.0	12.5	16.0
Power supply, V/ph/Hz	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50
Ventilator air flow (Hi/Med/Low), m³/h	1000/850/600	1500/1250/950	1700/1500/1100	2000/1500/1150
Power consumption, W	105.0	209.0	209.0	230.0
Standard ESP, Pa	50/30	50/30	50/30	50/30
Sound pressure (L _p) (Hi/Med/Low), dB(A)	35/33/30	40/36/32	40/36/32	42/40/37
Net dimensions (W×H×D), mm	1200×260×655	1340×260×655	1340×260×655	1340×260×655
Weight (brutto/neto), kg	47,0/40,0	55,0/46,0	55,0/46,0	56,0/47,0
Pipe connections (liquid/gas), inch	3/8 - 5/8	3/8 - 5/8	3/8 - 5/8	3/8 - 5/8

SLIM DUCTED



- ### Highly Efficient & Energy-saving

High-efficiency DC brushless motor is used. Its efficiency is improved by over 30% compared with common motor. Evaporator flow path adopts simulating optimized design via the refrigeration system simulation software, which has greatly increased the heat exchange capacity of evaporator.

- ### Slim & Small

The unit is only 200mm's thick and 450mm's deep. Suspended ceiling doesn't have to be very high. It is suitable for ordinary rooms.

- ### Wiring of Electric Control Box

Mounting board of electric control box elements are arranged at both sides of the mounting board of fan motor. There is a wire-cross notch on each side so that wiring at both sides of the mounting board of fan motor is convenient and efficient. Strong and weak current are also separated to ensure the effectiveness of weak current signal transmission.

- ### Protection Functions

Anti-freezing protection, fan motor built-in over-load protection, temperature sensor error protection.

- ### Ultra-quiet

High-efficiency centrifugal fan and ultralow noise volute are developed with ANSYS and Fluent. They have also gained national patents. Meanwhile, inlet mute valve is adopted so that noise of the complete unit is greatly reduced.

- ### Fast & Strong

Intelligent temperature control technology is adopted. Cooling/Heating function is fast and strong so that room temperature can quickly reach set temperature.

- ### Flexible Installation

Based on the requirements of building and utilization, different ways of air return and different air supply static pressure can be selected.

- ### CAN Bus Communication Technology

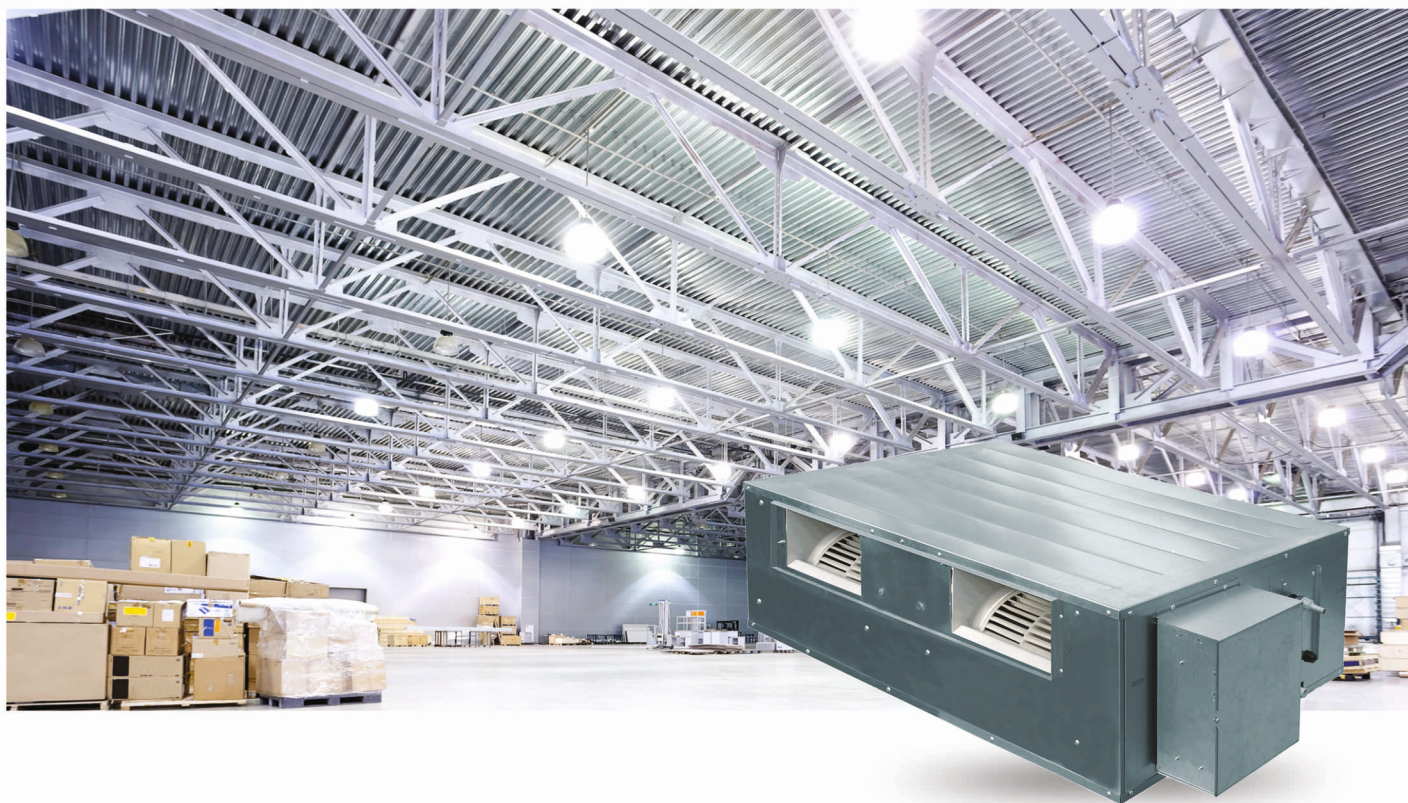
System response speed is faster and communication is more reliable. Auto addressing, non-polar communication, free wire matching.

- ### Convenient Operation & Maintenance

Electric control box is attached independently so that it can be detached as a whole, which is convenient for maintenance. The installation and maintenance of fan and motor is also convenient.

MODEL	ATTMI-22VRDC1A	ATTMI-28VRDC1A	ATTMI-36VRDC1A	ATTMI-45VRDC1A	ATTMI-56VRDC1A	ATTMI-72VRDC1A
Cooling capacity, kW	2.2	2.8	3.6	4.5	5.6	7.2
Heating capacity, kW	2.5	3.2	4.0	5.0	6.3	8.0
Power supply, V/ph/Hz	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50
Ventilator air flow (Hi/Med/Low), m³/h	450/400/320	450/400/320	550/450/340	750/660/540	850/700/610	1100/800/640
Power consumption, W	25.0	25.0	30.0	35.0	45.0	45.0
Standard ESP, Pa	15/0	15/0	15/0	15/0	15/0	15/0
Sound pressure (L _p) (Hi/Med/Low), dB(A)	30/28/22	30/28/22	31/29/25	33/30/27	35/33/29	37/34/30
Net dimensions (W×H×D), mm	710×200×450	710×200×450	710×200×450	1010×200×450	1010×200×450	1310×200×450
Weight (brutto/neto), kg	22,0/18,5	22,0/18,5	23,0/19,5	28,0/23,5	29,0/24,5	36,0/30,5
Pipe connections (liquid/gas), inch	1/4 - 3/8	1/4 - 3/8	1/4 - 1/2	1/4 - 1/2	3/8 - 5/8	3/8 - 5/8

HSP DUCTED



- **High static pressure design**

Static pressure can be up to 150Pa, especially suitable for places in need of long distance airflow.

- **Easy maintenance**

The system has maintenance port for easy maintenance.

- **Convenient installation**

You can choose circular air duct or rectangular air duct according to actual needs. Or you can choose different ways of air return.

- **Protection function**

Anti-freezing protection, fan motor overload protection, temperature sensor malfunction protection.

MODEL	ATMI-160VRDC1A	ATMI-224VRDC1A	ATMI-280VRDC1A
Cooling capacity, kW	16.0	22.4	28.0
Heating capacity, kW	17.0	25.0	31.0
Power supply, V/ph/Hz	220-240/1/50	220-240/1/50	220-240/1/50
Ventilator air flow (Hi/Med/Low), m³/h	2650/2100/1650	4000/3600/3200	4400/4000/3600
Power consumption, W	350.0	800.0	900.0
Standard ESP, Pa	150/70	200/100	200/100
Sound pressure (L _p) (Hi/Med/Low), dB(A)	50/48/46	54/52/49	55/52/50
Net dimensions (W×H×D), mm	1340×350×750	1483×385×791	1686×450×870
Weight (brutto/neto), kg	71,0/60,0	104,0/82,0	140,0/105,0
Pipe connections (liquid/gas), inch	3/8 - 3/4	3/8 - 3/4	3/8 - 7/8

CONSOLE



- Multiple fan speed**
 The fan can operate in multiple speed and satisfy different airflow volume requirements.
- High drain pump lift**
 Drain pump lift reaches 1.0m, which can effectively drain out water.
- Detachable grille and long life filter**
 Grille is detachable for easy cleaning. With long life filter, cleaning cycle is 20 times longer.
- Protection function**
 Water overflow protection, anti-freezing protection, fan motor overload protection, temperature sensor malfunction protection, auxiliary electric heating overheat protection (This function is not included in pure heat pump unit).

MODEL	AFKMI-22VRDC1A	AFKMI-28VRDC1A	AFKMI-36VRDC1A	AFKMI-50VRDC1A
Cooling capacity, kW	2.2	2.8	3.6	5.0
Heating capacity, kW	2.5	3.2	4.0	5.5
Power supply, V/ph/Hz	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50
Ventilator air flow (Hi/Med/Low), m³/h	400/320/270	400/320/270	480/400/310	680/600/500
Power consumption, W	60.0	60.0	60.0	60.0
Sound pressure (L _p) (Hi/Med/Low), dB(A)	38/33/26	38/33/26	40/37/32	46/41/35
Net dimensions (W×H×D), mm	700×600×215	700×600×215	700×600×215	700×600×215
Weight (brutto/neto), kg	19,0/16,0	19,0/16,0	19,0/16,0	19,0/16,0
Pipe connections (liquid/gas), inch	1/4 - 3/8	1/4 - 3/8	1/4 - 3/8	1/4 - 1/2

FLOOR STANDING



- **Wide Application**

It can be widely adopted in hotels, restaurants, office, etc.

- **Auto clean to ensure a healthy life**

After turning off the unit, the indoor fan will keep running in low speed for a moment to dry the inner components and parts, in order to prevent mildew and keep user healthy.

MODEL	AFTMI-100VRDC1A	AFTMI-140VRDC1A
Cooling capacity, kW	10.0	14.0
Heating capacity, kW	11.0	15.0
Power supply, V/ph/Hz	220-240/1/50	220-240/1/50
Ventilator air flow (Hi/Med/Low), m³/h	1850/1600/1400	1850/1600/1400
Power consumption, W	200.0	200.0
Sound pressure (L _p) (Hi/Med/Low), dB(A)	50/48/46	50/48/46
Net dimensions (W×H×D), mm	1870×400×580	1870×400×580
Weight (brutto/neto), kg	74,0/54,0	77,0/57,0
Pipe connections (liquid/gas), inch	3/8 - 5/8	3/8 - 5/8

AHU KIT



- Maximum capacity**
 Capacity of single unit reaches 20HP.
- Adjustable capacity**
 Adjust capacity by DIP switch code, flexible and convenient.
- Convenient for installation**
 EXV is separated from control box, flexible for installation.

MODEL	AXV-140VRDC1A	AXV-280VRDC1A	AXV-560VRDC1A
Cooling capacity, kW	9,0 / 11,2 / 14,0	22,4 / 28,0 / 33,5 / 40,0 / 45,0	50,4 / 56,0 / 84,0
Heating capacity, kW	10,0 / 12,5 / 16,0	25,0 / 31,5 / 37,5 / 45,0 / 50,0	56,5 / 63,0 / 94,5
Power supply, V/ph/Hz	220-240/1/50	220-240/1/50	220-240/1/50
Net dimensions of EXV box (W×H×D), mm	203×326×85	203×326×85	246×500×120
Net dimensions of control box (W×H×D), mm	334×284×111	334×284×111	334×284×111
Weight (brutto/neto), kg	11,5/8,6	11,5/8,6	15,5/11,8

CONTROL SYSTEM



WIRED CONTROLLER AND REMOTE CONTROLLER

There are two kinds of controllers: wired controller and remote controller. The system provides various controls for users, such as cooling, heating, dehumidifying and fan etc., users can select it flexibly according to their own using methods.

WIRED CONTROLLER XK46



- LCD with black background and white words; touch buttons;
- Clock can be displayed and set; 24 hours timer setting for on/off;
- 7 levels of fan speed, up & down swing and left & right swing;
- Can be switched in auto, cooling, dehumidifying, fan, heating, floor heating, 3D heating and pace heating operation modes;
- Master and slave wired controllers can be set; simultaneous control over several indoor units is available;
- Available functions: sleep, ventilation, quiet/auto quiet, light, energy saving, auxiliary heating, drying, memory, low-temperature dehumidifying, absence in heating, controllable auxiliary heating in dehumidifying, filter cleaning reminder, etc.;
- Detect ambient temperature; receive infrared remote controller signal;
- With project parameters viewing and setting functions;
- Dampproof structure design.

WIRED CONTROLLER XK79 (FOR HOTEL)



- Small and fashionable appearance with thickness only of 12 mm and back lighting LCD with black background and white words;
- Eight touch buttons;
- Clock can be displayed and set in countdown and clock timer;
- Besides normal functions, other functions such as low-temperature dehumidifying, absence in heating, controllable auxiliary heating in dehumidifying and filter cleaning reminder can also be set;
- Door control system can be connected.

WIRED CONTROLLER XK55



- Elegant appearance;
- High-resolution color LCD;
- Capacitive touch control; receive infrared remote controller signal;
- Various timing functions: three weekly timers and one countdown timer can be set simultaneously; mode, temperature and fan speed can be preset in weekly timer;
- Complete system functions; each function will be implemented in an individual page with interactive and humanized interface;
- Various personalized functions, e.g. setting brightness and back-light time;
- Sufficient viewing functions, e.g. viewing on/off status and after-sales service hot line.

WIRED CONTROLLER XK86



- Elegant and concise appearance;
- Touch buttons with back lighting LCD;
- Chinese and English display can be switched;
- With weekly timer function;
- Complete system functions with each function implemented in an individual page;
- Refreshing, auto dehumidifying, absence and other modes can be set;
- Detect ambient temperature precisely;
- With electricity consumption inquiry function (Unit with electricity measurement function shall be connected);
- With service hotline inquiry and after-sales phone number record functions.

REMOTE CONTROLLER YAP1F



- Can be switched in auto, cooling, dehumidifying, fan and heating operation modes;
- Besides turbo, 6 levels of fan speed can be set;
- Available functions: child lock, drying, health, ventilation, turbo, sleep, light, absence, I-Feel and timer;
- Clock display and indoor/outdoor ambient temperature viewing functions;
- Up & down swing and left & right swing.

REMOTE CONTROLLER YV1L1

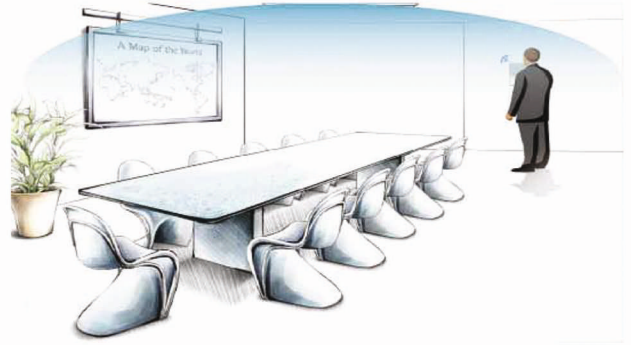


- Back lighting LCD;
- Can be switched in auto, cooling, dehumidifying, fan, heating, floor heating, 30 heating and space heating operation modes;
- 7 levels of fan speed, up & down swing and left & right swing;
- Available functions: child lock, energy saving, drying, health, ventilation, quiet/auto quiet, sleep, light, absence, low-temperature dehumidifying, I-Feel and timer;
- With clock display, system parameters viewing and setting functions.



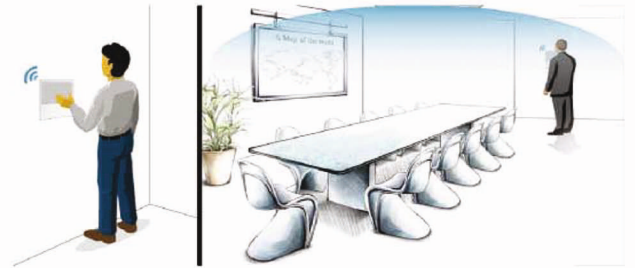
- **Single control of one unit**

Each indoor unit has an independent controller.



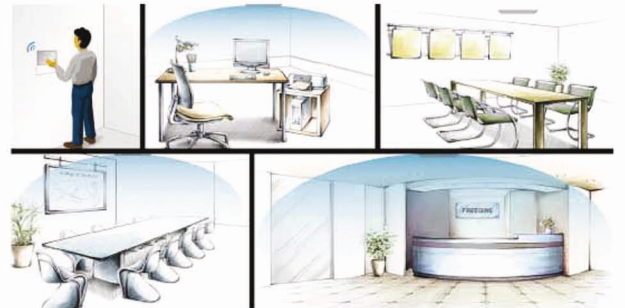
- **Multiple control of one unit**

One indoor unit can be controlled by several wired controllers at different places.



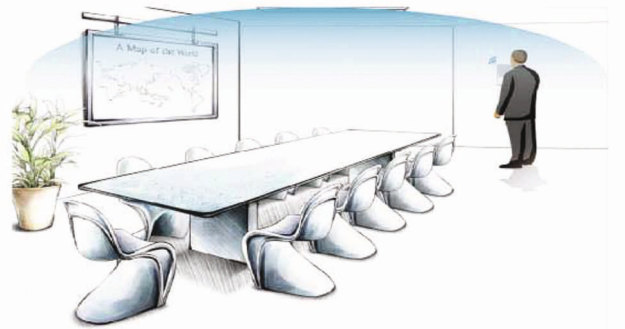
- **Central control of several indoor units**

One wired controller can control as many as 16 indoor units.



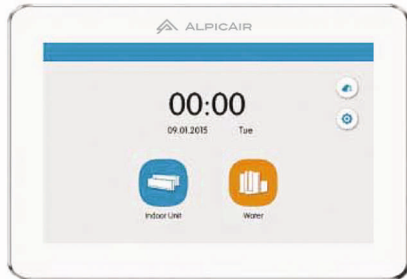
- **Joint control of remote controller and wired controller**

Users can control one unit with two types of controllers: a remote controller which is convenient and flexible; or a wired controller which includes every function of an air conditioner.



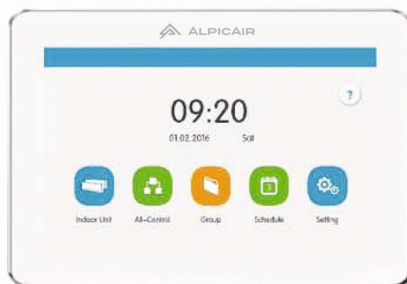
SMART ZONE CONTROLLER AND CENTRAL CONTROLLER

SMART ZONE CONTROLLER CE53-24/F(C)



- High-resolution color LCD;
- 7" capacitive touch screen for easy operation;
- Shielding function of single unit, group and all indoor units (shielding on/off, mode, temp setting, etc.);
- With various functions: centralized control (control all indoor units), group management (support DIY grouping), schedule management (setting of several schedules) and single unit control (on/off, mode, temp setting, fan speed, quiet, swing control, etc.);
- Provide naming of indoor units, selection of icons and personalized settings (setting background, backlight, etc.);
- Up to 32 units can be centrally controlled;
- Elegant and fashionable appearance;
- Embedded installation in wall with projecting thickness only of 11 mm;
- Connectable with network of indoor units or outdoor units;
- Independent power supply in 110-240 V wide voltage range;
- With project setting, parameter viewing, malfunction record and access management functions.

CENTRAL CONTROLLER CE52-24/F(C)



- High-resolution color LCD;
- 7" capacitive touch screen for easy operation;
- With project setting, parameter viewing, malfunction record and access management functions.
- With various functions: centralized control (control all indoor units), group management (support DIY grouping), schedule management (setting of several schedules) and single unit control (on/off, mode, temp setting, fan speed, quiet, swing control, etc.);
- Shielding function of single unit, group and all indoor units (shielding on/off, mode, temp setting, etc.);
- Provide naming of indoor units, selection of icons and personalized settings (setting background, backlight, etc.);
- Up to 255 units can be centrally controlled;
- Elegant and fashionable appearance;
- Embedded installation in wall with projecting thickness only of 11 mm;
- Connectable with network of indoor units or outdoor units;
- Independent power supply in 110-240 V wide voltage range;

E-SMART ZONE CONTROLLER CE54-24/F(C)

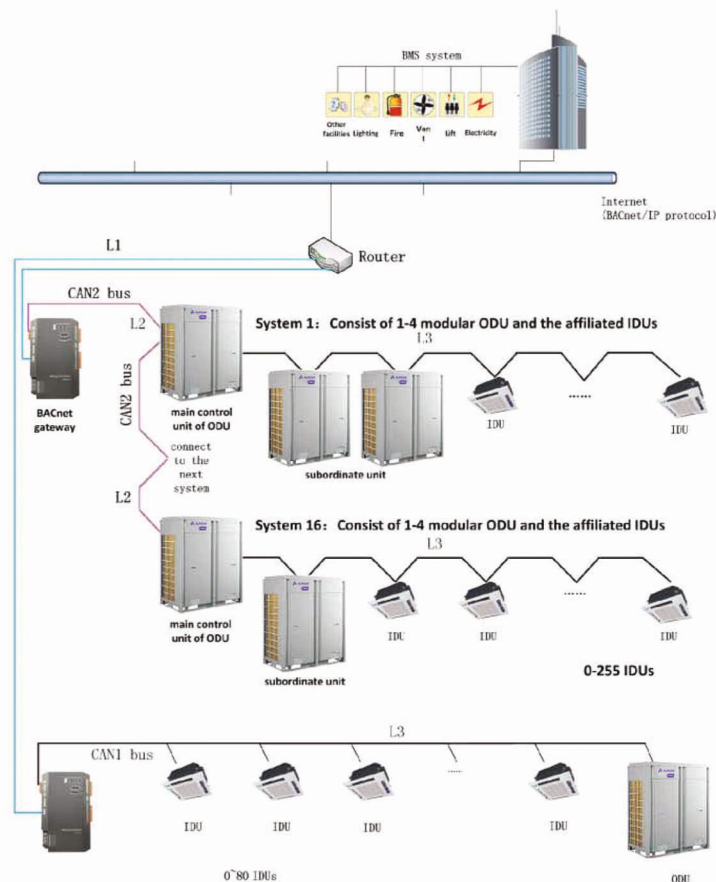


- Adopt built-in type installation; the exposed part is only 11 mm;
- High resolution colorful LCD;
- 4,3 inch capacitive touch screen for easy operation;
- With single indoor unit control (including general functions and advanced functions), group indoor units control (including general functions and advanced functions), group management (supporting DIY group), single indoor unit and group indoor units timer functions; (general functions: ON/OFF, Mode, Set, Fan, Swing, etc.; advance functions: Save, Sleep, E-heater, Absence, Quiet, Turbo, etc.)
- With long-distance shield function (shield switch, mode, set, etc.) for single unit, group and all indoor units;
- Support denomination for indoor units, and icon selection, realizing individuation management;
- Support maximum 32 indoor units, with powerful function;
- Indoor or outdoor unit network can be connected, simple and flexible;
- 110-240 V super wide voltage for independent power supply, stable and reliable;
- With functions of engineering setting, parameters view, malfunction view and authority management, easy for debugging and maintenance.

BACNET GATEWAY

AlpicAir BACnet Gateway kit ME30-24/D4(B) is intended to realize the data exchange between the air conditioning unit and BMS system, and providing standard BACnet/IP building interface and 10 I/Os (five inputs are 011, 012, 013, 014, DIS and five outputs are 001, 002, 003, 004, DOS). 011 is the fire alarm interface. The status of other I/Os are mapped to the specific objects of the BACnet/IP bus and are defined by the user.

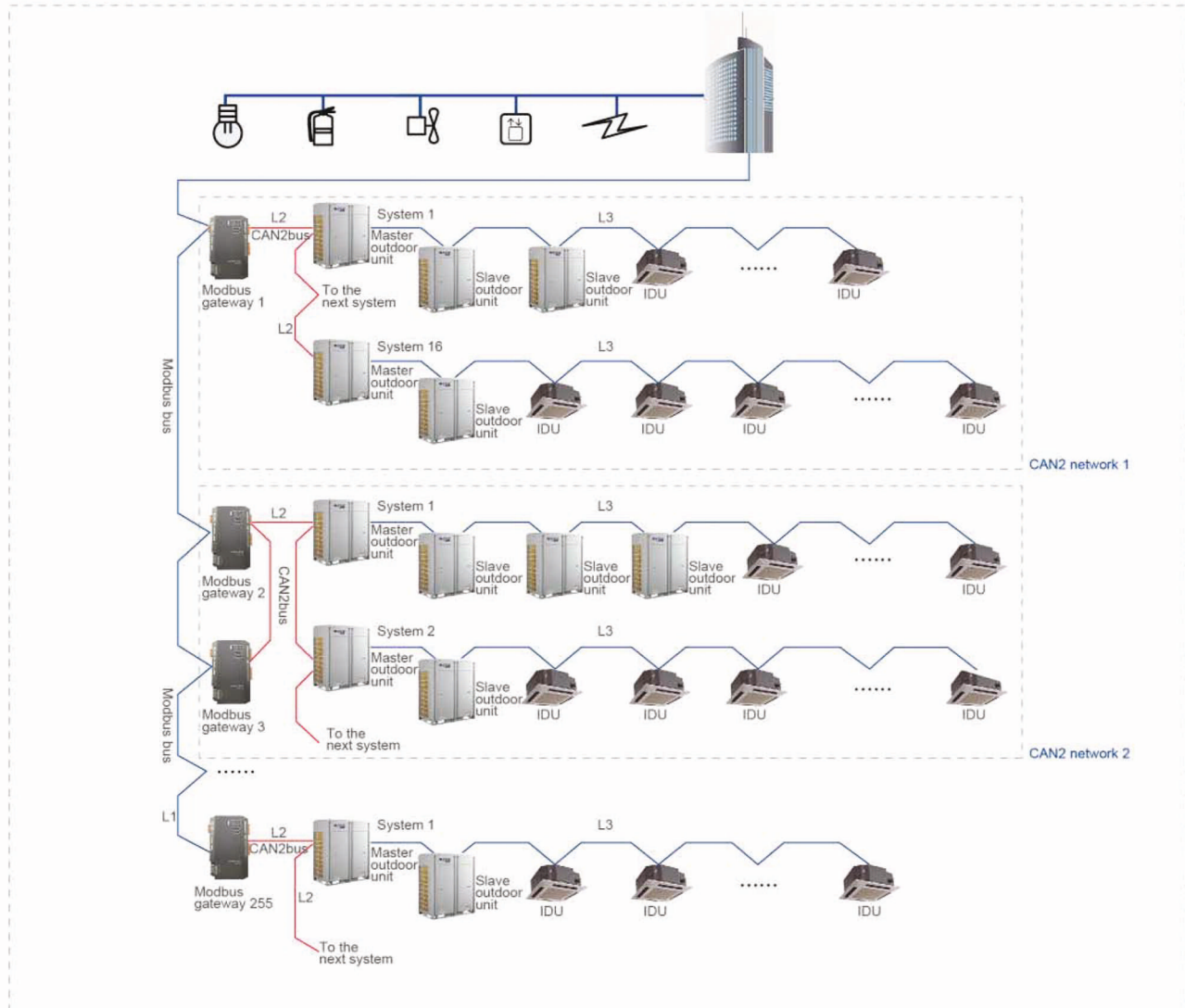
This gateway applies to the VRF system using CAN protocol.



- International standard BACnet/IP interface;
- Real-time monitoring of unit operation status, e.g. on/off, mode, temperature;
- Real-time response to the control of unit (on/off, mode setting and speed setting, etc.) by monitoring software;
- Monitor unit errors;
- Lock unit operation statuses, directing at all control functions of unit itself or a certain setting function;
- Achieve cooling and heating temperature limitation functions;
- 5DI&5DO interfaces for receiving fire alarm signal and user's definition logic;
- Up to 255 indoor units can be centrally controlled.

MODBUS GATEWAY

Modbus Gateway provides VRF5 system with the Modbus protocol interface when connecting to the Building Management System (BMS) in order to achieve central control and remote control over VRF5 system by BMS.



- Real-time monitoring of unit operation status, e.g. on/off, mode, temperature;
- Real-time response to the control of unit (on/off, mode setting and speed setting, etc.) by monitoring software;
- Control all the units switches of on and off;
- Monitor unit errors;
- One Modbus bus can support up to 255 gateways. One Modbus gateway can support at most 16 outdoor units (up to 64 modular outdoor units) and 128 indoor units;
- Lock unit operation statuses, directing at all control functions of unit itself or a certain setting function;
- Linkage control, supporting 5 DI and 5 DO for receiving fire alarm signal and user's definition logic;
- CAN, RS485 communication ports are non-polar, convenient for construction wiring;
- Achieve cooling and heating temperature limitation functions;
- 100-240 VAC, 50/60Hz wide voltage range, adapted to the power supply of each country and region.



ALPICAIR AIR CONDITIONING

Note:

AlpicAir is committed to continuously improving its products to ensure the highest quality and reliability standards and to meet local regulations and market requirements.

V 3.15.0 * Under our policy of continuous improvement, we reserve the right to change specifications and design without prior notice. www.alpicair.com



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