



 **OUTDOOR UNITS**

**V8S VRF**



## V8S VRF Lineup

### Outdoor Unit

8-14HP



16-24HP



26-48HP



50-72HP



74-96HP



● **The V8S** Series VRF uses a variety of algorithms and self-learning technology to monitor the operation of the equipment through operating parameters and timely maintenance, so that the equipment always runs in optimal condition throughout its life cycle.



# Outdoor Unit Functions

Functions			V8S
●: equipped as standard; ○: customization option;			
Key Technologies	HyperLink	Midea original communication bus chip greatly simplifies installation and saves installation cost	●
	SuperSense	18 sensors achieves the state of each part of the refrigerant pipeline can be known in the whole process	●
	Meta 2.0	Triple variable control to maximize the comfort and energy efficiency	●
	Zen air 2.0	Provides comfort and healthy air supply	●
	Doctor M 2.0	Intelligent diagnostic technology makes maintenance easier and more efficient	●
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High Efficiency	Full DC inverter technology	All electrical components of outdoor and indoor units are DC power supply, improving electrical efficiency and achieving energy saving	●
	Enhanced Vapor Injection (EVI) compressor	Increases refrigerant circulation and improves both cooling and heating capacity	●
	Micro-channel refrigerant subcooling	The refrigerant system can achieve 15°C refrigerant subcooling, which can further improve the refrigerant heat transfer efficiency while reducing the sound	●
	Low standby power consumption	The standby power consumption is as low as 3.5W	●
	60-step energy management	The system can be set 40% to 100% capacity output in 1% increments	●

Functions			V8S
●: equipped as standard; ○: customization option;			
High Reliability	Duty cycling	Equalizes the running time of the outdoor units in a multiple-unit system, significantly extending unit lifespan (available for combined unit)	●
	Backup operation (unit)	If one unit fails, the other units provide backup so that the system can continue operating (available for combined unit)	●
	Backup operation (fan motor)	If one fan motor fails, the other fan motor provide backup so that the system can continue operating	●
	Backup operation (sensor)	If one sensor fails, the virtual sensor provide backup so that the system can continue operating	●
	Precise oil control	Ensures all outdoor compressor oil is at a safe level, eliminating any compressor oil shortage problems.	●
	Heavy anti-corrosion protection	Can be customized with heavy anti-corrosion treatment for surface protection against corrosive air, acid rain and saline air (for installations in coastal regions) to extend overall useful life	○
	UL anti-corrosion certificate	It has been certified by UL that our VRF outdoor unit can withstand 27 years of simulated severe corrosion under a salt contaminated traffic environment	○
	Micro-channel refrigerant cooling PCB	10 times higher than ordinary refrigerant pipe cooling efficiency	●
	Auto dust-clean function	Blows away accumulated dust on the outdoor unit, guaranteeing the unit operating stable in dusty environment	●
	Alarm output	In case of system malfunction, remote output error information, remind maintenance personnel timely maintenance	○
Fire alarm input	In case of fire, receive fire information in time and stop the system immediately to avoid serious problems	●	





# Outdoor Unit Functions

Functions			V8S
●: equipped as standard; ○: customization option;			
Enhanced Comfort	Silent mode	15-step silent mode selections provide more freedom and convenience to match the customer needs	●
	Intelligent defrosting technology	Calculates the time required for defrosting according to the actual system status, eliminating heat losses from unnecessary defrosting	●
	Auto cooling-heating changeover	Automatically selects cooling or heating mode to achieve the set temperature (available in changeover priority mode)	●
	Additional ambient temperature sensor	The additional external ambient temperature sensor can detect the true outdoor ambient temperature, correctly judge whether the system is running in cooling or heating in auto priority mode, ensuring indoor comfort	○
	0.1 °C control precision	Control precision of the sensor can reach 0.1°C, ensuring less room temperature fluctuation	●
	Multiple priority modes	10 priority modes meet the requirements of all scenarios	●
	Wide Application Range	Wide capacity range	Meets all customer requirements from small to large buildings
Wide range of indoor units		Provides 12 types and more than 100 models of VRF indoor units to meet different application scenarios	●
Wide operation range		Operates stably under extreme conditions	-15-55°C (C) -30-30°C (H)
Long piping capability		Benefits for the system design, installation flexibility, as well as the less installation cost	●
Auto addressing (ODU-IDU)		Distributes addresses to indoor units automatically, simplifying the installation	●
Auto addressing (ODU-ODU)		Distributes addresses to slave outdoor units automatically, further simplifying the installation (available for combined unit)	●

Functions			V8S
●: equipped as standard; ○: customization option;			
Easy Installation And Service	Automatic refrigerant charging	Makes installation and service easier and more efficient	○
	Automatic refrigerant recycling	Refrigerant can recycle to ODUs or IDUs and normal ODUs, making the maintenance easier and more efficient	●
	Bluetooth module	It can be used for fault information storage, operation parameter enquiry, system parameter setting, quick after-sales PCB replacement, indoor and outdoor units programme upgrade, etc., simplifying installation and maintenance.	○
	Digit display	4 digit 7-segment display can be intuitive for parameter setting, parameter check and error check	●
	High external static pressure	Up to 80Pa ESP allows easy handling in a variety of installation environments	0-35Pa ● 35-80Pa ○
	Arbitrary topology of communication wire	Supports any communication topology, greatly simplifies installation and reduces installation cost	●
	2-core non-polarity communication wiring between the indoor and outdoor units	Simplifies installation and reduces wiring failures	●
	Long communication wiring	Communication wiring up to 2000m makes installation more flexible	●
	Wide combination ratio	Combination ration can be extended to 50%-200% under certain conditions which can meet different project requirements	50-130% ● 50-200% (for single unit system) ○
	Supports manual and automatic defrosting	Improves maintenance efficiency	●
	Supports manual and automatic oil return	Improves maintenance efficiency	●
	Easy software program upgrade	The software program can be upgraded via on-site USB and burning, or remotely via the web	●
	Flexible controller connection	Central controller and BMS gateway can connect to ODU at the same time, central controller can connect to ODU or IDU	●
	Refrigerant amount diagnosis	The unit can diagnose excessive or insufficient amounts of refrigerant, prompt maintenance personnel to check the system in time to avoid serious malfunction	●
	Easy system commissioning and checking	System commissioning and checking can easily be done on-site or remotely via the web	●
	Intelligent maintenance tool	Intelligent bluetooth after-sales kit can simplify maintenance and improve maintenance efficiency	○

Note:  
\*The web function needs to be realized through the data cloud gateway, and the data cloud gateway needs to be purchased separately.



# INNOVATIVE

## TECHNOLOGIES



**HyperLink** *New & Unique*

**SuperSense** *New & Unique*

 **ETA 2.0**

 **ENair 2.0**

**DOCTOR m. 2.0**



Midea original communication bus chip greatly simplifies installation and saves installation cost.

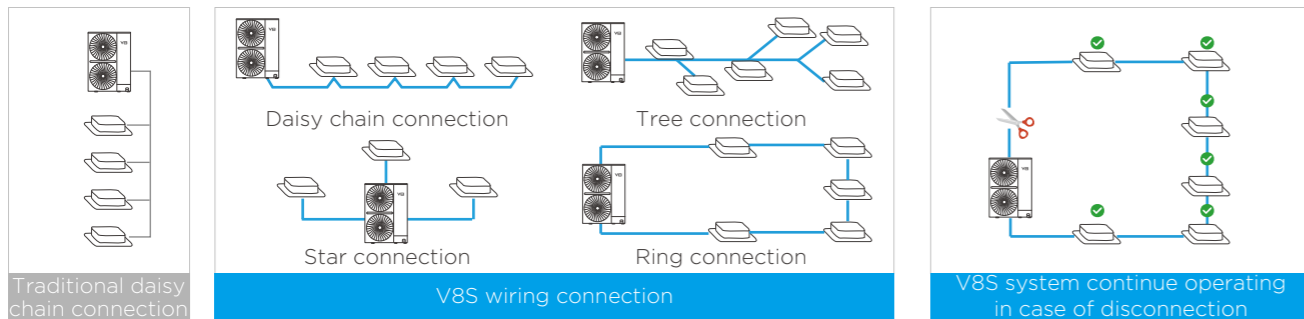


- Benefits**
- Flexible installation
  - Low installation cost
  - High reliability
  - Stable operation

HyperLink communication technology supports any wiring pattern rather than just daisy chain connection, reducing the installation cost and the possibility of incorrect connection. It has stronger anti-interference ability, achieving communication distance up to 2000m.

**Arbitrary Topology Communication**

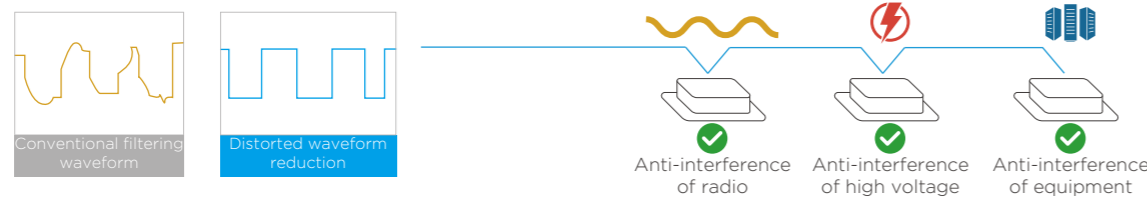
In addition to the traditional daisy chain connection, the communication wire supports tree connection, star connection, ring connection and so on. The wiring is flexible, which greatly reduces the installation cost and has no possibility of wrong connection on site.



\*In ring connection, the communication wire must be connected polarized (M1 port to M1 port and M2 port to M2 port).

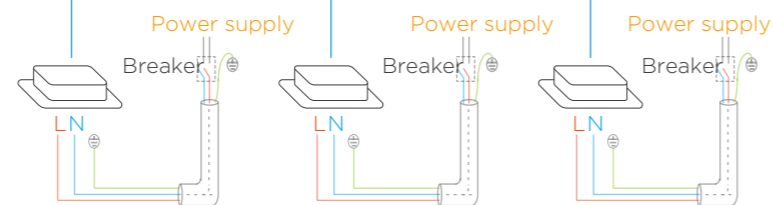
**Super Anti-interference Capability**

Special waveform restoration technology enhances anti-interference performance for more stable communication.



**Flexible Power Supply for Indoor Units**

HyperLink's unique communication method allows the indoor units to be powered not only by a uniform power supply, but also by individual and zone power supplies, making it particularly suitable for each shop in a large complex building, which can independently power on and off its own indoor units.



The status of the refrigerant is known anywhere throughout the process, ensuring high **RELIABILITY** and **COMFORT**.



- Benefits**
- High reliability
  - Stable operation
  - Enhanced comfort

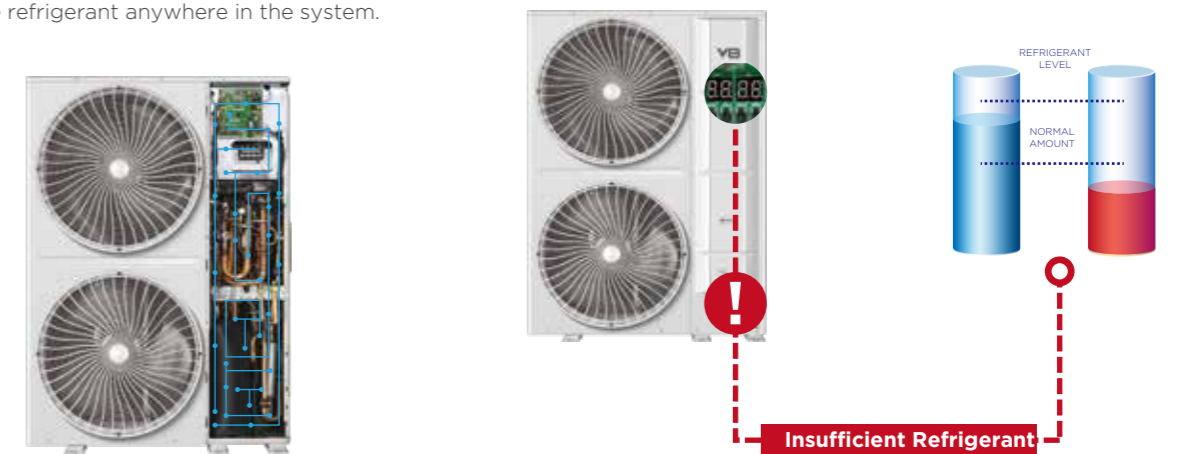
Up to 18 sensors are distributed throughout the refrigerant system, and the status of the refrigerant is known anywhere throughout the process, ensuring stable operation. At the same time, combined with the digital twin technology of the refrigerant system, a virtual sensor can be created in the event of a physical sensor failure, so that the system does not shut down in the event of a sensor failure, ensuring comfort.

**Complete Sensors**

The V8S VRF has the industry's most comprehensive range of 18 condition sensors with built-in data models for compressors, heat exchangers, throttling components and more. By analyzing sensor data in real time, it can sense the status of the refrigerant anywhere in the system.

**Refrigerant Amount Diagnosis**

Thanks to the complete sensors, the refrigerant running state is clearly visible, so as to accurately diagnose the amount of refrigerant.



**Virtual Sensor Backup**

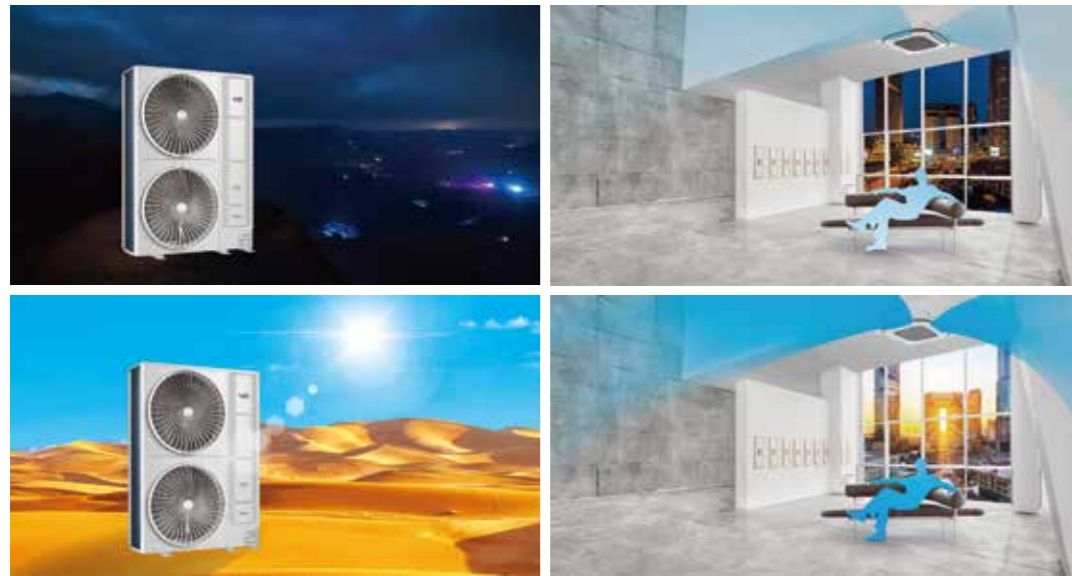
In the event of a sensor failure, other sensors can automatically simulate a virtual backup sensor, so that the VRF system can continue to operate without stopping.





## Midea ETA (META) 2.0

META is the abbreviation of Midea Evaporating Temperature Alteration. Further upgraded META technology to maximize **ENERGY SAVING**.



### Benefits

- Energy saving
- Enhanced comfort
- Fast cooling/heating

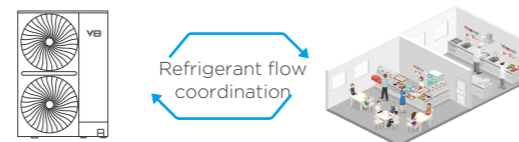
Built-in professional operation and maintenance algorithm, so that the annual operation energy efficiency of each set of systems increased by more than 28%.



Variable Refrigerant Flow

#### STEP 1: Architectural space feature recognition

The indoor unit automatically recognizes the size of the building space and the effectiveness of the insulation according to the rate of temperature drop.



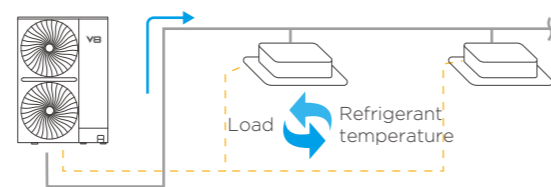
Automatic calculation of the building load and the required refrigerant quantity based on the sensor parameters.



Variable Refrigerant Temperature

#### STEP 2: System refrigerant temperature determination

The system automatically matches the evaporating temperature (in cooling) or condensing temperature (in heating) to the room load to maximize comfort and energy efficiency.



Automatic matching of the corresponding refrigerant temperature to the load.



Variable Indoor Airflow

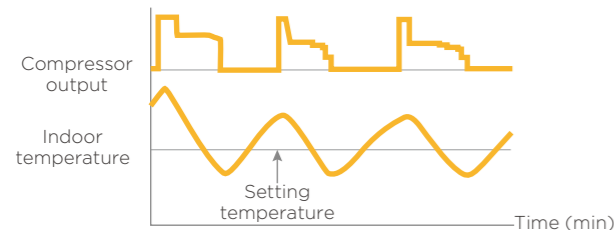
#### STEP 3: Adaptive indoor airflow and refrigerant flow

Each indoor unit automatically adjusts the corresponding indoor airflow and refrigerant flow according to the evaporating/condensing temperature, enabling precise temperature control.

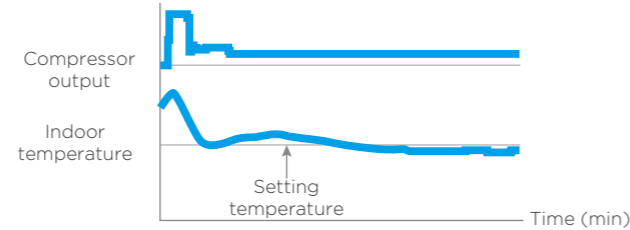


Automatic matching of the corresponding indoor airflow to the load and refrigerant temperature.

#### Conventional refrigerant regulation



#### V8S refrigerant regulation



## Zen Air 2.0

Further upgraded ZEN AIR technology to maximize **COMFORT**.



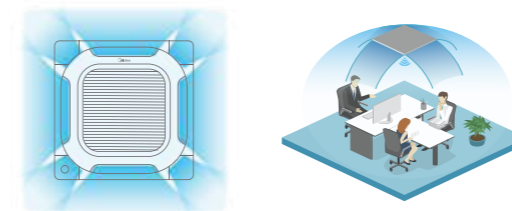
### Benefits

- Quiet
- Enhanced comfort
- Healthy

0.5°C temperature adjustment, 7 fan speeds selection, sleep mode, silent mode, windless technology, high efficiency filter, a variety of sterilization device and other advanced technologies used in V8S Series VRF are dedicated to creating a quiet, comfortable and healthy indoor environment.

#### 360° Airflow

New design, round air flow path ensures uniform air flow and temperature distribution.



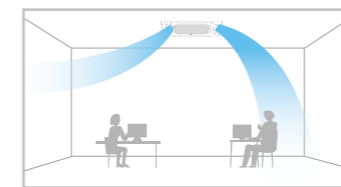
#### 7 Fan Speeds

7 indoor fan speed options to meet the needs of different indoor conditions.



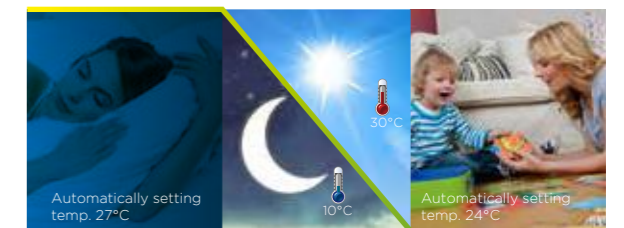
#### Individual Louver Control

The Individual louver control can control the motors separately, making it possible to control all four louvers independently.



#### Sleep Mode

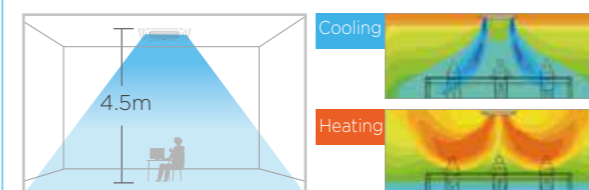
The smart sleep mode provides a comfortable sleep period and a refreshing wake up time.



\*Temperature on left is for reference.

#### Long Distance Air Delivery\*

The Four-way Cassette has an additional 50Pa static pressure for long airflow delivery and is capable of being used in spaces up to 4.5m in floor height.



\*This function is available as a customization option.

#### Innovative Puro-air Kit

Protectors of health and safety  
 From Germany - OSRAM quality UV light source  
 Ozone -Free  
 UV leakage-Free



\*The indoor unit needs to be customized in order to use the Puro-air Kit.






## Doctor M 2.0

Further upgraded DOCTOR M technology to maximize **EASY SERVICE**.



### Benefits

-  Easy maintenance
-  Fast maintenance
-  Low maintenance cost

Based on a cloud-based platform of big data and artificial intelligence, the V8S Series VRF can monitor the operation status of each unit in real time, predict system faults in advance and provide data analysis for system maintenance. Intelligent Bluetooth module and special Bluetooth after-sales kit can further simplify maintenance and improve maintenance efficiency.

### Intelligent Maintenance Tool

With intelligent Bluetooth module or special Bluetooth after-sales kit, the data of the outdoor unit can be directly read and written on your smart phone without the needs of connecting PC or opening cabinet.



\* Bluetooth module is available as a customization option.

### Real-time Monitoring of Operating Parameters

The V8S Series VRF synchronizes and stores all the unit parameters to the cloud through the data cloud gateway, including the running status, locking status, dirty blocking rate, all spot inspection parameters and so on. Users can query real-time and historical parameters on computers, tablets and mobile phones at any time.



### Cloud-based Big Data Analytics

Midea V8S Series VRF transmits the system operation data to the cloud in real time through the data cloud gateway, and timely reminds the system of abnormal conditions through big data analysis, helping users to proactively avoid the risk of failure that has not yet occurred and minimize hidden problems.



\*The data cloud gateway is still under development and needs to be purchased separately.



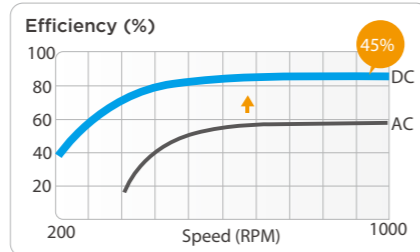


# High Efficiency

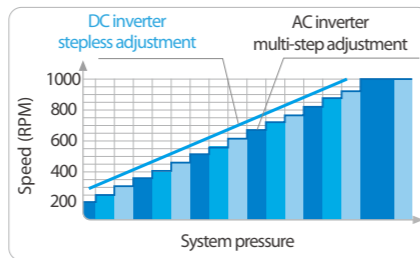
## Full DC Inverter Technology

The V8S Series VRF uses full DC inverter compressor and fan motor to achieve high precision stepless speed adjustment according to system operation, and ensures that the system is always in optimum condition, operating more efficiently, more consistently and with less noise.

Full DC Inverter for Outdoor Components



- Wider frequency adjustment range
- Faster cooling and heating
- Higher energy efficiency

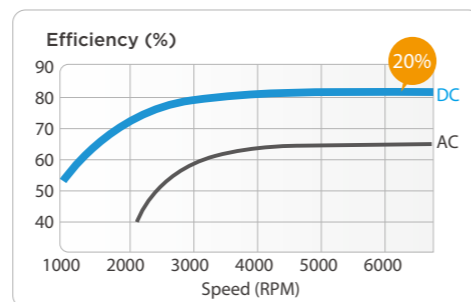
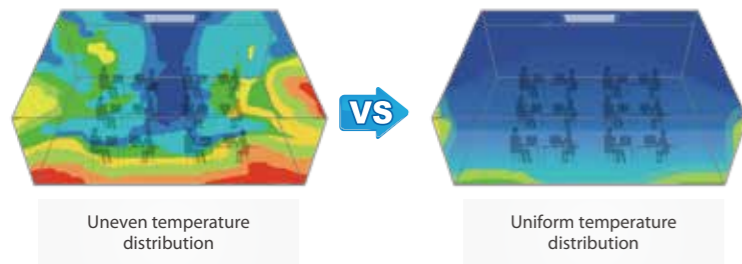


All power devices such as indoor fan motor, drain pump and electric control board are fully DC, which increases electrical efficiency by 20% and results in more accurate temperature control, a more constant indoor temperature and higher energy efficiency.

Full DC Inverter for Indoor Components

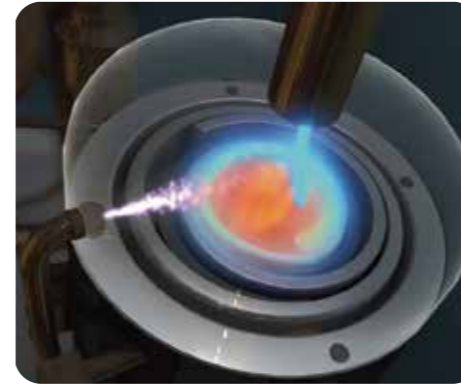


**20%**  
Efficiency improvements

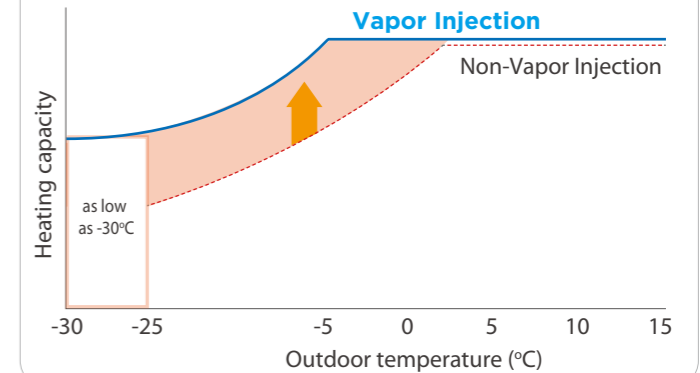


## Enhanced Vapor Injection (EVI) Compressor

The enhanced vapor injection DC inverter compressor increases refrigerant circulation and improves both cooling and heating capacity.

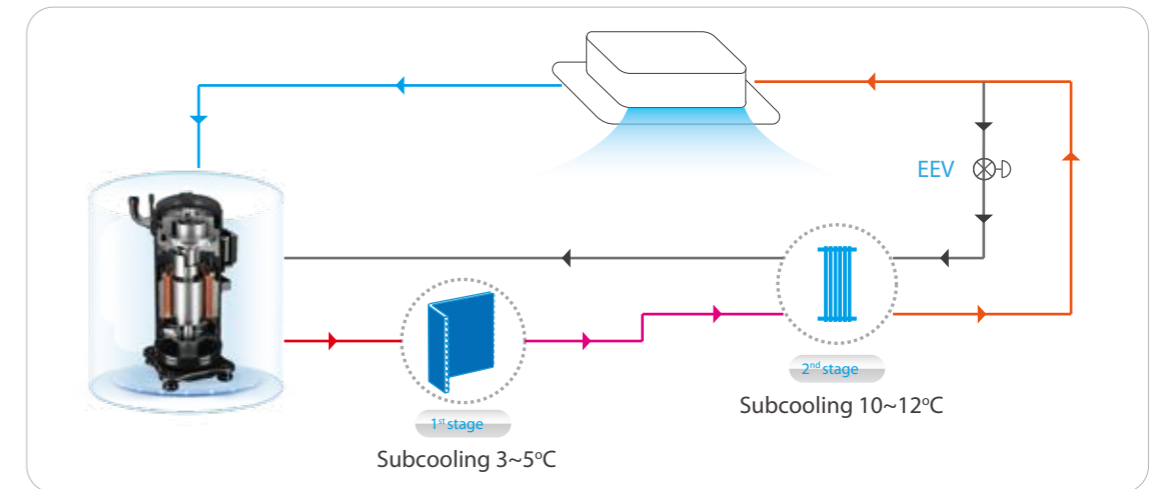


Performance Comparison



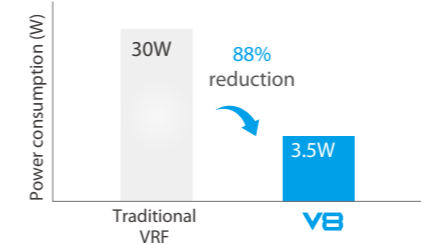
## Advanced Subcooling Technology

The V8S Series VRF uses a micro-channel heat exchanger to further cool the refrigerant and the refrigerant system can achieve 15°C refrigerant subcooling, which can further improve the refrigerant heat transfer efficiency while reducing the sound of refrigerant flow.



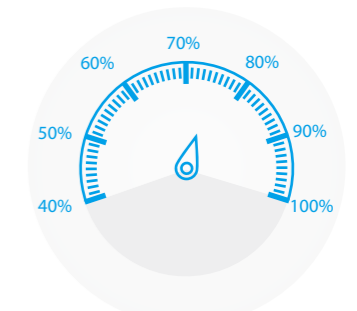
## Low Standby Power Consumption

Compared to the standby power consumption of traditional VRF of about 30W, the V8S Series VRF uses optimized control scheme to further reduce standby power consumption to as low as 3.5W.



## 60-step Energy Management

For projects with temporary electricity supply restrictions, the outdoor unit supports 60-step energy management which can be set to output 40-100% capacity in 1% increments. It prevents tripping during electricity supply restriction conditions and remains system continue to operate.





# High Reliability

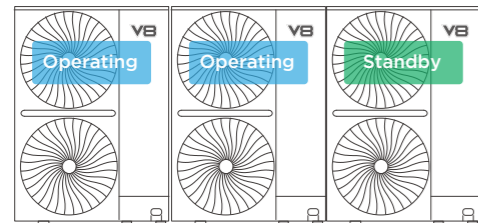


## Triple Backup

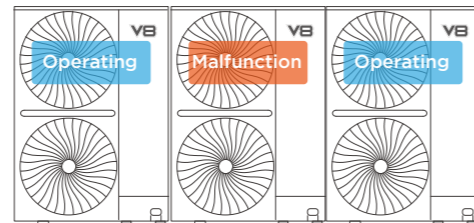
The V8S supports unit backup, fan backup and sensor backup. The triple backup ensures no shutdown in the event of a failure, further guaranteeing comfort.

### 1 Unit Backup

In a multi-unit system, the different units act as a backup to each other, ensuring that the system can continue to operate if one unit fails.



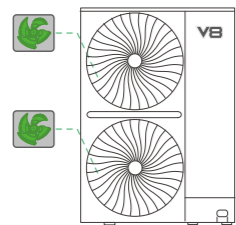
Intelligent load-bearing between units during normal operation



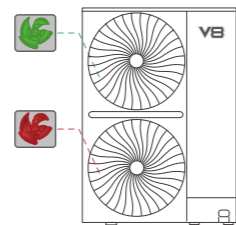
Standby unit backup operating with no system shutdown

### 2 Fan Backup

In unit with two fans, the two fans act as a backup to each other, ensuring that the system can continue to operate if one fan fails.



In normal operation, each fan runs on demand



Automatic backup operation of another fan in case of failure of one fan

Operation fan  
Failed fan

### 3 Sensor Backup

New & Unique

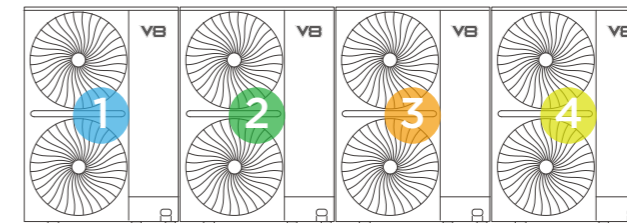
Through digital algorithms, each physical sensor generates a corresponding virtual sensor that acts as a backup to each other, ensuring that the failure of one sensor does not affect the normal operation of the system.



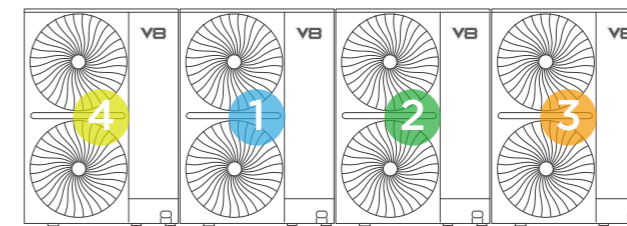
Automatic backup operation of the corresponding virtual sensor in case of failure of one physical sensor

## Duty Cycling

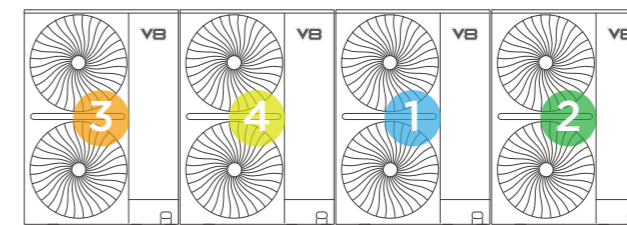
In a multi-unit system, duty cycling equalizes the running time of each outdoor unit, significantly extending unit lifespan.



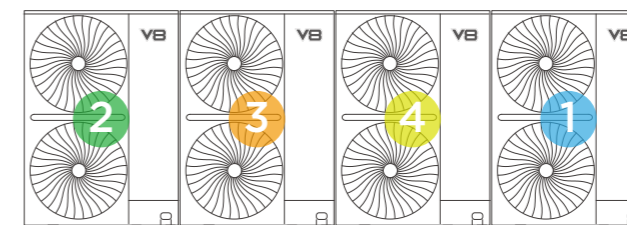
1<sup>st</sup> cycle



2<sup>nd</sup> cycle



3<sup>rd</sup> cycle



4<sup>th</sup> cycle

Note: The duty cycling sequence shown in the figure is only a schematic reference. The actual duty cycling sequence is not a fixed sequence. Please refer to the technical manual for specific rotation rules.

## SuperSense

V8S Series VRF uses up to 18 sensors for each outdoor unit and 4 sensors for each indoor unit. The operating status of the system refrigerant is clearly visible, which can realize intelligent analysis of operation parameters, intelligent error diagnosis and forecasting, and visualized energy saving.

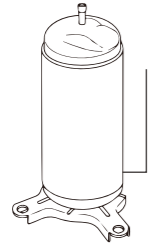




### /// Precise Oil Control

Three stages of oil control technology ensure all outdoor compressor oil is always kept at a safe level, eliminating any compressor oil shortage problems.

1



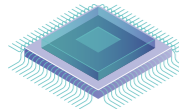
Compressor internal oil separation.

2



High-efficiency centrifugal oil separator (with separation efficiency of up to 99%) ensures that oil is separated from the discharge gas and returned to the compressors in a timely fashion.

3



The automatic oil return program determines the oil return through the running time and the oil discharge amount, enabling precise oil return.

### /// Heavy Anti-corrosion Protection\*

Outdoor units are given anti-corrosion treatment for non-extreme conditions as standard and can also be customized with heavy anti-corrosion treatment on main components for surface protection against corrosive air, acid rain and saline air (for installations in coastal regions) to extend overall useful life. The integrity of the anti-corrosion treatment is ensured by subjecting major components and parts to salt mist testing, moisture and heating testing and light aging testing.



\*Heavy anti-corrosion treatment is available as a customization option.

### /// UL Anti-Corrosion Certificate\*

It has been certified by UL that our VRF outdoor unit can withstand 27 years of simulated severe corrosion under a salt contaminated traffic environment.

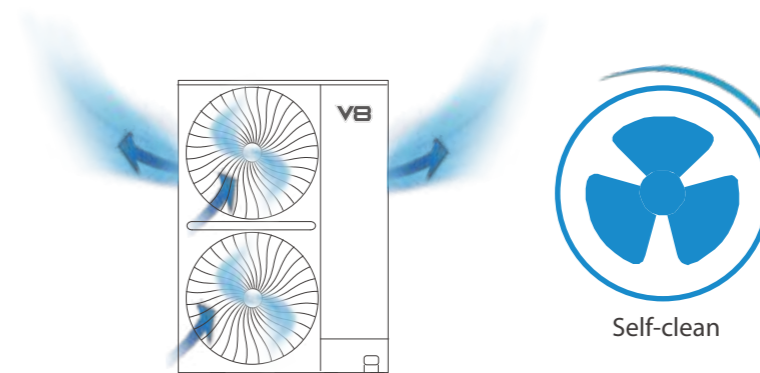
\*UL anti-corrosion certificate is available for heavy anti-corrosion treatment units.

Outdoor Unit can resist 27 years of simulated severe corrosion under a salt contaminated traffic environment



### /// Auto Dust-clean Function

The innovatively designed dust-clean function enables the outdoor unit to prevent the dust by itself.

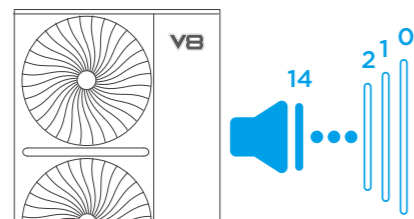




# Enhanced Comfort

## Advanced Silent Technology

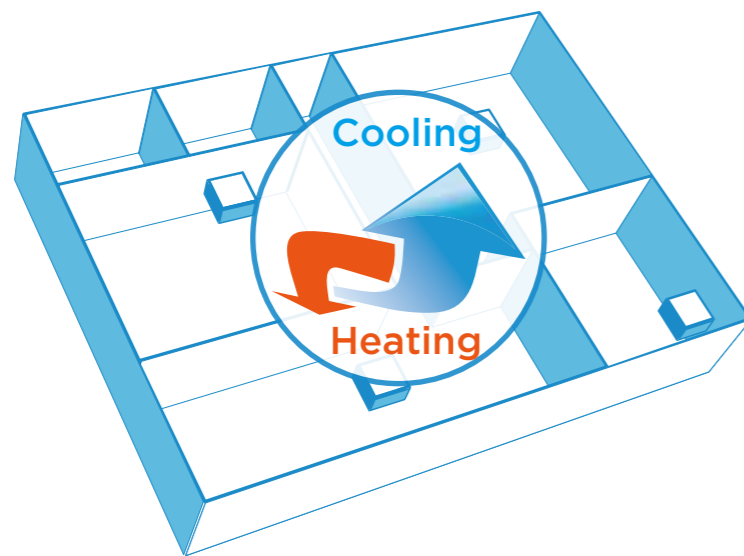
15-step silent mode provides more freedom and convenience to match the customer needs.



15 silent options

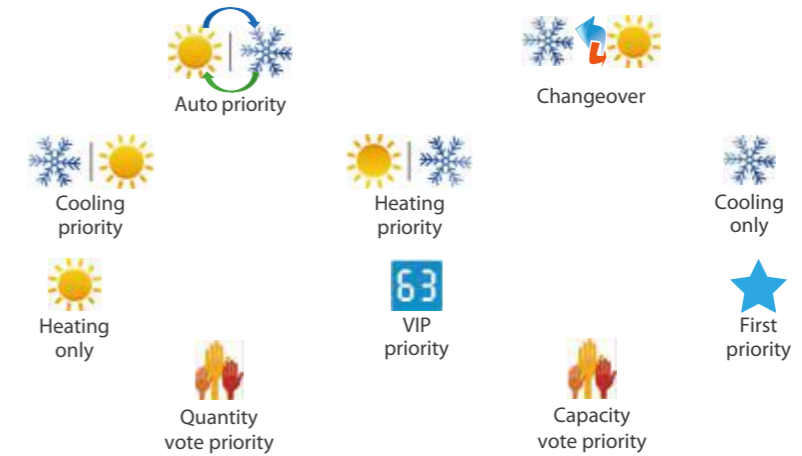
## Auto Cooling-heating Changeover

Automatically selects cooling or heating mode to achieve the set temperature.



## 10 Priority Modes

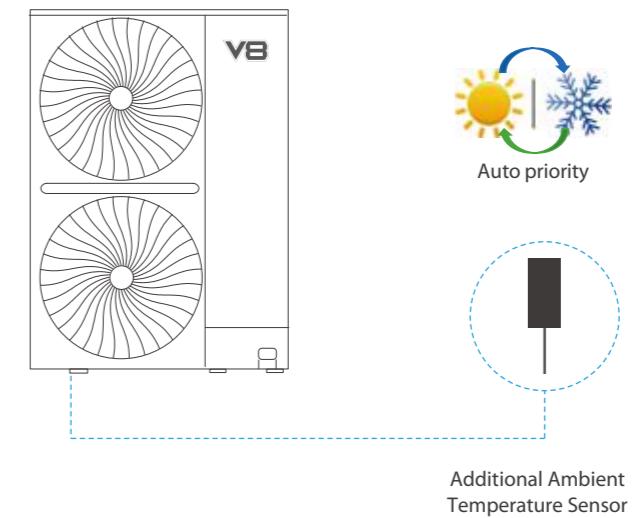
10 priority mode options provide more freedom and convenience to match the customer needs.



## Additional Ambient Temperature Sensor\*

The V8S Series VRF can be equipped with an additional external ambient temperature sensor to determine whether the system is operating in cooling or heating in auto priority mode. For some installations, the ambient temperature sensor fixed on the unit cannot detect the true ambient temperature, resulting in the system operating in an inappropriate mode and affecting indoor comfort. The external ambient temperature sensor can detect the true outdoor ambient temperature, correctly judge whether the system is running in cooling or heating, ensuring indoor comfort.

\*This function is available as a customization option.

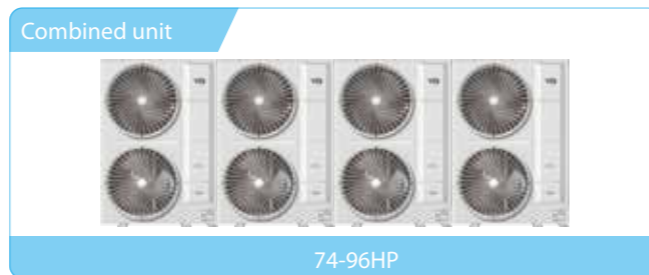
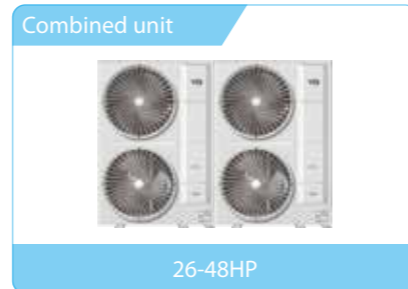
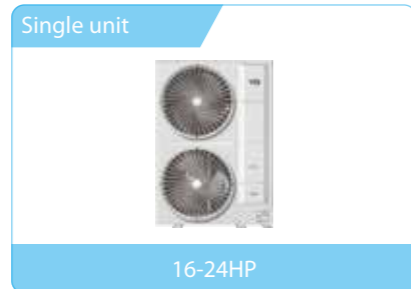
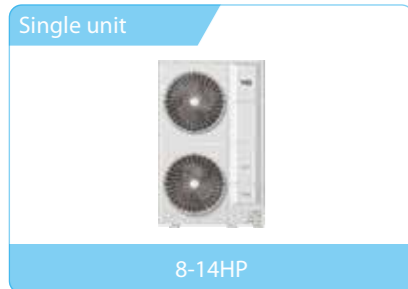




# Wide Application Range

## Wide Capacity Range

The capacity of one V8S Series VRF system is from 8HP to 96HP with up to 4 units combined, perfectly suited for small to large buildings.



## Wide Range of Indoor Units

The V8S Series VRF offers 12 types of over 100 models of indoor units to meet different scenarios of applications such as offices, shopping malls, hotels, airports, schools, hospitals, etc.



## Wide Operation Range

Thanks to the EVI compressor and refrigerant cooling technology, the V8S Series VRF can operate at temperatures as low as -30°C for heating and up to 55°C for cooling.

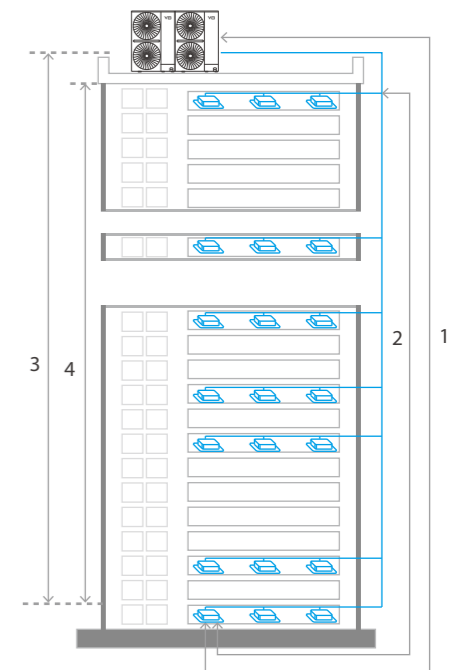


## Long Piping Capability

The total piping length of the V8S system can be up to 560m, the level difference between indoor and outdoor units can be up to 50m and the level difference between indoor units can be up to 30m, making the V8S Series VRF perfectly suitable for all buildings.

- Total piping length: **560m**
- 1 Longest piping length - actual (equivalent): **150(175)m**
- 2 Longest piping length after first branch: **40/90\*m**
- 3 Level difference between IDUs and ODU - ODU above (below): **50(40)m**
- 4 Level difference between IDUs: **30m**

\*The longest length after first branch is 40m as standard but can be extended to up to 90m under certain conditions. Please contact your local dealer for further information.





# Easy Installation and Service



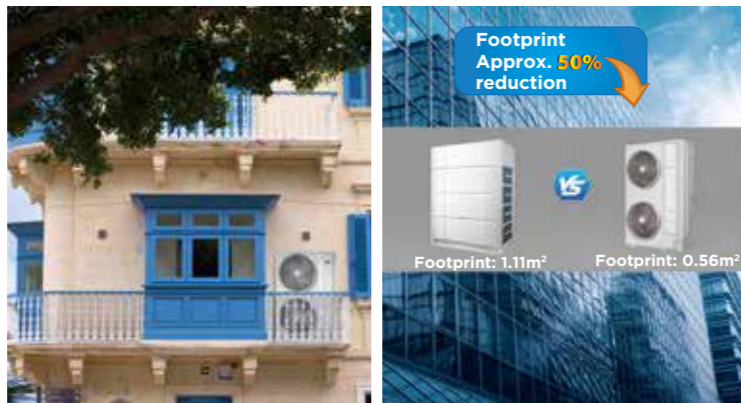
## Free Wiring

HyperLink communication technology supports any wiring pattern rather than just daisy chain connection, reducing the installation cost and the possibility of incorrect connection. It has stronger anti-interference ability, achieving communication distance up to 2000m.



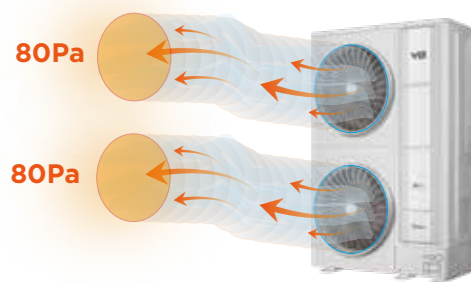
## Space Saving

The compact, slim designed outdoor unit can easily be installed on a balcony, realizing complete system installation within each floor. Which release more useful utilization of the space on the building rooftop.



## External Static Pressure up to 80Pa\*

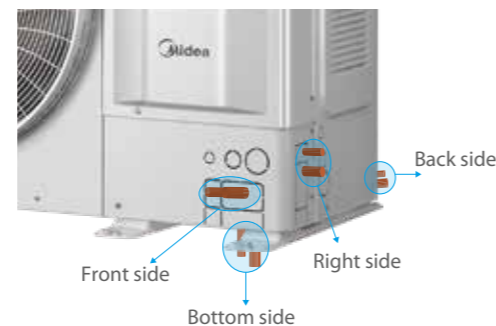
The static pressure of the outdoor unit can be up to 80Pa which facilitates installation of the unit on each floor of high-rise building or on balconies.



\*External static pressure above 35Pa is available as a customization option.

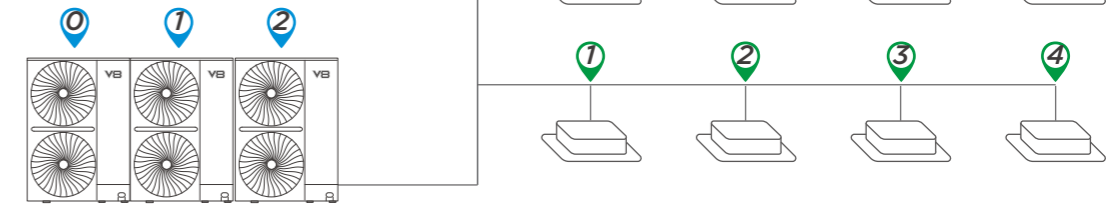
## Four-way Piping Connection

A four-direction space is available for connecting pipes and wiring in various installation sites.



## Auto Addressing

Addresses for all indoor units and combined outdoor units can be assigned automatically by the V8S system, further simplifying installation.



## Automatic Refrigerant Charging\*

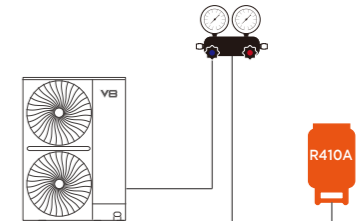
Compared to manual refrigerant charging, automatic refrigerant charging greatly simplifies the process, making installation and maintenance easier and more efficient.

### Manual refrigerant charging

- 1 Calculate additional refrigerant quantity
- 2 Connect refrigerant tank to the outdoor unit & start filling process
- 3 Observe the weight scale to check the refrigerant charge
- 4 Close the shut-off valve manually & finish filling process

### Automatic refrigerant charging

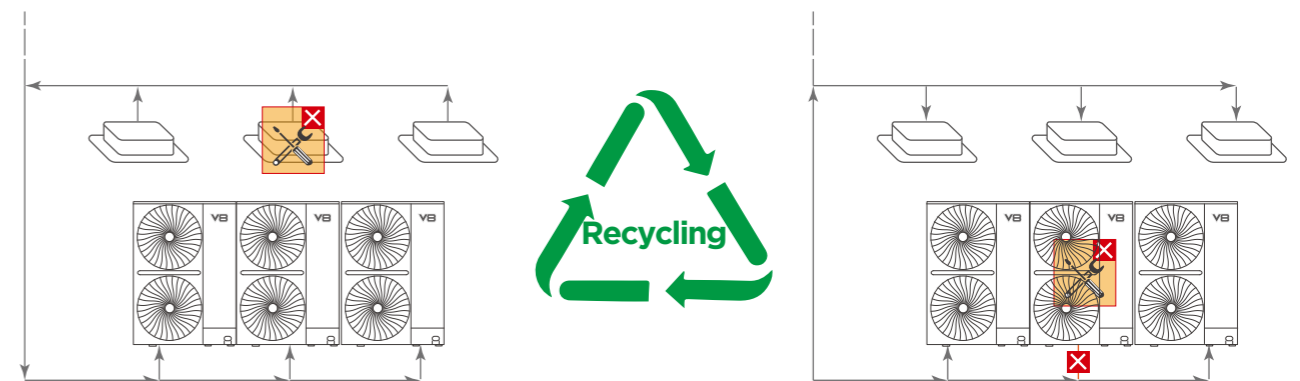
- 1 Connect refrigerant tank to the outdoor unit & activate automatic charging function
- 2 Close the shut-off valve automatically & finish filling process



\*This function is available as a customization option.

## Automatic Refrigerant Recycling

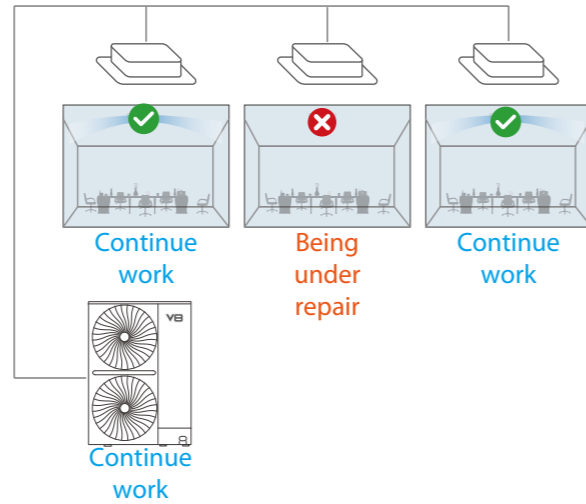
When an indoor unit fails, the refrigerant can be recycled into the outdoor units. When part of the outdoor unit fails, the refrigerant can be recycled into the indoor units and the normal outdoor unit. Two types of refrigerant recycling make the maintenance easier and more efficient.





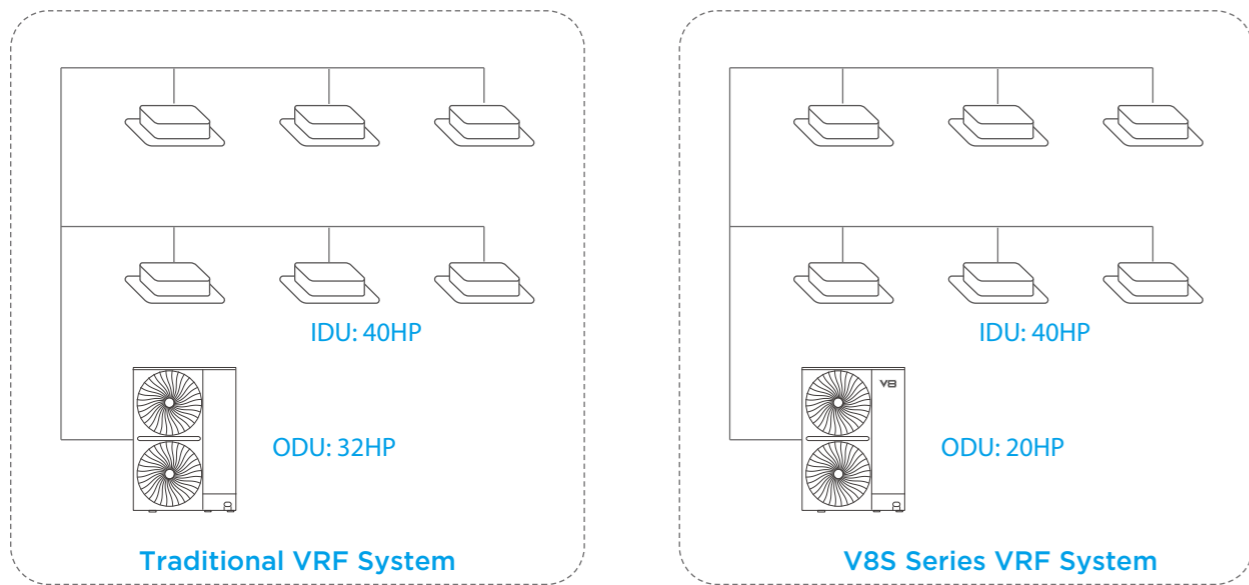
### /// Maintenance Mode

The maintenance mode allows the shutdown of some indoor units without shutting down the whole VRF system, and it can be activated on site during maintenance period as the remaining indoor units continue to operate.



### /// Wide Combination Ratio\*

Compared to traditional VRF with combination ratio of 50-130%, the V8S Series VRF can be extended to 50-200%, and the wider combination ratio allows for more flexible system configuration. The larger combination ratio can be applied to long-term part-load operation scenarios, allowing for further reduction in installation costs.



\*Combination ratio over 130% is available as a customization option.

### /// Easy Software Program Upgrade

In addition to upgrading the program of outdoor and indoor units through USB and burner, the new product can also remotely upgrade all the programs of indoor and outdoor units through data cloud gateway, making system upgrades very convenient and ensuring that the system program is always up to date.

\*The data cloud gateway is still under development and needs to be purchased separately.

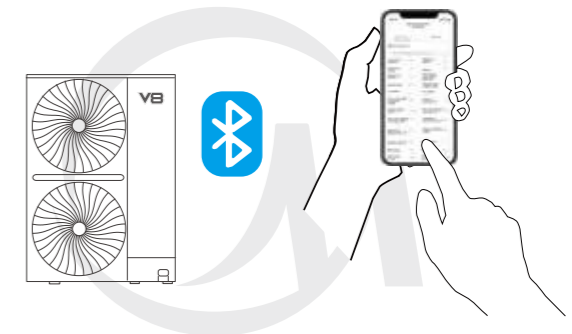


### /// Smart Commissioning/Maintenance Tool

With the newly developed smart tool (Bluetooth module and special Bluetooth after-sales kit), system settings, operating parameter queries, trial runs and programme upgrades are all possible without opening the cabinet.

**Useful in the following situations:**

- Installation
- Service maintenance



**Main functions:**

- Fault information storage
- Operating parameters query
- Start commissioning test run
- System parameter setting
- Quick after-sales PCB replacement
- Equipment control
- Indoor and outdoor units programme upgrade

