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.

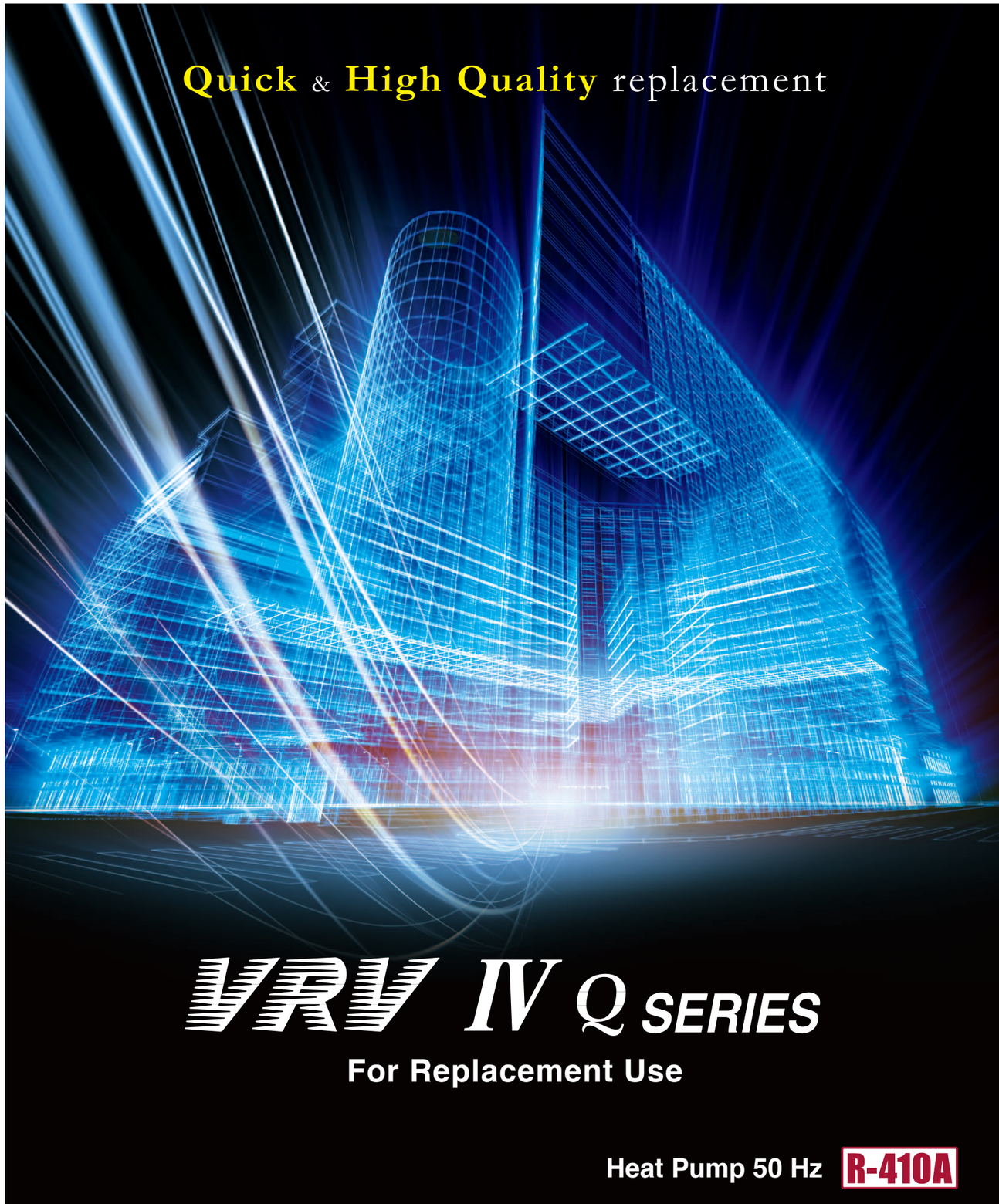
Cautions on product corrosion

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.

- Specifications, designs and other content appearing in this brochure are current as of October 2016 but subject to change without notice.

DAIKIN

PCVHK1622



VRV IV Q SERIES

For Replacement Use

Heat Pump 50 Hz R-410A

Reusing existing piping for speedy replacement to an advanced energy-saving air conditioning system

VRV IV Q SERIES

Upgrading air conditioning systems in the past used to require replacement of refrigerant piping in buildings, leading to major construction and costs exceeding those of the original installation.
To save time and cost, Daikin developed the *VRV* IV Q Series as a model specializing in system replacement. This revolutionary system reuses existing piping and enables quick and high quality replacement to the latest energy-saving air conditioning system without renovation work for new piping.

Reusing existing refrigerant piping minimizes:

- Piping removal and new construction along with installation time and cost
- Impact to the interior and exterior of buildings
- Suspension of daily business operations for renovation

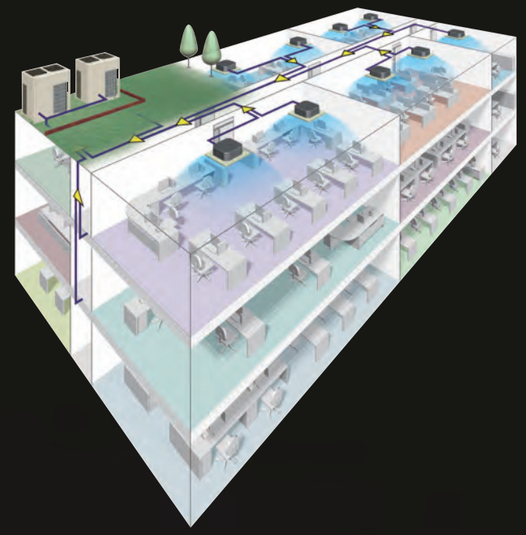
Improvement in capacity and greater number of indoor units with the *VRV* IV Q Series

- Increase in capacity is possible while using existing piping.
- More indoor units can be connected in a single system, enabling consolidation of existing piping.

VRV IV Q SERIES

An automatic refrigerant charge function enables high quality installation for the *VRV* IV Q Series.

- The system is automatically charged with the proper amount of refrigerant even when the length of the existing piping is unknown.
- Equipment automatically performs a sequence of tasks from refrigerant charging to test operation.



Quick & High Quality replacement

Enhanced lineup

2 types up to 48 HP

Energy saving

Higher COP and VRT technology

Variety of indoor unit

Multiple functions for greater comfort

Convenient control system

Advanced energy-saving management

INDEX

Quick, Quality and Economical

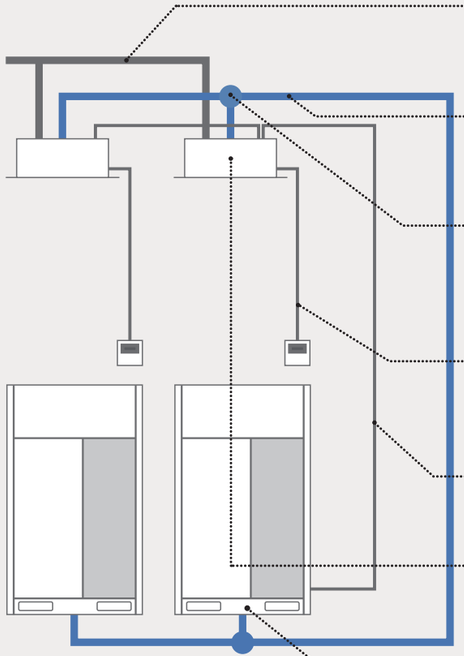
Reuse

Simple use of existing refrigerant piping.

In the past, special equipment and work was needed to clean pipes when using existing piping, but this is no longer required. A new function automatically deals with contamination inside piping during refrigerant charging, eliminating the work involved in cleaning.

Even applicable for non-DAIKIN systems!

The Daikin low-cost upgrade solution



- **Reuse drain pipes**
  Durable PVC pipes can be easily reused. Only flow tests are required.
- **Reuse refrigerant pipes**
  Pipes used for R22 will also work with *VRV* IV Q series, thanks to lower operating pressures of the system.
- **Reuse refrigerant branch pipes*1**
  There are no restrictions when upgrading from a Daikin *VRV* system. Other VRF systems require branch pipes withstand pressure up to 3.3 MPa.
- **Reuse remote control wiring**
  Reuse wiring when upgrading from a Daikin *VRV* system. In other cases, this will depend on the cable type.
- **Reuse indoor-outdoor wiring**
  Restrictions: see remote control wiring.
- **Replace indoor units*2**
  Contact your local dealer to check compatibility in case you need to keep the indoor units.
- **Replace outdoor units**

*1 For reuse of existing refrigerant piping, it is possible to use piping or branched piping capable of handling 3.3 MPa or more. Heat insulation is necessary for liquid piping and gas piping.
*2 It is possible to keep R-22 indoor units from K-series and later version. It is not possible to combine old R-22 and new R-410A indoor units in one system due to incompatibility of communication.

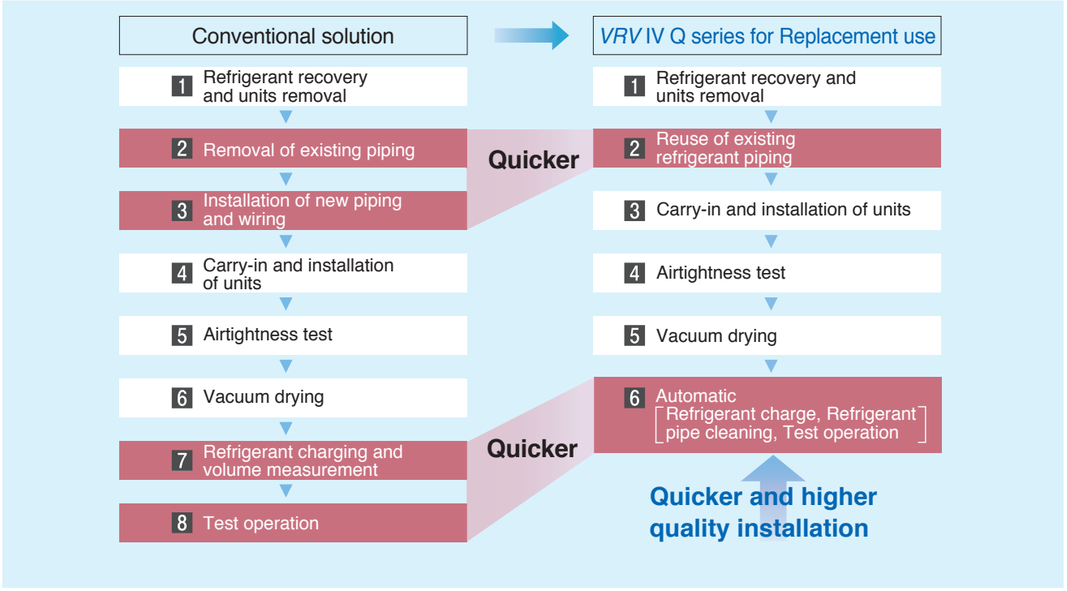
Automatic

Refrigerant charging, cleaning and test operation done with just a single switch.

The unique automatic refrigerant charge eliminates the need to calculate refrigerant volume, simplifying the installation process. Not knowing the exact piping lengths because of changes or mistakes in case you didn't do the original installation or replacing a competitor installation no longer poses a problem. Furthermore, there is no need to clean inside piping as this is handled automatically by the *VRV* IV Q unit.

Time saving

Enables smooth replacement of air conditioning with less effect on operations and users in the building.

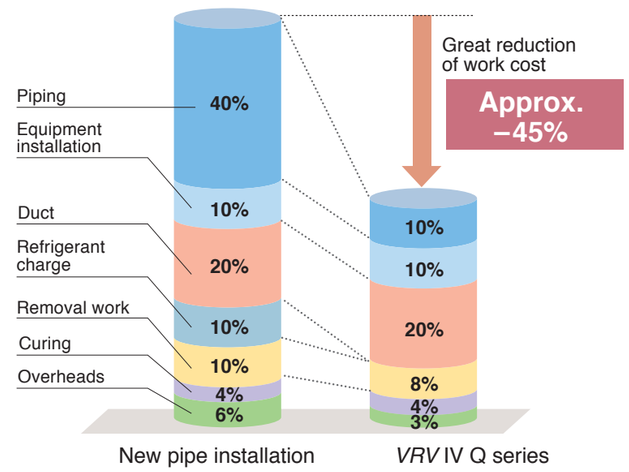


Cost saving

Work costs for pipe removal, installation and insulation account for almost 80% of the total cost.
By the reuse of existing piping, 45% of cost down can be realized compared to installing new pipes.
On top of the benefits from reusing pipes, costs of charging refrigerant to clean the pipes are also saved.

■ Cost details (10 HP example)

★Estimated in Japan by Daikin.



Design flexibility

Significantly more compact outdoor unit enables the effective use of limited space!

Compact design enables the effective use of space taken up by existing machinery

Conventional
VRV K PLUS series : RXY20K
(model from 20 years previous)
20 HP outdoor unit

Installation space
2.25 m²

VRV IV Q SERIES : RQYQ20T
20 HP outdoor unit

Installation space
0.95 m²

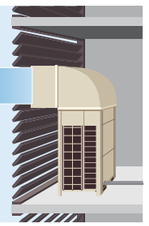
58% less space

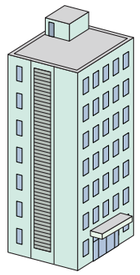
High external static pressure 78.4 Pa

Conventional *VRV* K series
(model from 20 years previous)
49.0 Pa

VRV IV Q SERIES
78.4 Pa

External static pressure
78.4 Pa
Easier discharge hood connection (field setting)





Easy installation on each floor for use in tall buildings

Small and light, significantly reducing constraints during carry-in

Can be carried on a cart

Can be transported easily by elevator

System flexibility

An increased number of connectable indoor units in a single system

More indoor units can be connected in a single system, enabling consolidation of existing piping!

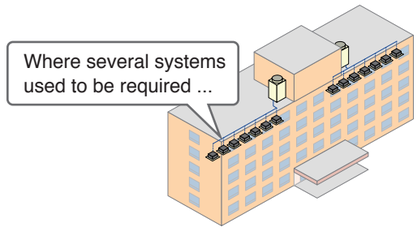
The number of connectable indoor units has been drastically increased from 30 to 64.

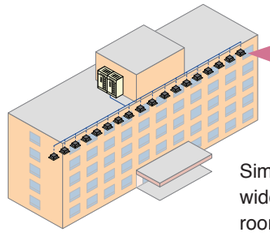
Conventional *VRV* K PLUS series: RXY24–30K
(model from 20 years previous)

Up to 30 indoor units connectable

VRV IV Q SERIES : RQYQ40–48T

Up to 64 indoor units connectable





Condensed into a single system

Simple to deploy even in long, wide buildings with many small rooms

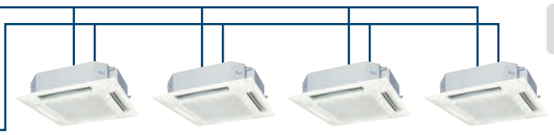
Enables increased capacity

System can be upgraded using existing piping

VRV IV Q series for replacement use enables the system capacity to be increased without changing the refrigerant piping. For example, it is possible to install a 16 HP *VRV* IV Q series using the refrigerant piping of an 10 HP R-22 system.

Before replacement
10 HP
R-22

Pipe size: ϕ28.6, ϕ12.7



2.5 HP ×4 units

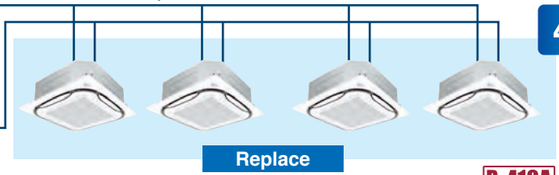
R-22

Reuse of existing piping

After replacement
VRV IV Q SERIES R-410A
16 HP

Replace

Pipe size: ϕ28.6, ϕ12.7



Replace

4.0 HP ×4 units

R-410A

* For reuse of existing refrigerant piping, it is possible to use piping or branched piping capable of handling 3.3 MPa or more. Heat insulation is necessary for liquid piping and gas piping.

Enhanced Lineup

2 types up to 48 HP

With its enhanced lineup of 2 types and Standard and Space saving types, ***VRV* IV Q** series outdoor units offer a high capacity up to 48 HP to meet an ever wider variety of needs.

Single outdoor unit

***VRV* III Q SERIES**

8, 10, 12 HP

14, 16 HP

1 type only

VRV IV Q SERIES

6, 8, 10, 12 HP New

14, 16, 18, 20 HP New New

2 type of Standard type and Space saving type

Lineup

Mo/C New Lineup

HP	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
Standard Type	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Space Saving Type							●	●					●	●	●	●	●	●	●	●	●	●

Compact & Light Weight Design

New Space Saving type with refined design

As a leading global innovator, Daikin advanced from the conventional 2 module combination to a single module for 18 and 20 HP models. This allows the installation area to reduce by 33% as compared to the previous models.

***VRV* III Q SERIES**

18, 20 HP

VRV IV Q SERIES

18, 20 HP

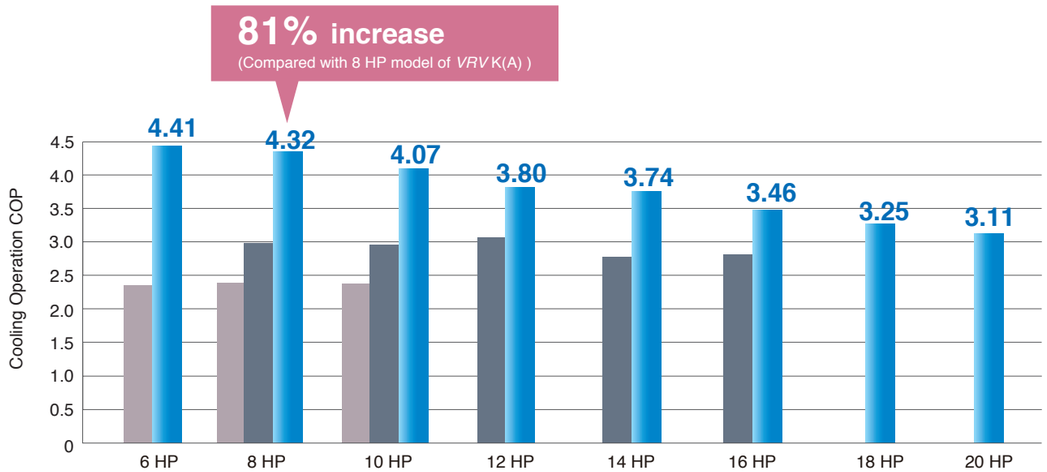
Foot print	1.42 m²	0.95 m²	33% decrease
Product weight	487 kg	320 kg	34% decrease

Energy Saving

Higher Coefficient of Performance (COP)

COP at 100% operation load

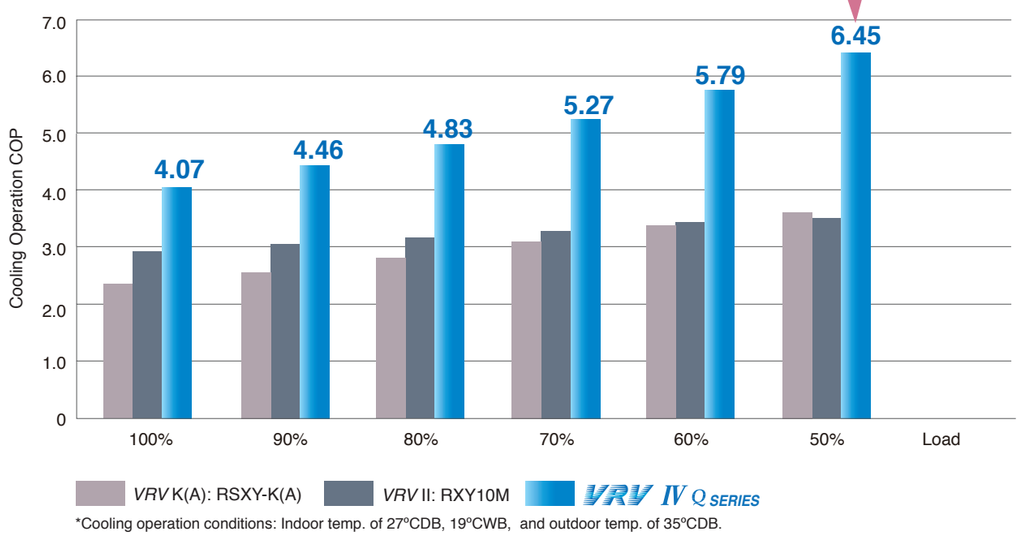
VRV IV Q series delivers highly efficient performance, contributing to high energy savings.



*Cooling operation conditions: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB.

COP for 10 HP

Improved efficiency during long operation under low load



*Cooling operation conditions: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB.

State-of-the-art energy saving technology for *VRV* system

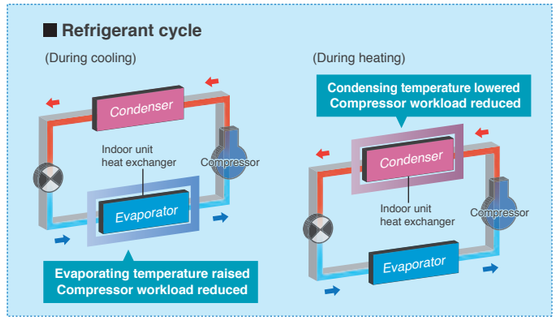
Customise your *VRV* system for optimal annual efficiency

The new ***VRV* IV** Q 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.

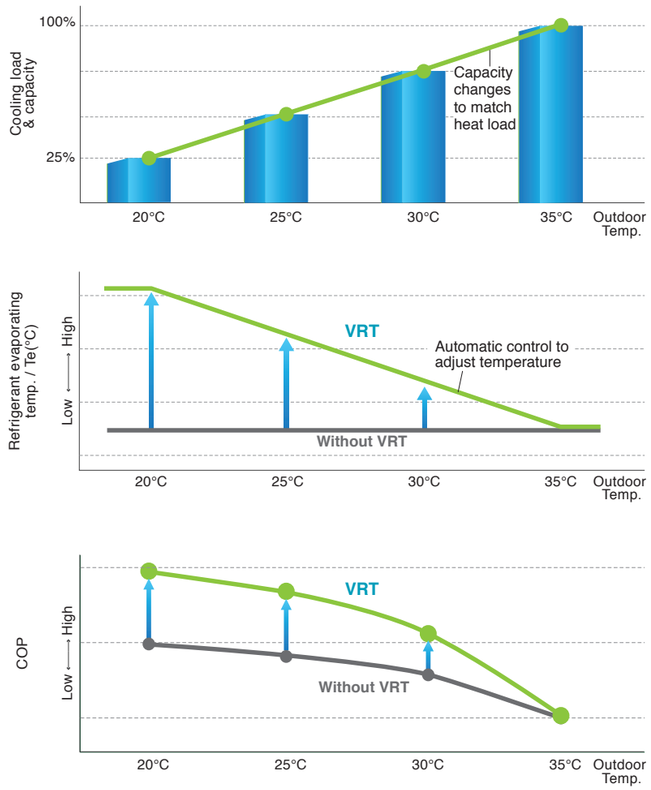
Variable Refrigerant Temperature

How is energy reduced?

During cooling, the refrigerant evaporating temperature (Te) is raised to minimise the difference with the condensing temperature. During heating, condensing temperature (Tc) is lowered to minimise the difference to the evaporating 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.

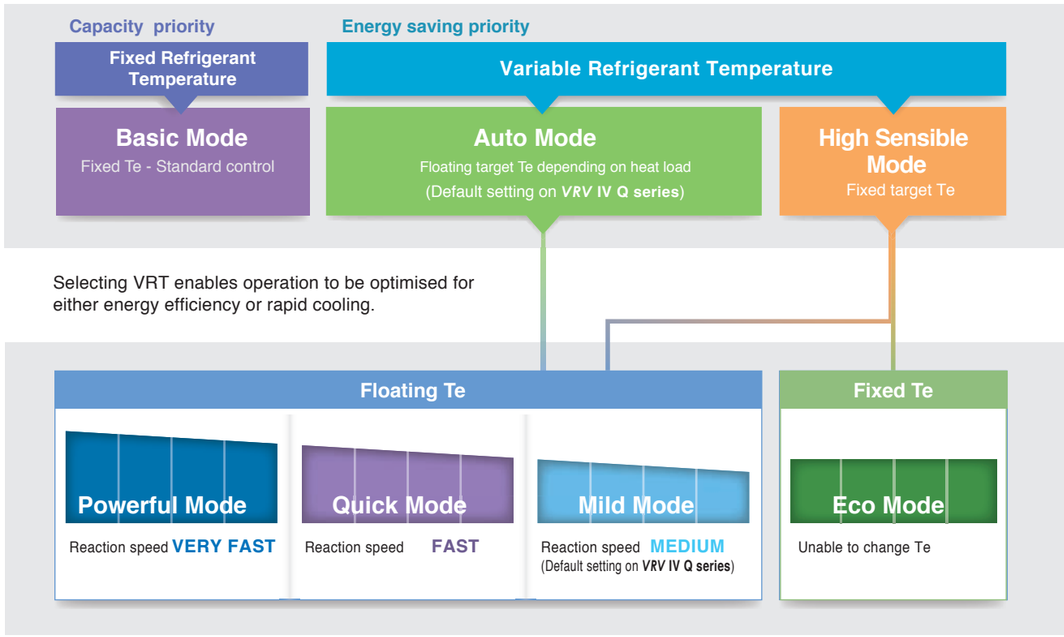
In case of fixed evaporating temperature, excessive cooling, thermo on-off loss, and other inefficiencies occur.

Automatic control adjusts evaporating temperature to heat load change.

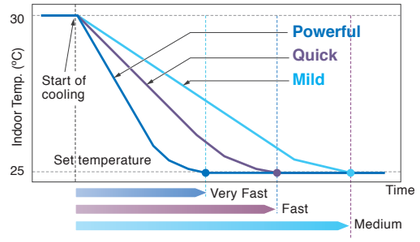
Energy efficiency is improved without sacrificing comfort.

New system more energy saving

Basic mode is selected to maintain optimal comfort.
VRT is selected to save energy and prevent excessive cooling or heating.



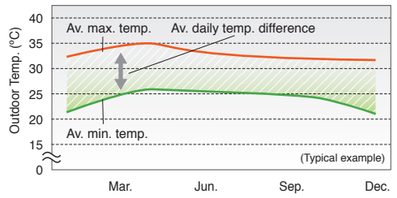
VRT offers quicker cool down to shorten uncomfortable pull down time.



Powerful Mode	• **Can boost capacity above 100% if needed.** The refrigerant temperature can go lower in cooling (higher in heating) than the set minimum (maximum in heating). • **Gives priority to very fast reaction speed.** The refrigerant temperature goes down (or up in heating) fast to keep the room setpoint stable.
Quick Mode	• **Gives priority to fast reaction speed.** The refrigerant temperature goes down (or up in heating) fast to keep the room setpoint stable.
Mild Mode	• **Gives priority to efficiency.** The refrigerant temperature goes down (or up in heating) gradually giving priority to the efficiency of the system instead of the reaction speed.

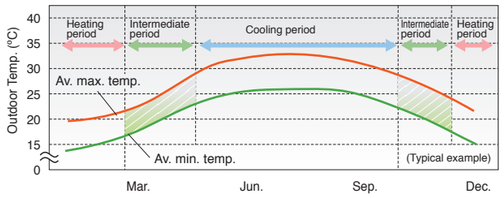
Recommended for use in these situations

■ Cooling only regions having differences in daily temperature.



VRT is particularly effective at night when ambient temperatures are low.

■ Cooling / heating regions having periods of mild outdoor temperatures.



VRT is particularly effective during the intermediate periods.

Advanced Technologies Achieve Excellent Performance

New technology that enables use of existing piping

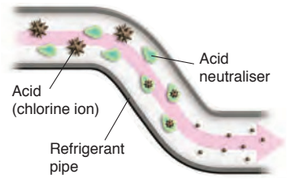
VRV IV Q series Only

New tested contamination collection method

A new method collects contamination from existing piping, eliminating compressors and electric valves malfunction.

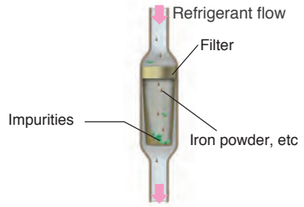
Acid

An acid neutraliser agent is added to disable acids (chlorine ions), which cause corrosion.



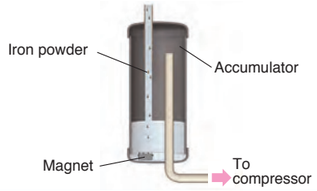
Impurities

A generously sized filter is provided inside the refrigerant circuit which traps impurities.



Iron powder

A magnet is installed inside the accumulator where liquid refrigerant accumulates.
The magnet attracts iron powder to keep the system clean.

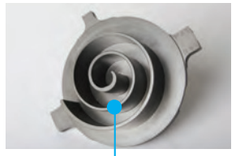


Large capacity all DC inverter compressor in compact casing

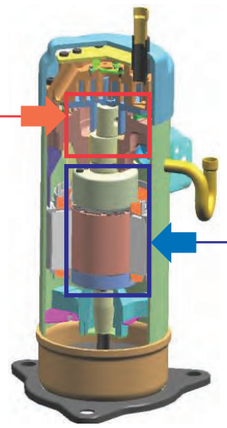
Large capacity all DC inverter compressor using high tension strength material, realise 12 HP compressor using 8 HP casing.

Development of high strength material

Gives 2.4 times tensile strength compare to conventional material
New Material: 600 MPa
Conventional Material : 250 MPa
Increase compression chamber volume by using thin spiral design.

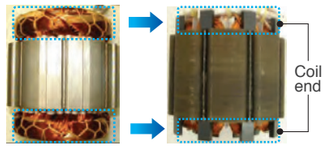


As a result of having thinned a wall - thickness of the scroll, compression chamber volume increase 50%



Small type high efficiency concentrated winding motor

Distributed winding motor (Current 8 HP compressor) | Concentrated winding motor (New 12 HP compressor)



Small sizing coil end using concentrated winding, reduce copper loss (winding resistance).

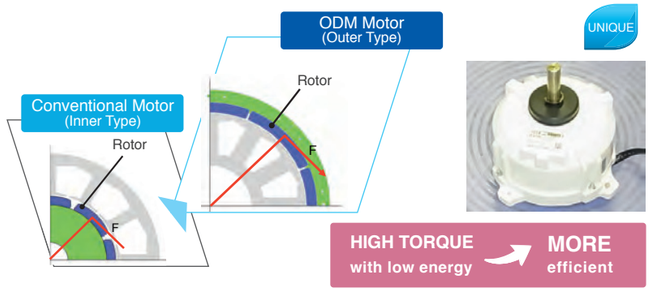
Improve motor efficiency in low rpm range (improve intermediate efficiency).

ODM Motor

Only Daikin adapted ODM motor with feature of stable rotation and volumetric efficiency

Advantages of ODM

Thanks to large diameter of the rotor,
① Large torque with same electromagnetic force
② Stable rotation in all range, and can be operated with small number of rotations

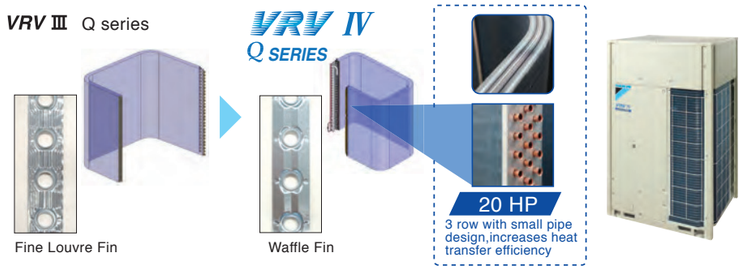


UNIQUE

HIGH TORQUE with low energy → MORE efficient

Highly integrated heat exchanger

Improve performance by increasing heat exchanger area while maintaining the same installation space.



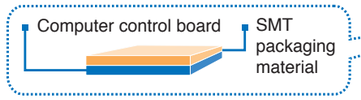
Realise highly integrated heat exchanger performance(increase row, reduce fin pitch) by reducing of airflow resistance which changes cooling tube to Ø7.

Change fin shape from fine louvre to waffle fin. Fin pitch can be reduced fin pitch from 2.0 mm to 1.4 mm, to realise unit efficiency whichincreased heat exchanger area.

Various 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

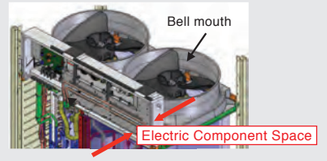
Computer control board surface adopting SMT packaging technology

Conventional computer control board surface

Refrigerant cooling technology, ensures stability of PCB temperature

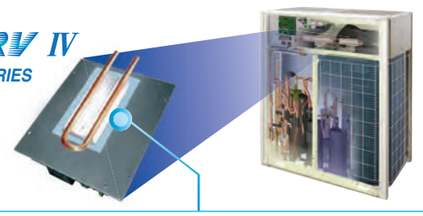
Improved inner design to increase smooth airflow

Downsize electric component, re-locate to dead space of bell mouth side to decrease airflow resistance.



VRV III Q series

VRV IV Q SERIES



Using refrigerant to cool the inverter power module helped minimize the electric component, and this resulted in reduced airflow resistance and improved efficiency of the heat exchanger.

Roof terrace temperature in summer is over 40ºC, seriously affecting inverter cooling efficiency, resulting in decline of inverter operating speed. Finally device parts response speed is reduced.

Control board failure ratio at stable operation is reduced.

Improve reliability at high ambient temperature

It is possible to cool the inverter power module stability even at high ambient temperature.
This helps to keep air-conditioning capacity and also reduces failure ratio.

Enhanced lineup to 2 types

- With its enhanced lineup of 2 types and Standard and Space Saving types, ***VRV* IV** Q series outdoor units offer a high capacity up to 48 HP to meet an ever wider variety of needs.
- The single outdoor unit has only 2 different shapes and dimensions, not only simplifying the design process, but also bringing the system flexibility to a new level.
- With the outdoor unit capacity increased in increment of 2 HP, customers' needs can be precisely met.
- Outdoor units with anti-corrosion specifications (-E type on request) are designed specifically for use in areas which are subject to salt damage and atmospheric pollution.

Standard Type

●Single Outdoor Units

6, 8, 10, 12 HP

RQYQ6TY1(E)
RQYQ8TY1(E)
RQYQ10TY1(E)
RQYQ12TY1(E)

14, 16 HP

RQYQ14TY1(E)
RQYQ16TY1(E)

●Double Outdoor Units

18, 20, 22, 24 HP

RQYQ18TNY1(E)
RQYQ20TNY1(E)
RQYQ22TNY1(E)
RQYQ24TNY1(E)

26, 28 HP

RQYQ26TNY1(E)
RQYQ28TNY1(E)

30, 32 HP

RQYQ30TNY1(E)
RQYQ32TNY1(E)

●Triple Outdoor Units

34, 36 HP

RQYQ34TNY1(E)
RQYQ36TNY1(E)

38, 40 HP

RQYQ38TNY1(E)
RQYQ40TNY1(E)

42, 44 HP

RQYQ42TNY1(E)
RQYQ44TNY1(E)

46, 48 HP

RQYQ46TNY1(E)
RQYQ48TNY1(E)

Space Saving Type

●Single Outdoor Units

18, 20 HP

RQYQ18TY1(E)
RQYQ20TY1(E)

●Double Outdoor Units

30, 32 HP

RQYQ30TSY1(E)
RQYQ32TSY1(E)

34, 36, 38, 40 HP

RQYQ34TSY1(E)
RQYQ36TSY1(E)
RQYQ38TSY1(E)
RQYQ40TSY1(E)

●Triple Outdoor Units

42, 44 HP

RQYQ42TSY1(E)
RQYQ44TSY1(E)

46, 48 HP

RQYQ46TSY1(E)
RQYQ48TSY1(E)

Lineup

Mo/C New Lineup

HP	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
Standard Type	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Space Saving Type							●	●					●	●	●	●	●	●	●	●	●	●

Variety of indoor unit

Type	Model Name		20	25	32	40	50	63	71	80	100	125	140	200	250
		Capacity Range	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
		Capacity Index	20	25	31.25	40	50	62,5	71	80	100	125	140	200	250
Ceiling Mounted Cassette (Round Flow with Sensing)	FXFQ-SVM			●	●	●	●	●		●	●	●			
Ceiling Mounted Cassette (Round Flow)	FXFQ-LUV1			●	●	●	●	●		●	●	●			
Ceiling Mounted Cassette (Compact Multi Flow)	FXZQ-MVE		●	●	●	●	●								
4-Way Flow Ceiling Suspended	FXUQ-AVEB								●		●				
Ceiling Mounted Cassette (Double Flow)	FXCQ-MVE		●	●	●	●	●	●		●		●			
Ceiling Mounted Cassette Corner	FXKQ-MAVE			●	●	●		●							
Slim Ceiling Mounted Duct	FXDQ-PBVE (with drain pump) FXDQ-PBVET (without drain pump)	 (700 mm width type)	●	●	●										
	FXDQ-NBVE (with drain pump) FXDQ-NBVET (without drain pump)	 (900/1,100 mm width type)				●	●	●							
Middle Static Pressure Ceiling Mounted Duct	FXSQ-PVE		●	●	●	●	●	●		●	●	●	●		
Ceiling Mounted Duct	FXMQ-PVE		●	●	●	●	●	●		●	●	●	●		
	FXMQ-MAVE													●	●
Outdoor-Air Processing Unit	FXMQ-MFV1											●		●	●
Ceiling Suspended	FXHQ-MAVE				●			●			●				
Wall Mounted	FXAQ-PVE		●	●	●	●	●	●							
Floor Standing	FXLQ-MAVE		●	●	●	●	●	●							
Concealed Floor Standing	FXNQ-MAVE		●	●	●	●	●	●							

* It is possible to keep R-22 indoor units from K-series and later version. It is not possible to combine old R-22 and new R-410A indoor units in one system due to incompatibility of communication.

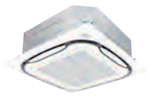
Indoor Unit Lineup

Daikin offers a wide range of indoor units responding to variety of needs of our customers that require air-conditioning solutions.

VRV Indoor Units

Ceiling Mounted Cassette (Round Flow with Sensing) Type

FXFQ-SVM



Presence of people and floor temperature can be detected to provide comfort and energy savings

Ceiling Mounted Cassette (Round Flow) Type

FXFQ-LUV1

360˚ airflow improves temperature distribution and offers a comfortable living environment.

Ceiling Mounted Cassette (Compact Multi Flow) Type

FXZQ-MVE

Quiet, compact, and designed for user comfort

4-Way Flow Ceiling Suspended Type

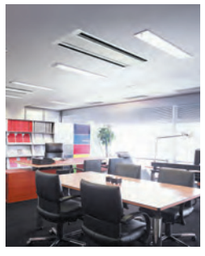
FXUQ-AVEB

This slim and stylish indoor unit achieves optimum air distribution, and can be installed without the need for ceiling cavity

Ceiling Mounted Cassette (Double Flow) Type

FXCQ-MVE

Thin, lightweight, and easy to install in narrow ceiling spaces



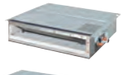
Ceiling Mounted Cassette Corner Type

FXKQ-MAVE

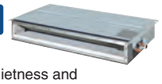
Slim design for flexible installation

Slim Ceiling Mounted Duct Type

FXDQ-PBVE(T)



FXDQ-NBVE(T)



Slim design, quietness and static pressure switching

Middle Static Pressure Ceiling Mounted Duct Type

FXSQ-PVE

Middle external static pressure and slim design allow flexible installations

Ceiling Mounted Duct Type

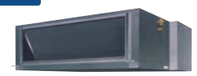
FXMQ-PVE

FXMQ-MAVE

High external static pressure allows flexible installations

Outdoor-Air Processing Unit

FXMQ-MFV1



Combine fresh air treatment and air conditioning, supplied from a single system.

Ceiling Suspended Type

FXHQ-MAVE

Slim body with quiet and wide airflow

Wall Mounted Type

FXAQ-PVE

Stylish flat panel design harmonised with your interior décor

Floor Standing Type

FXLQ-MAVE

Suitable for perimeter zone air conditioning

Concealed Floor Standing Type

FXNQ-MAVE

Designed to be concealed in the perimeter skirting-wall

Air Treatment Equipment

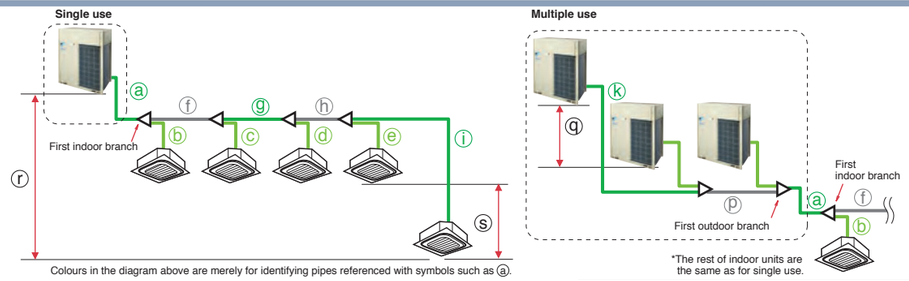
Heat Reclaim Ventilator with DX-Coil and Humidifier

VKM-GA(M)V1

Heat Reclaim Ventilator

VAM-GJVE

Piping limits for reuse of existing piping



		Actual piping length	Example	Equivalent piping length
Maximum allowable piping length	Refrigerant piping length	**150** m	a+f+g+h+i	**175** 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	**40** m	f+g+h+i	—
	Between the outdoor branch and the last outdoor unit	**10** m	k+p	**13** m

			Level Difference	Example
Maximum allowable level difference	Between the outdoor units (Multiple use)		**5** m	q
	Between the indoor units		**15** m	s
	Between the outdoor units and the indoor units	If the outdoor unit is above.	**50** m	r
		If the outdoor unit is below.	**40** m	r

Reusability of existing piping for *VRV* IV Q series

Type of piping	Capacity	Piping size														
		Liquid						Gas								
		ϕ6.4	ϕ9.5	ϕ12.7	ϕ15.9	ϕ19.1	ϕ22.2	ϕ12.7	ϕ15.9	ϕ19.1	ϕ22.2	ϕ25.4	ϕ28.6	ϕ34.9	ϕ41.3	ϕ54.1
Main piping	6 HP	×	S○●		×	×	×	×	×	S○	●		×	×	×	×
	8 HP	×	S○	●		×	×	×	×	S○		●	●	×	×	×
	10 HP	×	S○	●		×	×	×	×	×	S○		●	×	×	×
	12 HP	×	×	S○	●	×	×	×	×	×	×	×	S○	×●	×	×
	14 HP	×	×	S○	●	×	×	×	×	×	×	×	S○	●	×	×
	16 HP	×	×	S○	●	×	×	×	×	×	×	×	S○	●	×	×
	18 HP	×	×	×	S○	●	×	×	×	×	×	×	S○	●	×	×
	20 HP	×	×	×	S○	●	×	×	×	×	×	×	S○	●	×	×
	22 HP	×	×	×	S○	●	×	×	×	×	×	×	S○	●	×	×
	24 HP	×	×	×	S○	●	×	×	×	×	×	×	×	S○	●	×
	26 HP	×	×	×	×	S○	●	×	×	×	×	×	×	S○	●	×
	28 HP	×	×	×	×	S○	●	×	×	×	×	×	×	S○	●	×
	30 HP	×	×	×	×	S○	●	×	×	×	×	×	×	S○	●	×
	32 HP	×	×	×	×	S○	●	×	×	×	×	×	×	S○	●	×
	34 HP	×	×	×	×	S○	●	×	×	×	×	×	×	S○	●	×
	36 HP	×	×	×	×	S○	●	×	×	×	×	×	×	×	S○	●
	38 HP	×	×	×	×	S○	●	×	×	×	×	×	×	×	S○	●
	40 HP	×	×	×	×	S○	●	×	×	×	×	×	×	×	S○	●
	42 HP	×	×	×	×	S○	●	×	×	×	×	×	×	×	S○	●
	44 HP	×	×	×	×	S○	●	×	×	×	×	×	×	×	S○	●
	46 HP	×	×	×	×	S○	●	×	×	×	×	×	×	×	S○	●
	48 HP	×	×	×	×	S○	●	×	×	×	×	×	×	×	S○	●
From REFNET to REFNET*1	< 100	×	S○●		×	×	×	×	S○●		×	×	×	×	×	×
	100 ≤ X < 150	×	S○●		×	×	×	×	S○	●	×	×	×	×	×	×
	150 ≤ X < 160	×	S○●		×	×	×	×	×	S○●			×	×	×	×
	160 ≤ X < 200	×	S○	●	×	×	×	×	×	S○		●	×	×	×	×
	200 ≤ X < 290	×	S○	●		×	×	×	×	×	S○	●		×	×	×
	290 ≤ X < 330	×	×	S○●		×	×	×	×	×	×	●	S○		×	×
	330 ≤ X < 420	×	×	S○	●	×	×	×	×	×	×	×	S○	●	×	×
	420 ≤ X < 480	×	×	S	○●		×	×	×	×	×	×	S○	●	×	×
	480 ≤ X < 640	×	×	S	○	●	×	×	×	×	×	×	S○	●	×	×
	640 ≤ X < 900	×	×	×	S	○●		×	×	×	×	×	×	S○	●	
	900 ≤ X < 920	×	×	×	S	○	●	×	×	×	×	×	×	S○		●
	920 ≤	×	×	×	×	S○	●	×	×	×	×	×	×	×	S○	●
From REFNET to indoor unit*2	20–40 class	S○●		×	×	×	×	S●		×	×	×	×	×	×	×
	50 class	S○	●	×	×	×	×	S○	●	×	×	×	×	×	×	×
	63 class	×	S○●		×	×	×	○	S●	×	×	×	×	×	×	×
	80 class	×	S○●		×	×	×	×	S○●		×	×	×	×	×	×
	100–125 class	×	S○●		×	×	×	×	S○	●			×	×	×	×
	140 class	×	S○		×	×	×	×	S○				×	×	×	×
	200 class	×	S○	●	×	×	×	×	×	S○		●		×	×	×
	250 class	×	S○	●	×	×	×	×	×	×	S○		●	×	×	×

● : Piping size of conventional R-22 model
○ : Piping size of conventional R-410A model
S : Standard piping size of *VRV* IV Q series
: Possible
: Standard piping size of *VRV* IV Q series. However, when equivalent piping length between outdoor unit and indoor unit is 90 m or more, size of main piping must be increased.
× : Not possible

*1 Piping between REFNETs depends on total capacity index of indoor units connected below each REFNET. It cannot exceed piping size of upstream side.
*2 Piping from REFNET to indoor unit depends on the capacity of the connected indoor unit. It cannot exceed piping size of upstream side.

Outdoor Unit Combinations

Standard Type

HP	kW	Capacity index	Model name	Combination	Outdoor unit multi connection piping kit*1	Total capacity index of connectable indoor units*3	Maximum number of connectable indoor units*2
6	16.0	150	RQYQ6T	RQYQ6T	—	75 to 195	9
8	22.4	200	RQYQ8T	RQYQ8T	—	100 to 260	13
10	28.0	250	RQYQ10T	RQYQ10T	—	125 to 325	16
12	33.5	300	RQYQ12T	RQYQ12T	—	150 to 390	19
14	40.0	350	RQYQ14T	RQYQ14T	—	175 to 455	22
16	45.0	400	RQYQ16T	RQYQ16T	—	200 to 520	26
18	50.4	450	RQYQ18TN	RQYQ8T + RQYQ10T	BHFP22P100	225 to 585	29
20	55.9	500	RQYQ20TN	RQYQ8T + RQYQ12T		250 to 650	32
22	61.5	550	RQYQ22TN	RQYQ10T + RQYQ12T		275 to 715	35
24	67.0	600	RQYQ24TN	RQYQ12T × 2		300 to 780	39
26	73.5	650	RQYQ26TN	RQYQ12T + RQYQ14T		325 to 845	42
28	78.5	700	RQYQ28TN	RQYQ12T + RQYQ16T		350 to 910	45
30	85.0	750	RQYQ30TN	RQYQ14T + RQYQ16T		375 to 975	48
32	90.0	800	RQYQ32TN	RQYQ14T + RQYQ18T		400 to 1,040	52
34	95.0	850	RQYQ34TN	RQYQ10T + RQYQ12T × 2	BHFP22P151	425 to 1,105	55
36	101	900	RQYQ36TN	RQYQ12T × 3		450 to 1,170	58
38	106	950	RQYQ38TN	RQYQ8T + RQYQ12T + RQYQ18T		475 to 1,235	61
40	112	1,000	RQYQ40TN	RQYQ12T × 2 + RQYQ16T		500 to 1,300	64
42	119	1,050	RQYQ42TN	RQYQ12T + RQYQ14T + RQYQ16T		525 to 1,365	
44	124	1,100	RQYQ44TN	RQYQ12T + RQYQ16T × 2		550 to 1,430	
46	130	1,150	RQYQ46TN	RQYQ14T × 2 + RQYQ18T		575 to 1,495	
48	135	1,200	RQYQ48TN	RQYQ14T + RQYQ16T + RQYQ18T		600 to 1,560	

Note: *1 For multiple connection of 18 HP systems and above, the outdoor unit multi connection piping kit (separately sold) is required.
*2 Total capacity index of connectable indoor units must be 50%–130% of the capacity index of the outdoor units.
*3 When outdoor-air processing units and standard indoor units are connected, the total connection capacity index of the outdoor-air processing units must not exceed 30% of the capacity index of the outdoor units. And the connection ratio must not exceed 100%.

Space Saving Type

HP	kW	Capacity index	Model name	Combination	Outdoor unit multi connection piping kit*1	Total capacity index of connectable indoor units*3	Maximum number of connectable indoor units*2
18	50.0	450	RQYQ18T	RQYQ18T	–	225 to 585	29
20	56.0	500	RQYQ20T	RQYQ20T	–	250 to 650	32
30	83.5	750	RQYQ30TS	RQYQ12T + RQYQ18T	BHFP22P100	375 to 975	48
32	89.5	800	RQYQ32TS	RQYQ12T + RQYQ20T		400 to 1,040	52
34	95.0	850	RQYQ34TS	RQYQ16T + RQYQ18T		425 to 1,105	55
36	100	900	RQYQ36TS	RQYQ18T x 2		450 to 1,170	58
38	106	950	RQYQ38TS	RQYQ18T + RQYQ20T		475 to 1,235	61
40	112	1,000	RQYQ40TS	RQYQ20T x 2		500 to 1,300	64
42	117	1,050	RQYQ42TS	RQYQ12T x 2 + RQYQ18T	BHFP22P151	525 to 1,365	
44	123	1,100	RQYQ44TS	RQYQ12T x 2 + RQYQ20T		550 to 1,430	
46	129	1,150	RQYQ46TS	RQYQ12T + RQYQ16T + RQYQ18T		575 to 1,495	
48	134	1,200	RQYQ48TS	RQYQ12T + RQYQ18T x 2		600 to 1,560	

Note: *1 For multiple connection of 30 HP and above the outdoor unit multi connection piping kit (separately sold) is required.
*2 Total capacity index of connectable indoor units must be 50%–130% of the capacity index of the outdoor units.
*3 When outdoor-air processing units and standard indoor units are connected, the total connection capacity index of the outdoor-air processing units must not exceed 30% of the capacity index of the outdoor units. And the connection ratio must not exceed 100%.

Outdoor Units

Standard Type

																	
MODEL			**RQYQ6TY1(E)**	**RQYQ8TY1(E)**	**RQYQ10TY1(E)**	**RQYQ12TY1(E)**	**RQYQ14TY1(E)**	**RQYQ16TY1(E)**		**RQYQ18TNY1(E)**	**RQYQ20TNY1(E)**	**RQYQ22TNY1(E)**	**RQYQ24TNY1(E)**	**RQYQ26TNY1(E)**	**RQYQ28TNY1(E)**	**RQYQ30TNY1(E)**	**RQYQ32TNY1(E)**
Combination units			—	—	—	—	—	—		**RQYQ8TY1(E)**	**RQYQ8TY1(E)**	**RQYQ10TY1(E)**	**RQYQ12TY1(E)**	**RQYQ12TY1(E)**	**RQYQ12TY1(E)**	**RQYQ14TY1(E)**	**RQYQ14TY1(E)**
										RQYQ10TY1(E)	**RQYQ12TY1(E)**	**RQYQ12TY1(E)**	**RQYQ12TY1(E)**	**RQYQ14TY1(E)**	**RQYQ16TY1(E)**	**RQYQ16TY1(E)**	**RQYQ18TY1(E)**
										—	—	—	—	—	—	—	—
Power supply			3-phase 4-wire system, 380–415 V, 50 Hz							3-phase 4-wire system, 380–415 V, 50 Hz							
Cooling capacity		kcal/h	13,800	19,300	24,100	28,800	34,400	38,700		43,300	48,100	52,900	57,600	63,200	67,500	73,100	77,400
		Btu/h	54,600	76,400	95,500	114,000	136,000	154,000		172,000	191,000	210,000	229,000	251,000	268,000	290,000	307,000
		kW	16.0	22.4	28.0	33.5	40.0	45.0		50.4	55.9	61.5	67.0	73.5	78.5	85.0	90.0
Heating capacity		kcal/h	15,500	21,500	27,100	32,300	38,700	43,000		48,600	53,800	59,300	64,500	71,000	75,300	81,700	86,900
		Btu/h	61,400	85,300	107,000	128,000	154,000	171,000		193,000	213,000	235,000	256,000	281,000	299,000	324,000	345,000
		kW	18.0	25.0	31.5	37.5	45.0	50.0		56.5	62.5	69.0	75.0	82.5	87.5	95.0	101
Power consumption	Cooling	kW	3.63	5.18	6.88	8.82	10.7	13.0		12.1	14.0	15.7	17.6	19.5	21.8	23.7	26.1
	Heating	kW	3.99	5.69	7.29	9.06	11.1	12.8		13.0	14.8	16.4	18.1	20.2	21.9	23.9	26.2
Capacity control		%	20-100	20-100	16-100	15-100	11-100	10-100		8-100	8-100	8-100	8-100	6-100	6-100	5-100	5-100
Casing colour			Ivory white (5Y7.5/1)							Ivory white (5Y7.5/1)							
Compressor	Type		Hermetically Sealed Scroll Type							Hermetically Sealed Scroll Type							
	Motor output	kW	2.4X1	3.4X1	4.1X1	5.2X1	(2.9X1)+(3.3X1)	(3.6X1)+(3.7X1)		(3.4X1)+(4.1X1)	(3.4X1)+(5.2X1)	(4.1X1)+(5.2X1)	(5.2X1)+(5.2X1)	(5.2X1)+(2.9X1)+(3.3X1)	(5.2X1)+(3.6X1)+(3.7X1)	(2.9X1)+(3.3X1)+(3.6X1)+(3.7X1)	(2.9X1)+(3.3X1)+(4.4X1)+(4.0X1)
Airflow rate		m³/min	119	157	165	178	233	233		157+165	157+178	165+178	178+178	178+233	178+233	233+233	233+233
Dimensions (HxWxD)		mm	1,657X930X765	1,657X930X765	1,657X930X765	1,657X930X765	1,657X1,240X765	1,657X1,240X765		(1,657X930X765)+(1,657X930X765)	(1,657X930X765)+(1,657X930X765)	(1,657X930X765)+(1,657X930X765)	(1,657X930X765)+(1,657X930X765)	(1,657X930X765)+(1,657X1,240X765)	(1,657X930X765)+(1,657X1,240X765)	(1,657X1,240X765)+(1,657X1,240X765)	(1,657X1,240X765)+(1,657X1,240X765)
Machine weight		kg	185	185	195	195	285	285		185+195	185+195	195+195	195+195	195+285	195+285	285+285	285+300
Sound level		dB(A)	55	56	57	59	60	61		60	61	61	62	63	63	64	64
Operation range	Cooling	ºCDB	-5 to 49							-5 to 49							
	Heating	ºCWB	-20 to 15.5							-20 to 15.5							
Refrigerant	Type		R-410A							R-410A							
	Charge	kg	5.9	5.9	6.0	6.3	10.3	10.4		5.9+6.0	5.9+6.3	6.0+6.3	6.3+6.3	6.3+10.3	6.3+10.4	10.3+10.4	10.3+11.7
Piping connections	Liquid	mm	ϕ9.5 (Brazing)			ϕ12.7 (Brazing)				ϕ15.9 (Brazing)	ϕ15.9 (Brazing)	ϕ15.9 (Brazing)	ϕ15.9 (Brazing)	ϕ19.1 (Brazing)	ϕ19.1 (Brazing)	ϕ19.1 (Brazing)	ϕ19.1 (Brazing)
	Gas	mm	ϕ19.1 (Brazing)		ϕ22.2 (Brazing)	ϕ28.6 (Brazing)				ϕ28.6 (Brazing)	ϕ28.6 (Brazing)	ϕ28.6 (Brazing)	ϕ34.9 (Brazing)	ϕ34.9 (Brazing)	ϕ34.9 (Brazing)	ϕ34.9 (Brazing)	ϕ34.9 (Brazing)

Note: 1. Models with (E) are the outdoor units with anti-corrosion specifications. Please refer to Engineering Data Book for details.

2. Specifications are based on the following conditions;

- •Cooling: Indoor temp.: 27°CDB, 19°CWB, Outdoor temp.: 35°CDB, Equivalent piping length: 7.5 m, Level difference: 0 m.
- •Heating: Indoor temp.: 20°CDB, Outdoor temp.: 7°CDB, 6°CWB, 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.

Outdoor Units

Standard Type




MODEL			RQYQ34TNY1(E)	RQYQ36TNY1(E)	RQYQ38TNY1(E)	RQYQ40TNY1(E)	RQYQ42TNY1(E)	RQYQ44TNY1(E)		RQYQ46TNY1(E)	RQYQ48TNY1(E)
Combination units			RQYQ10TY1(E)	RQYQ12TY1(E)	RQYQ8TY1(E)	RQYQ12TY1(E)	RQYQ12TY1(E)	RQYQ12TY1(E)		RQYQ14TY1(E)	RQYQ14TY1(E)
			RQYQ12TY1(E)	RQYQ12TY1(E)	RQYQ12TY1(E)	RQYQ12TY1(E)	RQYQ14TY1(E)	RQYQ16TY1(E)		RQYQ14TY1(E)	RQYQ16TY1(E)
			RQYQ12TY1(E)	RQYQ12TY1(E)	RQYQ18TY1(E)	RQYQ16TY1(E)	RQYQ16TY1(E)	RQYQ16TY1(E)		RQYQ18TY1(E)	RQYQ18TY1(E)
Power supply			3-phase 4-wire system, 380–415 V, 50 Hz							3-phase 4-wire system, 380–415 V, 50 Hz	
Cooling capacity		kcal/h	81,700	86,900	91,200	96,300	102,000	107,000		112,000	116,000
		Btu/h	324,000	345,000	362,000	382,000	406,000	423,000		444,000	461,000
		kW	95.0	101	106	112	119	124		130	135
Heating capacity		kcal/h	92,000	97,200	102,000	108,000	114,000	119,000		126,000	130,000
		Btu/h	365,000	386,000	406,000	427,000	454,000	471,000		498,000	515,000
		kW	107	113	119	125	133	138		146	151
Power consumption	Cooling	kW	24.5	26.5	29.4	30.6	32.5	34.8		36.8	39.1
	Heating	kW	25.4	27.2	29.9	30.9	33.0	34.7		37.3	39.0
Capacity control		%	5-100	5-100	4-100	4-100	4-100	4-100		3-100	3-100
Casing colour			Ivory white (5Y7.5/1)							Ivory white (5Y7.5/1)	
Compressor	Type		Hermetically Sealed Scroll Type							Hermetically Sealed Scroll Type	
	Motor output	kW	(4.1X1)+(5.2X1)+(5.2X1)	(5.2X1)+(5.2X1)+(5.2X1)	(3.4X1)+(5.2X1)+(4.4X1)+(4.0X1)	(5.2X1)+(5.2X1)+(3.6X1)+(3.7X1)	(5.2X1)+(2.9X1)+(3.3X1)+(3.6X1)+(3.7X1)	(5.2X1)+(3.6X1)+(3.7X1)+(3.6X1)+(3.7X1)		(2.9X1)+(3.3X1)+(2.9X1)+(3.3X1)+(4.4X1)+(4.0X1)	(2.9X1)+(3.3X1)+(3.6X1)+(3.7X1)+(4.4X1)+(4.0X1)
Airflow rate		m³/min	165+178+178	178+178+178	157+178+233	178+178+233	178+233+233	178+233+233		233+233+233	233+233+233
Dimensions (HxWxD)		mm	(1,657X930X765)+(1,657X930X765)+(1,657X930X765)	(1,657X930X765)+(1,657X930X765)+(1,657X930X765)	(1,657X930X765)+(1,657X930X765)+(1,657X1,240X765)	(1,657X930X765)+(1,657X930X765)+(1,657X1,240X765)	(1,657X930X765)+(1,657X1,240X765)+(1,657X1,240X765)	(1,657X930X765)+(1,657X1,240X765)+(1,657X1,240X765)		(1,657X1,240X765)+(1,657X1,240X765)+(1,657X1,240X765)	(1,657X1,240X765)+(1,657X1,240X765)+(1,657X1,240X765)
Machine weight		kg	195+195+195	195+195+195	185+195+300	195+195+285	195+285+285	195+285+285		285+285+300	285+285+300
Sound level		dB(A)	63	64	64	65	65	65		66	66
Operation range	Cooling	ºCDB	-5 to 49							-5 to 49	
	Heating	ºCWB	-20 to 15.5							-20 to 15.5	
Refrigerant	Type		R-410A							R-410A	
	Charge	kg	6.0+6.3+6.3	6.3+6.3+6.3	5.9+6.3+11.7	6.3+6.3+10.4	6.3+10.3+10.4	6.3+10.4+10.4		10.3+10.3+11.7	10.3+10.4+11.7
Piping connections	Liquid	mm	φ19.1 (Brazing)	φ19.1 (Brazing)	φ19.1 (Brazing)	φ19.1 (Brazing)	φ19.1 (Brazing)	φ19.1 (Brazing)		φ19.1 (Brazing)	φ19.1 (Brazing)
	Gas	mm	φ34.9 (Brazing)	φ41.3 (Brazing)	φ41.3 (Brazing)	φ41.3 (Brazing)	φ41.3 (Brazing)	φ41.3 (Brazing)		φ41.3 (Brazing)	φ41.3 (Brazing)

Note: 1. Models with (E) are the outdoor units with anti-corrosion specifications. Please refer to Engineering Data Book for details.
2. Specifications are based on the following conditions;
•Cooling: Indoor temp.: 27°CDB, 19°CWB, Outdoor temp.: 35°CDB, Equivalent piping length: 7.5 m, Level difference: 0 m.
•Heating: Indoor temp.: 20°CDB, Outdoor temp.: 7°CDB, 6°CWB, 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.

Space Saving Type

MODEL			RQYQ18TY1(E)	RQYQ20TY1(E)
Combination units			—	—
Power supply			3-phase 4-wire system, 380–415 V, 50 Hz	
Cooling capacity		kcal/h	43,000	48,200
		Btu/h	171,000	191,000
		kW	50.0	56.0
Heating capacity		kcal/h	48,200	54,200
		Btu/h	191,000	215,000
		kW	56.0	63.0
Power consumption	Cooling	kW	15.4	18.0
	Heating	kW	15.1	17.5
Capacity control		%	10-100	8-100
Casing colour			Ivory white (5Y7.5/1)	
Compressor	Type			
	Motor output	kW	(4.4X1)+(4.0X1)	(4.6X1)+(5.5X1)
Airflow rate		m³/min	233	268
Dimensions (HxWxD)		mm	1,657X1,240X765	1,657X1,240X765
Machine weight		kg	300	320
Sound level		dB(A)	62	65
Operation range	Cooling	ºCDB	-5 to 49	
	Heating	ºCWB	-20 to 15.5	
Refrigerant	Type		R-410A	
	Charge	kg	11.7	11.8
Piping connections	Liquid	mm	φ15.9 (Brazing)	φ15.9 (Brazing)
	Gas	mm	φ28.6 (Brazing)	φ28.6 (Brazing)

Note: 1. Models with (E) are the outdoor units with anti-corrosion specifications. Please refer to Engineering Data Book for details.
2. Specifications are based on the following conditions;
•Cooling: Indoor temp.: 27°CDB, 19°CWB, Outdoor temp.: 35°CDB, Equivalent piping length: 7.5 m, Level difference: 0 m.
•Heating: Indoor temp.: 20°CDB, Outdoor temp.: 7°CDB, 6°CWB, 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.

Outdoor Units

Space Saving Type

												
MODEL		**RQYQ30TSY1(E)**	**RQYQ32TSY1(E)**	**RQYQ34TSY1(E)**	**RQYQ36TSY1(E)**		**RQYQ38TSY1(E)**	**RQYQ40TSY1(E)**	**RQYQ42TSY1(E)**	**RQYQ44TSY1(E)**	**RQYQ46TSY1(E)**	**RQYQ48TSY1(E)**
Combination units		**RQYQ12TY1(E)**	**RQYQ12TY1(E)**	**RQYQ16TY1(E)**	**RQYQ18TY1(E)**		**RQYQ18TY1(E)**	**RQYQ20TY1(E)**	**RQYQ12TY1(E)**	**RQYQ12TY1(E)**	**RQYQ12TY1(E)**	**RQYQ12TY1(E)**
		RQYQ18TY1(E)	**RQYQ20TY1(E)**	**RQYQ18TY1(E)**	**RQYQ18TY1(E)**		**RQYQ20TY1(E)**	**RQYQ20TY1(E)**	**RQYQ12TY1(E)**	**RQYQ12TY1(E)**	**RQYQ16TY1(E)**	**RQYQ18TY1(E)**
		—	—	—	—		—	—	**RQYQ18TY1(E)**	**RQYQ20TY1(E)**	**RQYQ18TY1(E)**	**RQYQ18TY1(E)**
Power supply		3-phase 4-wire system, 380–415 V, 50 Hz					3-phase 4-wire system, 380–415 V, 50 Hz					
Cooling capacity	kcal/h	71,800	77,000	81,700	86,000		91,200	96,300	101,000	106,000	111,000	115,000
	Btu/h	285,000	305,000	324,000	341,000		362,000	382,000	399,000	420,000	440,000	457,000
	kW	83.5	89.5	95.0	100		106	112	117	123	129	134
Heating capacity	kcal/h	80,400	86,900	91,200	96,300		102,000	108,000	113,000	119,000	124,000	129,000
	Btu/h	319,000	345,000	362,000	382,000		406,000	430,000	447,000	471,000	491,000	512,000
	kW	93.5	101	106	112		119	126	131	138	144	150
Power consumption	Cooling kW	24.2	26.8	28.4	30.8		33.4	36.0	33.0	35.6	37.2	39.6
	Heating kW	24.2	26.6	27.9	30.2		32.6	35.0	33.2	35.6	37.0	39.3
Capacity control		%	6-100	5-100	5-100	5-100		4-100	4-100	4-100	4-100	4-100	4-100
Casing colour		Ivory white (5Y7.5/1)					Ivory white (5Y7.5/1)					
Compressor	Type	Hermetically Sealed Scroll Type					Hermetically Sealed Scroll Type					
	Motor output kW	(5.2X1)+(4.4X1)+(4.0X1)	(5.2X1)+(4.6X1)+(5.5X1)	(3.6X1)+(3.7X1)+(4.4X1)+(4.0X1)	(4.4X1)+(4.0X1)+(4.4X1)+(4.0X1)		(4.4X1)+(4.0X1)+(4.6X1)+(5.5X1)	(4.6X1)+(5.5X1)+(4.6X1)+(5.5X1)	(5.2X1)+(5.2X1)+(4.4X1)+(4.0X1)	(5.2X1)+(5.2X1)+(4.6X1)+(5.5X1)	(5.2X1)+(3.6X1)+(3.7X1)+(4.4X1)+(4.0X1)	(5.2X1)+(4.4X1)+(4.0X1)+(4.4X1)+(4.0X1)
Airflow rate		m³/min	178+233	178+268	233+233	233+233		233+268	268+268	178+178+233	178+178+268	178+233+233	178+233+233
Dimensions (HxWxD)		mm	(1,657X930X765)+(1,657X1,240X765)	(1,657X930X765)+(1,657X1,240X765)	(1,657X1,240X765)+(1,657X1,240X765)	(1,657X1,240X765)+(1,657X1,240X765)		(1,657X1,240X765)+(1,657X1,240X765)	(1,657X1,240X765)+(1,657X1,240X765)	(1,657X930X765)+(1,657X930X765)+(1,657X1,240X765)	(1,657X930X765)+(1,657X930X765)+(1,657X1,240X765)	(1,657X930X765)+(1,657X1,240X765)+(1,657X1,240X765)	(1,657X930X765)+(1,657X1,240X765)+(1,657X1,240X765)
Machine weight		kg	195+300	195+320	285+300	300+300		300+320	320+320	195+195+300	195+195+320	195+285+300	195+300+300
Sound level		dB(A)	64	66	65	65		67	68	65	67	66	66
Operation range	Cooling °CDB	-5 to 49					-5 to 49					
	Heating °CWB	-20 to 15.5					-20 to 15.5					
Refrigerant	Type	R-410A					R-410A					
	Charge kg	6.3+11.7	6.3+11.8	10.4+11.7	11.7+11.7		11.7+11.8	11.8+11.8	6.3+6.3+11.7	6.3+6.3+11.8	6.3+10.4+11.7	6.3+11.7+11.7
Piping connections	Liquid mm	ϕ19.1 (Brazing)	ϕ19.1 (Brazing)	ϕ19.1 (Brazing)	ϕ19.1 (Brazing)		ϕ19.1 (Brazing)	ϕ19.1 (Brazing)	ϕ19.1 (Brazing)	ϕ19.1 (Brazing)	ϕ19.1 (Brazing)	ϕ19.1 (Brazing)
	Gas mm	ϕ34.9 (Brazing)	ϕ34.9 (Brazing)	ϕ34.9 (Brazing)	ϕ41.3 (Brazing)		ϕ41.3 (Brazing)	ϕ41.3 (Brazing)	ϕ41.3 (Brazing)	ϕ41.3 (Brazing)	ϕ41.3 (Brazing)	ϕ41.3 (Brazing)

Note: 1. Models with (E) are the outdoor units with anti-corrosion specifications. Please refer to Engineering Data Book for details.

2. Specifications are based on the following conditions;

- Cooling: Indoor temp.: 27°CDB, 19°CWB, Outdoor temp.: 35°CDB, Equivalent piping length: 7.5 m, Level difference: 0 m.
- Heating: Indoor temp.: 20°CDB, Outdoor temp.: 7°CDB, 6°CWB, 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.

Outdoor Units

Standard Type

Optional Accessories		RQYQ6T(E) RQYQ8T(E) RQYQ10T(E)	RQYQ12T(E)	RQYQ14T(E) RQYQ16T(E)
Distributive piping	REFNET header	KHRP26M22H (Max. 4 branch), KHRP26M33H (Max. 8 branch)	KHRP26M22H, KHRP26M33H, KHRP26M72H (Max. 4 branch) (Max. 8 branch) (Max. 8 branch)	
	REFNET joint	KHRP26A22T KHRP26A33T	KHRP26A22T, KHRP26A33T, KHRP26A72T	
Cool / Heat selector		KRC19-26A (Applies to RQYQ only)		

Optional Accessories		RQYQ18TN(E) RQYQ20TN(E)	RQYQ22TN(E)	RQYQ24TN(E) RQYQ26TN(E)	RQYQ28TN(E) RQYQ30TN(E) RQYQ32TN(E)
Distributive piping	REFNET header	KHRP26M22H, KHRP26M33H (Max. 4 branch) (Max. 8 branch), KHRP26M72H (Max. 8 branch)		KHRP26M22H, KHRP26M33H, (Max. 4 branch) (Max. 8 branch) KHRP26M72H, KHRP26M73H (Max. 8 branch) (Max. 8 branch)	
	REFNET joint	KHRP26A22T, KHRP26A33T, KHRP26A72T		KHRP26A22T, KHRP26A33T, KHRP26A72T, KHRP26A73T	
Pipe size reducer		–		KHRP26M73TP, KHPR26M73HP	
Outdoor unit multi connection piping kit		BHFP22P100			
Cool / Heat selector		KRC19-26A (Applies to RQYQ only)			

Optional Accessories		RQYQ34TN(E) RQYQ36TN(E)	RQYQ38TN(E) RQYQ40TN(E)	RQYQ42TN(E) RQYQ44TN(E)	RQYQ46TN(E) RQYQ48TN(E)
Distributive piping	REFNET header	KHRP26M22H, KHRP26M33H, KHRP26M72H, KHRP26M73H (Max. 4 branch) (Max. 8 branch) (Max. 8 branch) (Max. 8 branch)			
	REFNET joint	KHRP26A22T, KHRP26A33T, KHRP26A72T, KHRP26A73T			
Pipe size reducer		KHRP26M73TP, KHPR26M73HP			
Outdoor unit multi connection piping kit		BHFP22P151			
Cool / Heat selector		KRC19-26A (Applies to RQYQ only)			

Space Saving Type

Optional Accessories		RQYQ18T(E) RQYQ20T(E)
Disinbutive piping	REFNET header	KHRP26M22H, KHRP26M33H, KHRP26M72H (Max.4 branch) (Max.8 branch) (Max.8 branch)
	REFNET joint	KHRP26A22T, KHRP26A33T, KHRP26A72T
Cool / Heat selector		KRC19-26A (Applies to RQYQ only)

Optional Accessories		RQYQ30TS(E) RQYQ32TS(E)	RQYQ34TS(E) RQYQ36TS(E) RQYQ38TS(E) RQYQ40TS(E)
Disinbutive piping	REFNET header	KHRP26M22H, KHRP26M33H, KHRP26M72H, KHRP26M73H (Max.4 branch) (Max.8 branch) (Max.8 branch) (Max.8 branch)	
	REFNET joint	KHRP26A22T, KHRP26A33T, KHRP26A72T, KHRP26A73T	
Pipe size reducer		KHRP26M73TP, KHRP26M73HP	
Outdoor unit connection piping kit		BHFP22P100	
Cool / Heat selector		KRC19-26A (Applies to RQYQ only)	

Optional Accessories		RQYQ42TS(E) RQYQ44TS(E)	RQYQ46TS(E) RQYQ48TS(E)
Disinbutive piping	REFNET header	KHRP26M22H, KHRP26M33H, KHRP26M72H, KHRP26M73H (Max.4 branch) (Max.8 branch) (Max.8 branch) (Max.8 branch)	
	REFNET joint	KHRP26A22T, KHRP26A33T, KHRP26A72T, KHRP26A73T	
Pipe size reducer		KHRP26M73TP, KHRP26M73HP	
Outdoor unit connection piping kit		BHFP22P151	
Cool / Heat selector		KRC19-26A (Applies to RQYQ only)	

Control Systems

Building Management System

No.	Item				Model No.	Function
1	intelligent Touch Controller	Basic	Hardware	intelligent Touch Controller	DCS601C51	• Air-Conditioning management system that can be controlled by a compact all-in-one unit.
1-1		Option	Hardware	DIII-NET plus adaptor	DCS601A52	• Additional 64 groups (10 outdoor units) is possible.
1-2	Electrical box with earth terminal (4 blocks)				KJB411A	• Wall embedded switch box.
2	intelligent Touch Manager	Basic	Hardware	intelligent Touch Manager	DCM601A51	• Air-conditioning management system that can be controlled by touch screen.
2-1		Option	Hardware	iTM plus adaptor	DCM601A52	• Additional 64 groups (10 outdoor units) is possible. Max. 7 iTM plus adaptors can be connected to intelligent Touch Manager.
2-2			Software	iTM power proportional distribution	DCM002A51	• Power consumption of indoor units are calculated based on operation status of the indoor unit and outdoor unit power consumption measured by kWh metre.
2-3				iTM energy navigator	DCM008A51	• Building energy consumption is visualised. Wasted air-conditioning energy can be found out.
2-4				BACnet client	DCM009A51	• BACnet equipment can be managed by intelligent Touch Manager.
2-5				HTTP Interface	DCM007A51	• Interface for intelligent Touch Manager by HTTP
2-6			Hardware	*1 SVM series	SVMPR2	• *VRV* Smart Phone Control System for residence
2-7					SVMPC2	• *VRV* Smart Phone Remote Controller for building
2-8					SVMPS1	• Tenant Billing System with PPD
2-9	*VRV* Smart Phone Control System				SVMPR1	• *VRV* Smart Phone Control System for residence with DTA116A51.
2-10	*VRV* Tablet Controller				SVMPC1	• *VRV* Tablet Controller for small size building with DTA116A51.
2-11	Di unit				DEC101A51	• 8 pairs based on a pair of ON/OFF input and abnormality input.
2-12	Dio unit				DEC102A51	• 4 pairs based on a pair of ON/OFF input and abnormality input.
3	Communication interface	*2 Interface for use in BACnet®			DMS502B51	• Interface unit to allow communications between *VRV* and BMS. Operation and monitoring of air-conditioning systems through BACnet® communication.
3-1		Optional DIII board			DAM411B51	• Expansion kit, installed on DMS502B51, to provide 2 more DIII-NET communication ports. Not usable independently.
3-2		Optional Di board			DAM412B51	• Expansion kit, installed on DMS502B51, to provide 16 more wattmeter pulse input points. Not usable independently.
4		*3 Interface for use in LONWORKS®			DMS504B51	• Interface unit to allow communications between *VRV* and BMS. Operation and monitoring of air-conditioning systems through LonWorks® communication.
5		Home Automation Interface Adaptor			DTA116A51	• Use of the Modbus protocol enables the connection of the *VRV* system with a variety of home automation systems from other manufacturers.
6	Contact/ analogue signal	Unification adaptor for computerised control			★DCS302A52	• Interface between the central monitoring board and central control units.

Note: *1. HTTP interface (DCM007A51) is also required.
*2. BACnet® is a registered trademark of American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE).
*3. LonWorks® is a trademark of Echelon Corporation registered in the United States and other countries.
*4. Installation box for ★ adaptor must be obtained locally.

Individual Control Systems for *VRV* System

Navigation remote controller (Wired remote controller) (Option)

BRC1E62

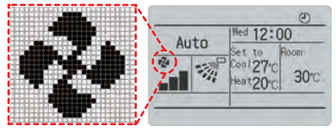
Clear display

•Dot matrix display

· A combination of fine dots enables various icons. Large text display is easy to see.

•Backlight display

· Backlight display helps operating in dark rooms.



Simple operation

•Large buttons and arrow keys

· Large buttons and arrow keys enable easy operation. Basic setting such as fan speed and temperature can be intuitively operated. For other settings just select the function from the menu list.

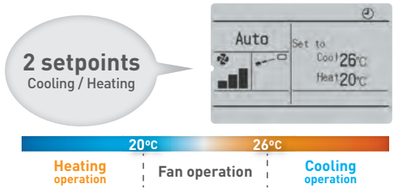
•Guide on display

· The display gives an explanation of each setting for easy operation.

Energy saving

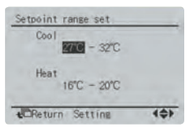
•Auto operation mode

· Until now only the temperature for one point could be set, but now the new remote controller (BRC1E62) allows the setting of both Cooling and Heating, and with the fan operation, mid-range temperatures are comfortable and operation is more energy efficient.



•Setpoint range set

· Saves energy by limiting the min. and max. set temperature.
· Avoids excessive cooling or heating.
· This function is convenient when the remote controller is installed at a place where any number of people may operate it.

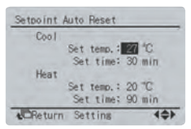


•Off timer

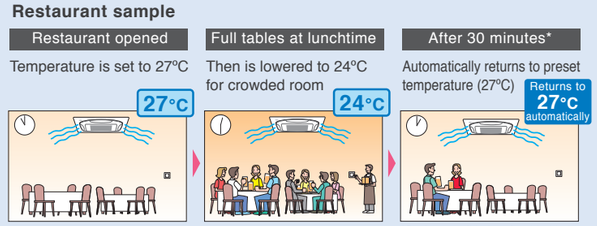
· Turns off the air conditioner after a preset period of time.
· Period can be preset from 30 to 180 minutes in 10-minute increments.

•Setpoint auto reset

· Even if the set temperature is changed, it returns to the preset temperature after a preset period of time.
· Period selectable from 30 min/60 min/90 min/120 min.



Restaurant sample



*Setting possible for after 30, 60, 90, and 120 minutes.

Convenience

•Setback (default : OFF)

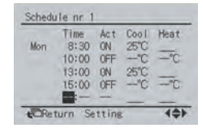
Maintains the room temperature in a specific range during unoccupied period by temporarily starting air conditioner that was turned OFF.

Ex) Setback temperature Cooling : 35°C Recovery differential Cooling : -2°C
When the room temperature goes above 35°C, the air conditioner starts operating in Cooling automatically.
When room temperature reaches 33°C, the air conditioner returns OFF.

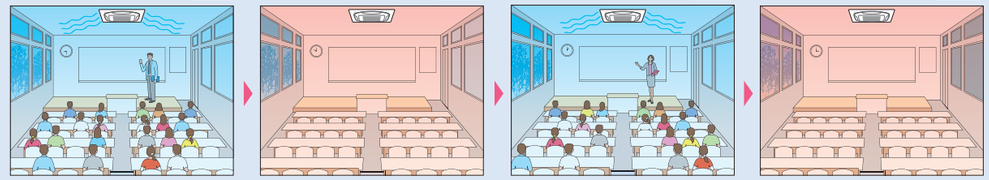
	Setback temperature	Recovery differential
Cooling	33 — 37°C	-2 — -8°C
Heating	10 — 15°C	+2 — +8°C

•Weekly schedule

· 5 actions per day can be scheduled for each day of the week.
· The holiday function will disable schedule timer for the days that have been set as holiday.
· 3 independent schedules can be set. (e.g. summer, winter, mid-season)



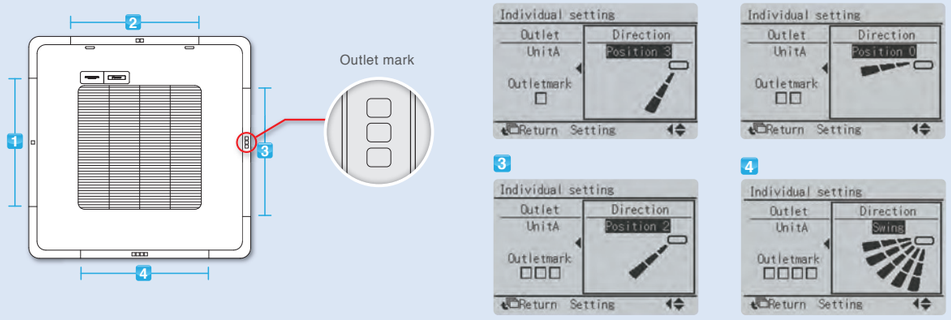
College classroom sample (a summer Monday case)



Comfort

•Individual airflow direction (*1)

Airflow direction of each of the four air outlets can be controlled individually.
(Positions 0 to 4, Swing, and No individual setting are selectable.)



•Auto airflow rate (*2)

Airflow rate is automatically controlled in accordance with the difference between room temperature and set temperature.

*1. Only available for *VRV* 4-Way Flow Ceiling Suspended type FXUQ-A series and Ceiling Mounted Cassette (Round Flow with Sensing) type FXFQ-S series.
*2. Only available for *VRV* 4-Way Flow Ceiling Suspended type FXUQ-A series, Ceiling Mounted Cassette (Round Flow with Sensing) type FXFQ-S series and Middle Static Pressure Ceiling Mounted Duct type FXSQ-P series.

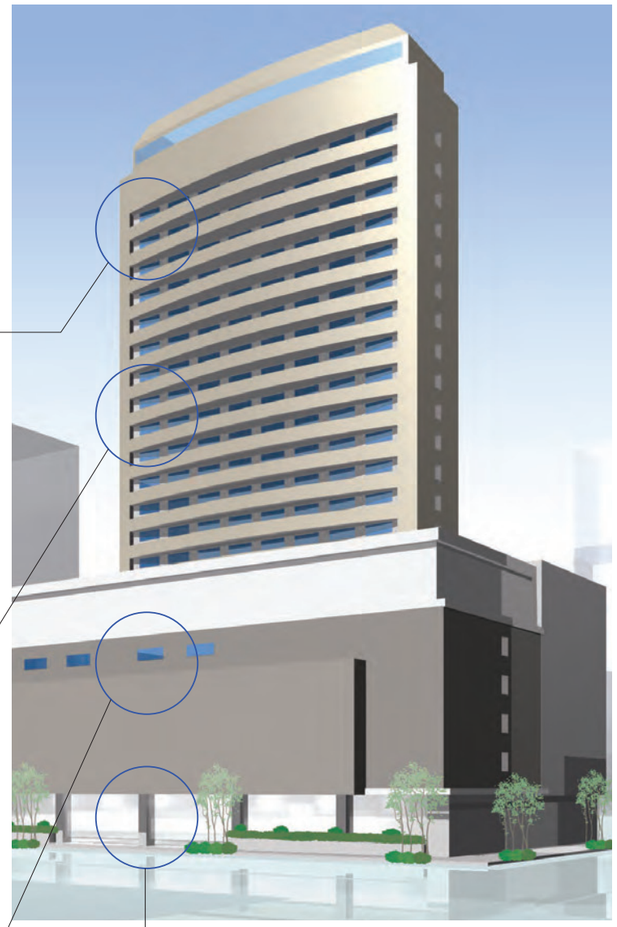
Advanced Control Systems for *VRV* System

intelligent Touch Manager

One touch selection enables flexible control of equipment in a building.

DCM009A51

Various types of equipment in a building can be controlled by a single controller.



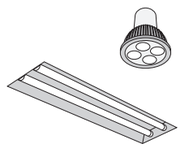
Individual air-conditioning control

The flexible control achieved by the *VRV* system precisely meets different air conditioning needs in each room (e.g. offices, conference rooms, hotel rooms).

Lighting control

DALI-compatible

DALI-compatible LED lighting systems can be controlled and monitored. Lighting control is enhanced through an interlock function with air conditioners and other functions.



Air-conditioning control for large spaces

Air handling units can also be controlled. Large spaces, such as entrance halls and shopping malls, can be easily controlled to ensure comfort.

Building equipment control

Various types of equipment other than air conditioners, including ventilators, fans, and pumps, can also be controlled.

Pump

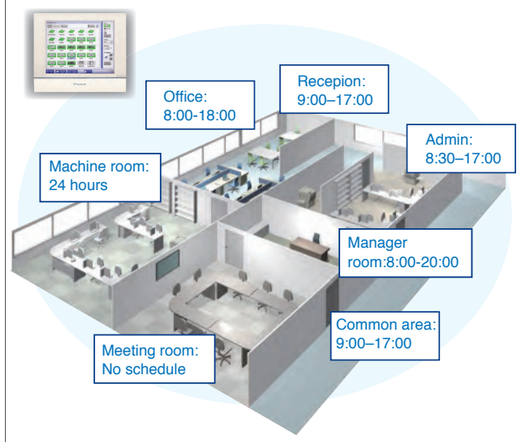
Fan

For Energy Saving & Comfort

intelligent Touch Manager maximises the advantages of *VRV* features

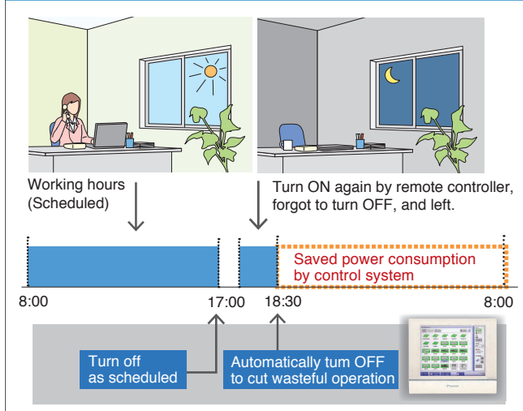
intelligent Touch Manager is an advanced multi-zone controller that provides the most cost-effective way to control and monitor the Daikin *VRV* system.
The 10.4" LCD touch screen is easy to use with three different screen views to include the floor plan layout view, icon view and list view and menus for system configurations.
It is also easy to use with standardized remote Web Access from your PC.
It can manage a total of 650 management points consisting of up to 512 Daikin indoor unit groups(up to 1024 indoor units) along with building equipment control / monitoring with Digital Inputs / Output (Di/Dio) , Analog Inputs / Output (Ai/Ao) and Pulse input (Pi) optional devices.

Schedule the operation time for each application.

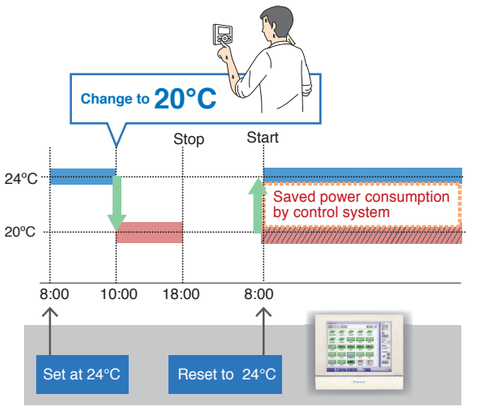


Define the setpoint range that users can change.

Turn the unit OFF if a user didn't.



Reset setpoint regularly.



Advanced Control Systems for *VRV* System

In addition to switching lights on and off, advanced lighting control, such as illuminance adjustment, can be achieved

Lighting control (Option)

Connection to DALI - compatible lighting control system

Simple wiring (daisy chain) enables management of LED lighting by the *intelligent Touch Manager*.
Various air conditioning and lighting control is enabled through the interlock with occupancy sensors and illuminance sensors.

DALI-compatible

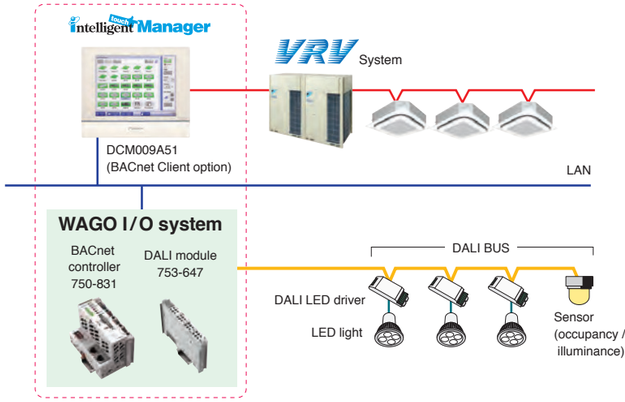
Please contact your local sales office for details.

Lighting control achieved by the *intelligent Touch Manager*

[Operation]
- Switch-on/switch-off operation
- Illuminance (1–100%) control
- Various illuminance patterns can be registered
- Registered pattern can be selected from *intelligent Touch Manager*

[Monitoring]
- Switch-on/switch-off status monitoring
- Lighting abnormality monitoring
- Illuminance monitoring
- DALI occupancy sensor monitoring
- DALI illuminance sensor monitoring

Air conditioning and lighting for which power consumption is high can be efficiently controlled to promote energy conservation and cost reduction!



[Overview of control]

- Up to 5 DALI modules can be connected to a single BACnet controller.
- Up to 64 DALI LED drivers (64 addresses) can be connected to a single DALI module.
- 64 DALI addresses can be freely assigned to up to 16 groups using a single DALI module. (Each group corresponds to a management point of the *intelligent Touch Manager*.)
- Up to 16 scenes can be set to a single DALI module.
- Up to 12 sensors (occupancy, illuminance) can be connected to a single DALI module.
- DALI BAS simplifies wiring and setting work by daisy chain wiring and automatic address setting.

Easy maintenance and energy saving by lighting control

Case1

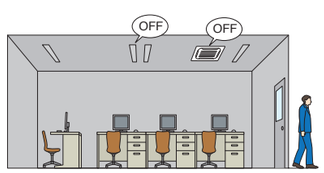
Switch-on / switch-off and illuminance are controlled based on a schedule to cut wasteful power consumption.

- Failing to switch off lights is prevented.

- Optimal illuminance reduces energy.

Case2

Occupancy sensors are used to eliminate both wasteful lighting and air conditioning.
When a room is unoccupied, the air conditioning stops and the lighting is switched off.



Case3

Lighting abnormalities (e.g. burned-out bulbs) can be checked on the *intelligent Touch Manager* screen.

Lighting maintenance becomes easier and quicker.

The layout screen enables quick identification of specific locations.

Tenant Management (PPD*Option)

Reporting the power consumption of *VRV* system for each tenant

With the PPD function, power consumption can be calculated for each indoor unit (Option)

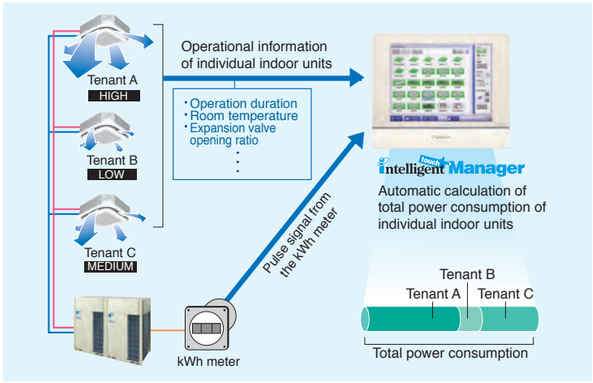
The energy consumption is proportionally calculated for each indoor unit. The data can be used for energy management and calculation of air conditioning usage fees for respective tenants.

Operational information of individual indoor units are monitored, based on distribution of power consumption of outdoor units.

Daikin's PPD keeps track of power distribution for each indoor unit. It performs air conditioning billing calculations quickly and automatically.

It is easy to output PPD data.
PPD data is output in CSV format to a PC or USB memory device and can be freely processed and managed.

*PPD (Power Proportional Distribution) is Daikin's proprietary calculation method.

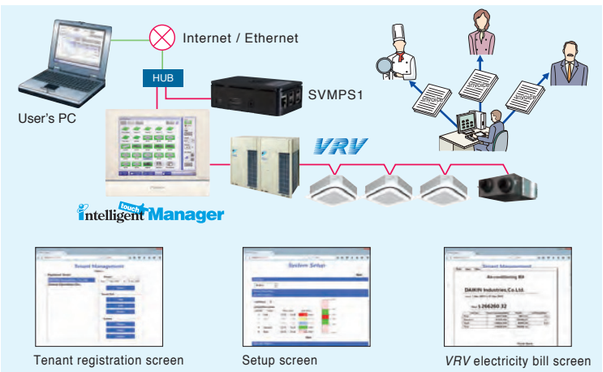


Air conditioning bills can be issued by one click

Electricity bills can be easily calculated for each tenant (Option)

The power consumption of *VRV* controlled by the *intelligent Touch Manager* can be easily managed for each tenant using a PC. The electricity bill settings facilitate billing work through easy calculation and issuance of *VRV* electricity bills.

[Main functions]
- Register tenants
- Set the electricity unit price for 5 time zones
- Calculate power consumption and electricity charge for each tenant
- Show aggregation results in the specified period for each tenant
- Output the results (Printout and CSV file)



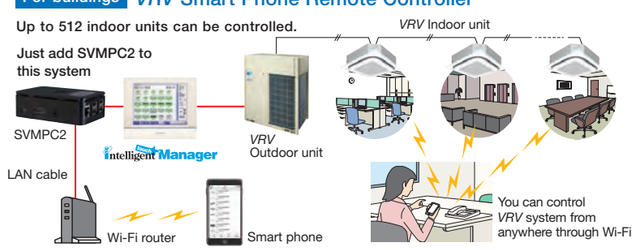
Effective service functions offered to tenants

Smart phone will be a remote controller of *VRV* system (Option)

Users can operate and check the status of *VRV* system from their smart phones via Wi-Fi.
It is not necessary to move where a remote controller is located with this feature.
VRV system in other rooms can be operated, and their status can be checked.
It is also possible to check if air conditioners in other rooms remain switched on etc., helping achieve energy saving.

For buildings *VRV* Smart Phone Remote Controller

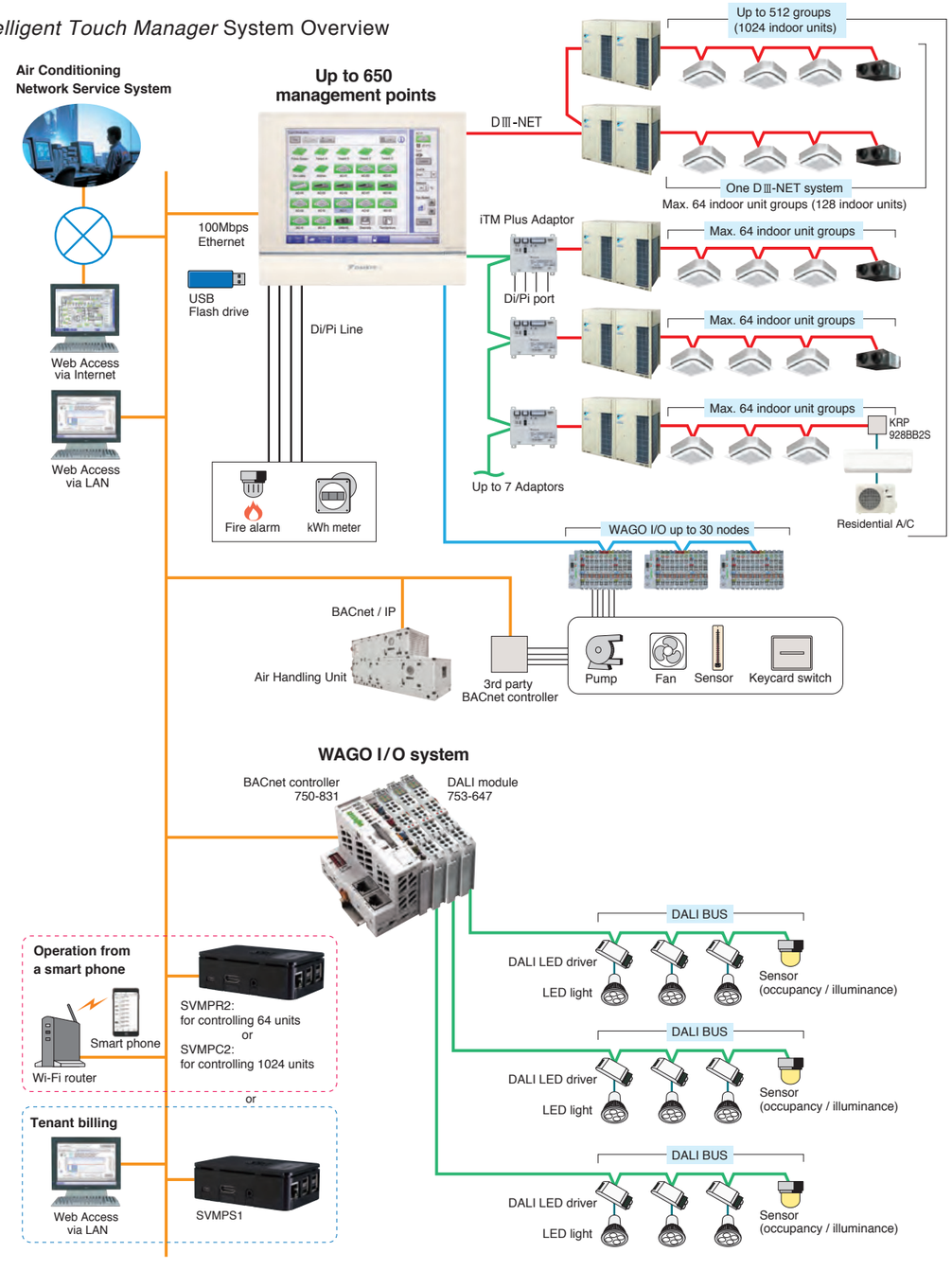
Up to 512 indoor units can be controlled.



Advanced Control Systems for *VRV* System

System structure

intelligent Touch Manager System Overview



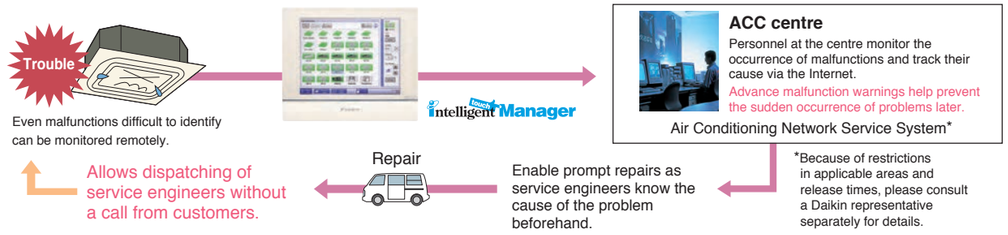
Air Conditioning Network Service System

Preventive Maintenance

The *intelligent Touch Manager* can be connected to Daikin's own Air Conditioning Network Service System for remote monitoring and verification of operation status for *VRV* system. By its ability to predict malfunctions, this service provides customers with additional peace of mind.

Enhanced convenience with link to the Air Conditioning Network Service System

The *intelligent Touch Manager* connects seamlessly to Daikin's 24-hour Air Conditioning Network Service System.



Daikin Offers a Variety of Control Systems

Convenient controllers that offer more freedom to administrators

DCS601C51

intelligent touch Controller

Ease of use and expanded control functions

The user-friendly controller features colours, multilingual function, and icons in the display for ease of understanding. A wide variety of control methods can be accommodated, permitting administrators to monitor and operate the system even when they are away from the controller.

Connect *VRV* system to your BMS via BACnet® or LonWORKS®

Compatible with BACnet® and LonWORKS®, the two leading open network comunication protocols, Daikin offers interfaces that provide a seamless connection between *VRV* system and your BMS.

Dedicated interfaces make Daikin air conditioners freely compatible with open networks

DMS502B51
(Interface for use in BACnet®)

BACnet®

Seamless connection between *VRV* system and BACnet® open network protocol.

DMS504B51
(Interface for use in LonWORKS®)

LonWORKS®

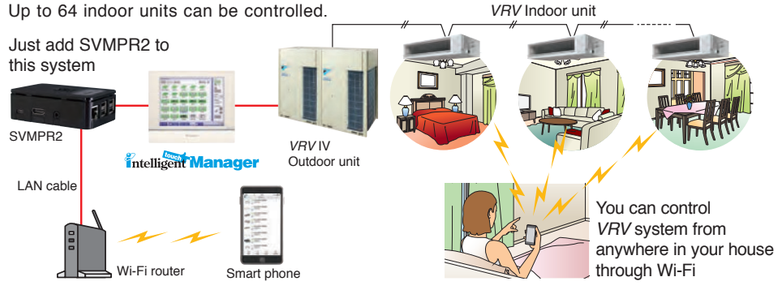
Facilitating the network integration of *VRV* system and LonWORKS®

Note: 1.BACnet® is a registered trademark of American Society of Heating , Refrigerating and Air-Conditioning Engineers(ASHRAE).
2.LonWORKS® is a trademark of Echelon Corporation registered in the United States and other countries.

Smart phone will be a remote controller of *VRV* system (Option)

For house *VRV* Smart Phone Control System

Up to 64 indoor units can be controlled.

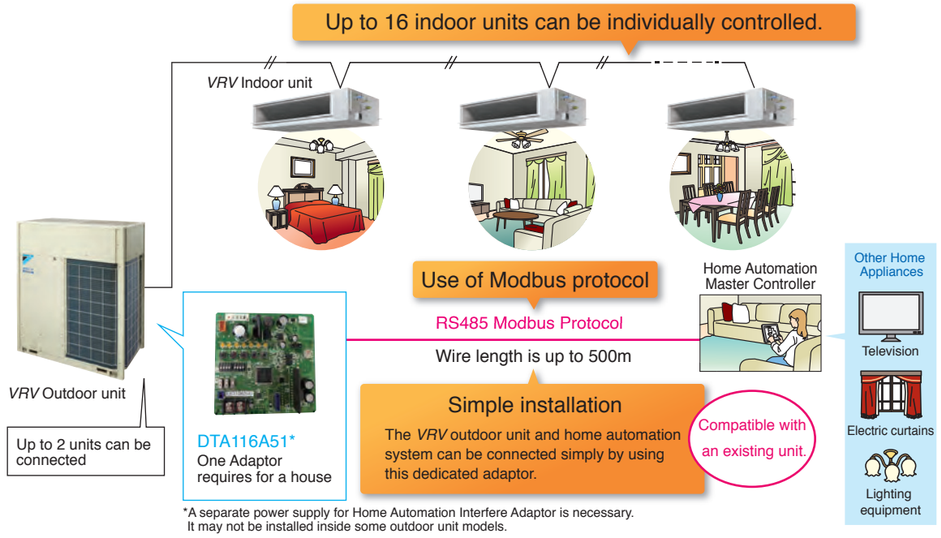


Advanced Control Systems for *VRV* System

Home Automation Interface Adaptor

The *VRV* system can be operated from the home automation system.

Image to use Home Automation Interface Adaptor DTA116A51



*A separate power supply for Home Automation Interfere Adaptor is necessary. It may not be installed inside some outdoor unit models.

■ Functions

● Monitor

On/Off	On/Off status of indoor units
Operation mode	Cooling, Heating, Fan, Dry, Auto (depend on indoor unit capability)
Setpoint	Setpoint of indoor units
Room temperature	Suction temperature of indoor units
Fan direction	Swing, Flap direction (depend on indoor unit capability)
Fan volume	L, M, H (depend on indoor unit capability)
Forced off status	Forced off status of indoor units
Error	Malfunction, Warning with Error code
Filter sign	Filter sign of indoor units
Communication status	Communication normal/error of indoor units

● Control

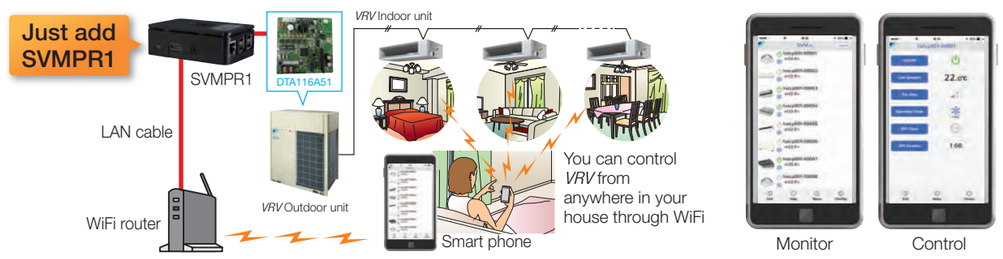
On/Off	On/Off control of indoor units
Operation mode	Cooling, Heating, Fan, Dry, Auto (depend on indoor unit capability)
Setpoint	Cooling/Heating setpoint
Fan direction	Swing, Stop, Flap direction (depend on indoor unit capability)
Fan volume	L, M, H (depend on indoor unit capability)
Filter sign reset	Reset filter sign of indoor units

● Retrieve system information

Connected indoor units	DIII-NET address of connected indoor units can be retrieved.
Indoor unit capabilities	Indoor unit capabilities such as operation mode, fan control, setpoint HV can be retrieved.

VRV Smart Phone Control System

***VRV* Smart Phone Control System can be realized by SVMPR1 which is a new product to utilize DTA116A51.**



★ Modbus is a registered trademark of Schneider Electric S.A.

VRV Tablet Controller : SVMPC1

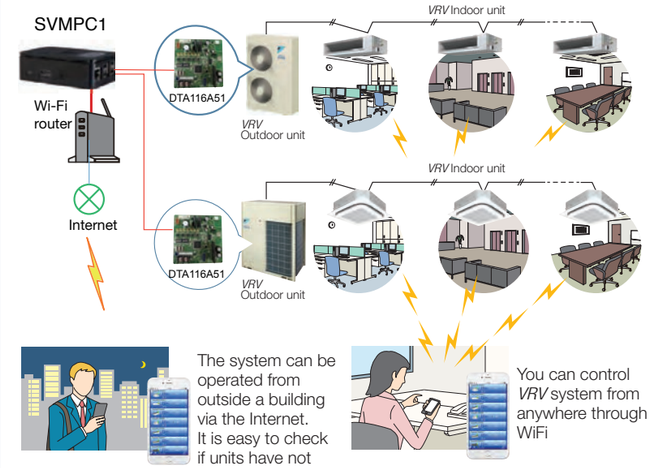
The SVMPC1 is easy to install, and enables monitoring and operation of *VRV* systems via tablets and smartphones. It is optimal for centralized management of *VRV* systems in small buildings or on individual floors of a building.

Simple and easy but powerful enough

- SVMPC1 is easy to install. Just add DTA116A51 to outdoor unit and connect it to controller.
- Thanks to user-friendly screen, anyone can operate easily.

- SVMPC1 allows to operate *VRV* system from anywhere(inside and outside of an office) through the internet.
- Set point range limitation and setback function achieve energy saving and comfortable air-conditioning.
- Daily air-conditioning operation is automatically done by schedule function with annual calendar.
- Quick notification of malfunction by e-mail will be support quick maintenance.

Up to 32 indoor units can be monitored and controlled.



The system can be operated from outside a building via the Internet. It is easy to check if units have not been switched off, etc.

You can control *VRV* system from anywhere through WiFi

■ Functions

*: only admin user can set

Category	Function	Detail
Access security	User login	User name, password
	Device registration	Registered device(Tablet, Smartphone) can access through the internet
Main screen	Status monitoring	On/Off, Setpoint, Operation mode, Fan step, Flap, Error, Error code, Room Temperature
	Manual operation	On/Off, Setpoint, Operation mode, Fan step, Flap
Automatic control	Setpoint range limitation*	Cool setpoint min/max, Heat setpoint min/max
	Off timer*	Off timer on/off, Off timer duration(5min – 12h, every 5min)
	Setback operation*	Setback setpoint range (Cool: 24-35℃, Heat: 10-20℃)
	Schedule*	Action registration: Time, On/Off, Setpoint, Operation mode, Fan step, Flap, Off timer on/off, Setback setpoint
		Calendar setting: set by date or day of the week
System setting	Language	English, Spanish, Portuguese, Thai, Vietnam, Simplified Chinese, Traditional Chinese
	Password setting	
	User administration*	Add/Modify/Delete user, Set User name, Password, Accessible points
	Point setting*	Set point name, Select icon

■ Specifications

Category	Specification	Detail
Connectable units	Number of indoor units	Max 32 (with additional DTA116A51)
	Number of DTA116A51	Max 2
Connectable device	Number of Tablet/Smartphone	Max 20
	Device type	iPad, iPhone, Android tablet, Android Phone, Windows Tablet, Windows Phone, Windows PC, Mac
	Web browser	Firefox, Chrome, Safari

Umeda Center Building

OFFICE

Capacity UP

PROJECT OUTLINE

- Location: Osaka, Japan
- Construction Period: 2006-2009 8days/floor
- EHP 1620 HP → *VRV* Q 2322HP
- 20 years in use

2013 (1st)

Awarded "SHASE Special Award -Renewal Award-"

An award since 2013 to help promote the development of renovation technology and operation management technology, that is to keep building equipment sustainable in a long term.
Members of SHASE with excellent performance are honored with this award.

*SHASE: A major organization and the only scientific society in the field of heating, air-conditioning and sanitary engineering in Japan with a history of over 80 years. There are more than 20,000 members all over the world as of 2001.

REQUIREMENTS / ISSUES

- Aging equipment
- To cope with increasing cooling load
- To minimize tenant fee loss during replacement
- Not to disturb tenant's working hours
- To organize well managed construction schedule due to a fully occupied building

DAIKIN SOLUTION

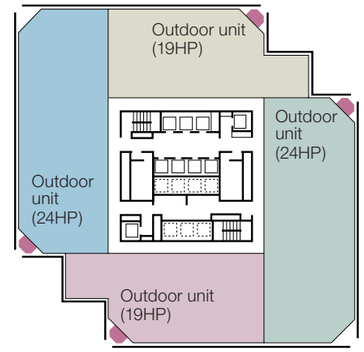
- Increased capacity from 60HP to 86HP within same installation space
- Construction done only on weekends not to disturb tenants by the noise and vibration of construction (8days per floor)
- Reuse of existing piping, automatic cleaning and charging refrigerant shortened the construction period

Installation time

8 days / floor

- Detail
  Piping work: 3 people, 112 hrs
  Ducting: 4 people, 144 hrs
  Control: 2 people, 32 hrs
  Carrying in: 4 people, 40 hrs
  Administration: 2 people, 208 hrs

No interruption of tenant's operation on week days!



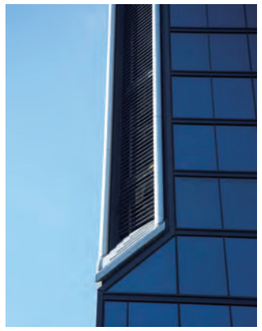
1zone 2days (Sat and Sun)

Umeda Center Building

OFFICE

Space saving

Smaller footprint,
less installation space



Outdoor units are installed in the corners of each floor. Maintenance space can be accessed from the door on the side.

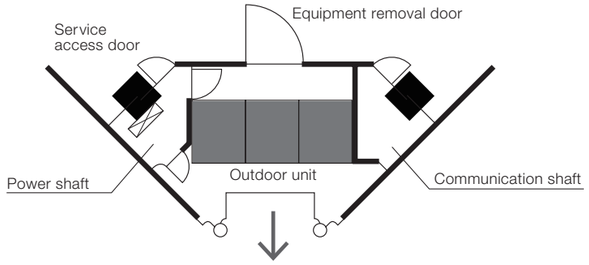
The louver side is painted black to make the outdoor unit less visible from outside.

Before

5HP×3

1987

VRV G

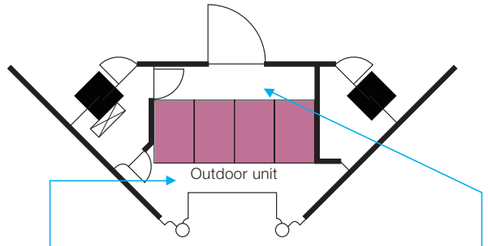


After

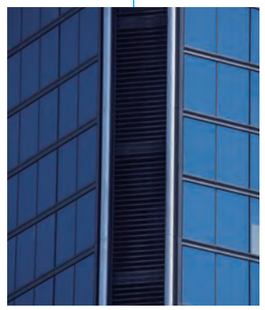
6HP×4

2007

VRV III-Q



•Outdoor unit facing the louver side

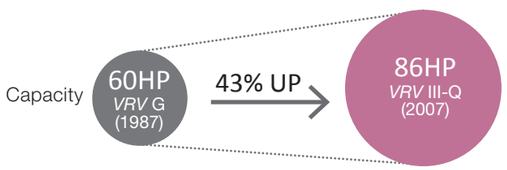


•Exterior of installation space

•Outdoor unit facing the indoor side

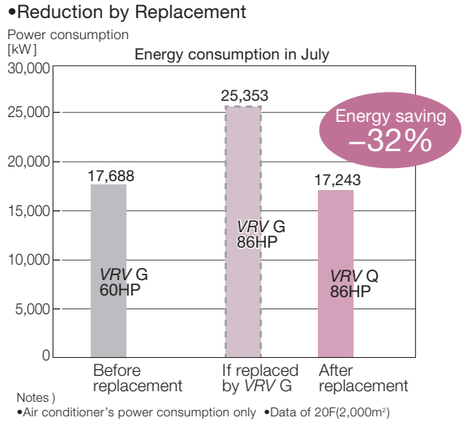
Energy saving

More capacity
less energy consumption



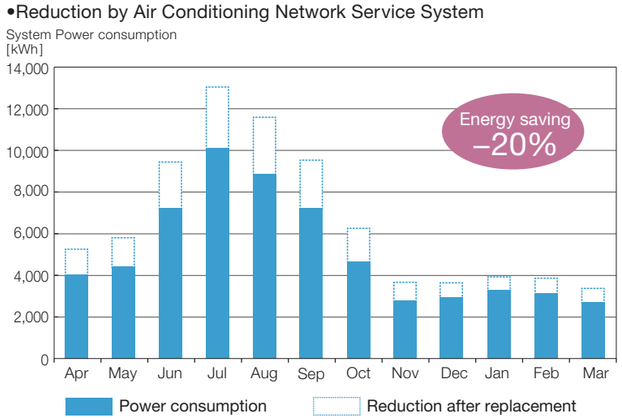
Power Consumption

•Reduction by Replacement



Notes)
•Air conditioner's power consumption only •Data of 20F(2,000m²)

•Reduction by Air Conditioning Network Service System

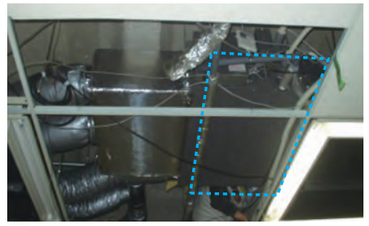


Installation process

1 Protection of tenant's facilities

2 Removing existing indoor unit

3 Refrigerant recovery

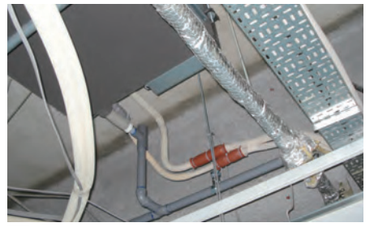


4 Replaced indoor unit

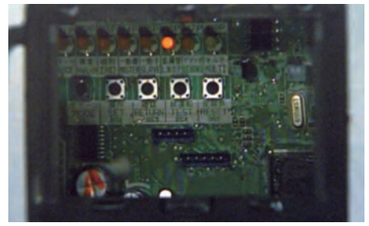
5 Easy to carry in

6 Compact size

7 Outdoor unit installation



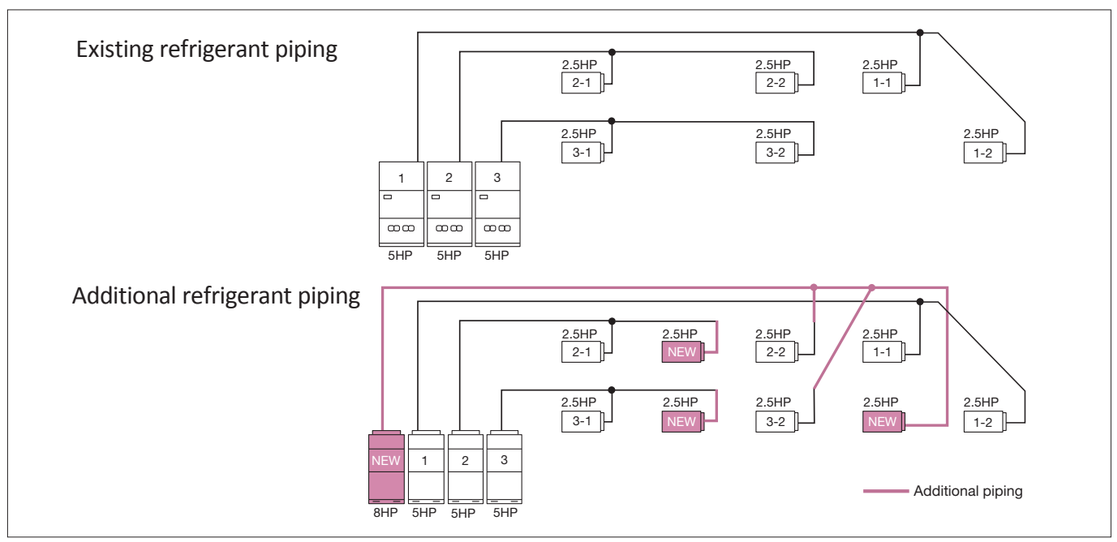
8 Refrigerant piping



9 Test run

Time/Cost saving

Reusing existing piping, ducting and drain pipes reduces the replacement time and cost.
VRV IV Q series allows system capacity increases, additional new piping is required for the new system.



Beijing Yuanlong Yato Culture Communications Co. Ltd.

OFFICE

Capacity UP

NON DAIKIN → DAIKIN

PROJECT OUTLINE

- Location: Beijing, China
- Construction Period: 108hrs (2weekends)
- EHP 60 HP → *VRV* Q 80 HP
- Other manufacturer → DAIKIN
- 7years in use
- Renovation area: 1,000m²

REQUIREMENTS / ISSUES

- To reduce frequent malfunctions and lack of heating capacity
- To reduce expensive maintenance fee
- To avoid disturbance of daily operation hours
- To increase capacity

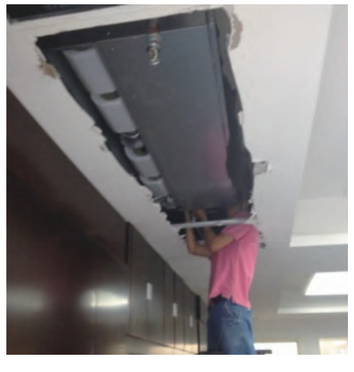
DAIKIN SOLUTION

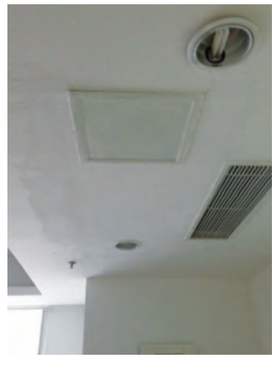
- Replaced non-DAIKIN system with *VRV* Q
- Construction done only on weekends
- Used existing piping to save cost
- Smaller footprint more capacity

Special Features

Before

After





Oriental Electronic Science and Technology Building

OFFICE

NON DAIKIN → DAIKIN

PROJECT OUTLINE

- Location: Beijing, China
- Construction Period: 4 months
- Renewal: 2013
- *VRV* Q 178HP
- Other manufacturer → DAIKIN
- Renovation area: Approx.600m²

Background

Oriental Electronic Science and Technology Building is a 9-story building, with a total of 20,000 square meters. After leasing the floors in 2005, tenants had added multiple brands of air conditioners. This had made the total system very complicated and thus the owner had wanted to replace the whole air conditioning system by a single manufacturer once the equipment broke down. Further, aging equipment badly needed replacement. About 1/3 of the whole building had to be renovated, including the improvement of the machine room and air conditioning in the office. Additional renovation for the rest of the building was considered in the future.

The headquarter of the owner's company, located in Hangzhou, was financially strong and wanted to use the best equipment. Since DAIKIN was a well-known reliable company in the local area, owner initially intended to upgrade with DAIKIN's *VRV* system. Due to a system integration company with busy working hours, closing the office for construction was a great loss. After learning more about user requirements and site visits, DAIKIN recommended *VRV* Q which could realize short construction period, simple installation and no affection to the user's daily office hours by night-time construction.
Owner was interested in the proposal. Initially, they doubted the feasibility of the replacement program. However, through the latest technology and making 7 to 8 site visits with proposals, DAIKIN *VRV* Q achieved trust from the owner.

Before
Multiple brands installed

After
VRV Q installation

Hommachi Fuji Building

OFFICE

NON DAIKIN → DAIKIN

NON DAIKIN GHP → EHP

PROJECT OUTLINE

- Location: Osaka, Japan
- Renewal: 1st phase Oct, 2014
  2nd phase Apr, 2015
  3rd phase Dec,2015 (In progress)
- GHP 784 HP → *VRV* Q 716 HP
- Other manufacturer → DAIKIN
- 15 years in use

Background

Hommachi Fuji building is a 12-storey office building located in the heart of busy Osaka city.

Built in year 2000, GHP was adopted for the air conditioning system mainly to save electricity cost.
As the years passed by, malfunctions had increased due to the aging equipment.

This was the perfect timing for DAIKIN to make a replacement proposal as follows;

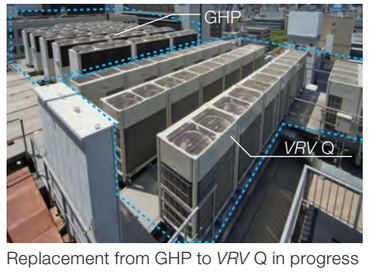
- Use exsiting piping
- Schedule construction only on weekends to avoid disturbance to tenants
- Offer reliable maintenance contract (Easy to obtain parts)
- Optimize outdoor unit capacity by adjusting connection ratio
- Easy control by intelligent Touch Manager

With all these factors and total cost considered, the owner decided to adopt DAIKIN's *VRV* Q.

Installation process

Removing old indoor unit

New indoor unit installed



Replacement from GHP to *VRV* Q in progress

VRV Q installation

intelligent Touch Manager

Entrance Hall

Shiroguchi Building

OFFICE

PROJECT OUTLINE

- Location: Osaka, Japan
- Construction Period: 2 weeks
- EHP 129 HP → *VRV* Q 119 HP
- 15 years in use

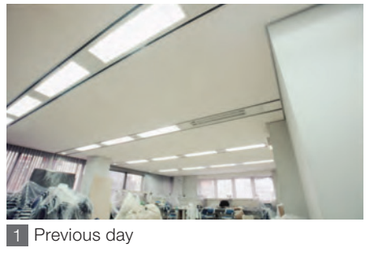
REQUIREMENTS / ISSUES

- Difficult carry-in route to the ad-tower
- Not to disturb tenants
- Decrease capacity to reduce power consumption
- Enhance stability of air conditioning system

DAIKIN SOLUTION

- The compact footprint of *VRV* Q enabled the outdoor units to be carried in without disassembling the ad-tower
- Construction was done mainly at night time considering operating tenants during weekends
- Indoor construction was done only at night time thanks to the reuse of existing piping and automatic pipe cleaning
- Safe installation was realized since no brazing necessary
- The flexibility of *VRV* Q realized the outdoor unit size reduction by 10HP while keeping the same indoor unit capacity
- A backup system was implemented in case of malfunction

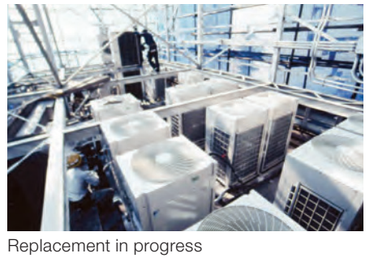
Background Special Features



1 Previous day

2 Construction during night time

3 Next morning without a trace



Replacement in progress

After Replacement

Torre Serenissima

OFFICE

PROJECT OUTLINE

- Location: Verona, Italy
- Renewal: 2013
- *VRV* Q 39 units
- 17 years in use

Background

Torre Serenissima is the headquarters of the Brescia Padova Motorway, in Verona, northern Italy.

Why *VRV* Q?
"The complete replacement of the 17-year-old R22 system resulted in only half-day of missed work for employees.
(Full installation done during weekends)
The improved control of the air flow by the user significantly enhanced comfort while reducing energy consumption by 25%"
Maurizio Casarola (Property Manager)

The original *VRV* units that ran on R22 were replaced with *VRV* III-Q units running on R410A.

Thirty-nine *VRV* III-Q units serve 215 cassette type indoor units and 35 VAM ventilation units.

The *VRV* III-Q units run on R410A, ensuring compliance with the latest standards.

Installation was carried out during weekends to minimize disruption to business.

A *VRV* heat recovery system was installed on the top two floors which house a number of individual offices.

VRV allows independent control of climate in different areas of the building.

Jinan Qilu Hospital

HOSPITAL

PROJECT OUTLINE

- Location: Jinan, China
- Renewal: Sep, 2014
- *VRV* K(R22) → *VRV* Q 796HP

Background

Aging equipment by hospital's long-term operation required an upgrade.
To complete installation without stopping treatment was essential.
Excellent products, excellent service, professional renovation experience gained user's acceptance.

Suzhou Municipal Hospital in North District

HOSPITAL

PROJECT OUTLINE

- Location: Suzhou, China
- Renewal: 1st phase Sep, 2013
  2nd phase Jun,2014
- *VRV* II(R22) → *VRV* Q 128HP

Background

Due to equipment for laboratories, temperature requirements and stability were demanding.
Partial interior construction was required without stopping experiments.
Flexible construction and phasing further reduced the impact of the replacement.

The Bloomsbury Hotel

HOTEL

PROJECT OUTLINE

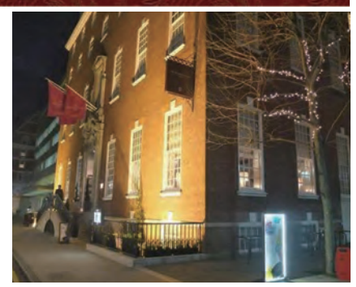
- Location: London, UK
- Construction period: 9 months
- *VRV* Q 56 outdoor units

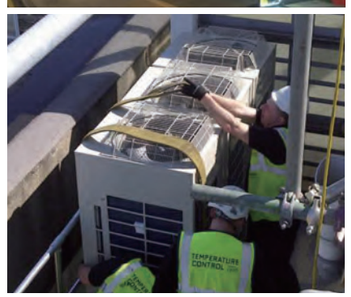
REQUIREMENTS/ISSUES

- To reduce energy usage and CO_2 emissions by 30% while improving comfort levels for guests
- To comply with UK legislation on the use of refrigerant gases
- To work in an operational hotel
- To keep the 9month program to minimize revenue loss

DAIKIN SOLUTION

- *VRV* Q uses R410A gas which can work at the lower pressures used by R22 systems while delivering much higher efficiencies thus allowing existing pipework to be retained. The system is 40% more efficient in heating and 25% higher in cooling than R22 refrigerant systems.
- *VRV* systems are modular, which means they are flexible in their application and installation can be phased, further minimizing disruption. On this project, the compact and lightweight units could also be installed without using cranes, reducing costs further and avoiding road closures.
- Although, all the outdoor and indoor units were replaced, along with BS boxes, installation costs were half of the expected cost of complete system replacement. Existing pipework could also be retained, saving time and money. The phased approach meant occupancy rates could be maintained minimizing the effect on revenue.





Helena Resort

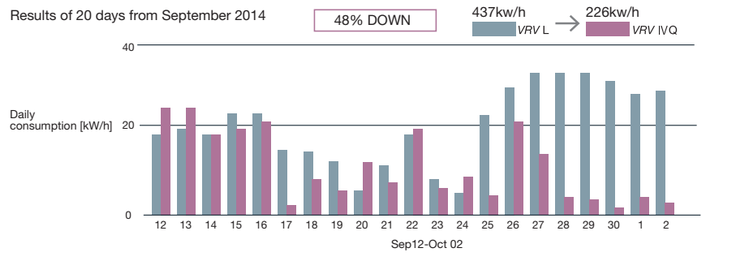
HOTEL

PROJECT OUTLINE

- Location: Sunny Beach, Bulgaria
- Construction Period: In progress
- 1outdoor unit: replaced 44outdoor units: ready to replace
- 12years in use

Benefits and Highlights

- Real measured *VRV* replacement system with a result of 38.9 % higher efficiency in cooling mode
- Long term relation with investor turns into new sales opportunities
- No tender !
- Creates opportunities for other projects
- Savings: *VRV* replacement 40 %
- The original project and the replacement project was done by the same company with high system and design knowledge



Hotel Le Pigonnet

HOTEL

PROJECT OUTLINE

- Location: Aix-en-Provence, France
- Renewal: 2011
- *VRV* Q 8 units

Replacement of the existing *VRV* system of a luxury 5 star hotel to anticipate R22 phase out while preserving interior decoration.

SCHOOL

Shanghai Jiading District Committee Party School

PROJECT OUTLINE

- Location: Shanghai, China
- Renewal: Jul, 2014
- *VRV* II(R22) → *VRV* Q 318HP

Background

Aging equipment of a government project had increased the cost for maintenance and electricity year by year.

Requirements were as follows;
- To protect interior at the fullest
- To minimize construction period
- To be flexible with construction schedule considering class time

VRV Q easliy solved the problem of the installation work in pipe shafts.

OTHERS

Shanghai Qingpu District Library

PROJECT OUTLINE

- Location: Shanghai, China
- Renewal: May, 2014
- *VRV* II → *VRV* Q 350HP

Background

The outdoor unit placed by the waterfront was facing serious aging. Construction during the night enabled the replacement for a library of 365-day year-round operation without closing. There was no effect on daily business.

OTHERS

The Palace of Westminster

PROJECT OUTLINE

- Location: London, UK
- Renewal: 2012
- *VRV* Q 3units
- Other manufacturer → DAIKIN
- 17 years in use

NON DAIKIN → DAIKIN

Background

- Up to 50% cost reduction possible when compared with total system replacement by the reuse of existing pipe work.
- Up to 40% reduction of energy consumption possible.
- Fast and effective upgrade was achievable because *VRV* III-Q was designed to operate at the lower pressures required by existing R22 piping, without compromising high efficiency levels.
- Not only reduces associated CO_2 emissions but also improves energy efficiency by using R410A.

Comment from installer

"*VRV* III-Q offers a three pipe replacement option, which has the unique ability to reduce operating pressures of R410A down to near those of R22, without loss of performance.
The system was flushed, and new refnet joints were fitted into the existing pipework, the new indoor and *VRV* outdoor units were installed and the system was commissioned.
It is anticipated that the new R22 solution will provide in excess of 35% energy savings when compared with the old system, as well as an annual carbon reduction of six tonnes of CO_2.
Mick Langford(All Seasons Climate Control)