DAIKIN

WATER COOLED SYSTEM

Cooling Only 50 Hz

R-410A

VRV IV

W SERIES

Exceeding Boundari
Innovative Energy Sa

New

First launched in Japan in 1982, the Daikin VRV by world markets for over 35 years. Now, Daikin the new VRV X and A series.By combining the VRV, VRT and VAV, we have attained both ener comfortable air conditioning.

VRV+VRT

Energy savings

Uniting **VRV**, VRT and VAV technologies

Automatic refrigerant charge function

- Optimised operation efficiency
- Higher installation quality
- Easier installation

es with vings

system has been embraced
proudly introduces
technologies of
gy savings and

+VAV

Contents

High reliability

- New inverter PC board
- Double backup operation
- Refrigerant cooling for PC board

Background of VRV development

The 1st Generation | VRV series released in 1982

<The birth of innovative products that changed the history of air conditioning technology>

- 2.5-year development term
- Completion of development in May, 1982
- Technical award of Japan Society of Refrigerating & Air-conditioning Engineers in 1983

Development history

To meet the needs of the times, we've been continuously developing technologies as the leading air conditioning manufacturer manufacturer in the world.

'82

VRV **D series**
-Cooling only-

'84

VRV **C series**
-Cooling only-

'88

VRV **F series**
-Cooling only-

'90

VRV **G series**
-Heat pump-

'92

VRV **G series**
-Heat recovery-

'95

VRV **H series**
Made possible to connect to BMS using the DIII-NET

'96

VRV **K series**

'99

VRV **K Plus series**

'00

VRV **KA series**

'02

VRV **L series**
Adopted the new R-407C refrigerant

'04

VRV **II-S series**

'05

VRV **II MA series**

VRV **III series**

VRV **III-S series**

'06

VRV-**WII series**

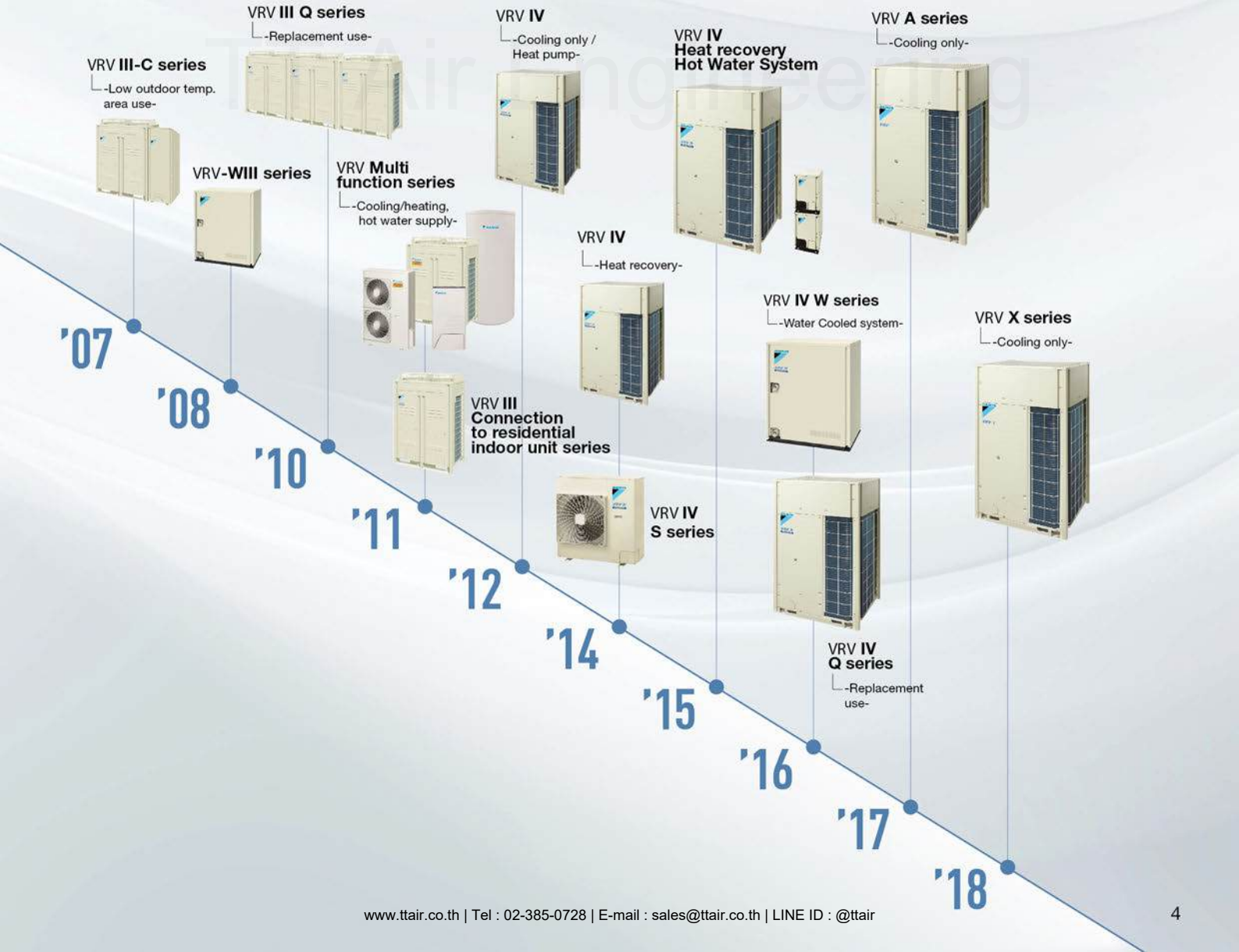
VRV **II M series**
Adopted the new R-410A refrigerant

VRV
General Catalogue

* ***VRV*** is a trademark of Daikin Industries, Ltd.

Expansion of the country of sale

Sales is undergoing in more than 70 countries



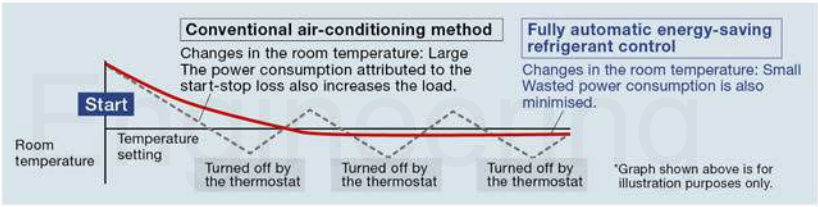
VRV User Benefits

First launched in 1982, the Daikin ***VRV*** system has been providing comfort and reliability to building owners and their tenants for over 35 years. Leveraging the latest in energy-saving technology, Daikin has further improved energy savings while reducing space requirements. This added value is one reason why Daikin is the right choice for building owners.

Energy saving & comfortable environment

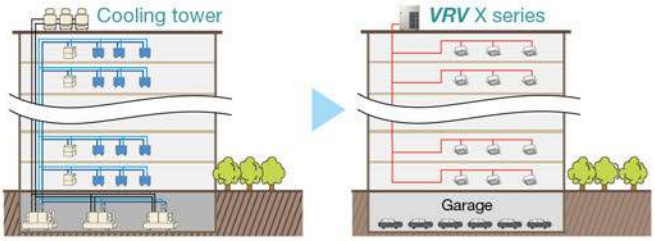
Based on the idea of using only as much space as absolutely required, Daikin first launched its commercial multi-split air conditioning systems in 1982. Since then, customers have benefitted from much increased energy efficiency. Now, our revolutionary new systems dramatically reduce energy with VRT Smart Control. During operating periods, control programs ensure thermal loading is generally low, thus boosting energy efficiency. This greatly reduces the amount of energy required for building air conditioning.

While optimally operating at low load, it maintains a comfortable indoor environment.



Efficient space utilisation

Daikin ***VRV*** system can be used to develop a large-scale air conditioning system on a single refrigerant system, thus reducing the space required for air conditioning equipment. Because the difference in height between the indoor and the outdoor unit can be as large as 90 m, even with a 20-storey building all of the outdoor units can be placed on the rooftop for more efficient utilisation of space.



High reliability

Double backup operation

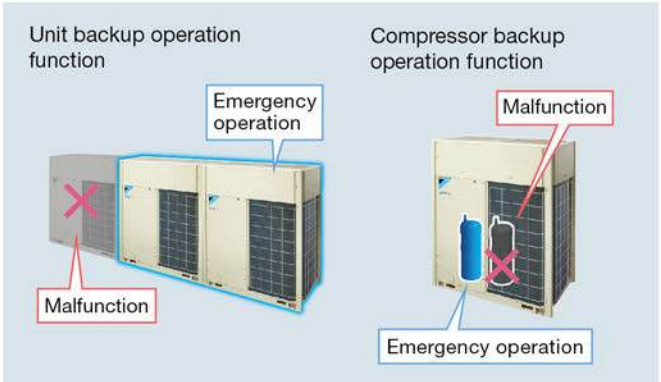
Daikin ***VRV*** outdoor unit goes beyond just highly reliable compressors with a backup system that ensures continued operation.

Unit backup

Should one outdoor unit in a multiple unit system fail, the other outdoor units switch to emergency operation. If for some reason a failure occurs, the system for that unit does not completely stop, and air conditioning is maintained.

Compressor backup

Since units are equipped with two compressors, even if one compressor fails, the other compressor carries on in emergency mode.

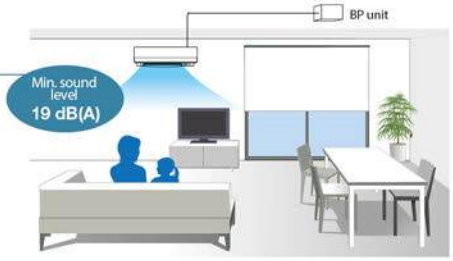


Comfortable environment

While operating optimally at low load, VRT smart operation maintains the indoor temperature and ensures a comfortable environment.

Residential Indoor Units

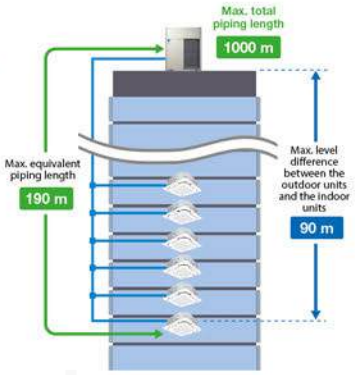
Because indoor units developed for residential use can be connected, it is possible to realise quiet operation.
You can include indoor units that operate at min.19 dB(A), and to reduce the noise of refrigerant passing through the piping by remotely installing an BP unit.



Varied lineup of models

System applications range from family residences to large commercial buildings. With 26 types of indoor unit available, comfortable airflow is ensured in every space.

Long piping provides more flexible system design



Greater design freedom is provided because equivalent piping between indoor and outdoor unit can run as large as 190 m and reach a maximum height difference of 90 m.

Compatible with engineering software

We at Daikin provide the software, the simulation results, and drawing materials to support the business-information modeling (BIM) currently entering the mainstream in construction industries.

Energy efficient

Daikin' s innovative energy-saving technology helps you to achieve your green building solution.

Automatic Refrigerant Charge Function

The automatic refrigerant charge function automates the charging of the proper refrigerant amount and the closing of shut-off valves by simply pressing a switch after pre-charging. Simplified installation eliminates excessive and insufficient refrigerant charge amounts due to calculation mistakes, and this has led to higher installation quality.

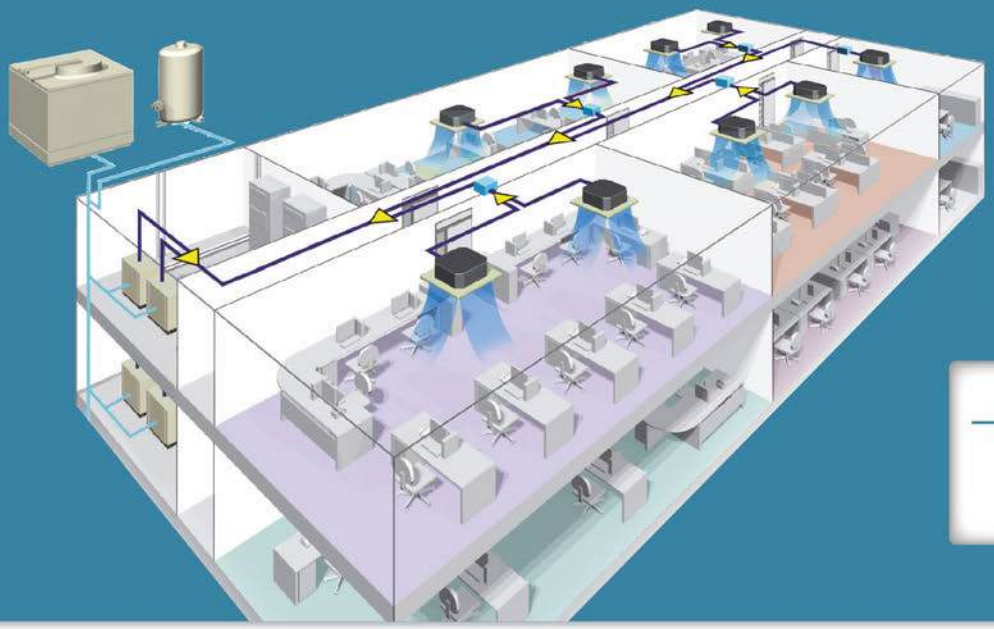
Lightweight and compact large-capacity single units

Systems can be configured with single modules providing up to 20 HP.
The lightweight and compact bodies are both easy to install and can be transported in elevators.

Simple piping, easy wiring

The REFNET piping system and DIII-NET system simplify refrigerant piping and control wiring installation.

VRV IV W SERIES Water Cooled



RWEYQ-T

Cooling Only

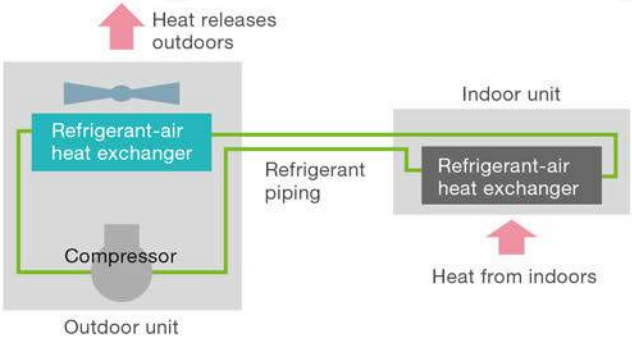
6 HP - 36 HP
(16 kW) (101 kW)

A water cooled intelligent individual air conditioning system suitable for tall multi-storeyed buildings.

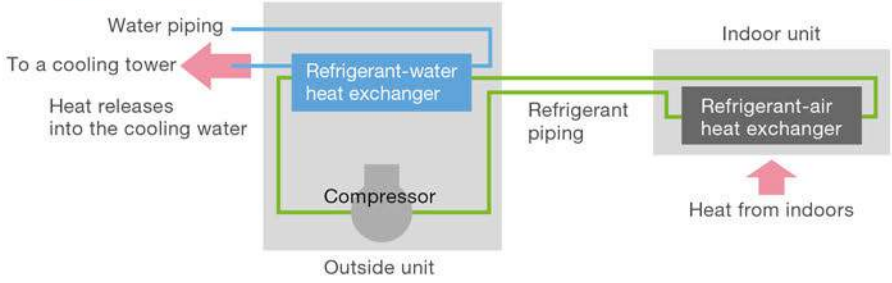
What is a water cooled system?

While an air cooled air conditioning system is designed to exchange heat recovered from indoors with outdoor air, a water cooled air conditioning system is designed for heat exchange with water.

Air cooled system



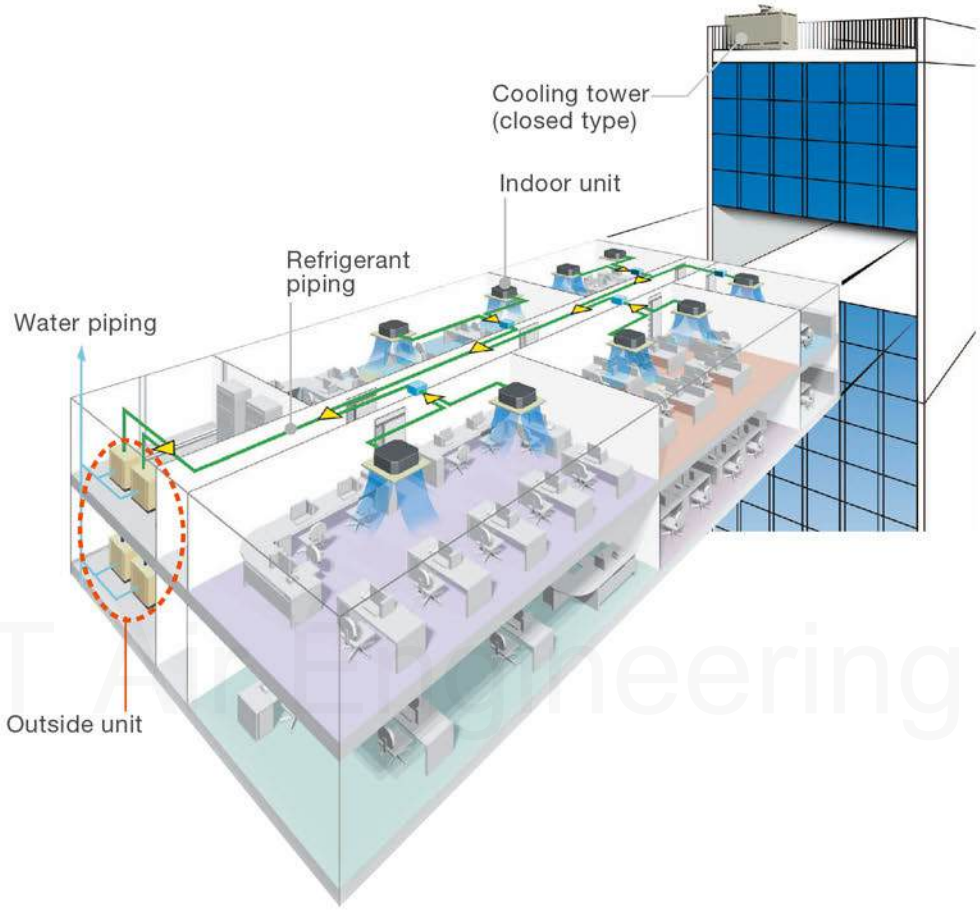
Water cooled system



As a water cooled system does not require to exchange heat with outdoor air,

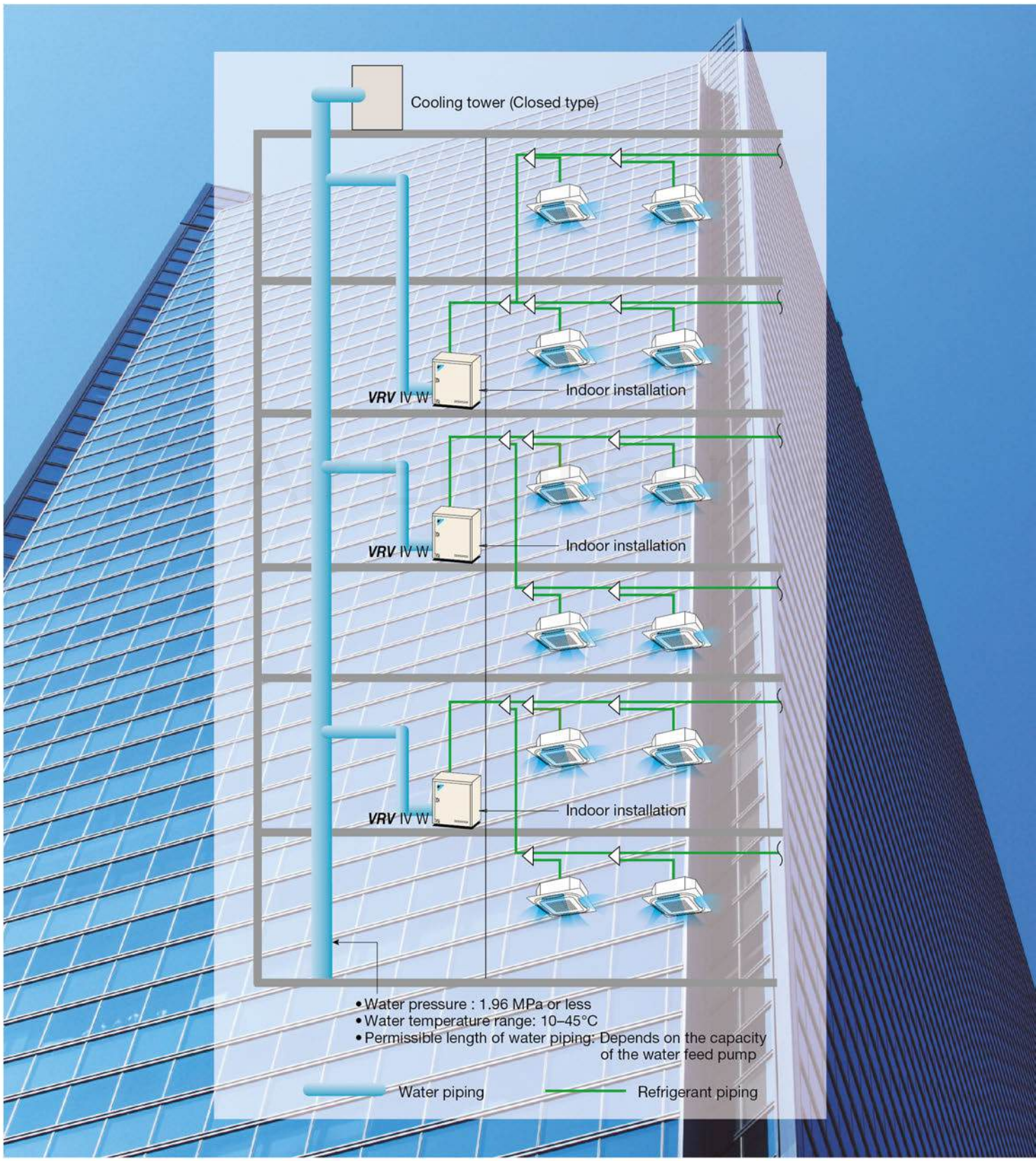
- Outside units can be installed indoors, for example, on basement floors.
  →High installation flexibility
- The air conditioning operation is stable even when the outdoor air temperature is high.
  →Improved comfort

The *VRV* IV W series combines the characteristics of a water cooled system with the *VRV* system.



- Individual air conditioning is achieved via on-demand operation in each room.
- Outside units can be installed anywhere in a building if they can be connected with water piping.
- The length of the refrigerant piping can be minimized by installing outside units in proximity to indoor units.
  [The system can easily fit into long building floors.]
  [The system helps reduce energy loss caused by long refrigerant piping.]
- Refrigerant piping is connected to indoor units.
  This design helps reduce the risks of indoor water leakage.

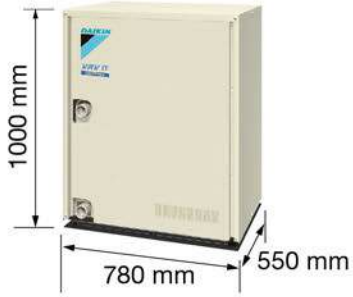
The *VRV* IV W series can meet various air conditioning needs by taking full advantage of the characteristics of a water cooled system.

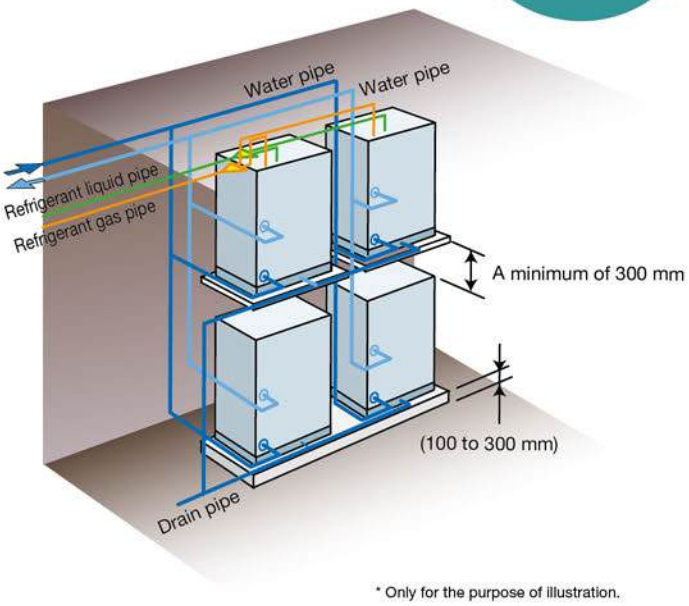


No balcony required

Adaptable to high-rise buildings due to easy installation on each floor

Compact outside units can be easily installed in the machine rooms on each floor.
This helps overcome the restriction on differences in height of refrigerant piping.
Individual air conditioning can be easily provided in high-rise buildings using this ***VRV*** system.

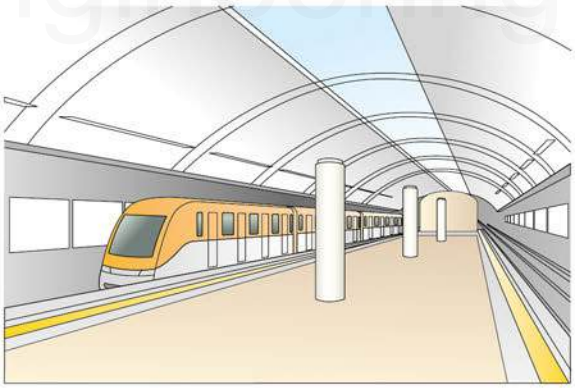




* Only for the purpose of illustration.

Easy to install in underground shopping malls and subway systems

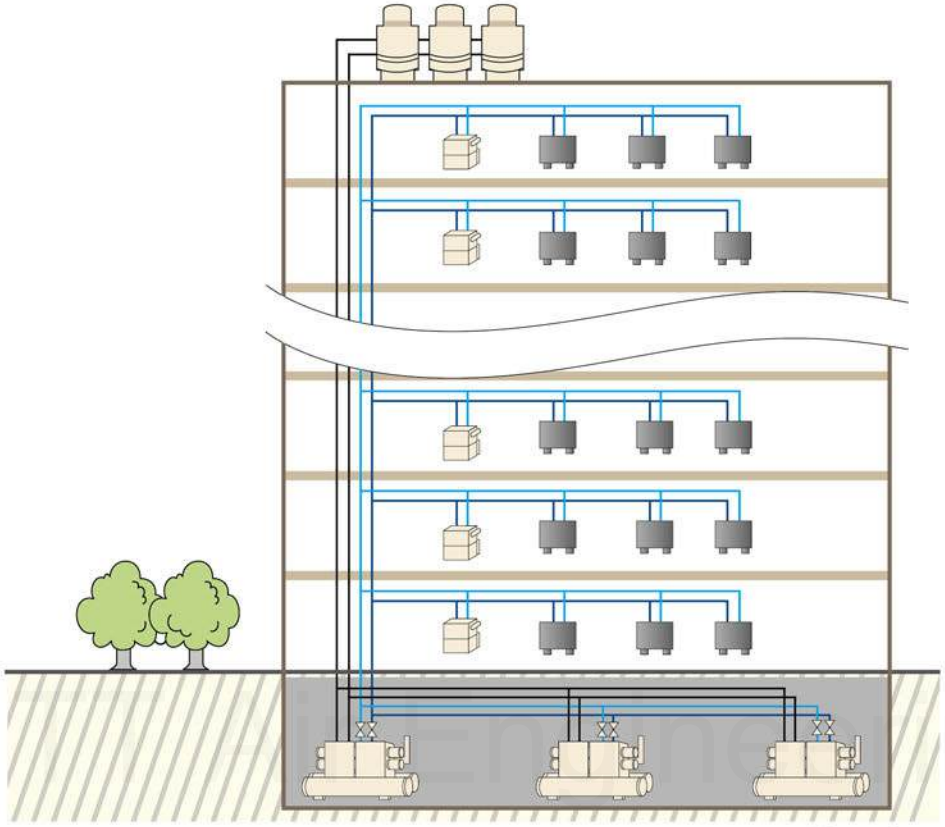
Individual air conditioning can be easily provided in underground shopping malls, subway systems, etc. using this ***VRV*** system because heat exchanging with outdoor air is not required.



Also recommended for condominiums and detached houses

We offer an extensive lineup of small capacity outside units as well as connectable residential indoor units for detached houses. Compact outside units can be installed indoors.

Rising problems for old, conventional water system



* System diagram

Why is renovation necessary?

1. As equipment ages, its air conditioning capacity weakens with each passing year.
2. With frequent breakdowns in the outside unit, normal use of air conditioners is unachievable.
3. The maintenance cost for the equipment keeps rising.
4. The longer the equipment serves, its noise becomes louder.
5. Scale formed in water pipes is hard to clean, accelerating corrosion and aging processes.
6. Meeting the requirements of a 24-hour running IT room is out of the question.
7. Catering to new tenants' partitioning changes in a timely manner is difficult.
8. Charging by household is not possible.
9. Serving tenants working overtime is difficult.
10. Central control and management costs too much.

Troublesome issues in renovation?

1. How to avoid damaging the building structure?
2. How to reduce the impact on tenants during renovation?
3. How to bring the renovation costs down to lowest level possible?
4. How to securely transport the air conditioning outside unit without incident?
5. How to simplify maintenance of the air conditioning system?

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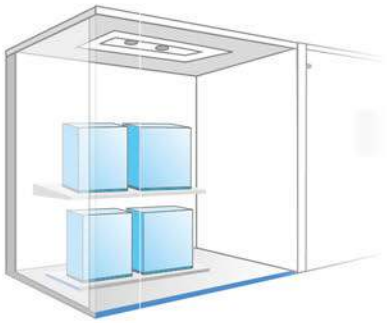
A Flexible System, Convenient for Expansion/Renovation

Problems with existing water systems can be solved with minimal construction work.

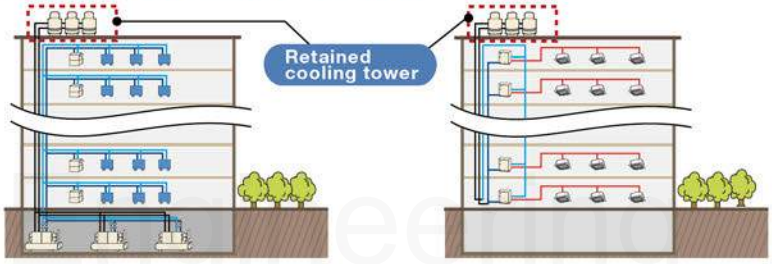
1 Indoor installation solves the puzzle of proper placement of outdoor units

The outside units of the water cooled ***VRV*** IV W series don' t have necessity to direct heat exchanging with outdoor air. This feature makes it possible to place the outside unit inside the building, which greatly extends design flexibility and makes it easier to adapt to different types of buildings and open to various kinds of creative building exteriors.



2 Part of the old system can be retained for cost reduction

The water cooled ***VRV*** IV W series can retain the cooling tower of the old system during renovation, effectively keeping costs down.

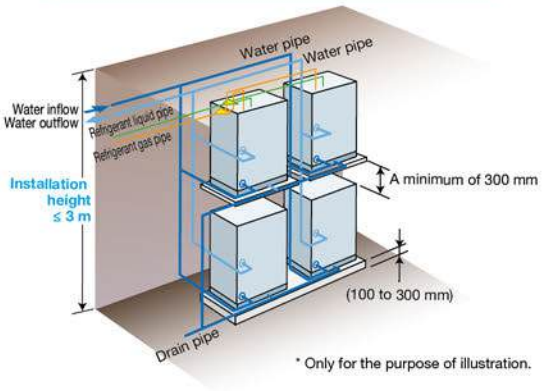


3 The compact outside units facilitate the renovation process and saves space for the outside unit area

- The outside units of the water cooled ***VRV*** IV W series are conveniently compact, which not only enables transport by elevator possible, but also effectively simplifies installation. This also saves a great deal of time and labor.

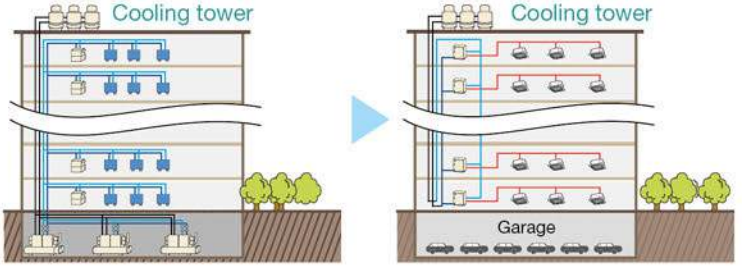
- The modular design featured by the water cooled ***VRV*** IV W series enables a free and flexible configuration of the outside units. Outside units can be arranged with one on top of another, saving space for other purposes.

Stacking up of the outside units



* Only for the purpose of illustration.

Saving more space for other purposes



With a conventional central air conditioning system, the outside units take up a disproportionately large amount of space for installation.

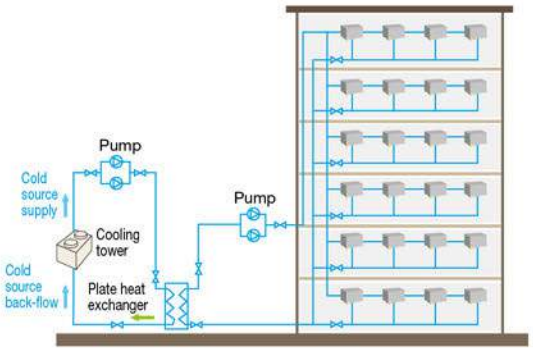
With the water cooled ***VRV*** IV W series, the outside units are modular design and can be arranged more freely and flexibly, saving part of the outside unit room for purposes such as business or car parking.

* System diagram

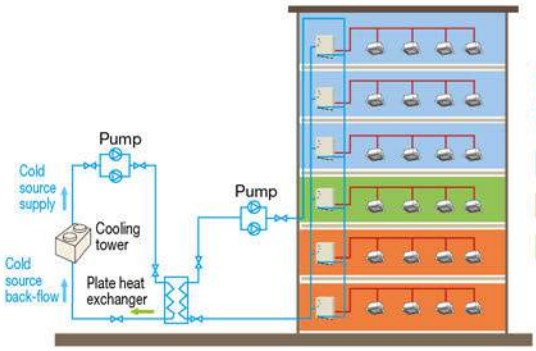
Renovation of an Air Conditioning System

4 Floor by floor renovation without disturbing other tenants

Based on the actual situation, renovation work can be carried out in phases, lot by lot and floor by floor. This truly and properly gives expression to the outstanding flexibility of the water cooled ***VRV*** IV W series.



Water cooled packaged air conditioning system



Water cooled ***VRV*** IV W series

Renovation in phases is possible.

Phase 1
Phase 2
Phase 3

* System diagram

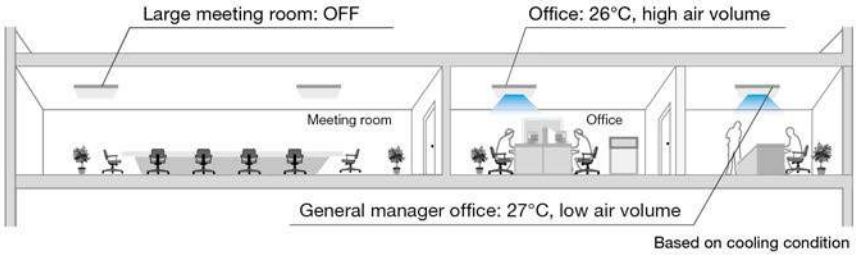
5 Compact refrigerant pipes and *VRV* indoor units help to save ceiling space

The outside units and indoor units of the water cooled ***VRV*** IV W series are connected by refrigerant pipes. As the ***VRV*** indoor units and the diameter of refrigerant pipes are significantly smaller than duct and water pipes, less ceiling space is occupied and more floor height is saved. Less work is needed for expansion and renovation of the air conditioning system, thus minimizing the influence on other tenants.

Individual air conditioning comfort can be realized when and where it is actually required.

1 Independent control provides greater comfort and convenience

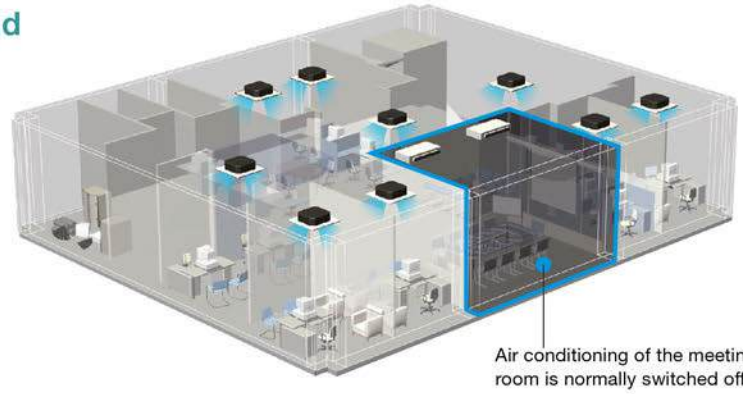
Each indoor unit of the water cooled ***VRV*** IV W series can be independently controlled and adjusted according to each tenant's individual needs for temperature and air volume.
This achieves optimal comfort and convenience.



Based on cooling condition

2 Higher efficiency with partial load

In actual operation, an air conditioning system's load may vary due to external climate change or variation of indoor unit operation rate, making the air conditioning system work in a partial load operation most of the time. By virtue of Daikin's advanced DC inverter technology and advanced refrigerant control technology, the water cooled ***VRV*** IV W series boasts a higher efficiency in a partial load state than in the rated operating conditions.

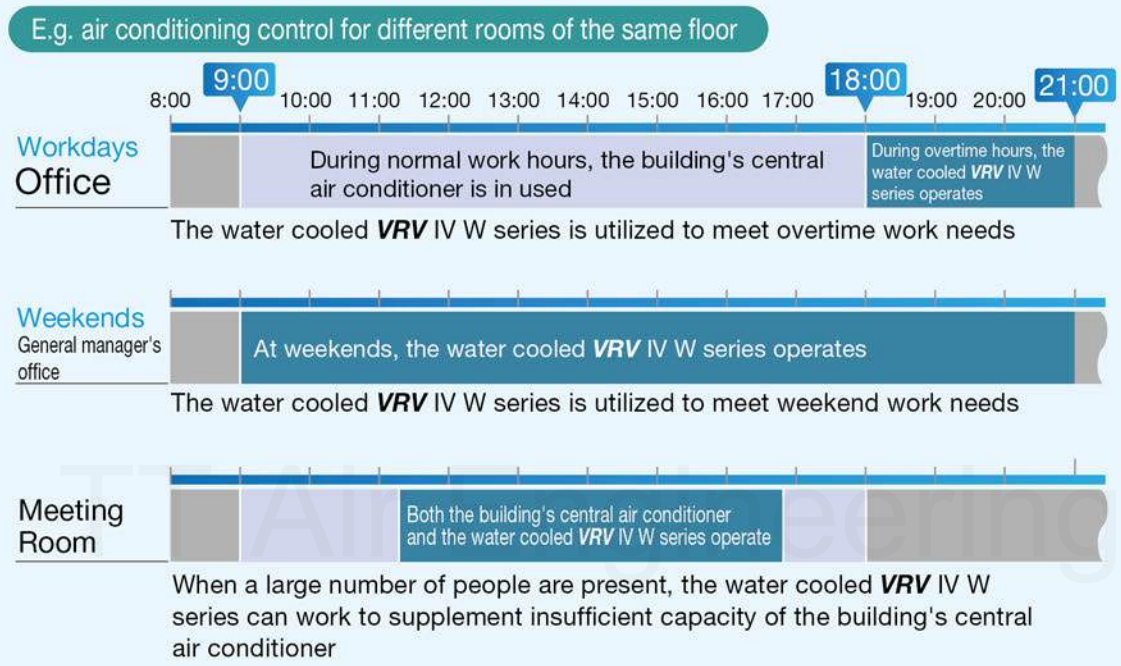


Actual conditions of the floor

3 Flexibly satisfies conditions for working overtime and times of insufficient load

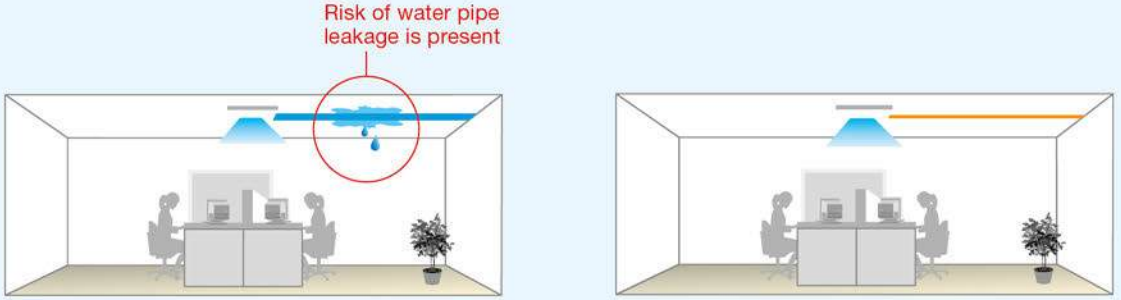
When teaming up with a conventional central air conditioning system, the water cooled ***VRV*** IV W series can easily handle the air conditioning needs for working after-hours while the building' s central air conditioner can be utilized during normal work hours. The water cooled ***VRV*** IV W series can be added according to actual needs.

- Inconvenient transportation procedures are eliminated, and the tenants' daily air conditioning costs decrease.
- Based on actual schedules, operation for each indoor unit can be precisely and individually set.



4 Connection using refrigerant pipes eliminate the risk of water leakage

The outside units and indoor units of the water cooled ***VRV*** IV W series are connected by refrigerant pipes, with water pipes centralised in the outside unit room and the pipe well. This arrangement greatly reduces the risk of damage on important equipment indoors caused by water leakage of the system.



Adoption of water pipes for indoor connections in an all-water central air conditioning system

Adoption of refrigerant pipes for indoor connections in a water cooled ***VRV*** IV W series system

Compact and lightweight

Adoption of a water heat exchanger and optimisation of the refrigerant control circuit has resulted in compact and lightweight equipment.
A weight of 146 kg and height of 1,000 mm make it possible for installation in buildings with limited space, or where space is unavailable for outdoor units.
This makes the system ideal for places that doesn' t have area outside—such as underground malls.

* The unit is designed for indoor installation only.

VRV III W series
24 HP(8 HP+8 HP+8 HP)

VRV IV W SERIES
24 HP(12 HP+12 HP)

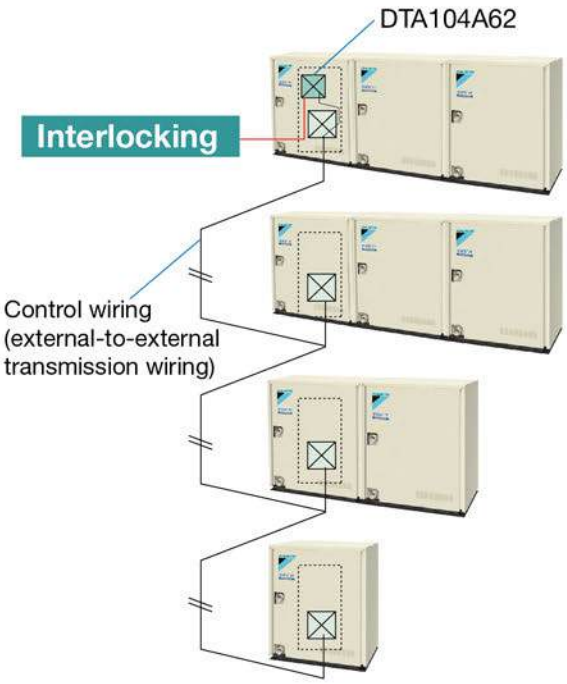
Footprint	**1.29 m²**	→	0.86 m²	33% Decrease
Product Weight	**447 kg**	→	294 kg	34% Decrease

Enhanced usability

Centralised interlocking function

Centralised interlocking input operate by using an external control adaptor (DTA104A62).

Using one external control adaptor circuit board makes centralised interlocking input to multiple units within the same water system possible.



Enhanced lineup

Wider capacity range from 6 to 36 HP

With its enhanced lineup of 2 new models-6 HP and 12 HP single outside units, ***VRV*** IV W series offers a wider capacity range from 6 HP to 36 HP to meet broad variety of needs.

Single outside unit

VRV III W series

8 HP, 10 HP

VRV IV W SERIES

6 HP, 8 HP, 10 HP, 12 HP

VRV IV W SERIES

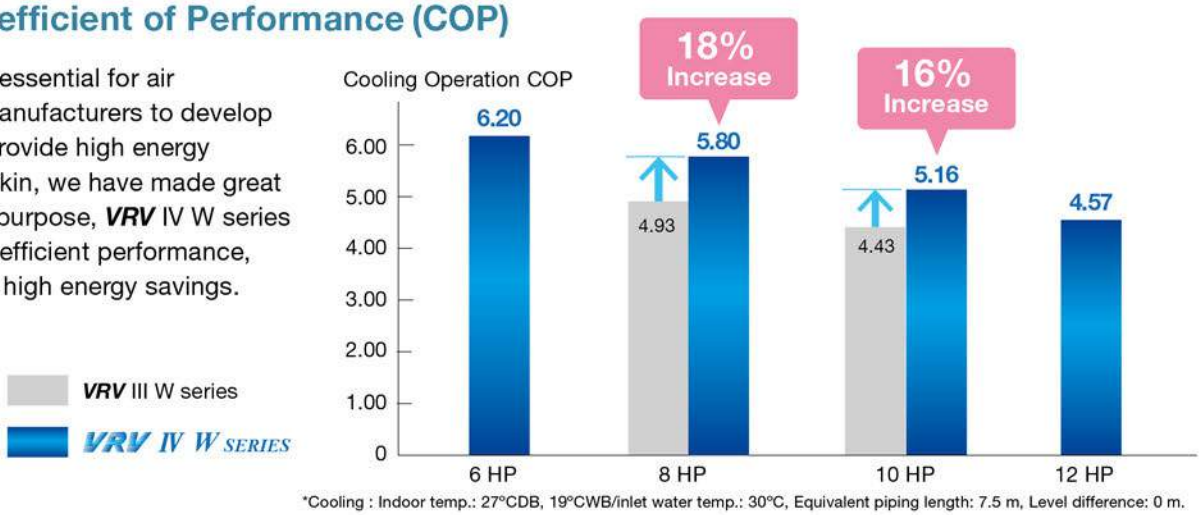
6,8,10,12 HP	14,16,18,20,22,24 HP	26,28,32,34,36 HP
		
RWEYQ6TY1S RWEYQ8TY1S	RWEYQ10TY1S RWEYQ12TY1S	RWEYQ14TY1S RWEYQ16TY1S RWEYQ18TY1S	RWEYQ20TY1S RWEYQ22TY1S RWEYQ24TY1S	RWEYQ26TY1S RWEYQ28TY1S RWEYQ30TY1S	RWEYQ32TY1S RWEYQ34TY1S RWEYQ36TY1S

Capacity Range	HP	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
	kW	16.0	22.4	28.0	33.5	38.4	44.8	50.4	56.0	61.5	67.0	72.8	78.4	84.0	89.4	95.0	101
Conventional model ***VRV*** III W series			○	○			○	○	○		○	○	○	○			
VRV IV W SERIES		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Energy saving

Higher Coefficient of Performance (COP)

It has become essential for air conditioning manufacturers to develop systems that provide high energy savings. At Daikin, we have made great efforts for this purpose, ***VRV*** IV W series delivers highly efficient performance, contributing to high energy savings.



*Cooling : Indoor temp.: 27°CDB, 19°CWB/inlet water temp.: 30°C, Equivalent piping length: 7.5 m, Level difference: 0 m.

State-of-the-art energy saving technology

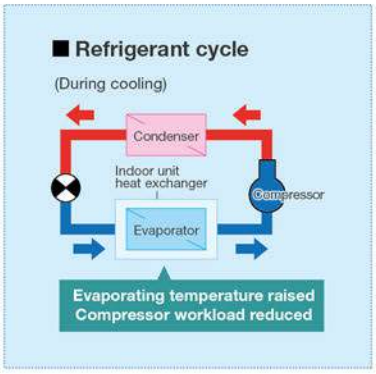
Customise your *VRV* system for optimal annual efficiency

The new ***VRV*** IV W series now features VRT technology.
VRT automatically adjusts refrigerant temperature to individual building and climate requirement, thus further improving annual energy efficiency and maintaining comfort.
With this excellent technology, running costs are reduced.

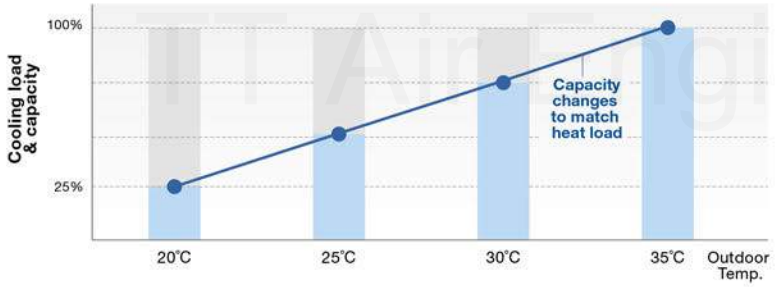
Variable Refrigerant Temperature

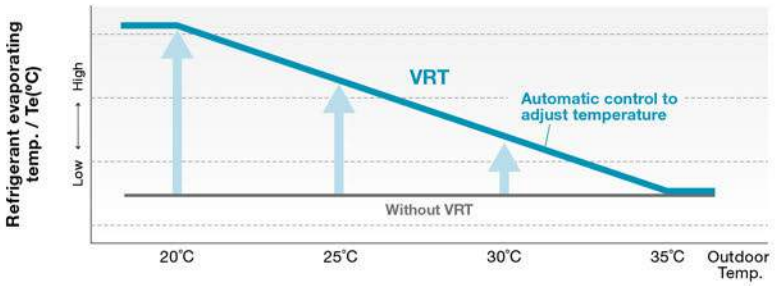
How is energy reduced?

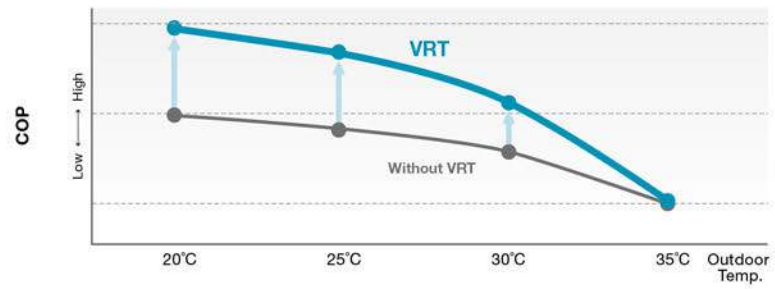
During cooling, the refrigerant evaporating temperature (Te) is raised to minimise the difference with the condensing temperature. Compressors work less, and this reduces power consumption.



■ Typical changes in evaporating temperature and COP depending on changing indoor load







Required capacity changes as air conditioning load changes according to outdoor temperature.

In case of fixed evaporating temperature, excessive cooling, thermo on-off loss, and other inefficiencies occur.

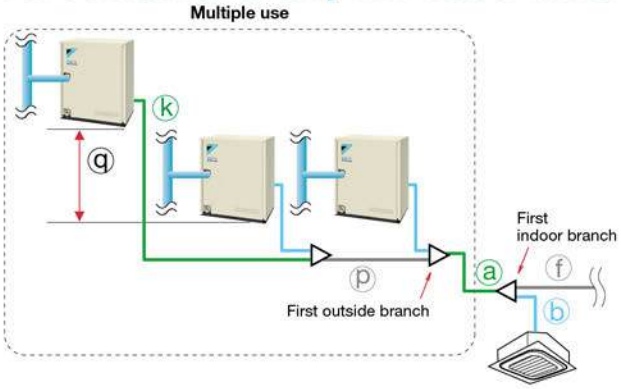
Automatic control adjusts evaporating temperature to heat load change.

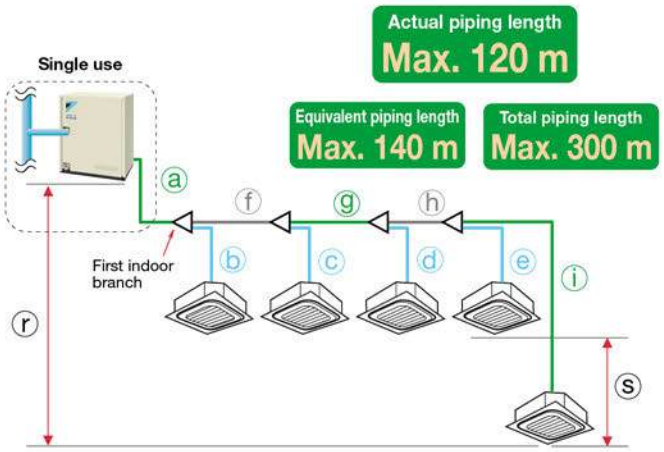
Energy efficiency is improved without sacrificing comfort.

Long refrigerant piping length

Within the refrigerant piping system, a maximum of 120 m of actual piping length and 50 m of level difference between the ***VRV*** IV W series and indoor units are possible. Water piping does not enter occupied spaces, so there is little chance of water leaking.

For connection of only *VRV* indoor units.

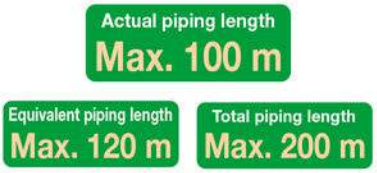


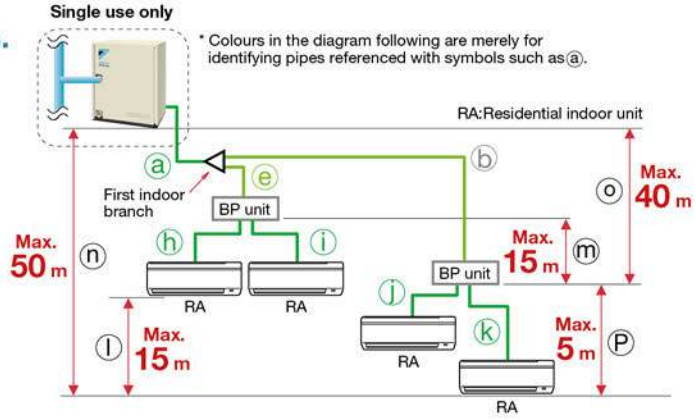


			Actual piping length	Example	Equivalent piping length
Max. allowable piping length	Refrigerant piping length		120 m	a+f+g+h+i	140 m
	Total piping length		300 m	a+b+c+d+e+f+g+h+i	—
	Between the first indoor branch and the farthest indoor unit		90 m*1	f+g+h+i	—
	Between the first outside branch and the last outside unit		10 m	k+p	13 m
Max. allowable level difference	Between the outside units (multiple use)		2 m	q	—
	Between the indoor units		15 m	s	—
	Between the outside units and the indoor units	If the outside unit is above.	50 m	r	—
		If the outside unit is below.	40 m	r	—

*1 No special requirements up to 40 m. The maximum actual piping length can be 90 m, depending on conditions. The ***VRV*** IV W series is easy to extend to 90 m by lessening the conditions from conventional ***VRV*** III W models. Be sure to refer to the Engineering Data Book for details of these conditions and requirements.

For connection of only residential indoor units.





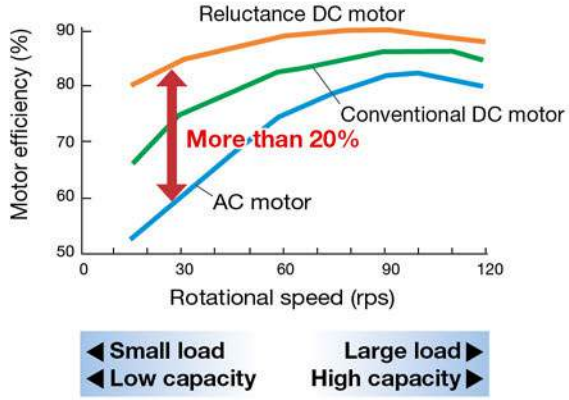
			Actual piping length	Example	Equivalent Example piping length
Max. allowable piping length	Refrigerant piping length		100 m	a+b+k	120 m
	Total piping length		200 m	a+b+e+h+j+k	—
	Between the first indoor branch and the farthest indoor unit		50 m*1	b+k	—
Max. and min. allowable piping length	Between BP unit and indoor unit	If indoor unit capacity index < 60	2 m - 15 m	h,i,j,k	—
		If indoor unit capacity index is 60	2 m - 12 m	h,i,j,k	—
		If indoor unit capacity index is 71	2 m - 8 m	h,i,j,k	—
Max. allowable level difference	Between the outside unit and the indoor unit	If the outside unit is above.	50 m	n	—
		If the outside unit is below.	40 m	n	—
	Between the indoor units		15 m	l	—
	Between the outside unit and the BP unit		40 m	o	—
	Between BP units		15 m	m	—
	Between the BP unit and the indoor unit		5 m	p	—

*1. When the piping length exceeds 20 m, the size of the main pipes (the gas side and the liquid side) must be increased. Please refer to Engineering Data Book for details.

High efficiency compressor to achieve a high COP

Compressor equipped with Reluctance DC motor

Daikin DC inverter models are equipped with the Reluctance DC motor for compressor. The Reluctance DC motor uses 2 different types of torque, neodymium magnet*1 and reluctance torque*2. This motor can save energy because it generates more power with a smaller electric power than an AC or conventional DC motor.



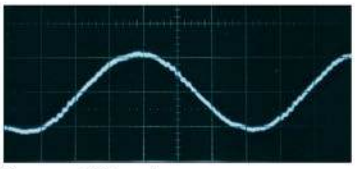
Note: Data are based on studies conducted under controlled conditions at a Daikin laboratory using Daikin products.

*1 A neodymium magnet is approximately 10 times stronger than a standard ferrite magnet.

*2 The torque created by the change in power between the iron and magnet parts.

Smooth sine wave DC inverter

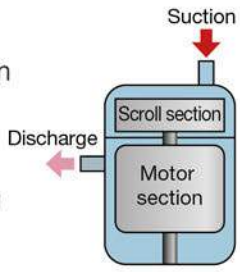
Use of an optimised sine wave smoothes motor rotation, further improving operating efficiency.



Sine wave DC inverter

Scroll compressor

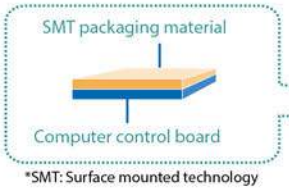
Sucked gas is compressed in the scrolling part before the heated motor, so that the machine compress the non-expanded gas, resulting in high efficiency compression.



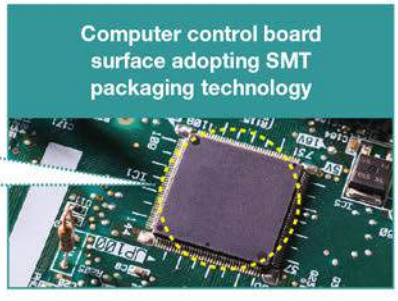
Advanced control main PC board

SMT* packaging technology

- SMT packaging technology adopted by the whole computer control panel improves the anti-clutter performance.
- Protects your computer boards from the adverse effect of sandy and humid weather.



*SMT: Surface mounted technology



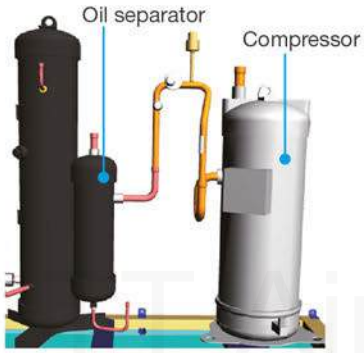
Minimize performance degradation from refrigeration oil in all stages of operation

Newly designed oil receiver

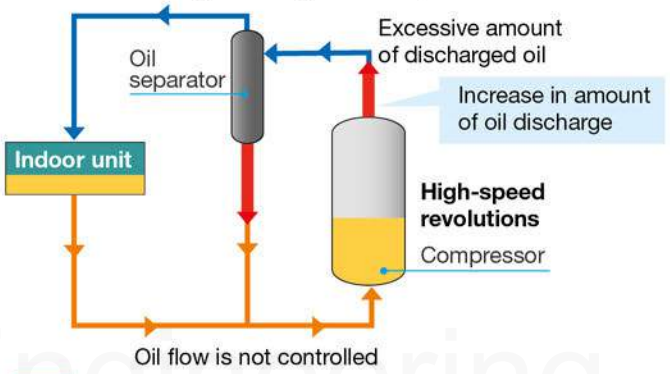
Adding a container vessel (Oil Receiver) helps eliminate performance degradation by retaining refrigeration oil and preventing excessive oil from flowing to the heat exchanger.
The new design enables the oil receiver to automatically supply the compressor with only the necessary amount of oil.

Conventional *VRV*III W series

Refrigeration oil discharged from the compressor circulates in the refrigerant cycle and lowers the heat transfer capabilities of the indoor and outside unit heat exchangers.

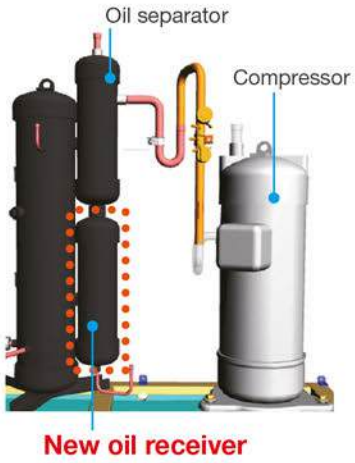


Oil flows to the indoor and outside unit heat exchangers through the oil separator.

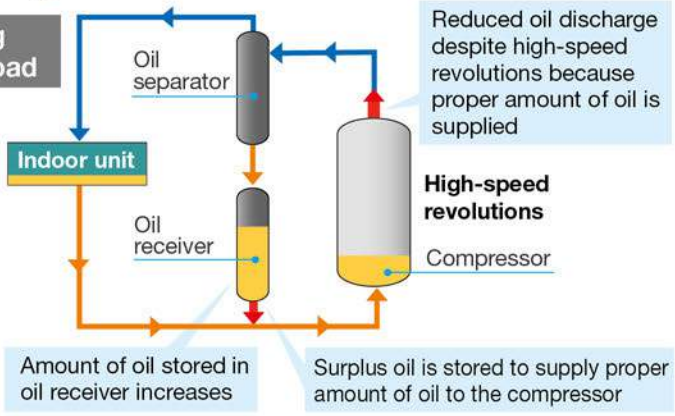


VRV IV W SERIES

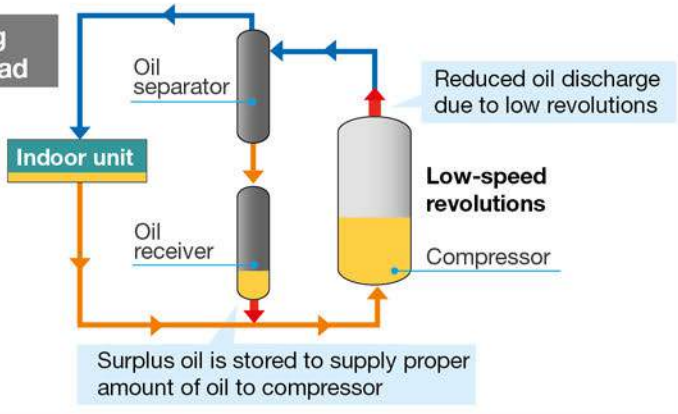
Surplus oil is stored in the oil receiver and automatically controls the amount of refrigeration oil in the refrigerant cycle. This prevents a reduction in performance for heat exchanger.



During high load



During low load



Simplified commissioning and after-sales service

Function of information display by luminous digital tube

VRV IV W series utilises 7-segment luminous digital tubes to display system operation information, enabling the operational state to be visually displayed whilst facilitating simplified commissioning and after-sales service.

7-segment digital display

Displays system operation information directly

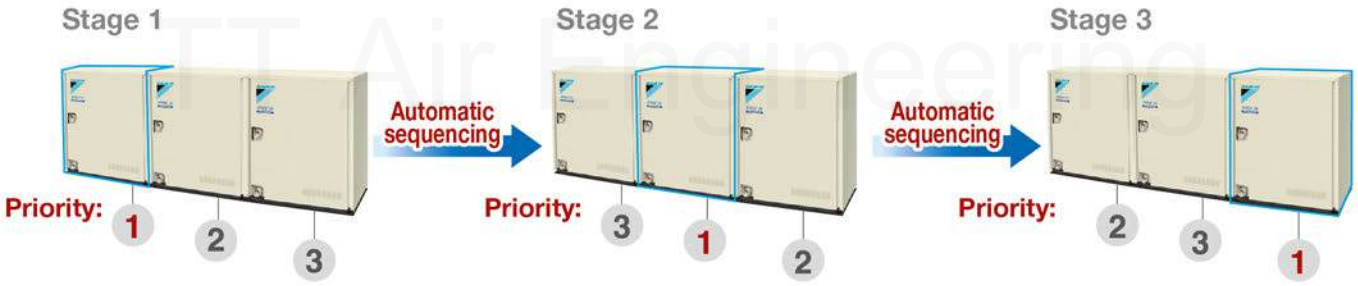
Conventional LED display

Figures out system operation information by reading light emitting state of different diodes, which is both inefficient and fallible.

Outside unit sequencing technology

Automatic sequencing operation

During start-up, Daikin ***VRV*** IV W series outside unit sequencing operation will be automatically enabled to ensure balanced operation of each outdoor unit to improve longevity of equipment and stable operation.



Reliable and convenient air conditioning system

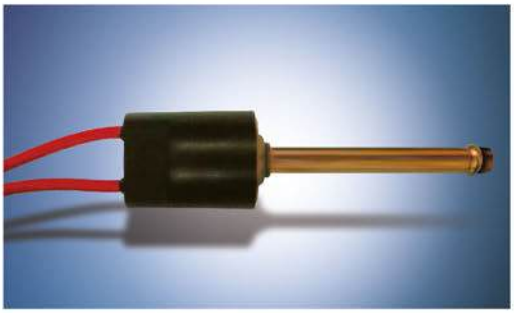
Auto-restart technology after power interruption

Whether the indoor or outside unit accidentally experiences a power interruption during normal operation or not, the system will keep a record of the operating mode adopted before the power interruption. When the power supply recovers, the air conditioning system will then restore itself back into the recorded operating status, simplifying the operation after an accidental power interruption.

Refrigerant pressure detection technology makes system operation more stable and efficient

Quick and accurate detection of refrigerant status is crucial to the stable and efficient operation of the system. The water cooled ***VRV*** IV W series not only utilizes temperature sensors to detect the system's operating status, but also employs high and low pressure sensors to carry out a quick, comprehensive and accurate detection of the refrigerant status, ensuring more stable and efficient operation.

More stable operation



- Low pressure protection: the system can effectively protect the compressor from being affected by instantaneous low pressure changes through monitoring the pressure data of the air suction pipe. Compared with the conventional low pressure protection method featuring temperature sensors, the pressure-sensor method boasts quicker response and can better reflect the system's instantaneous operating status.
- High pressure protection: the system can also keep the compressor from being affected by instantaneous high pressure changes.

More efficient operation

- A low pressure sensor, together with advanced supercooling technologies and high pressure protection control, helps to realize fast starting of the compressor, and can also quickly adjust rotational speed according to refrigerant status to adjust to indoor load fluctuations more rapidly.

Outside Unit Combinations

For connection of only *VRV* indoor units

HP	kW	Capacity index	Model	Combination	Total capacity index of connectable indoor units*2	Maximum number of connectable indoor units
6	16.0	150	RWEYQ6T	RWEYQ6T × 1	75 to 195	9
8	22.4	200	RWEYQ8T	RWEYQ8T × 1	100 to 260	13
10	28.0	250	RWEYQ10T	RWEYQ10T × 1	125 to 325	16
12	33.5	300	RWEYQ12T	RWEYQ12T × 1	150 to 390	19
14	38.4	350	RWEYQ14T*1	RWEYQ6T + RWEYQ8T	175 to 455	22
16	44.8	400	RWEYQ16T*1	RWEYQ8T × 2	200 to 520	26
18	50.4	450	RWEYQ18T*1	RWEYQ8T + RWEYQ10T	225 to 585	29
20	56.0	500	RWEYQ20T*1	RWEYQ10T × 2	250 to 650	32
22	61.5	550	RWEYQ22T*1	RWEYQ10T + RWEYQ12T	275 to 715	35
24	67.0	600	RWEYQ24T*1	RWEYQ12T × 2	300 to 780	39
26	72.8	650	RWEYQ26T*1	RWEYQ8T × 2 + RWEYQ10T	325 to 845	42
28	78.4	700	RWEYQ28T*1	RWEYQ8T + RWEYQ10T × 2	350 to 910	45
30	84.0	750	RWEYQ30T*1	RWEYQ10T × 3	375 to 975	48
32	89.5	800	RWEYQ32T*1	RWEYQ10T × 2 + RWEYQ12T	400 to 1,040	52
34	95.0	850	RWEYQ34T*1	RWEYQ10T + RWEYQ12T × 2	425 to 1,105	55
36	101	900	RWEYQ36T*1	RWEYQ12T × 3	450 to 1,170	58

*1. An outside unit multi connection piping kit (option) is necessary for multiple connections of 14 HP systems and above.
*2. Total capacity index of connectable indoor units must be 50%–130% of the capacity index of the outside units.

For connection of only residential indoor units

Model name*1	kW	HP	Capacity index	Total capacity index of connectable indoor units*2			Maximum number of connectable indoor units
				Combination (%)*2			
				50%*2	100%	130%	
RWEYQ6T	16.0	6 HP	150	75	150	195	9
RWEYQ8T	22.4	8 HP	200	100	200	260	13
RWEYQ10T	28.0	10 HP	250	125	250	325	16
RWEYQ12T	33.5	12 HP	300	150	300	390	19

*1. Only single outdoor unit (RWEYQ6-12T) can be connected.
*2. Total capacity index of connectable indoor units must be 50%–130% of the capacity index of the outside unit.

Indoor Unit Lineup

Enhanced range of choices

Indoor units can be selected from 2 lineups, both ***VRV*** and residential indoor units, to match rooms and preferences.

*VRV*indoor units

● New lineup

Type	Model Name		Capacity Range	20	25	32	40	50	63	71	80	100	125	140	200	250	400	500
				0.8 HP	1 HP	1.25 HP	1.6 HP	2 HP	2.5 HP	3 HP	3.2 HP	4 HP	5 HP	6 HP	8 HP	10 HP	16 HP	20 HP
			Capacity Index	20	25	31.25	40	50	62.5	71	80	100	125	140	200	250	400	500
Ceiling Mounted Cassette (Round Flow with Sensing)	New	FXFSQ-AVS			●	●	●	●	●		●	●	●	● New capacity				
Ceiling Mounted Cassette (Round Flow)	New	FXFQ-AVS			●	●	●	●	●		●	●	●	● New capacity				
Ceiling Mounted Cassette (Compact Multi Flow)		FXZQ-MVES		●	●	●	●	●										
Ceiling Mounted Cassette (Double Flow)		FXCQ-MVE9		●	●	●	●	●	●		●		●					
Ceiling Mounted Cassette (Single Flow)	New	FXEQ-AV36		●	●	●	●	●	●									
Slim Ceiling Mounted Duct (Standard Series)	New	FXDQ-PDV2S (with drain pump)	(700mm width type)	●	●	●												
	New	FXDQ-PDVTS (without drain pump)		●	●	●												
	New	FXDQ-NDV2S (with drain pump)	(900 / 1,100mm width type)				●	●	●									
	New	FXDQ-NDVTS (without drain pump)					●	●	●									
Slim Ceiling Mounted Duct (Compact Series)		FXDQ-SPV1		●	●	●	●	●	●									
Middle Static Pressure Ceiling Mounted Duct	New	FXSQ-PAVS		●	●	●	●	●	●		●	●	●	●				
Ceiling Mounted Duct	New	FXMQ-PAVS		●	●	●	●	●	●		●	●	●	●				
		FXMQ-MVES													●	●		
Outdoor-Air Processing Unit		FXMQ-MFV1											●		●	●		
4-Way Flow Ceiling Suspended		FXUQ-AVEB								●		●						
Ceiling Suspended		FXHQ-MAVS				●			●			●						
Wall Mounted		FXAQ-PVES		●	●	●	●	●	●									
Floor Standing		FXLQ-MAVE8		●	●	●	●	●	●									
Concealed Floor Standing		FXNQ-MAVE8		●	●	●	●	●	●									
Floor Standing Duct		FXVQ-NY1											●		●	●	●	●
		FXVQ-NY16 (high static pressure type)																●
Heat Reclaim Ventilator with DX-Coil and Humidifier		VKM-GA(M)V1		Airflow rate 500-1000 m³/h														
Heat Reclaim Ventilator		VAM-GJVE		Airflow rate 150-2000 m³/h														

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Residential indoor units with connection to BP units

Type	Model Name		09	12	18	24	28
		Rated Capacity (kW)	2.5	3.5	5.0	6.0	7.1
		Capacity Index	25	35	50	60	71
Slim Ceiling Mounted Duct	FDKS-EAVMS	 (700 mm width type)	●	●			
	FDKS-C(A)VMS	 (900/1,100 mm width type)	●	●	●	●	
Wall Mounted	FTKJ-NV1SW		●	●	●		
	FTKJ-NV1SS		●	●	●		
	FTKS-DVMS		●	●			
	FTKS-FVMS				●	●	●

Note: BP units are necessary for residential indoor units. Only single outside unit (RWEYQ6-12T) can be connected.

Max. 58 indoor units

***VRV*indoor units only**

Max. 19 indoor units

Residential indoor units only

*Refer to page 90 for the maximum number of connectable indoor units.

Specifications

Outside Units

Cooling Only

MODEL			RWEYQ6TY1S	RWEYQ8TY1S	RWEYQ10TY1S	RWEYQ12TY1S
Combination units			–	–	–	–
			–	–	–	–
			–	–	–	–
Power supply			3-phase 4-wire system, 380-415 V, 50 Hz			
Cooling capacity		Btu/h	54,600	76,400	95,500	114,000
		Btu/h*	54,900	76,900	96,000	115,000
		kW	16.0 / 16.1*	22.4 / 22.6*	28.0 / 28.2*	33.5 / 33.7*
COP			6.2	5.8	5.16	
Power consumption		kW	2.58	3.86	5.43	7.33
Casing colour			Ivory white (5Y7.5/1)			
Dimensions (H×W×D)		mm	1,000 × 780 × 550			
Compressor	Type		Hermetically sealed scroll type			
	Motor output	kW	1.9	2.8	3.7	4.7
Refrigerant piping connections	Liquid	mm	ϕ9.5 (Flare)			ϕ12.7 (Flare)
	Suction gas *1		ϕ19.1 (Brazing)		ϕ22.2 (Brazing)	
	High and low pressure gas		ϕ19.1 (Brazing) *2		ϕ22.2 (Brazing) *2	
Water piping connections	Water inlet		PT1 1/4B internal thread			
	Water outlet		PT1 1/4B internal thread			
	Drain outlet		PS1/2B internal thread			
Machine weight (Operating weight)		kg	146 (148)		147 (149)	
Sound level		dB(A)	49	50	51	53
Operation range (Inlet water temp.)		°C	10 to 45			
Capacity control		%	23-100		19-100	
Refrigerant charge	Type		R-410A			
	Charge	kg	3.5		4.2	

MODEL			RWEYQ26TY1S	RWEYQ28TY1S	RWEYQ30TY1S
Combination units			RWEYQ8TY1S	RWEYQ8TY1S	RWEYQ10TY1S
			RWEYQ8TY1S	RWEYQ10TY1S	RWEYQ10TY1S
			RWEYQ10TY1S	RWEYQ10TY1S	RWEYQ10TY1S
Power supply			3-phase 4-wire system, 380-415 V, 50 Hz		
Cooling capacity		Btu/h	248,000	268,000	287,000
		Btu/h*	249,900	269,000	288,300
		kW	72.8 / 73.3*	78.4 / 78.9*	84.0 / 84.5*
COP			5.52	5.33	5
Power consumption		kW	13.2	14.7	16.3
Casing colour			Ivory white (5Y7.5/1)		
Dimensions (H×W×D)		mm	(1,000 × 780 × 550) × 3		
Compressor	Type		Hermetically sealed scroll type		
	Motor output	kW	2.8 × 2 + 3.7	2.8 + 3.7 × 2	3.7 × 3
Refrigerant piping connections	Liquid	mm	ϕ19.1 (Flare)		
	Suction gas *1		ϕ34.9 (Brazing)		
	High and low pressure gas		ϕ34.9 (Brazing) *2		
Water piping connections	Water inlet		(PT1 1/4B) × 3 internal thread		
	Water outlet		(PT1 1/4B) × 3 internal thread		
	Drain outlet		(PS1/2B) × 3 internal thread		
Machine weight (Operating weight)		kg	146 × 2 + 147 (148 × 2 + 149)	146 + 147 × 2 (148 + 149 × 2)	147 × 3 (149 × 3)
Sound level		dB(A)	55	56	
Operation range (Inlet water temp.)		°C	10 to 45		
Capacity control		%	21-100	20-100	19-100
Refrigerant charge	Type		R-410A		
	Charge	kg	3.5 + 3.5 + 4.2	3.5 + 4.2 + 4.2	4.2 + 4.2 + 4.2

Note : 1. Specifications are based on the following conditions ;
- •Cooling: Indoor temp.: 27°CDB,19°CWB,; *27°CDB,19.5°CWB / Inlet water temp.: 30°C, Equivalent piping / length: 7.5 m, Level difference: 0 m.
- •Sound level: Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.5 m.
  During actual operation, these values are normally somewhat higher as a result of ambient conditions and oil recovery mode.
  When there is concern for noise to the surrounding area such as residences, we recommend investigating the installation location and taking soundproofing measures.

2. This unit cannot be installed in the outdoors. Install indoors (Machine room, etc).
3. Hold ambient temperature at 0–40°C and humidity at 80%RH or less. Heat rejection from the casing: 0.51 kW/6-8 HP/hour, 0.58 kW/10-12 HP/hour.
4. Connectable to closed type cooling tower only. *1: In the case of cooling only system, suction gas pipe is not used. *2: In the case of cooling only system.

	RWEYQ14TY1S	RWEYQ16TY1S	RWEYQ18TY1S	RWEYQ20TY1S	RWEYQ22TY1S	RWEYQ24TY1S
	RWEYQ6TY1S	RWEYQ8TY1S	RWEYQ8TY1S	RWEYQ10TY1S	RWEYQ10TY1S	RWEYQ12TY1S
	RWEYQ8TY1S	RWEYQ8TY1S	RWEYQ10TY1S	RWEYQ10TY1S	RWEYQ12TY1S	RWEYQ12TY1S
	–	–	–	–	–	–
	3-phase 4-wire system, 380-415 V, 50 Hz					
	131,000	153,000	172,000	191,000	210,000	229,000
	131,900	153,700	173,000	192,300	211,000	230,000
	38.4 / 38.7*	44.8 / 45.1*	50.4 / 50.7*	56.0 / 56.4*	61.5 / 61.9*	67.0 / 67.4*
	5.96	5.8	5.43	5.14	4.8	4.56
	6.44	7.72	9.29	10.9	12.8	14.7
	Ivory white (5Y7.5/1)					
	(1,000 × 780 × 550) × 2					
	Hermetically sealed scroll type					
	1.9 + 2.8	2.8 × 2	2.8 + 3.7	3.7 × 2	3.7 + 4.7	4.7 × 2
	ϕ 12.7 (Flare)		ϕ 15.9 (Flare)		ϕ 19.1 (Flare)	
	ϕ 28.6 (Brazing)					
	ϕ 28.6 (Brazing) *2					
	(PT1 1/4B) × 2 internal thread					
	(PT1 1/4B) × 2 internal thread					
	(PS1/2B) × 2 internal thread					
	146 × 2 (148 × 2)		146 + 147 (148 + 149)		147 × 2 (149 × 2)	
	53		54		55	56
	10 to 45					
	23-100		20-100		19-100	
	R-410A					
	3.5 + 3.5		3.5 + 4.2		4.2 + 4.2	

	RWEYQ32TY1S	RWEYQ34TY1S	RWEYQ36TY1S
	RWEYQ10TY1S	RWEYQ10TY1S	RWEYQ12TY1S
	RWEYQ10TY1S	RWEYQ12TY1S	RWEYQ12TY1S
	RWEYQ12TY1S	RWEYQ12TY1S	RWEYQ12TY1S
	3-phase 4-wire system, 380-415 V, 50 Hz		
	305,000	324,000	345,000
	307,300	326,000	346,300
	89.5 / 90.1*	95.0 / 95.6*	101.0 / 101.5*
	4.92	4.73	4.59
	18.2	20.1	22.0
	Ivory white (5Y7.5/1)		
	(1,000 × 780 × 550) × 3		
	Hermetically sealed scroll type		
	3.7 × 2 + 4.7	3.7 + 4.7 × 2	4.7 × 3
	ϕ19.1 (Flare)		
	ϕ34.9 (Brazing)		
	ϕ34.9 (Brazing) *2		
	(PT1 1/4B) × 3 internal thread		
	(PT1 1/4B) × 3 internal thread		
	(PS1/2B) × 3 internal thread		
	147 × 3 (149 × 3)		
	57		58
	10 to 45		
	19-100		
	R-410A		
	4.2 + 4.2 + 4.2		

• Be sure to refer to the Engineering Data Book for facility design.

Outdoor Units

VRV IV W SERIES

No.	Item \ Type		RWEYQ6TY1S RWEYQ8TY1S RWEYQ10TY1S RWEYQ12TY1S	RWEYQ14TY1S RWEYQ16TY1S RWEYQ18TY1S RWEYQ20TY1S RWEYQ22TY1S RWEYQ24TY1S	RWEYQ26TY1S RWEYQ28TY1S RWEYQ30TY1S RWEYQ32TY1S RWEYQ34TY1S RWEYQ36TY1S
1	Distributive piping	REFNET header	KHRP25M33H (Max. 8 branch), KHRP26M22H (Max. 4 branch), KHRP26M33H (Max. 8 branch)	KHRP25M33H (Max. 8 branch), KHRP25M72H (Max. 8 branch), KHRP26M22H (Max. 4 branch), KHRP26M33H (Max. 8 branch), KHRP26M72H (Max. 8 branch)	KHRP25M33H (Max. 8 branch), KHRP25M72H (Max. 8 branch), KHRP25M73H (Max. 8 branch), KHRP26M22H (Max. 4 branch), KHRP26M33H (Max. 8 branch), KHRP26M72H (Max. 8 branch), KHRP26M73H (Max. 8 branch)
		REFNET joint	KHRP25A22T, KHRP25A33T, KHRP26A22T, KHRP26A33T	KHRP25A22T, KHRP25A33T, KHRP25A72T, KHRP26A22T, KHRP26A33T, KHRP26A72T	KHRP25A22T,KHRP25A33T, KHRP25A72T, KHRP25A73T, KHRP26A22T, KHRP26A33T, KHRP26A72T, KHRP26A73T
2	Outside unit multi connection piping kit		–	BHFP22MA56	BHFP22MA84
3	External control adaptor		DTA104A62		
4	Strainer kit		BWU26A15, BWU26A20		

Daikin Engineering Supports

VRV Design and Sales Proposal Assistance

Daikin provides engineering supports for ***VRV*** systems. It consists of design supports that can assist consultants and architects, as well as sales proposal supports for air conditioning engineers and dealers. We at Daikin provide the software, the simulation results, and drawing materials to support the business-information modeling (BIM) currently entering the mainstream in construction industries.

Design

For consultants and architects

- Combines energy efficiency and comfort
  - Heat load calculation
  - CFD simulation to optimise outdoor unit layouts
- Design flexibility
  - Heat load calculation
  - Model selection
  - Drawing materials support

Sales proposals

For air conditioning engineers and dealers

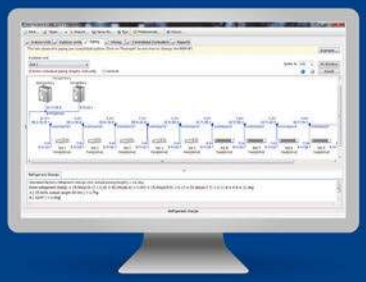
- Heat load calculation
- Model selection

Daikin Engineering Supports

Model Selection Software

VRV Xpress

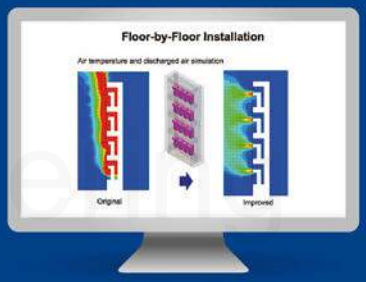
VRV Xpress is a flexible design software that optimises equipment selection. It can empower consultants and air conditioning engineers so they can fully enhance their equipment selections to design the most effective, optimum systems possible. The software also allows the choice of outdoor units based on peak loads rather than the sum of required capacities for each indoor unit. This fine-tuning feature reduces ***VRV*** system sizes and increases efficiency.



CFD Simulation to Optimise Outdoor Unit Layouts

DT FLOW II

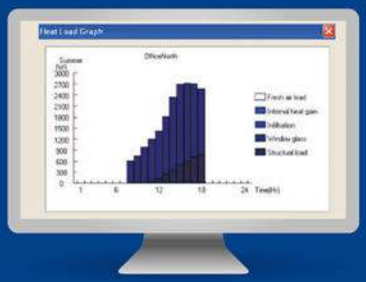
DT FLOW II is a simulation software that uses computational fluid dynamics (CFD), aiming to optimise outdoor unit layouts right at the design stage. When discharged air from the outdoor unit is drawn back into the suction vent, it can short circuit the system and lead to: decrease in efficiency of cooling operations, capacity shortages, operation cut-offs, and shorter lifetime for the outdoor unit. To avoid the need for expensive layout modifications once construction is complete, Daikin uses the CFD method at the early design stage. This can help consultants and architects optimise their outdoor unit arrangement.



Heat Load Calculation

DACCS-HKGSG and HKGSA

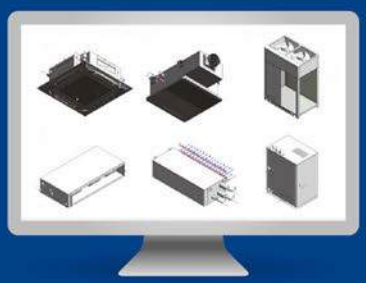
The DACCS program uses a steady-state load calculation method to compute heat load over a 24-hour period on summer and winter days. The heat load coming in through outer walls and rooftops from strong summer sunlight can be substantial, but the DACCS program applies effective temperature differences based on the effects of heat accumulated in the walls. The program also accesses 24-hour weather data for all major cities. The standard design data includes accurate weather information for 140 countries.



Drawing Supports

CAD Symbols

Users download CAD symbol drawing materials, including 2D CAD symbols and 3D Revit data, for ***VRV*** systems designing. The 3D Revit data contains specifications for Daikin products, including things like capacities and electric characteristics to support Business Information Modeling (BIM).



DAIKIN

Warning

- Ask a qualified installer or contractor to install this product. Do not try to install the product yourself. Improper installation can result in water or refrigerant leakage, electrical shock, fire or explosion.
- Use only those parts and accessories supplied or specified by Daikin. Ask a qualified installer or contractor to install those parts and accessories. Use of unauthorised parts and accessories or improper installation of parts and accessories can result in water or refrigerant leakage, electrical shock, fire or explosion.
- Read the user's manual carefully before using this product. The user's manual provides important safety instructions and warnings. Be sure to follow these instructions and warnings.

If you have any enquiries, please contact your local importer, distributor and/or retailer.

Cautions on product corrosion

1. Air conditioners should not be installed in areas where corrosive gases, such as acid gas or alkaline gas, are produced.
2. If the outdoor unit is to be installed close to the sea shore, direct exposure to the sea breeze should be avoided. If you need to install the outdoor unit close to the sea shore, contact your local distributor.

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