



Trane – by Trane Technologies (NYSE: TT), a global climate innovator – creates comfortable, energy efficient indoor environments through a broad portfolio of heating, ventilating and air conditioning systems and controls, services, parts and supply. For more information, please visit trane.com or tranetechnologies.com.

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09/2023

TVR 7G DC INVERTER COOLING

Benefits of TRANE VRF

For End-users

- Healthy Operation
- Cost Saving Operation
- Comfortable Environment



For Consultants

- Diversified Solutions
- Professional Tool and Support
- Design Flexibility



For Building Owners

- Energy Saving Management
- Reliable Operation
- Backup Solution



For Construction Companies

- Green Solutions
- Space Saving Design
- Intelligent Management



Application Solutions

Office Complexes

Enjoy comfort while working

TRANE VRF provides solutions for office buildings of all sizes and its smart control solutions streamline the management of VRF. It offers a wide variety of indoor units that are suitable for all designs.



Hotels & Shopping Malls

Increase your business, not your bills

The high efficiency and reliability of TRANE VRF make it ideal for commercial applications. Intelligent control solutions like hotel key cards and touch screen controller make management easy.



Residential Apartments

One for every home

A compact size and high efficiency make TRANE VRF suitable for all residential homes.



Hospitals/ Schools/ Airports

Meeting all expectations

The innovative design and variety of indoor unit options make TRANE VRF suitable for all kinds of applications. The newly designed puro-air kit is perfect for modern hospitals.







OUTDOOR UNITS

7G Cooling



Outdoor Unit Lineup

7G Cooling (Combinable series)

	8-20HP	22-30HP
Single Unit		
Combined Unit	32-60HP	
		
Combined Unit	62-90HP	
		



Outdoor Unit Functions

Functions			7G Cooling
●: equipped as standard; ○: customization option			
Innovative Technologies	TVRlink	TRANE original communication bus chip greatly simplifies installation and saves installation costs	●
	S-Box	IP55 fully sealed electric control box realizes resisting all protects against intrusion and damage to the electric control box	●
	SenseMesh	17 sensors monitor the state of each part of the refrigerant pipeline throughout the whole process	●
	TRANE ETA 2.0	Triple variable control maximizes comfort and energy efficiency	●
	Comfort+	Provides comfort and healthy air supply	●
	Analyze+	Intelligent diagnostic technology makes maintenance easier and more efficient	●
High Efficiency	Full DC inverter technology	All electrical components of outdoor and indoor units use DC power supply, improving electrical efficiency and saving energy	●
	Enhanced Vapor Injection (EVI) compressor	Increases refrigerant circulation and improves cooling 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 noise	●
	Low standby power consumption	The standby power consumption is as low as 3.5W	●
	60-step energy management	The system can be set from 40% to 100% capacity output in 1% increments	●
High Reliability	Duty cycling (unit)	Equalizes the running time of the outdoor units in a multiple-unit system, significantly extending unit lifespan (available for combined units)	●
	Duty cycling (compressor)	Equalizes the running time of the compressor in each unit, significantly extending compressor lifespan (available for units with two compressors)	●
	Backup operation (unit)	If one unit fails, the other units provide backup so that the system can continue operating (available for combined units)	●
	Backup operation (compressor)	If one compressor fails, the other compressor provides backup so that the system can continue operating (available for units with two compressors)	●
	Backup operation (fan motor)	If one fan motor fails, the other fan motor provides backup so that the system can continue operating (available for unit units two fan motors)	●
Backup operation (sensor)	If one sensor fails, the virtual sensor provides backup so that the system can continue operating	●	

Outdoor Unit Functions

Functions			7G Cooling
●: equipped as standard; ○: customization option			
High Reliability	Precise oil control	Ensures all outdoor compressor oil is at a safe level, eliminating compressor oil shortages	●
	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 stable unit operations in a dusty environment	●
	Resistant to magnitude 8 earthquakes	A reinforced frame footprint to prevent tipping and deformation damage in magnitude 8 earthquakes	○
	Resistant to violent typhoon	A reinforced trusses and double fastening for stable operation even under violent typhoon	○
	Alarm output	In the event of system malfunction, remotely output error information and remind maintenance personnel to conduct maintenance	○
	Fire alarm input	In the event of fire, receive fire information in time and stop the system immediately to avoid serious problems	●
Enhanced Comfort	Silent mode	15-step silent mode selections provide more freedom and convenience to match the needs of customers	●
	0.1 °C control precision	Control precision of the sensor can reach 0.1°C, ensuring less fluctuations in room temperature	●
Wide Application Range	Wide capacity range	Meets all customer requirements from small to large buildings	8-30HP (single) 32-90HP (combined)
	Wide range of indoor units	Provides 12 types and more than 100 models of VRF indoor units to meet the needs of different application scenarios	●
	Wide operation range	Operates stably under extreme conditions	-15-55°C
	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	●

Outdoor Unit Functions

Functions			7G Cooling
●: equipped as standard; ○: customization option			
Easy Installation And Service	Auto addressing (ODU-ODU)	Distributes addresses to slave outdoor units automatically, further simplifying the installation (available for combined units)	●
	Automatic refrigerant charging	Makes installation and service easier and more efficient	○
	Automatic refrigerant recycling	Refrigerant can be recycled 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, programme upgrade for indoor and outdoor units, etc., simplifying installation and maintenance.	○
	Digit display	4 digit 7-segment display can be intuitive for parameter setting, parameter checks and error checks	●
	High external static pressure	Up to 120Pa ESP allows easy handling in a variety of installation environments	0-20Pa ● 20-120Pa ○
	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 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 the ODU at the same time, and the central controller can connect to the ODU or IDU	●
	Refrigerant amount diagnosis	The unit can diagnose excessive or insufficient amounts of refrigerant, and 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 completed 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

TV-Link

S-Box

SenceMesh

ARTC 2.0

Comfort+

Analyze+

TRANE's original communication bus chip greatly simplifies installation and saves installation costs.

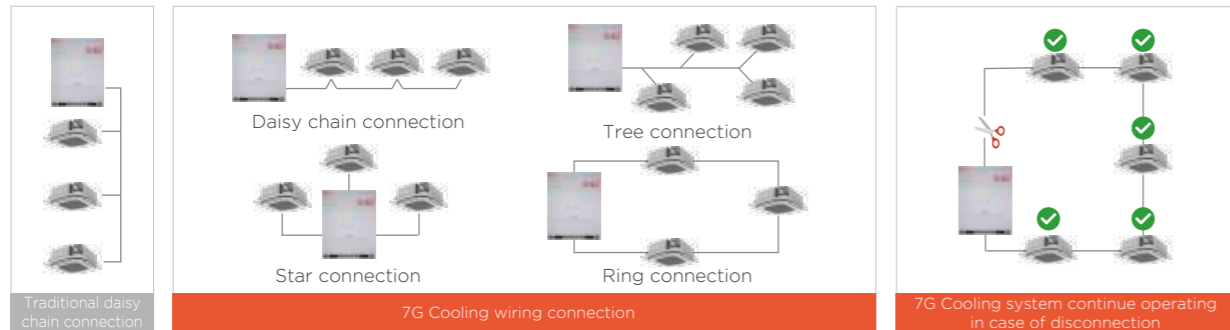


- Benefits**
-  Flexible installation
 -  Low installation cost
 -  High reliability
 -  Stable operation

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

Arbitrary Topology Communication

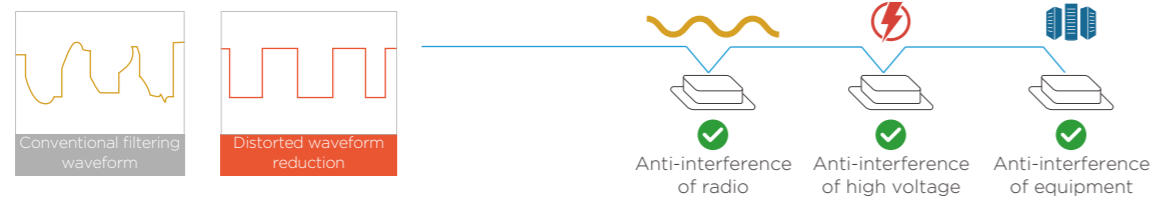
In addition to the traditional daisy chain connection, the communication wire supports tree connection, star connection, ring connection and so on. The wiring is flexible, which greatly reduces installation costs and has no possibility of wrong connection on site.



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

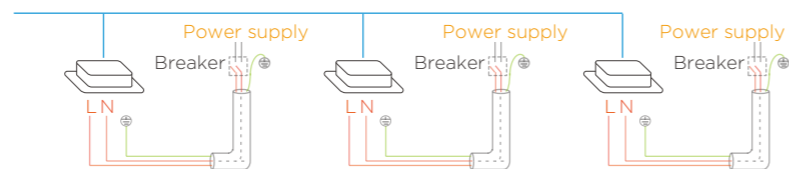
Super Anti-interference Capability

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

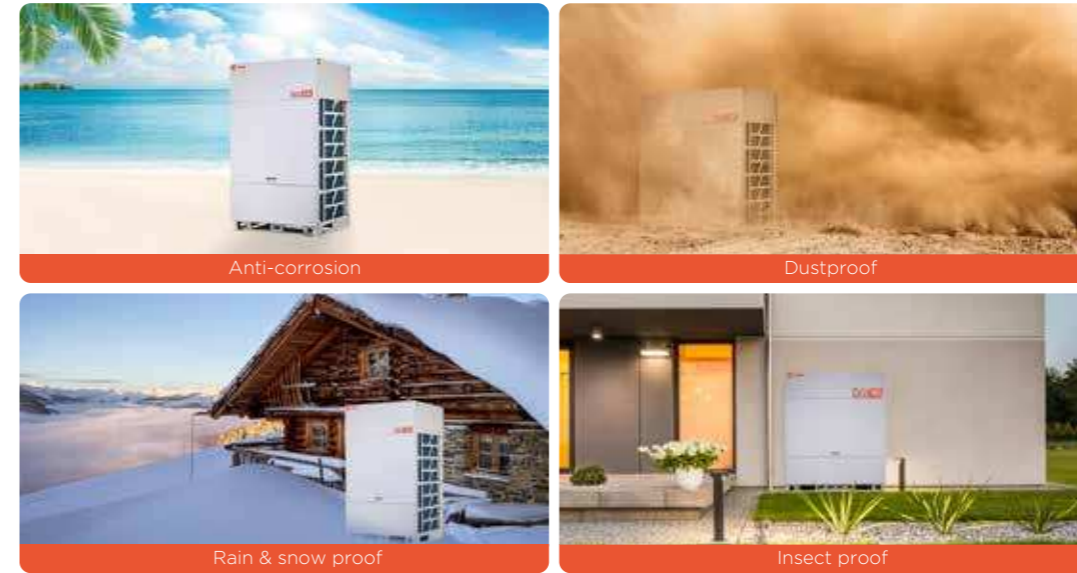


Flexible Power Supply for Indoor Units

HyerLink'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.



IP55 fully enclosed electric control box provides all-round protection for internal electronic components, greatly improving system **RELIABILITY**.



- Benefits**
-  High reliability
 -  Stable operation
- IP (INGRESS PROTECTION)
- IP 55**
- Dustproof grade code**
Prevent entry foreign objects and dust
 - Waterproof grade code**
Prevent water spray in all directions

Fully enclosed electronic components are isolated from the external environment to protect against corrosion, sand, humidity, snowstorms and other harsh conditions, and prevent small animals and insects from entering the chamber. This protects internal electronic devices and improves the overall environmental tolerance.

All Microchannel Refrigerant Cooling

All electronic components including inverter module, filter module and power module are cooled by specially designed microchannel refrigerant to ensure that the electronic components work in the best temperature range.



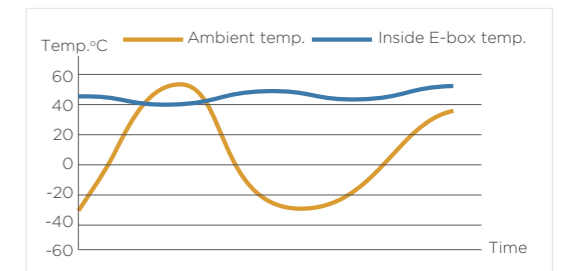
Built-in Circulating Fan

The built-in circulating fan accelerates the air flow inside the chamber, and the heat exchange is more sufficient to ensure the consistent ambient temperature inside the chamber.

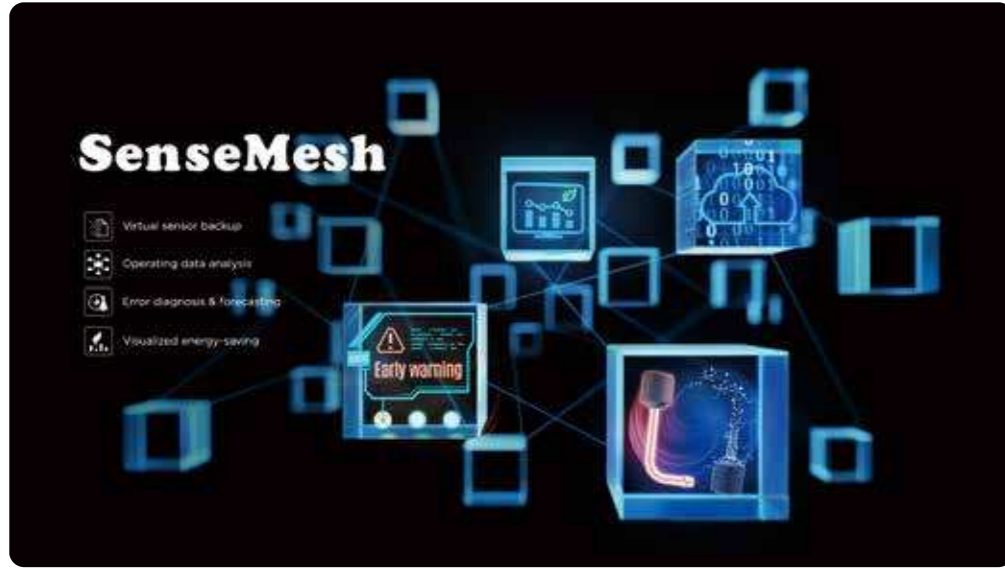


5 High Precision Temperature Sensors

5 high precision temperature sensors are used to accurately monitor the operation state of electronic control under various conditions to ensure that the internal temperature of the chamber is always kept within a stable range.



The status of the refrigerant can be determined throughout the process, ensuring high **RELIABILITY** and **COMFORT**.



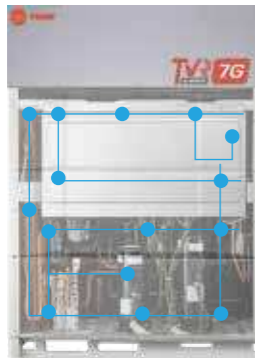
Benefits

- High reliability
- Stable operation
- Enhanced comfort

Up to 17 sensors are distributed throughout the refrigerant system, and the status of the refrigerant can be determined 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 VC MAS Series VRF is equipped with up to 17 condition monitoring sensors, combined with built-in data models of compressors, heat exchangers and throttling components, which can analyze the operation data in real time and monitor the refrigerant condition of 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.



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



Benefits

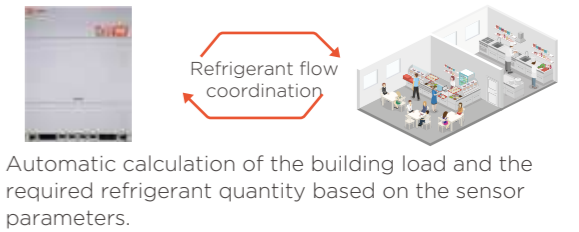
- Energy saving
- Enhanced comfort
- Fast cooling

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



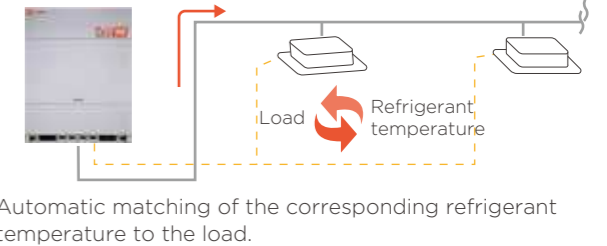
Variable Refrigerant Flow

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.



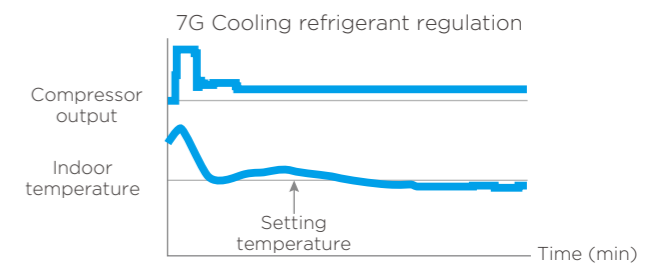
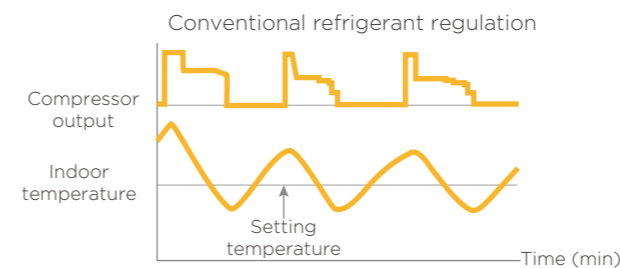
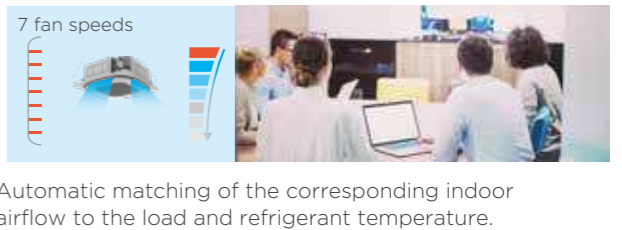
Variable Refrigerant Temperature

STEP 2: System refrigerant temperature determination
The system automatically matches the evaporating temperature to the room load to maximize comfort and energy efficiency.



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 temperature, enabling precise temperature control.



Comfort+

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



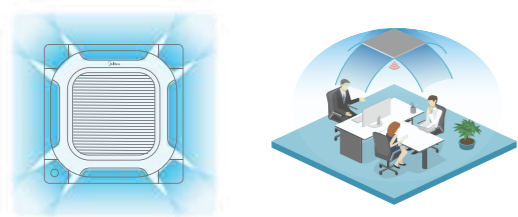
Benefits

- 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 devices and other advanced technologies used in 7G Cooling Series VRF are dedicated to creating a quiet, comfortable and healthy indoor environment.

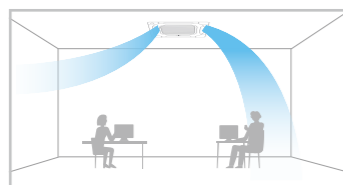
360° Airflow

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



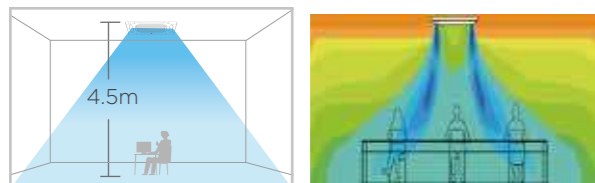
Individual Louver Control

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



Long Distance Air Delivery*

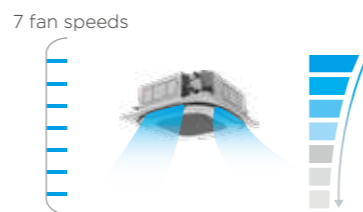
The Four-Way Cassette has an additional 50Pa of static pressure for long airflow delivery and can be used in spaces of up to 4.5m in floor height.



*This function is available as a customization option.

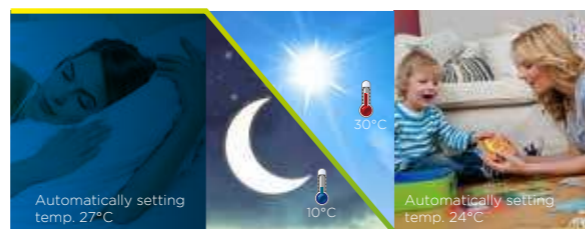
7 Fan Speeds

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



Sleep Mode

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



*The above temperatures are for reference only.

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.



Analyze+

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 7G Cooling 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. The intelligent Bluetooth module and special Bluetooth after-sales kit can further simplify maintenance and improve maintenance efficiency.

Intelligent Maintenance Tool

With the 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 connecting a PC or opening the cabinet.



*The Bluetooth module is available as a customization option.

Real-time Monitoring of Operating Parameters

The 7G Cooling 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.



*The data cloud gateway needs to be purchased separately.

Cloud-based Big Data Analytics

TRANE 7G Cooling 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.

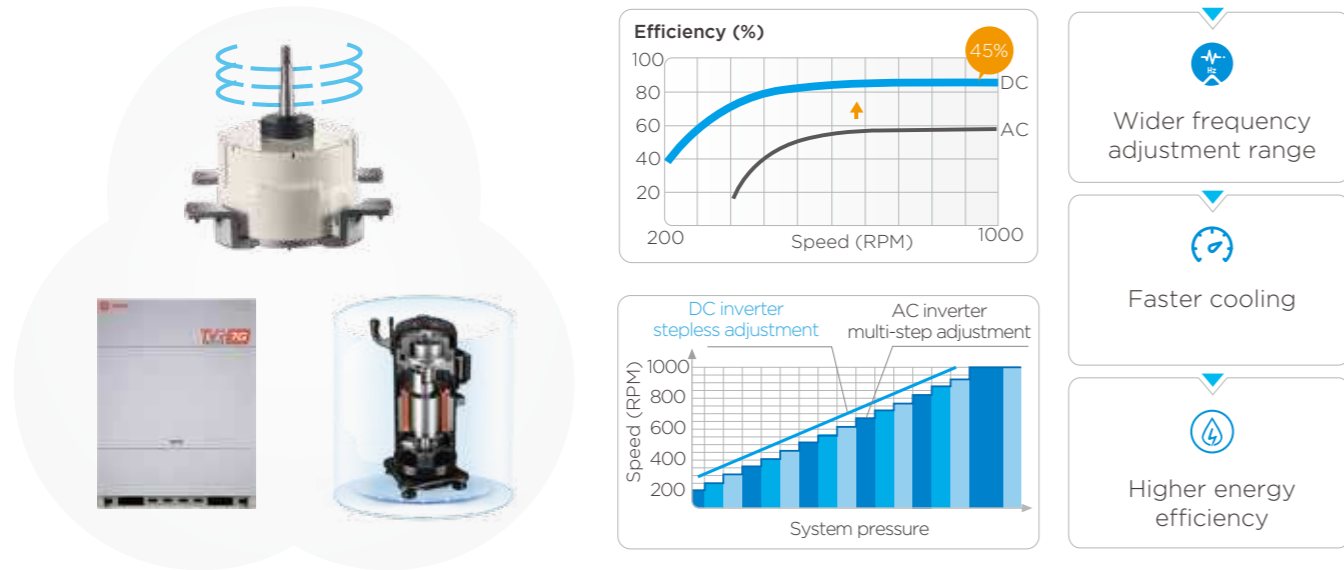


High Efficiency

Full DC Inverter Technology

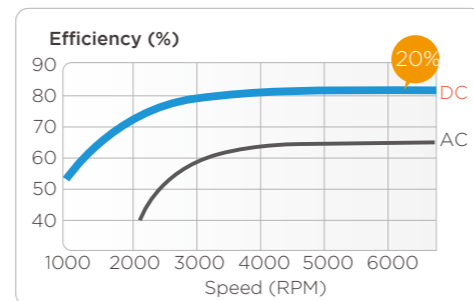
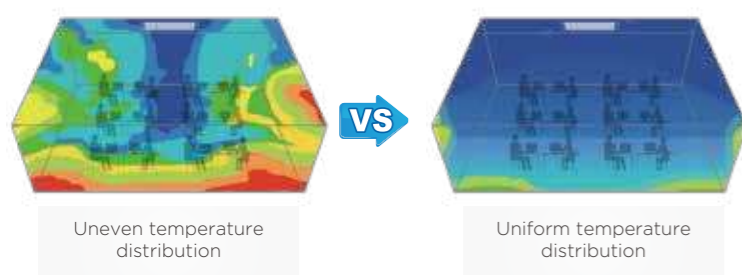
Full DC Inverter for Outdoor Components

The 7G Cooling 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.



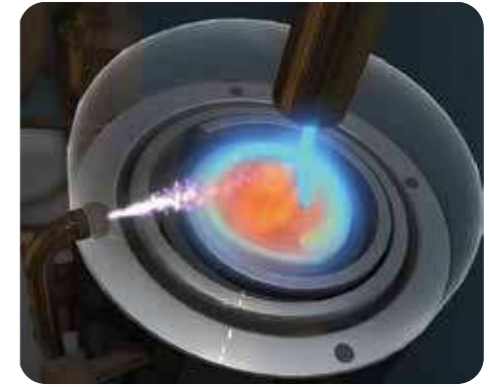
Full DC Inverter for Indoor Components

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.



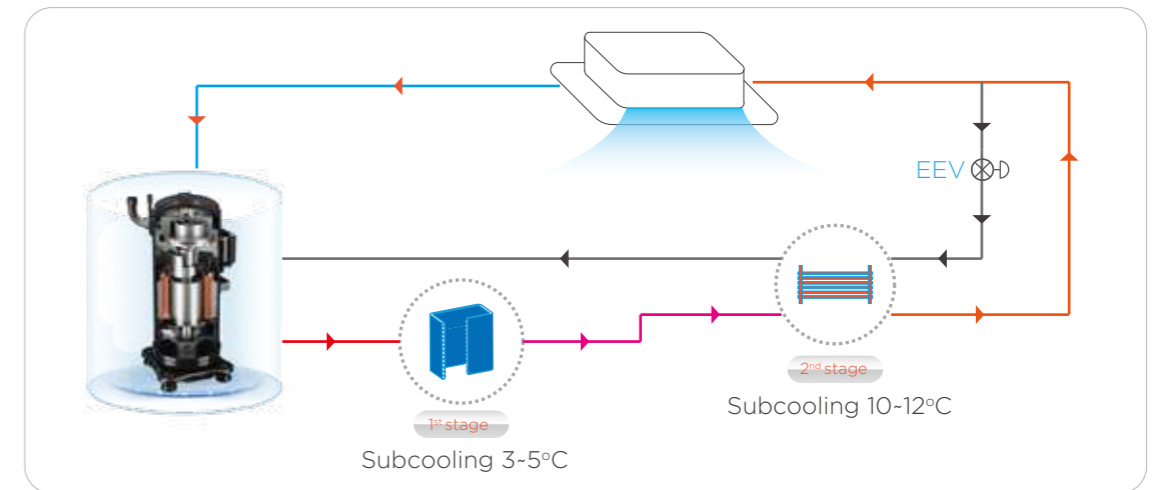
Enhanced Vapor Injection (EVI) Compressor

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



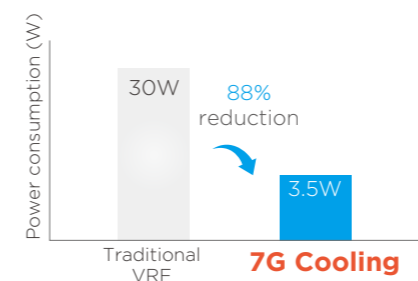
Advanced Subcooling Technology

The 7G Cooling 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.



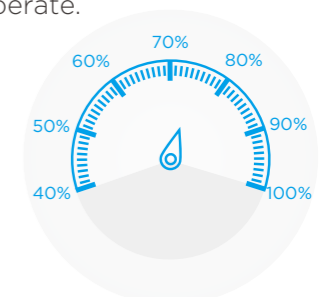
Low Standby Power Consumption

Compared to the standby power consumption of traditional VRF of about 30W, the 7G Cooling 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 conditions of restricted electricity supply and allows the system to continue to operate.





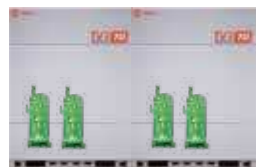
High Reliability

Quadruple Backup

In two fans, two compressors and multiple units, one can run in backup for another. Additionally, the 7G Cooling series VRF generates a corresponding virtual sensor for each physical sensor by means of a digital algorithm, which serves as a backup for each other, ensuring no shutdown in the event of a fault, and 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

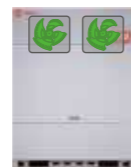


Continue operating in case of failure of one unit

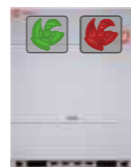
Operation compressor Failed compressor

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 Compressor Backup

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



Intelligent load-bearing between compressors during normal operation



Continue operating in case of failure of one compressor

4 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.

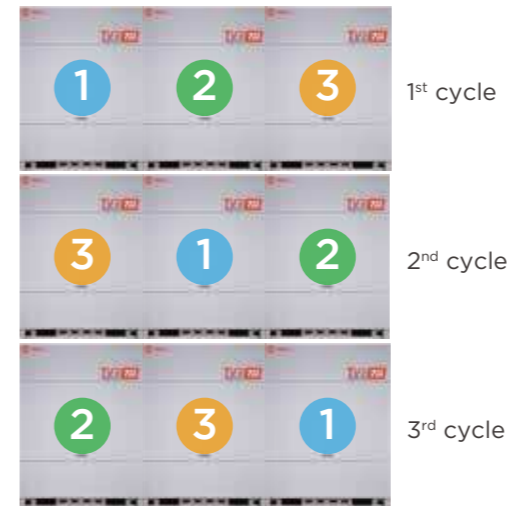


Automatic backup operation of the corresponding virtual sensor in case of failure of one physical sensor

Double Duty Cycling

1 Unit Duty Cycling

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



2 Compressor Duty Cycling

In units with two compressors, duty cycling equalizes the running time of each compressor, significantly extending compressor lifespan.



Compressor start-up sequence

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.

ShieldBox

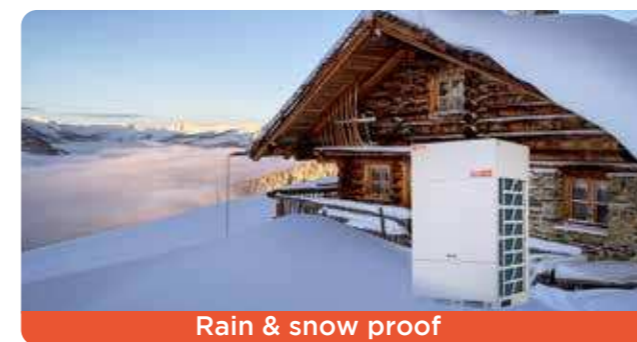
IP55 fully enclosed electric control box provides all-round protection for internal electronic components, greatly improving system reliability.



Anti-corrosion



Dustproof



Rain & snow proof



Insect proof

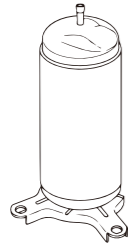

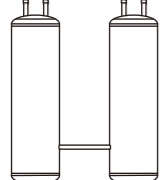
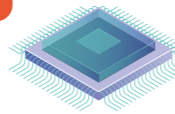
SuperSense

7G Cooling Series VRF uses up to 17 sensors for each outdoor unit and 4 sensors for each indoor unit. The operating status of the system refrigerant is clearly visible, which can achieve intelligent analysis of operation parameters, intelligent error diagnosis and forecasting, and visualized energy saving.



Precise Oil Control

Four 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**  Oil balance pipes between gas-liquid separator ensure even oil distribution to keep compressors running normally.
- 4**  The automatic oil return program determines the oil return through the running time and the oil discharge amount, enabling precise oil return.

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

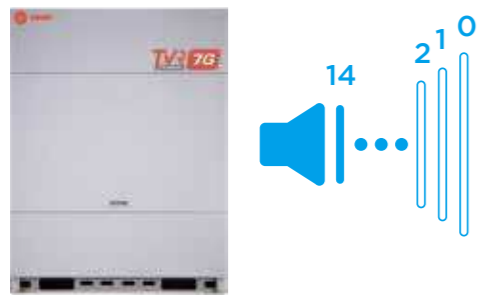
The innovatively designed dust-clean function enables the outdoor unit to prevent the dust by itself.



Enhanced Comfort

Advanced Silent Technology

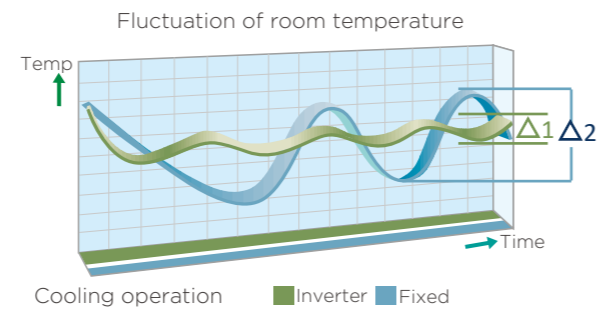
15-step silent mode provide more freedom and convenience to match the customer needs.



15 silent options

Fast Cooling

Thanks to advanced full DC inverter technology, the system can quickly reach full load output, shorten cooling time, reduce temperature fluctuations, and create a more comfortable living environment.



Wide Application Range

Wide Capacity Range

The capacity of one 7G Cooling Series VRF system is from 8HP to 90HP with up to 3 units combined, perfectly suited for small to large buildings.



Wide Operation Range

Thanks to the refrigerant cooling technology, the 7G Cooling Series VRF can operate stably in a temperature range as low as -15°C and as high as 55°C.



Wide Range of Indoor Units

The 7G Cooling 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.

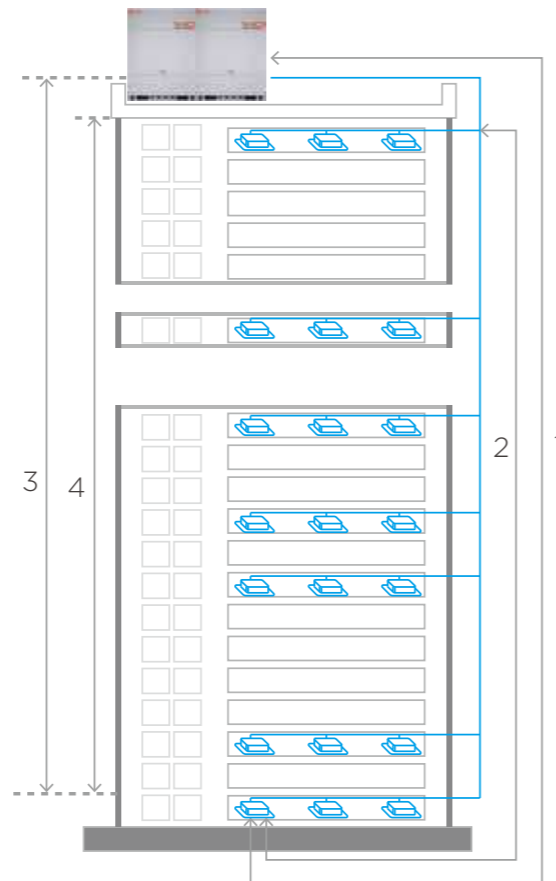


Long Piping Capability

The 7G Cooling system can support a total piping length of up to 1100m, an installation height difference of up to 110m between indoor and outdoor units, and up to 40m between indoor units, making the 7G Cooling Series VRF adaptable to a wide range of building designs.

- Total piping length: **1100m**
- 1 Longest piping length - actual (equivalent): **220(260)m**
- 2 Longest piping length after first branch: **40/120*m**
- 3 Level difference between IDUs and ODU - ODU above (below): **110(110)m**
- 4 Level difference between IDUs: **40m**

*The longest length after first branch is 40m as a standard but can be extended to up to 120m under certain conditions. Please contact your local dealer for further information.



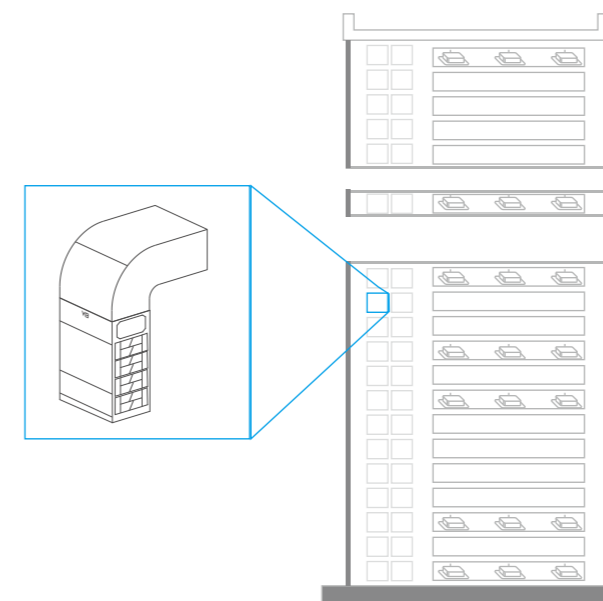
Free Wiring

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 a communication distance of up to 2000m.

External Static Pressure up to 120Pa*

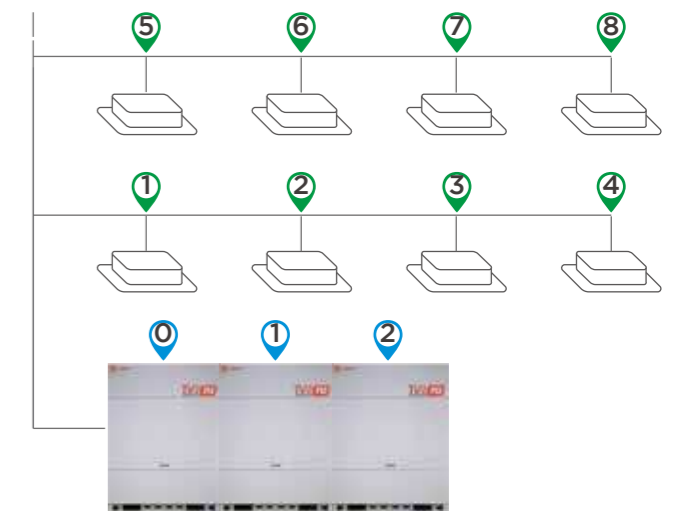
The static pressure of the outdoor unit can be up to 120Pa which facilitates installation of the unit on each floor of high-rise buildings or on balconies.

*External static pressure above 20Pa is available as a customization option.



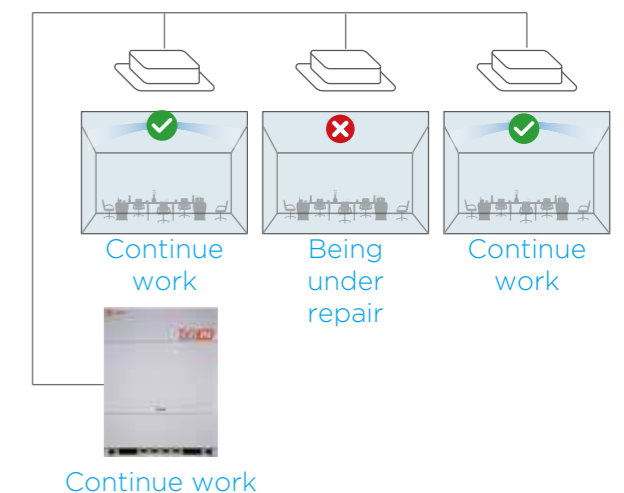
Auto Addressing

Addresses for all indoor units and combined outdoor units can be assigned automatically by the 7G Cooling system, further simplifying installation.



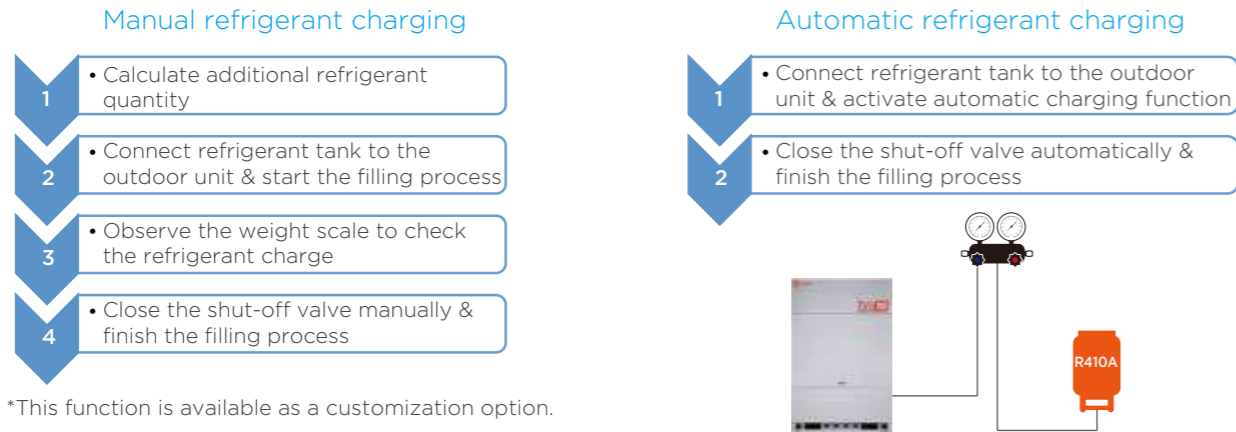
Maintenance Mode

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 the maintenance period as the remaining indoor units continue to operate.



Automatic Refrigerant Charging*

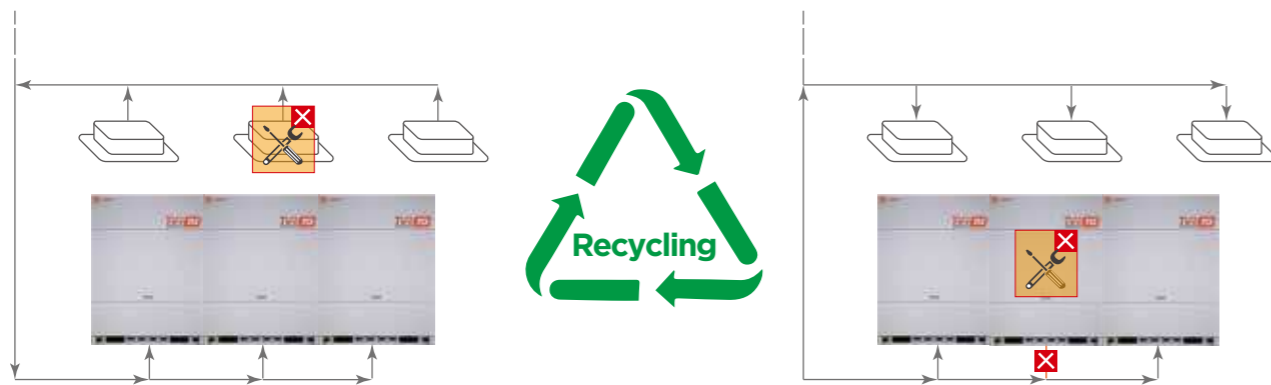
Compared to manual refrigerant charging, automatic refrigerant charging greatly simplifies the process, making installation and maintenance easier and more efficient.



*This function is available as a customization option.

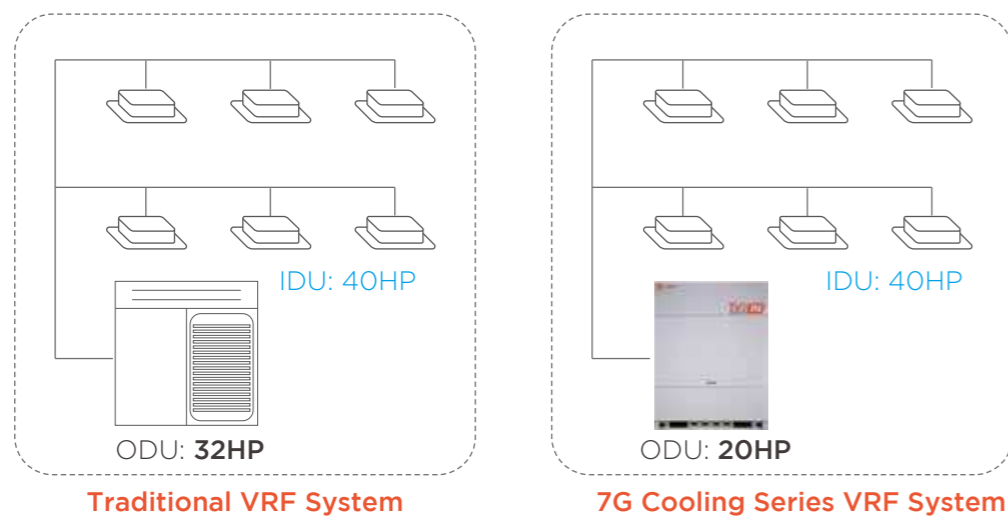
Automatic Refrigerant Recycling

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 process easier and more efficient.



Wide Combination Ratio*

Compared to traditional VRF with combination ratio of 50-130%, the 7G Cooling 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 the data cloud gateway, making system upgrades very convenient and ensuring that the system program is always up to date.

*The data cloud gateway needs to be purchased separately.

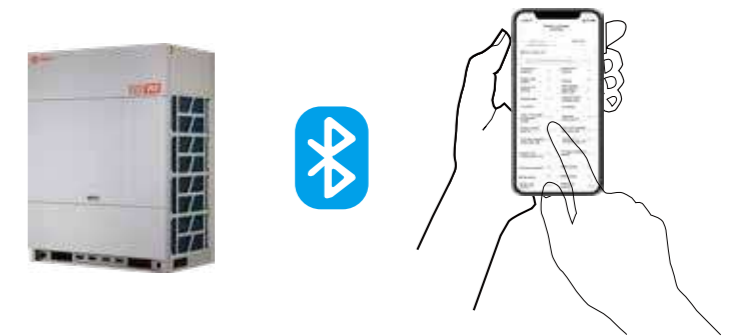


Smart Commissioning/Maintenance Tool

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.

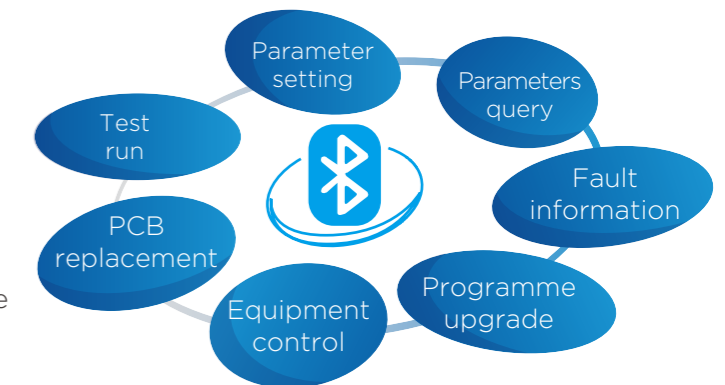
Useful in the following situations:

- 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



Specifications

7G Cooling Series VRF

HP		8		10		12		
Model name		4TVVT08DD07CAA		4TVVT096DD07CAA		4TVVT115DD07CAA		
Power supply		V/N/Hz	380-415/3/50(60)		380-415/3/50(60)		380-415/3/50(60)	
Cooling ¹	Capacity	kW	22.4		28		33.5	
		kBtu/h	76.4		95.5		114.2	
	Power input	kW	4.8		6.8		8.8	
	EER		4.65		4.14		3.81	
Connected indoor unit	Total capacity		50-130% of outdoor unit capacity		50-130% of outdoor unit capacity		50-130% of outdoor unit capacity	
	Maximum quantity		13		16		19	
Compressor	Type		Scroll DC inverter		Scroll DC inverter		Scroll DC inverter	
	Quantity		1		1		1	
Fan	Type		DC		DC		DC	
	Quantity		1		1		1	
	Static pressure	Pa	0-20 (default); 20-120 (customized)		0-20 (default); 20-120 (customized)		0-20 (default); 20-120 (customized)	
	Airflow rate	m ³ /h	12600		12600		13500	
Refrigerant	Type		R410A		R410A		R410A	
	Factory charge	kg	7.4		7.4		7.4	
Pipe connections ²	Liquid pipe	mm	Φ12.7		Φ12.7		Φ12.7	
	Gas pipe	mm	Φ25.4		Φ25.4		Φ25.4	
Sound pressure level ³		dB(A)	57		58		60	
Net dimensions (W×H×D)		mm	940×1760×825		940×1760×825		940×1760×825	
Packed dimensions (W×H×D)		mm	1010×1945×890		1010×1945×890		1010×1945×890	
Net weight		kg	185		185		185	
Gross weight		kg	200		200		200	
Ambient temp. operation range (Cooling)		°C	-15 to 55		-15 to 55		-15 to 55	

HP		14		16		18		
Model name		4TVVT140DD07CAA		4TVVT155DD07CAA		4TVVT172DD07CAA		
Power supply		V/N/Hz	380-415/3/50(60)		380-415/3/50(60)		380-415/3/50(60)	
Cooling ¹	Capacity	kW	40		45		50	
		kBtu/h	136.4		153.5		170.5	
	Power input	kW	9.7		12.3		13.4	
	EER		4.12		3.67		3.74	
Connected indoor unit	Total capacity		50-130% of outdoor unit capacity		50-130% of outdoor unit capacity		50-130% of outdoor unit capacity	
	Maximum quantity		23		26		29	
Compressor	Type		Scroll DC inverter		Scroll DC inverter		Scroll DC inverter	
	Quantity		1		1		1	
Fan	Type		DC		DC		DC	
	Quantity		1		1		1	
	Static pressure	Pa	0-20 (default); 20-120 (customized)		0-20 (default); 20-120 (customized)		0-20 (default); 20-120 (customized)	
	Airflow rate	m ³ /h	15600		15600		16500	
Refrigerant	Type		R410A		R410A		R410A	
	Factory charge	kg	8.4		8.4		10	
Pipe connections ²	Liquid pipe	mm	Φ15.9		Φ15.9		Φ15.9	
	Gas pipe	mm	Φ28.6		Φ28.6		Φ28.6	
Sound pressure level ³		dB(A)	60		61		62	
Net dimensions (W×H×D)		mm	940×1760×825		940×1760×825		940×1760×825	
Packed dimensions (W×H×D)		mm	1010×1945×890		1010×1945×890		1010×1945×890	
Net weight		kg	200		200		212	
Gross weight		kg	215		215		232	
Ambient temp. operation range (Cooling)		°C	-15 to 55		-15 to 55		-15 to 55	

Notes:

- Indoor temperature 27°C DB, 19°C WB; outdoor temperature 35°C DB; equivalent refrigerant piping length 7.5m with zero level difference.
- Diameters given are those of the unit's stop valves.
- Sound pressure level is measured at a position 1m in front of the unit and 1.3m above the floor in a semi-anechoic chamber.

Specifications

7G Cooling Series VRF

HP		20		22		24		
Model name		4TVVT192DD07CAA		4TVVT211DD07CAA		4TVVT228DD07CAA		
Power supply		V/N/Hz	380-415/3/50(60)		380-415/3/50(60)		380-415/3/50(60)	
Cooling ¹	Capacity	kW	56		61.5		67	
		kBtu/h	191.0		209.7		228.5	
	Power input	kW	17.4		17.3		19.0	
	EER		3.21		3.55		3.52	
Connected indoor unit	Total capacity		50-130% of outdoor unit capacity		50-130% of outdoor unit capacity		50-130% of outdoor unit capacity	
	Maximum quantity		33		36		39	
Compressor	Type		Scroll DC inverter		Scroll DC inverter		Scroll DC inverter	
	Quantity		1		1		1	
Fan	Type		DC		DC		DC	
	Quantity		1		2		2	
	Static pressure	Pa	0-20 (default); 20-120 (customized)		0-20 (default); 20-120 (customized)		0-20 (default); 20-120 (customized)	
	Airflow rate	m ³ /h	16500		21500		21500	
Refrigerant	Type		R410A		R410A		R410A	
	Factory charge	kg	10		12.8		12.8	
Pipe connections ²	Liquid pipe	mm	Φ15.9		Φ19.1		Φ19.1	
	Gas pipe	mm	Φ28.6		Φ31.8		Φ31.8	
Sound pressure level ³		dB(A)	63		63		64	
Net dimensions (W×H×D)		mm	940×1760×825		1340×1760×825		1340×1760×825	
Packed dimensions (W×H×D)		mm	1010×1945×890		1410×1945×890		1410×1945×890	
Net weight		kg	225		260		260	
Gross weight		kg	245		285		285	
Ambient temp. operation range (Cooling)		°C	-15 to 55		-15 to 55		-15 to 55	





HP		26		28		30		
Model name		4TVVT251DD07CAA		4TVVT270DD07CAA		4TVVT288DD07CAA		
Power supply		V/N/Hz	380-415/3/50(60)		380-415/3/50(60)		380-415/3/50(60)	
Cooling ¹	Capacity	kW	73		78.5		85	
		kBtu/h	248.9		267.7		289.9	
	Power input	kW	19.4		22.3		26.4	
	EER		3.76		3.52		3.22	
Connected indoor unit	Total capacity		50-130% of outdoor unit capacity		50-130% of outdoor unit capacity		50-130% of outdoor unit capacity	
	Maximum quantity		43		46		50	
Compressor	Type		Scroll DC inverter		Scroll DC inverter		Scroll DC inverter	
	Quantity		2		2		2	
Fan	Type		DC		DC		DC	
	Quantity		2		2		2	
	Static pressure	Pa	0-20 (default); 20-120 (customized)		0-20 (default); 20-120 (customized)		0-20 (default); 20-120 (customized)	
	Airflow rate	m ³ /h	22000		22000		22000	
Refrigerant	Type		R410A		R410A		R410A	
	Factory charge	kg	15.4		15.4		15.4	
Pipe connections ²	Liquid pipe	mm	Φ22.2		Φ22.2		Φ22.2	
	Gas pipe	mm	Φ31.8		Φ31.8		Φ31.8	
Sound pressure level ³		dB(A)	64		64		64	
Net dimensions (W×H×D)		mm	1340×1760×825		1340×1760×825		1340×1760×825	
Packed dimensions (W×H×D)		mm	1410×1945×890		1410×1945×890		1410×1945×890	
Net weight		kg	325		325		325	
Gross weight		kg	350		350		350	
Ambient temp. operation range (Cooling)		°C	-15 to 55		-15 to 55		-15 to 55	

Notes:

- Indoor temperature 27°C DB, 19°C WB; outdoor temperature 35°C DB; equivalent refrigerant piping length 7.5m with zero level difference.
- Diameters given are those of the unit's stop valves.
- Sound pressure level is measured at a position 1m in front of the unit and 1.3m above the floor in a semi-anechoic chamber.

Specifications

7G Cooling Series VRF - Capacity Combination Table

Model Name		Cooling Capacity			Power Input (kW)	COP	ODU Combination Models		
		HP	kW	Btu/h			ODU #1	ODU #2	ODU #3
4TVVT86DD07CAA		8	22.4	76,400	4.8	4.65	4TVVT86DD07CAA		
4TVVT96DD07CAA		10	28.0	95,500	6.8	4.14	4TVVT96DD07CAA		
4TVVT115DD07CAA		12	33.5	114,200	8.8	3.81	4TVVT115DD07CAA		
4TVVT140DD07CAA		14	40.0	136,400	9.7	4.12	4TVVT140DD07CAA		
4TVVT155DD07CAA		16	45.0	153,500	12.3	3.67	4TVVT155DD07CAA		
4TVVT172DD07CAA		18	50.0	170,500	13.4	3.74	4TVVT172DD07CAA		
4TVVT192DD07CAA		20	56.0	191,000	17.4	3.21	4TVVT192DD07CAA		
4TVVT211DD07CAA		22	61.5	209,700	17.3	3.55	4TVVT211DD07CAA		
4TVVT228DD07CAA		24	67.0	228,500	19.0	3.52	4TVVT228DD07CAA		
4TVVT251DD07CAA		26	73.0	248,900	19.4	3.76	4TVVT251DD07CAA		
4TVVT270DD07CAA		28	78.5	267,700	22.3	3.52	4TVVT270DD07CAA		
4TVVT288DD07CAA		30	85.0	289,900	26.4	3.22	4TVVT288DD07CAA		
4TVVT310DD07CAA		32 (16+16)	90.0	306,900	24.6	3.66	4TVVT155DD07CAA	4TVVT155DD07CAA	
4TVVT332DD07CAA		34 (14+20)	96.0	327,400	27.1	3.54	4TVVT140DD07CAA	4TVVT192DD07CAA	
4TVVT347DD07CAA		36 (16+20)	101.0	344,400	29.7	3.40	4TVVT155DD07CAA	4TVVT192DD07CAA	
4TVVT364DD07CAA		38 (18+20)	106.0	361,500	30.8	3.44	4TVVT172DD07CAA	4TVVT192DD07CAA	
4TVVT383DD07CAA		40 (16+24)	112.0	382,000	31.3	3.58	4TVVT155DD07CAA	4TVVT228DD07CAA	
4TVVT400DD07CAA		42 (18+24)	117.0	399,000	32.4	3.61	4TVVT172DD07CAA	4TVVT228DD07CAA	
4TVVT420DD07CAA		44 (20+24)	123.0	419,500	36.4	3.38	4TVVT192DD07CAA	4TVVT228DD07CAA	
4TVVT443DD07CAA		46 (16+30)	130.0	443,400	38.7	3.36	4TVVT155DD07CAA	4TVVT288DD07CAA	
4TVVT460DD07CAA		48 (18+30)	135.0	460,400	39.8	3.39	4TVVT172DD07CAA	4TVVT288DD07CAA	
4TVVT480DD07CAA		50 (20+30)	141.0	480,900	43.8	3.22	4TVVT192DD07CAA	4TVVT288DD07CAA	
4TVVT499DD07CAA		52 (22+30)	146.5	499,600	43.7	3.35	4TVVT211DD07CAA	4TVVT288DD07CAA	
4TVVT516DD07CAA		54 (24+30)	152.0	518,400	45.4	3.35	4TVVT228DD07CAA	4TVVT288DD07CAA	
4TVVT539DD07CAA		56 (26+30)	158.0	538,800	45.8	3.45	4TVVT251DD07CAA	4TVVT288DD07CAA	
4TVVT558DD07CAA		58 (28+30)	163.5	557,600	48.7	3.36	4TVVT270DD07CAA	4TVVT288DD07CAA	
4TVVT576DD07CAA		60 (30+30)	170.0	579,800	52.8	3.22	4TVVT288DD07CAA	4TVVT288DD07CAA	
4TVVT598DD07CAA		62 (16+16+30)	175.0	596,900	51.0	3.43	4TVVT155DD07CAA	4TVVT155DD07CAA	4TVVT288DD07CAA
4TVVT620DD07CAA			64 (14+20+30)	181.0	617,300	53.5	3.38	4TVVT140DD07CAA	4TVVT192DD07CAA
4TVVT635DD07CAA	66 (16+20+30)		186.0	634,300	56.1	3.32	4TVVT155DD07CAA	4TVVT192DD07CAA	4TVVT288DD07CAA
4TVVT652DD07CAA	68 (18+20+30)		191.0	651,400	57.2	3.34	4TVVT172DD07CAA	4TVVT192DD07CAA	4TVVT288DD07CAA
4TVVT671DD07CAA	70 (16+24+30)		197.0	671,900	57.7	3.41	4TVVT155DD07CAA	4TVVT228DD07CAA	4TVVT288DD07CAA
4TVVT688DD07CAA	72 (18+24+30)		202.0	688,900	58.8	3.44	4TVVT172DD07CAA	4TVVT228DD07CAA	4TVVT288DD07CAA
4TVVT708DD07CAA	74 (20+24+30)		208.0	709,400	62.8	3.31	4TVVT192DD07CAA	4TVVT228DD07CAA	4TVVT288DD07CAA
4TVVT731DD07CAA	76 (16+30+30)		215.0	733,300	65.1	3.30	4TVVT155DD07CAA	4TVVT288DD07CAA	4TVVT288DD07CAA
4TVVT748DD07CAA	78 (18+30+30)		220.0	750,300	66.2	3.32	4TVVT172DD07CAA	4TVVT288DD07CAA	4TVVT288DD07CAA
4TVVT768DD07CAA	80 (20+30+30)		226.0	770,800	70.2	3.22	4TVVT192DD07CAA	4TVVT288DD07CAA	4TVVT288DD07CAA
4TVVT787DD07CAA	82 (22+30+30)		231.5	789,500	70.1	3.30	4TVVT211DD07CAA	4TVVT288DD07CAA	4TVVT288DD07CAA
4TVVT804DD07CAA	84 (24+30+30)		237.0	808,300	71.8	3.30	4TVVT228DD07CAA	4TVVT288DD07CAA	4TVVT288DD07CAA
4TVVT827DD07CAA	86 (26+30+30)		243.0	828,700	72.2	3.37	4TVVT251DD07CAA	4TVVT288DD07CAA	4TVVT288DD07CAA
4TVVT846DD07CAA	88 (28+30+30)		248.5	847,500	75.1	3.31	4TVVT270DD07CAA	4TVVT288DD07CAA	4TVVT288DD07CAA
4TVVT864DD07CAA	90 (30+30+30)		255.0	869,700	79.2	3.22	4TVVT288DD07CAA	4TVVT288DD07CAA	4TVVT288DD07CAA