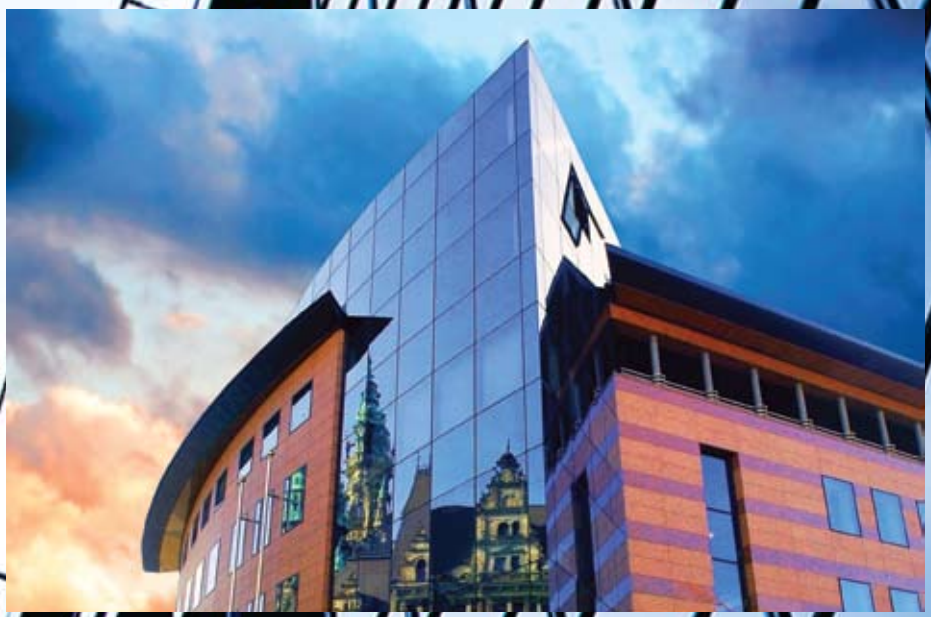
DAIKIN AC®
absolute comfort

VRV® III

VRV III

AIR-COOLED



AIR-COOLED ■ COMMERCIAL ■ RENOVATION ■ NEW CONSTRUCTION

Daikin's VRVIII system is the 7th generation of the original Daikin VRV® launched in 1982. Completely re-engineered to realize opportunities for VRV in taller / larger buildings, it utilizes the latest advances in refrigeration and air-conditioning technology. The totally new Daikin Inverter compressor system delivers improved efficiency and performance, while ensuring satisfaction of demands throughout the connected zones. With a choice of 460V/3ph/60Hz or 208-230V/3ph/60Hz, the heat pump or heat recovery configurations power up to 20-Ton capacity from a single piping network. The system also allows up to 41 indoor fan coil units, a 200% connection index, and integrated controls, with BMS options and piping limitations never before seen with a DX system. With these attributes, VRVIII naturally positions itself wherever traditional chilled water systems are desired.

VRV III Features and Benefits

Commercial sites can range in size from a few hundred to several thousand square feet. That's why Daikin offers the new VRVIII air-cooled system with advanced features to meet practically any challenge. Completely re-engineered to realize opportunities for VRV in taller / larger buildings, it utilizes the latest advances in refrigeration and air-conditioning technology.

- Available up to 20-Ton in one system, 208-230V/60Hz/3ph or 460V/60Hz/3ph
- Heat pump (heating and cooling) and heat recovery (simultaneous heating and cooling across multiple zones) systems available
- Individual zone control
- Can operate up to 41 indoor fan coil units
- Auto charging function
- Continuous heating during defrost operation
- Longest pipe lengths in product class
- Advanced zoning capabilities
- Excellent energy efficiency, especially at part load conditions
- Daikin's optimized scroll compressor designed for R-410A provides a quiet, reliable energy-efficient operation
- Anticorrosion treatment standard on exterior metal parts and heat exchanger
- Fully compatible with the complete Daikin control suite including Intelligent Touch Controller, Intelligent Manager III, and LonWorks® and BACnet® gateways

It is widely used worldwide in applications such as:

- Health care
- Hotels and conference facilities
- Offices
- Residential multi-family
- Restaurants
- Retail stores
- Schools

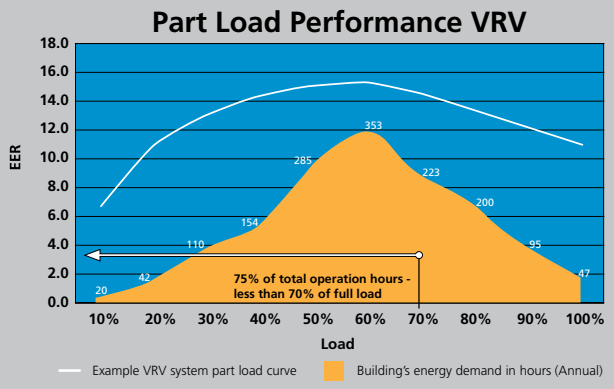
VRVIII is available in heat pump and heat recovery versions where heating and cooling can be made available simultaneously across multiple zones.

What is VRV?

VRV is a commercially applied heating and cooling system that distributes refrigerant, rather than water, to multiple fan coil units serving the conditioned spaces. The natural attributes of a VRV system position it as an alternative to a chiller system.

The Features of VRV

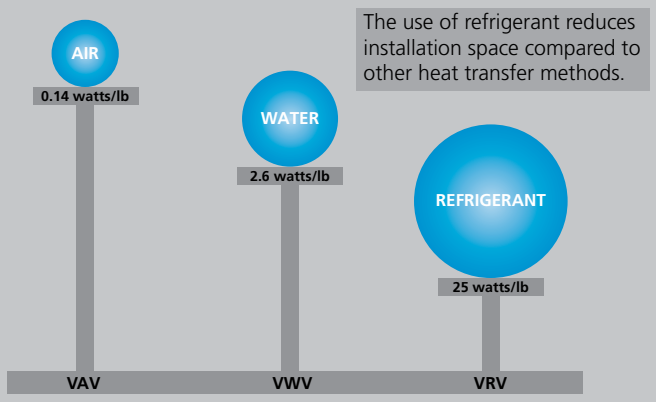
- Energy efficient, all systems incorporate inverter "variable speed" compressors
- Many zones (individual control - up to 41 zones on one piping network)
- Centralized system (long piping - up to 3,280 ft. total)
- Tight temperature control (Proportional Integral Derivative)
- Large capacity (modular systems combination)
- Quiet operation (down to 25dB(A) indoor)
- High level control (BACnet, LonWorks, Intelligent Manager, Intelligent Touch Controller)
- Superior heating performance
- Absolute Comfort



Why Refrigerant?

The commonly used methods of heat transfer in air-conditioning solutions each exercise different operational characteristics regarding adding or removing heat energy to a conditioned space.

This diagram represents the energy transfer possible per pound of media due to the performance characteristic of the fluid used.



The use of refrigerant reduces installation space compared to other heat transfer methods.

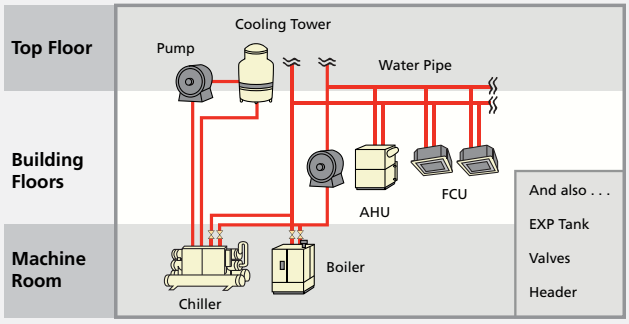
Why is VRV an efficient alternative?

The heating and cooling system in a commercial building is used at 70% or less of its maximum capacity for 75% of the operational time.

VRV offers ease of design and installation

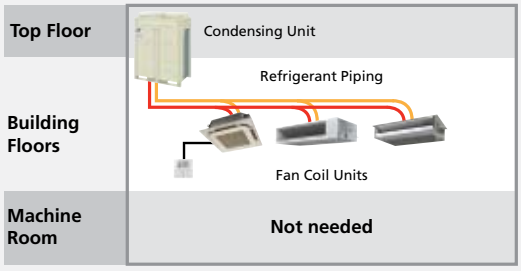
Complicated System

Chilled water central plant layout with boiler



Simple System

VRV III Layout



VRVIII opens up opportunities in larger, more complex buildings

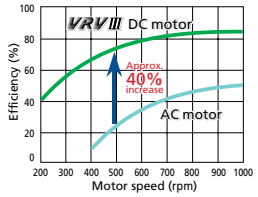
Daikin is using the latest and most revolutionary technologies in the development of the VRVIII system for large-sized buildings. The system offers greater energy savings, easier installation, longer actual and total piping length, and more.

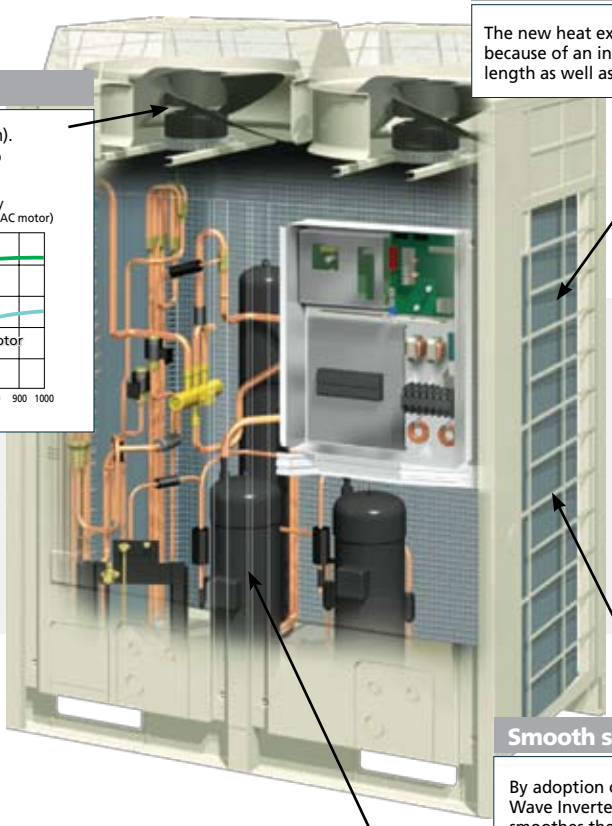
DC fan motor

- Across entire range of models (from 6 to 20-Ton).
- Efficiency improvement by approximately 40% especially at low speed.

DC fan motor structure

DC motor efficiency
(comparison with a conventional AC motor)



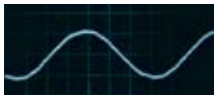


Heat exchanger

The new heat exchanger contributes to a high EER and COP because of an increase from 7% to 10% of the effective length as well as an optimized e-Pass heat exchanger.

Smooth sine wave DC Inverter

By adoption of the Sine Wave Inverter, which smoothes the rotation of the motor, operation efficiency is improved sharply.



Improving the high efficiency compressor to achieve a high EER and COP

Reluctance DC scroll compressor

Daikin's unique scroll compressor minimizes heat loss and is driven by a high efficiency motor to achieve significant energy savings.

High torque and efficiency is attained with the use of neodymium magnets. Achieves 70% reduction in volume.

The secret to raising energy efficiency - Powerful magnets!

Neodymium magnets are much more powerful than the widely used ferrite magnets.

Reluctance DC motor

New

High-performance, low-noise new scroll compressor operates at a faster rate. The speed increase has been achieved through advanced stress analysis for increased strength and utilization of the advantages (oil film control) of the high thrust mechanism*.

*High thrust mechanism
By introducing high pressure oil, the reactive force from the fixed scroll is added to the internal force, thereby reducing thrust losses. This results in improved efficiency and lower sound levels.

Did you know?

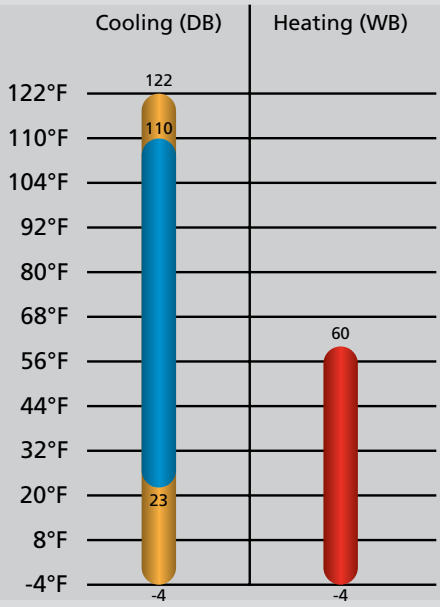
Daikin is the only company in the world dedicated to manufacturing heating and cooling units, compressors and refrigerant. All Daikin systems in North America employ "variable speed" compressors and non-ozone depletion potential R-410A refrigerant, which optimize energy conservation.

VRVIII

Extended Operation Range

Advanced Proportional Integral Derivative (PID) control of the outdoor unit enables the VRVIII series to operate at outdoor ambient conditions down to 23°F in cooling mode and down to -4°F in heating mode. A new Low Ambient Cooling feature allows the VRVIII heat recovery systems to operate as low as -4°F in cooling mode as well.

Daikin is the only VRF manufacturer to provide capacity tables up to 122°F for high ambient design applications. The cooling is guaranteed at those temperatures. However, both efficiency and cooling output will start dropping over 110°F.



Standard operation range (cooling)

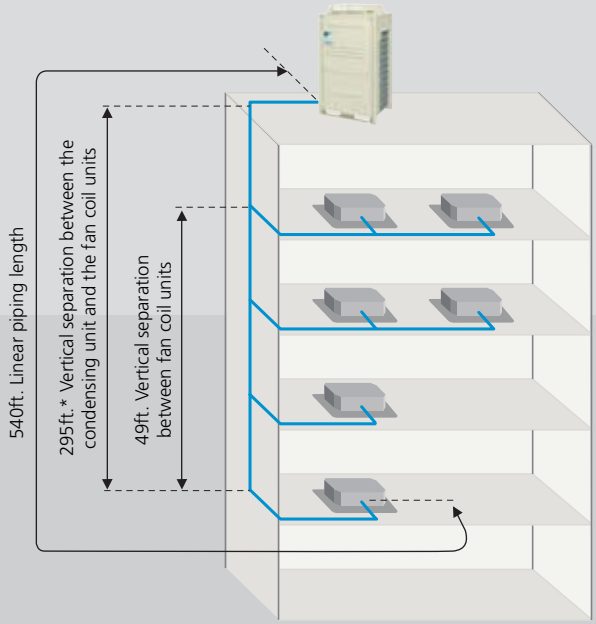
Extended operation range (cooling)

Standard operation range (heating)

Long Refrigerant Piping Lengths

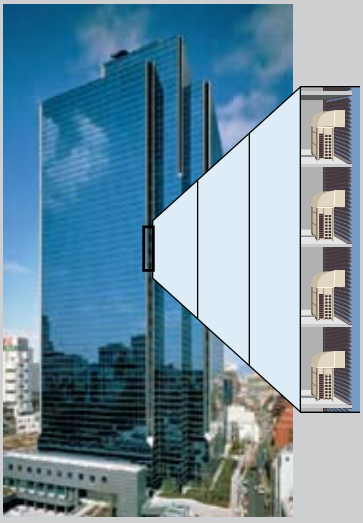
Refrigerant piping specifications	Ft.
Linear piping between condensing unit and furthest located fan coil unit (equivalent)	540 (620)
Total "one-way" piping in the complete piping network	3,280
Vertical (height) separation between the condensing unit and the fan coil units (if outdoor unit is below)	164* (295)
Vertical (height) separation between fan coil units	49
Linear piping between 1st REFNET and furthest located fan coil unit	295

*295ft. if outdoor unit is above and accessory PCB is installed

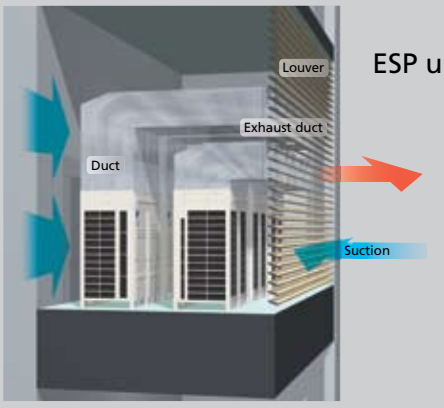


External Static Pressure (ESP)

The additional ESP (up to 0.32" W.G.) provides far more flexibility when designing condensing units in plant room applications. No additional components are required to extend the fan performance.



It is now even easier to put a condensing unit on each floor or in a mechanical room and duct out the discharge air.



ESP up to 0.32" W.G.

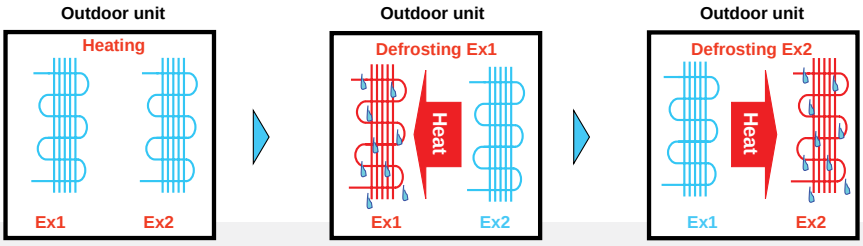
VRVIII Benefits in Heating

Advanced Defrost Cycle Operation in Heating

Superior Heating Comfort

Thanks to the newly adopted continuous heating during defrost function, cold draft discharge from the indoor unit during defrost is eliminated. Therefore, heating comfort is improved and better maintained.

Each heat exchanger is defrosted by using heat transferred from one heat exchanger to the other in the outdoor unit.

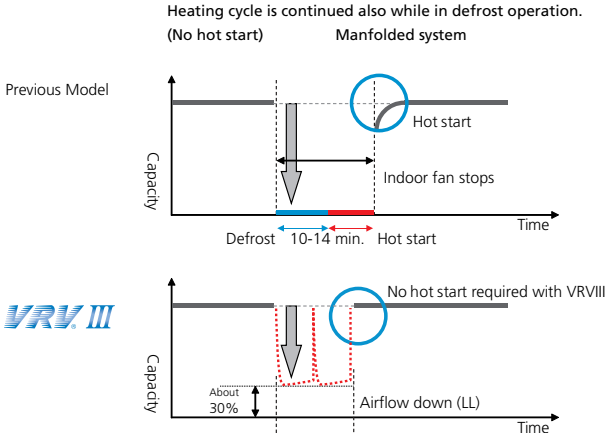


(not available in single module heat pump)

Heating Operation While on Defrost Operation

The first graph below shows the defrost cycle on the previous model where it uses a reverse cycle defrost of 10 to 14 minutes and then has to perform a hot start. With VRVIII the outdoor unit continues in heating and the fans will switch to LL (Low Low). Defrost lasts for 8 to 12 minutes and because heating operation has continued, no hot start is required.

Heating operation while on defrost operation

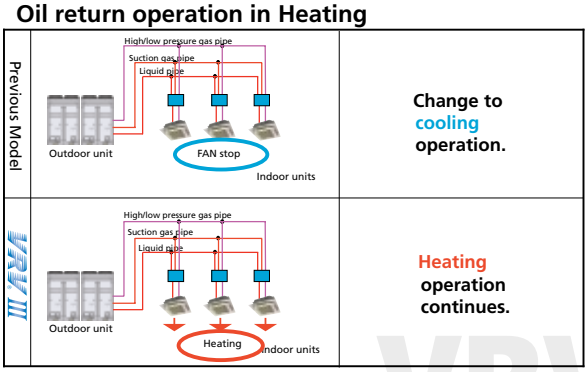


- The new VRVIII allows continuous heating during defrost
- Approximately 30% or more capacity can be produced with no hot start required
- All other VRF systems require the system to switch to cooling then a hot start to preheat the indoor unit before resuming operation
- This causes a disruption to the heating and space temperature

Continuous heating during oil return

When the previous model is in heating mode to perform an oil recovery cycle (two hours after initial start up and every eight hours thereafter), the system must change to cooling. With the improvements to VRVIII outdoor unit and branch selector unit, the system continues in the heating mode during the full oil recovery cycle. Daikin is the only VRF manufacturer that is capable of continuous heating during oil return.

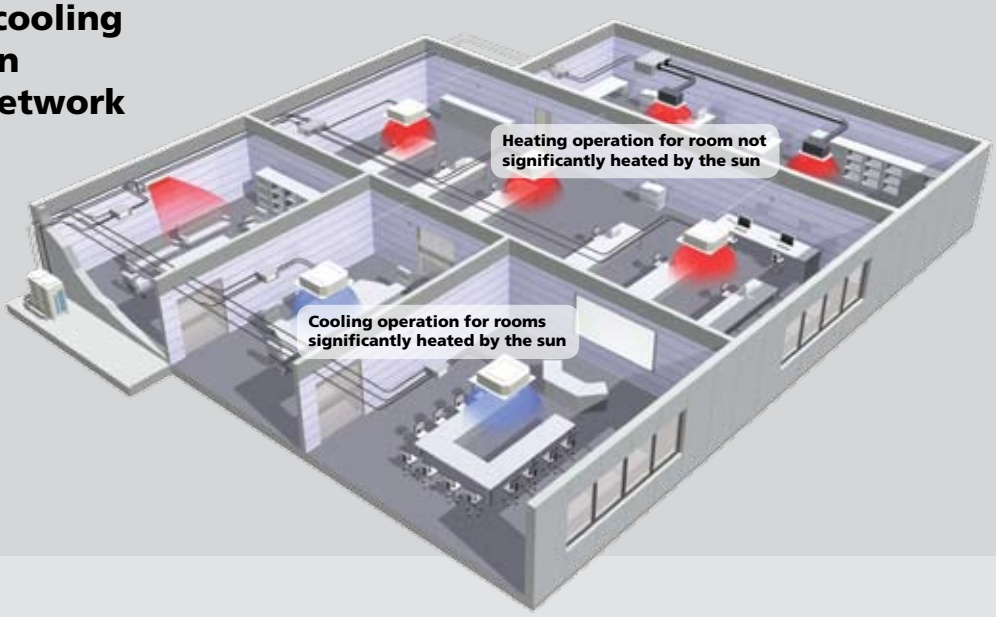
Oil return operation in Heating



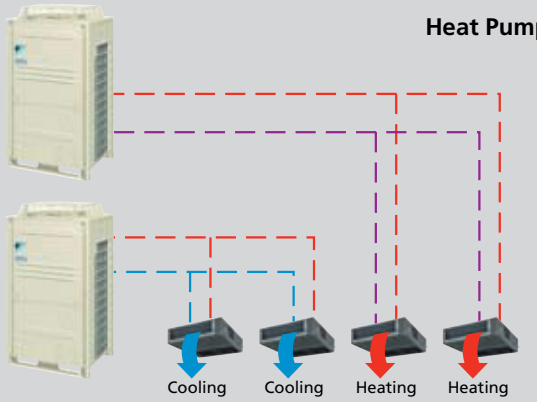
VRVIII Heat Recovery

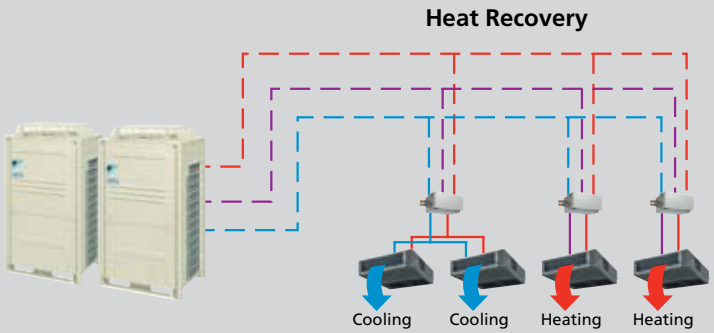
Offers simultaneous cooling and heating operation on the same piping network

Branch Selector Unit
By adding high pressure/low pressure gas piping and a branch selector unit (sold separately), simultaneous heating and cooling operation can be provided by a single system.



The example below shows two 6-Ton heat pump systems, one operating in full cooling (6 Tons) and one operating in full heating (6 Tons), the power inputs were 5.74kW and 6.83kW respectively, giving a total of 12.57kW. When looking at the same example with a heat recovery system, with 50% of the capacity operating in full cooling (6 Tons) and 50% operating in full heating (6 Tons), the power input for the system can be as low as 5.31kW, this would mean about half reduction in power input.





Indoor Temperature: 67 °F WB (cooling)
70 °F DB (heating)
Outdoor Temperature: 95 °F WB (cooling)
47 °F DB (heating)

Power Input

Cooling	Heating
5.74kW	6.83kW (22,519 Btu)

Power Input

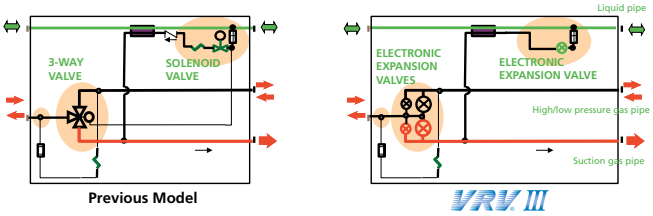
Simultaneous cooling and heating 5.31kW

Approximately **50%** Reduction

The new branch selector unit (BSVQ_P) has improved the cooling/heating changeover, oil recovery cycle and sound level by utilizing expansion valves in place of the 3-way valve and solenoid subcooling valve found in the previous model.

In the new branch selector unit there is a main and sub expansion valve for the high/low pressure gas pipe, the suction gas pipe and one for the subcooling circuit.

- Improvement of the cooling/heating changeover
- Continuous operation during oil recovery
- Sound level reduction of branch selector unit

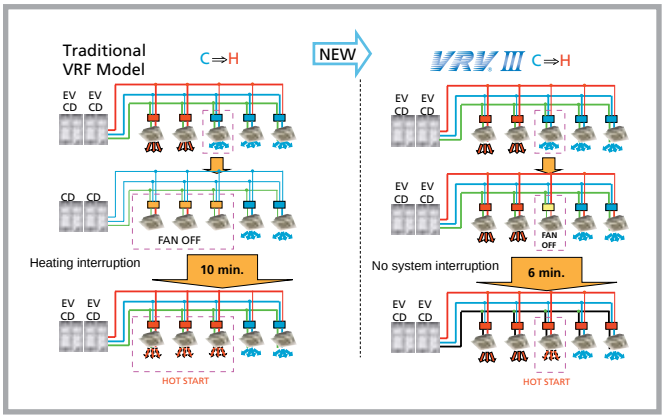


No system interruption in mode changeover

With most VRF systems, when changing an indoor unit from cooling to heating, the heating operation for the full system is shut down. The system pressure must equalize in the hot gas line, which causes disruption to all units in heating. The heating is then started for the full system and each indoor unit has to go through a hot start (the indoor unit coil has to be at approximately 93°F) before the fan starts to avoid cold drafts. This sequence of operation can take approximately 10 minutes.

With the new branch selector unit (BSVQ_P), only the indoor units changing from cooling to heating will shut down and only those will go through a hot start causing no system disruption and only six minutes of downtime for the indoor unit changing operation mode.

The changeover time can be shortened depending on the pipe length from the branch selector unit to indoor unit by simply reprogramming the indoor unit (range 3-10 minutes).

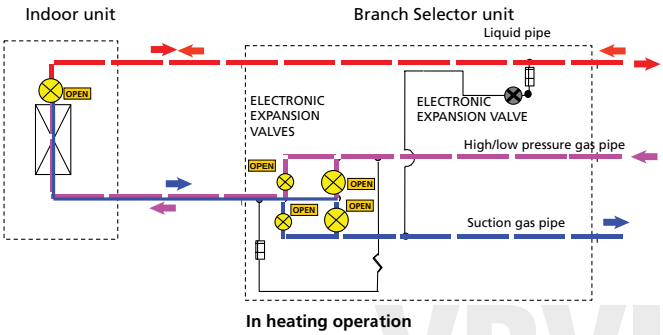


The Daikin Difference

In most VRF systems, the heating mode for the full system has to allow the high pressure in the hot gas line to equalize before heating is started. There then has to be at least 44 psi difference between gas and suction to have enough force to switch the 3-way valve which could cause refrigerant noise.

The new branch selector unit has dual expansion valves on both suction and high/low pressure gas pipes in place of the 3-way valve in the previous model. This allows the pressure from the branch selector unit to indoor unit to slowly equalize by opening the sub expansion valve on high/low pressure pipe closing all other valves in the branch selector unit before full heating operation begins for that indoor unit.

This eliminates the need to stop the heating mode in the full system and reduces sound level. Also, the solenoid valve and capillary tube supply to the liquid sub-cool heat-exchanger is replaced by an expansion valve to eliminate the switching sound of the solenoid valve, and also to enable some control of the amount of refrigerant to flow through the sub-cool heat-exchanger.

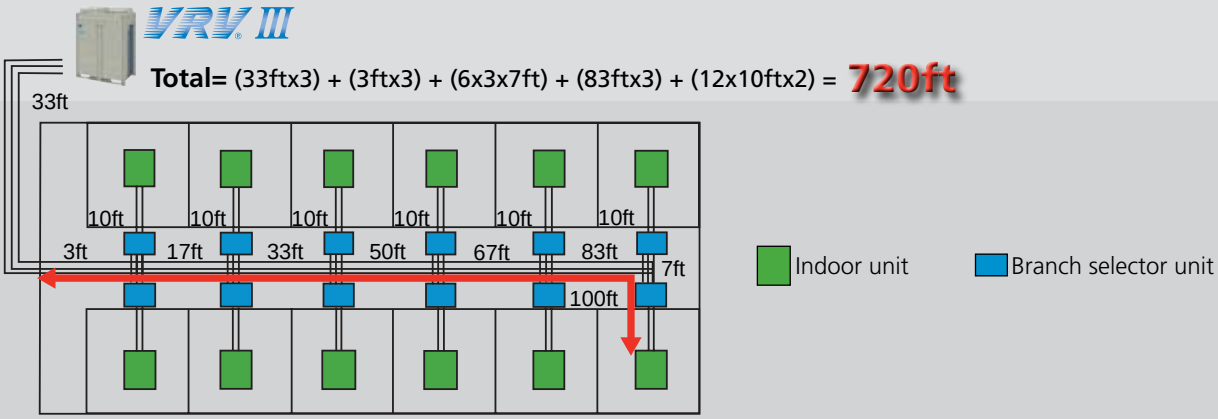


Heat Recovery Built-in Flexibility

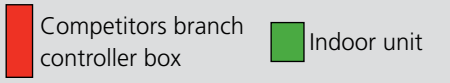
Benefits of Daikin VRVIII using 3-pipe configuration in its heat recovery version

Daikin's VRV heat recovery uses a dedicated hot gas pipe during heating operation allowing for higher off coil temperatures, even at lower ambient conditions, thus increasing the heating capacity of the system. Compared to a 2-pipe heat recovery system using a liquid/gas mixture line, the Daikin system eliminates the friction occurring between pure gas and pure liquid when used in the same pipe. Also, the 2-pipe heat recovery systems have a lower hot gas temperature which can result in a lack of heating capacity and off coil temperatures.

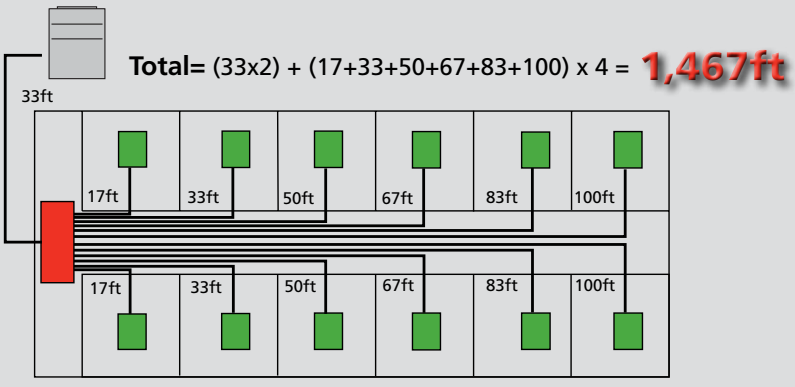
Daikin's layout example: The Daikin 3-pipe system allows for installation of smaller, easily hidden branch selector units facilitating installation in remote spaces.



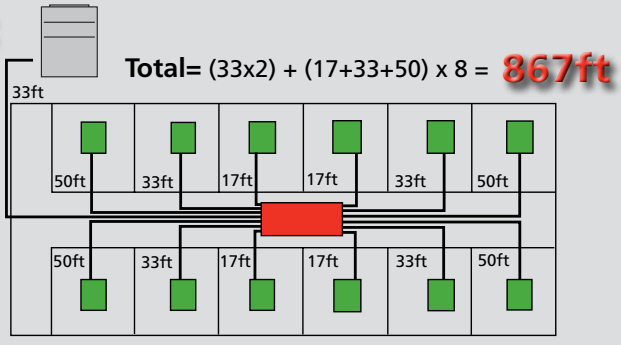
Other VRF layout examples: 2-pipe systems usually require a bulky branch controller box needing a drain connection.



Branch controller box located at the end of the hallway



Branch controller box centrally located



As shown above, using a 2-pipe heat recovery system results in an increase of about 20% additional piping and insulation in best case scenario, augmenting both cost of supplies and labor. Moreover, the Daikin VRV system ensures an easier compliance with local and national refrigerant safety standards such as ASHRAE Standard 15.

VRVIII's Outstanding performance in cooling and heating

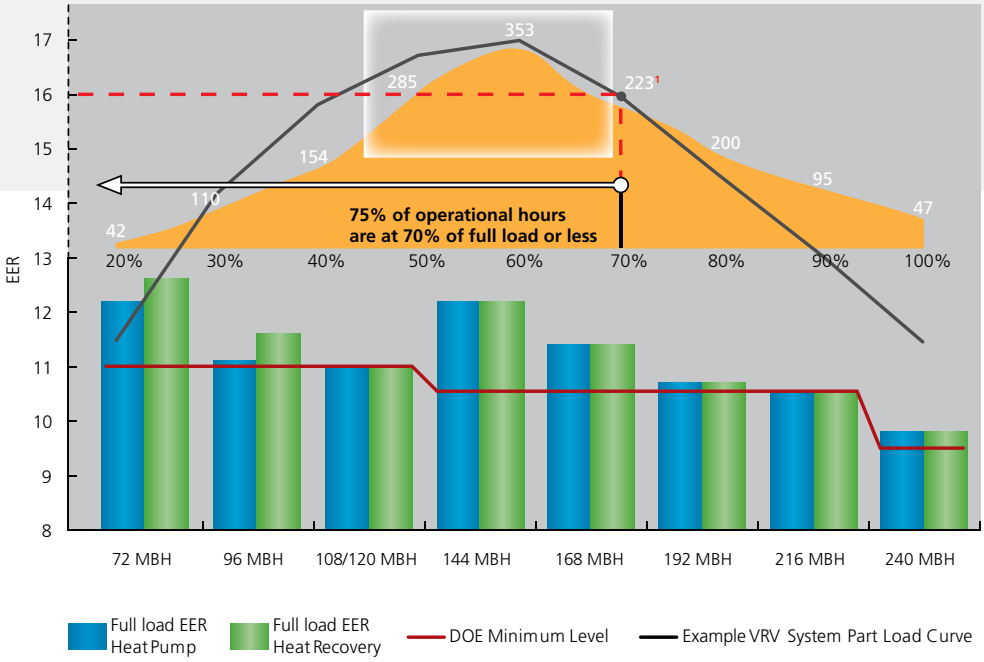
Cooling

Widely acknowledged as the most advanced system of its type in the market, VRV represents a powerful combination of advanced inverter, heat pump and control technologies. When cooling a space, the system can operate at full load EER levels as high as 12.2 (6-Ton heat pump) and 12.6 (6-Ton heat recovery). However, the system can operate at much higher EER levels during part load operation.

Buildings are made up of many individual zones which can have varying heating and cooling requirements. It is more efficient to cool or heat an individual space as needed than to condition all of the space throughout the building, all of the time. VRV systems have the ability to control the amount of refrigerant flowing to each of the indoor units, enabling the use of up to 41 indoor units with differing capacities and styles, providing individualized comfort control, simultaneous heating and cooling in different zones and heat recovery from one zone to another.

Based on a simulation developed by Daikin's proprietary tool, EnergyCalc, the graphic below charts an EER curve and the cooling demand of a building over the time period of one year. Analysis of the building's annual cooling demand shows the required cooling capacity is below 70% of the maximum design capacity 75% of the time. With Daikin, building owners save energy by not paying to heat or cool an empty or unused space.

VRV performance and energy use are highly application-dependent and should be obtained from detailed analysis.



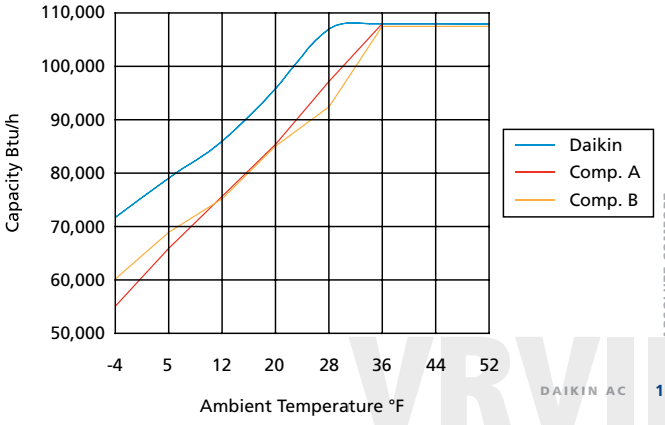
Building's energy demand in hours. (Annual)

For example **1**, the graphic shows that over the course of one full operational year, the building's VRV system analyzed operates for 223 hours at 70% of its maximum capacity (thus being at part load operation). Under this specific operational condition, the Daikin VRV has an EER of 16 in this example.

Heating

Comparing a VRVIII and its competition at full load in heating, the VRVIII 6-Ton heat recovery is 4% more efficient.

VRVIII has also more capacity in heating during low ambient operation compared to standard VRF systems. At temperatures of -4°FWB, VRVIII has more heating capacity than equivalent VRF systems by 16% and 23% respectively.

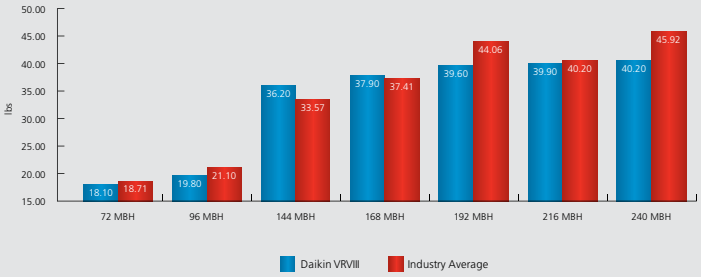


VRVIII's Outstanding performance in cooling and heating

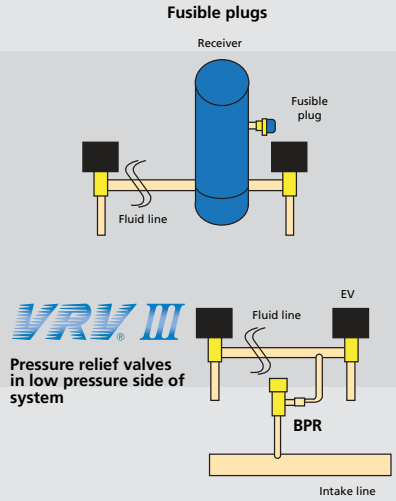
Reduced factory charge

The factory refrigerant charge has been reduced for all outdoor units by up to 34% compared to previous VRV models. This allows for easier application to satisfy local and national safety standards such as ASHRAE standard 15.

The reduction in the factory charge puts Daikin at up to 10% less factory refrigerant charge than our VRF competitors, an excellent advantage to engineers when it comes to satisfying local and national safety standards.



(Heat pump 208-230V used as example).

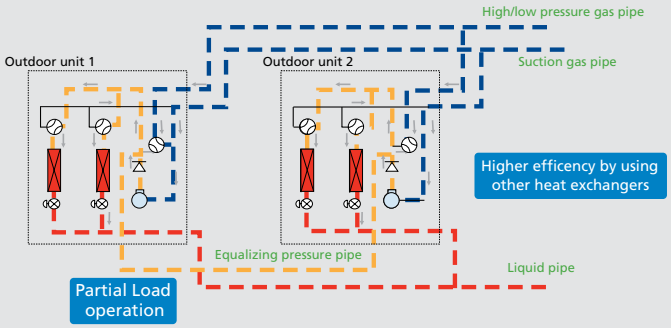


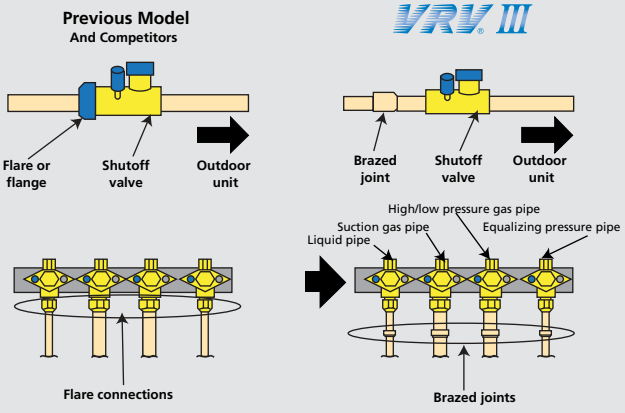
Environmental consciousness

The fusible plugs used in older systems as the pressure relief device in the liquid receiver have been replaced with pressure relief valves. Now instead of releasing the refrigerant to the atmosphere, it is relieved to the low pressure side of the system, a far more environmentally conscious solution (The safety valve is activated if the pressure exceeds 570psi).

Environmental consciousness

When only one of the outdoor unit modules is operating due to low load, refrigerant is bypassed to the other outdoor unit through the pressure equalizing pipe. By utilizing both heat exchangers part load energy efficiency is improved.





To minimize the chance of leaks, the piping connections inside the outdoor unit are all brazed. Also, the flared connections were changed to brazed connections on liquid and gas shutoff valves.

Backup Functions

In order to make operation time equal for each compressor in a manifolded system, the outdoor units are used in rotation. The operation priority starts once the following conditions have been met:

- On completion of oil recovery cycle
- On completion of defrost
- Upon restart once a system has stopped

The cyclical start-up sequence of multiple outdoor unit systems equalize compressor duty and extends operating life.

Back up – redundancy

Should a fault occur on a compressor, the system can be set into "emergency" mode. This will allow the system to operate at partial capacity for a period of 24 hours until the problem can be rectified.

Manual Back Up Single Module

If the system is set to "emergency inverter compressor" operation, the standard compressor will operate at the index of the indoor units in thermostat-on at a minimum 50% of the connected ratio.

10-Ton System

Compressor	INV	STD 1	Capacity (approx.)
INVERTER Alarm	Trouble	Stop	50%
STANDARD Alarm	Operate	Trouble	50%

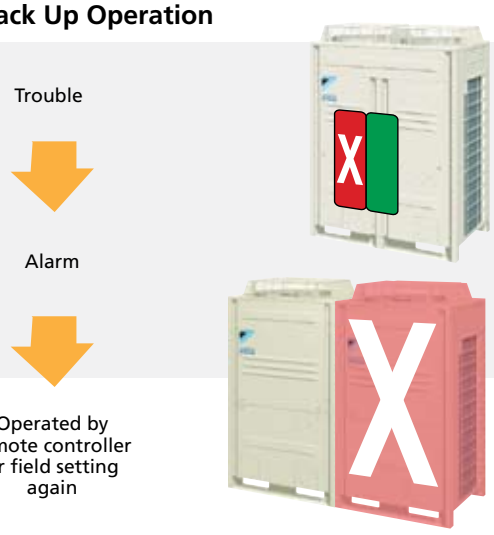
16-Ton System

	No. 1 Unit		No.2 Unit	Capacity (approx.)
	INV	STD 1		
INVERTER Alarm	Trouble	Stop	Operate	50%
STANDARD 1 Alarm	Stop	Trouble	Operate	50%

Rotation of outdoor units System with two outdoor units		
	Outdoor Unit A	**Outdoor Unit B**
Previous time	Priority 1	Priority 2
This time	Priority 2	Priority 1
Next time	Priority 1	Priority 2

If the system is set to "emergency standard compressor" operation, the inverter compressor can operate even if only one indoor unit (with less than 50% index) is in thermostat-on.

Back Up Operation



Auto or Manual Back Up of Manifolded Systems

In case of compressor trouble in a manifolded system, it is required to disable the entire module with the malfunction. It is not possible to disable only one compressor and leave the other compressor running in that module. This is due to oil balancing within the system. The "emergency mode" in a manifolded system can be set to manual or automatic via a field code.

The automatic mode is achieved by pressing the on/off button for four seconds once the compressor malfunction code has been activated. This allows the end user (if desired) to reset the system and run on 50% of heating/cooling until a service technician arrives.

Installation & Maintenance

Friendly Design

Automatic Charge Function

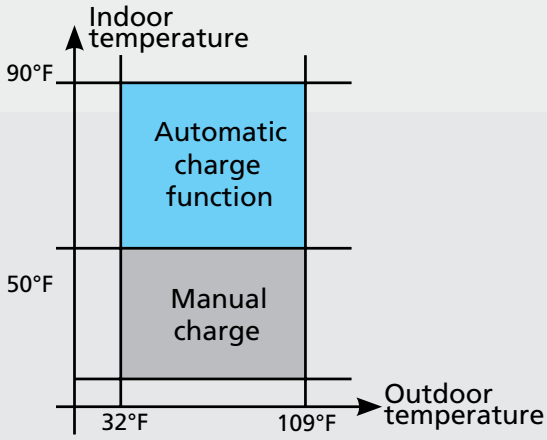
Conventional Way:

1. Calculation of additional refrigerant charging volume
2. Charging the unit with additional refrigerant
3. Measuring the weight of the cylinder
4. Judgment based on pressure (test operation)

VRVIII

With VRVIII however, these four steps are omitted since the VRVIII unit can be charged with the necessary amount of refrigerant automatically via a push button on the PCB. Automatic charging will cease once the appropriate amount of refrigerant has been transferred.

If temperature drops below 32°F outdoors, manual charging is necessary. After having switched to heating and once the indoor temperature rises above 32°F, push the auto charge button to activate auto charge function.



Automatic Test - Simplified Commissioning

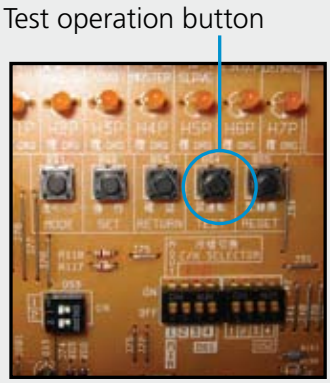
When refrigerant charging has ceased, pushing the test operation button on the PCB will initiate a check on the wiring, shut off valves, sensors and refrigerant volume. This test ceases automatically when completed.

Easy Maintenance Self Diagnostic Function

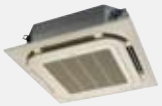
This function operated via push button on the PCB, speeds up troubleshooting and should be used for start-up and maintenance. Disconnected thermistors, faulty solenoid valves or motor operated valves, compressor malfunctions, communication errors, etc can be diagnosed quickly.

Automatic Information Storage

During unit operation, storage of data from the last five minutes occurs automatically. In cases of malfunction, analysis of data from the last five minutes will be carried out to identify the location of the problem and cause of malfunction. Measures to eliminate the cause of malfunction can then be implemented.



VRV Indoor Units

Indoor Type		Capacity Range											
	MBH	7.5	09	12	18	24	30	36	42	48	54	72	96
	Tons	0.6	0.75	1	1.5	2	2.5	3	3.5	4	4.5	6	8
Ducted	Vertical air handling unit (horizontal right configuration is possible)	FXTQ_PAVJU 			▲ OSA	▲ OSA	▲ OSA	▲ OSA	▲ OSA	▲ OSA	▲ OSA	▲ OSA		
	DC ducted concealed ceiling (medium static)	FXMQ_PVJU 	▲ OSA	▲ OSA	▲ OSA	▲ OSA	▲ OSA	▲ OSA	▲ OSA		▲ OSA			
	Concealed ceiling unit (medium static)	FXMQ_MVJU 										▲ OSA	▲ OSA
	Slim duct built-in concealed ceiling unit	FXDQ_MVJU 	▲ OSA	▲ OSA	▲ OSA	▲ OSA	▲ OSA							
Duct-free	Round flow ceiling mounted cassette	FXFQ_PVJU 		▲ OSA	▲ OSA	▲ OSA	▲ OSA	▲ OSA	▲ OSA		▲ OSA			
	2' x 2' 4-way ceiling mounted cassette	FXZQ_M7VJU 	▲ OSA	▲ OSA	▲ OSA	▲ OSA								
	Wall mounted unit	FXAQ_MVJU 	▲	▲	▲	▲	▲							
	Ceiling suspended unit	FXHQ_MVJU 			▲		▲		▲					
	Floor standing unit	FXLQ_MVJU 			▲	▲	▲							
	Concealed floor standing unit	FXNQ_MVJU 			▲ OSA	▲ OSA	▲ OSA							
Ventilation	100% Outside Air Processing Unit	FXMQ_MFVJU 									▲ OSA		▲ OSA	▲ OSA

▲ Available (11 types, 51 models)

Condensate pump standard on model

OSA Outside air connection possible on model

VRVIII Specifications 460V heat pump

Single Module Systems

VRVIII 460V Heat Pump			6-Ton	8-Ton	9-Ton
Model	Name		RXYQ72PAYD	RXYQ96PAYD	RXYQ108PAYD
Performance	Nominal Cooling Capacity[1]	Btu/h	72,000	96,000	108,000
	Rated Cooling Capacity	Btu/h	70,000	92,000	104,000
	Rated Cooling Input Power (system)	kW	5.74	8.29	9.45
	Rated Full Load EER[1,3] (system)		12.2	11.1	11.0
	Nominal Heating Capacity[2]	Btu/h	81,000	108,000	122,000
	Rated Heating Capacity	Btu/h	77,000	103,000	116,000
	Rated Heating Input Power (system)	kW (Btu/h)	6.6	9.1	10.3
	Rated Full Load COP[2,3] (system)		3.4	3.3	3.3
	Power	V/ph/Hz	460/3/60	460/3/60	460/3/60
	Sound Pressure Level at 3ft.	dB(A)	58	58	60
Refrigerant Piping	Refrigerant Type and Quantity	(lbs.)	R-410A (18.1)	R-410A (19.8)	R-410A (20.1)
	Liquid Pipe (Main Line)	in.	3/8 (Braze)	3/8 (Braze)	1/2 (Braze)
	Suction Gas Pipe (Main Line)	in.	3/4 (Braze)	7/8 (Braze)	1-1/8 (Braze)
	Vertical Pipe Length (if unit is below FCU)	ft.	295	295	295
	Vertical Pipe Length (if unit is above FCU)	ft.	164 (295 with Option)	164 (295 with Option)	164 (295 with Option)
	Actual Pipe Length (Equivalent Length)	ft.	540 (620)	540 (620)	540 (620)
	Total Pipe Length	ft.	3,280	3,280	3,280
Connection Ratio	Connectable Indoor Unit Ratio	%	50-130% as Standard (Up to 200% is permitted depending on application & fan coil unit selection)		
	Maximum Number of Indoor Units	Qty.	12	16	18
Unit	Weight	lbs.	573	573	573
	Dimensions (H x W x D)	in.	66-1/8 x 36-5/8 x 30-1/8	66-1/8 x 36-5/8 x 30-1/8	66-1/8 x 36-5/8 x 30-1/8
Fan	Air Flow	cfm	6,530	6,530	7,060
	External Static Pressure	in. W.G.	0.32	0.32	0.32
	Fan Motor Output and Quantity	kW (Qty.)	0.75 x 1	0.75 x 1	0.75 x 1
Electrical	Maximum Overcurrent Protection (MOP)	A	25	25	30
	Minimum Circuit Amps (MCA)	A	20.2	20.3	20.5
	Minimum Starting Current (MSC)	A	65	65	65
	Compressor Rated Load Amps (RLA)	A	7.1	3.9 + 8.4	6.1 + 8.4
Compressor	Compressor Type		Daikin Scroll x 2	Daikin Scroll x 2	Daikin Scroll x 2
	Compressor Set-Up		1 INV + 1 FIX	1 INV + 1 FIX	1 INV + 1 FIX
	Compressor Capacity Control	%	20 - 100	14 - 100	14 - 100

1 Indoor temp. : 80°FDB or 67°FWB / outdoor temp. : 95°FDB / Equivalent piping length : 25 ft (7.5 m), level difference : 0 ft.
2 Indoor temp. : 70°FDB / outdoor temp. : 47°FDB or 43°FWB / Equivalent piping length : 25 ft (7.5 m), level difference : 0 ft.
3 The tested system EER and COP values reflect "full load efficiency only and are the results from testing to the Alternate Test Method (ATM) guidelines provided by the U.S. Department of Energy (DOE) in the Federal Register / Vol. 74, No. 68 / Friday April 8, 2009 / Notices / Pages 15955-15958.

RXYQ72PAYD
RXYQ96PAYD
RXYQ108PAYD

Double Module Systems

VRVIII 460V Heat Pump			12-Ton	14-Ton	16-Ton	18-Ton	20-Ton
Model	Name		RXYQ144PAYD	RXYQ168PAYD	RXYQ192PAYD	RXYQ216PYDNR	RXYQ240PYDNR
	Combination		RXYQ72PAYD x 2	RXYQ96PAYD + RXYQ72PAYD	RXYQ96PAYD x 2	RXYQ120PYDNR + RXYQ96PAYDN	RXYQ120PYDNR x 2
Performance	Nominal Cooling Capacity[1]	Btu/h	144,000	168,000	192,000	216,000	240,000
	Rated Cooling Capacity	Btu/h	138,000	160,000	184,000	206,000	240,000
	Rated Cooling Input Power (system)	kW	11.31	14.04	17.20	19.43	24.49
	Rated Full Load EER[1,3] (system)		12.2	11.4	10.7	10.6	9.80
	Nominal Heating Capacity[2]	Btu/h	162,000	188,000	216,000	243,000	270,000
	Rated Heating Capacity	Btu/h	154,000	180,000	206,000	232,000	258,000
	Rated Heating Input Power (system)	kW (Btu/h)	13.3	16.0	18.9	21.25	23.63
	Rated Full Load COP[2,3] (system)		3.4	3.3	3.2	3.2	3.2
	Power	V/ph/Hz	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60
	Sound Pressure Level at 3ft.	dB(A)	62	61	62	62	63
Refrigerant Piping	Refrigerant Type and Quantity	(lbs.)	R-410A (18.1+18.1)	R-410A (19.8+18.1)	R-410A (19.8+19.8)	R-410A (20.1+19.8)	R-410A (20.1+20.1)
	Liquid Pipe (Main Line)	in.	1/2 (Braze)	5/8 (Braze)	5/8 (Braze)	5/8 (Braze)	5/8 (Braze)
	Suction Gas Pipe (Main Line)	in.	1-1/8 (Braze)	1-1/8 (Braze)	1-1/8 (Braze)	1-1/8 (Braze)	1-3/8 (Braze)
	High and Low Pressure Equalization Pipe	in.	3/4 (Braze)	3/4 (Braze)	3/4 (Braze)	3/4 (Braze)	3/4 (Braze)
	Vertical Pipe Length (if unit is below FCU)	ft.	295	295	295	295	295
	Vertical Pipe Length (if unit is above FCU)	ft.	164 (295 with Option)	164 (295 with Option)	164 (295 with Option)	164 (295 with Option)	164 (295 with Option)
	Actual Pipe Length (Equivalent Length)	ft.	540 (620)	540 (620)	540 (620)	540 (620)	540 (620)
	Total Pipe Length	ft.	3,280	3,280	3,280	3,280	3,280
Connection Ratio	Connectable Indoor Unit Ratio	%	50-130% as Standard (Up to 200% is permitted depending on application & fan coil unit selection)				
	Maximum Number of Indoor Units	Qty.	25	29	33	37	41
Unit	Weight	lbs.	573 + 573	573 + 573	573 + 573	573 + 573	573 + 573
	Dimensions (H x W x D)	in.	(66-1/8 x 36-5/8 x 30-1/8) x 2				
Fan	Air Flow	cfm	6,530 + 6,530	6,530 + 6,530	6,530 + 6,530	7,060 + 6,530	7,060 + 7,060
	External Static Pressure	in. W.G.	0.32	0.32	0.32	0.32	0.32
	Fan Motor Output and Quantity	kW (Qty.)	0.75 x 2	0.75 x 2	0.75 x 2	0.75 x 2	0.75 x 2
Electrical	Maximum Overcurrent Protection (MOP)	A	25 + 25	25 + 25	25 + 25	25 + 30	30 + 30
	Minimum Circuit Amps (MCA)	A	20.2 + 20.2	20.3 + 20.2	20.3 + 20.3	20.5 + 20.3	20.5 + 20.5
	Minimum Starting Current (MSC)	A	69	69	69	77	78
	Compressor Rated Load Amps (RLA)	A	7.1 + 7.1	(3.9 + 8.4) + 7.1	(3.9 + 8.4) + (3.9 + 8.4)	(3.9 + 8.4) + (6.1 +8.4)	(6.1 + 8.4) x 2
Compressor	Compressor Type		Daikin Scroll x 4	Daikin Scroll x 4	Daikin Scroll x 4	Daikin Scroll x 4	Daikin Scroll x 4
	Compressor Set-Up		(1 INV + 1 FIX) x 2	(1 INV + 1 FIX) x 2	(1 INV + 1 FIX) x 2	(1 INV + 1 FIX) x 2	(1 INV + 1 FIX) x 2
	Compressor Capacity Control	%	13 - 100	9 - 100	7 - 100	7 - 100	6 - 100

1 Indoor temp. : 80°FDB or 67°FWB / outdoor temp. : 95°FDB / Equivalent piping length : 25 ft (7.5 m), level difference : 0 ft.
2 Indoor temp. : 70°FDB / outdoor temp. : 47°FDB or 43°FWB / Equivalent piping length : 25 ft (7.5 m), level difference : 0 ft.
3 The tested system EER and COP values reflect "full load efficiency only and are the results from testing to the Alternate Test Method (ATM) guidelines provided by the U.S. Department of Energy (DOE) in the Federal Register / Vol. 74, No. 68 / Friday April 8, 2009 / Notices / Pages 15955-15958.

RXYQ144PAYD
RXYQ168PAYD
RXYQ192PAYD
RXYQ216PYDNR
RXYQ240PYDNR

VRVIII Specifications 208-230V heat pump

Single Module Systems

VRVIII 208-230V Heat Pump			6-Ton	8-Ton	9-Ton
Model	Name		RXYQ72PATJ	RXYQ96PATJ	RXYQ108PATJ
Performance	Nominal Cooling Capacity[1]	Btu/h	72,000	96,000	108,000
	Rated Cooling Capacity	Btu/h	70,000	92,000	104,000
	Rated Cooling Input Power (system)	kW	5.74	8.29	9.45
	Rated Full Load EER[1,3] (system)		12.2	11.1	11.0
	Nominal Heating Capacity[2]	Btu/h	81,000	108,000	122,000
	Rated Heating Capacity	Btu/h	77,000	103,000	116,000
	Rated Heating Input Power (system)	kW (Btu/h)	6.6	9.1	10.3
	Rated Full Load COP[2,3] (system)		3.4	3.3	3.3
	Power	V/ph/Hz	208-230/3/60	208-230/3/60	208-230/3/60
	Sound Pressure Level at 3ft.	dB(A)	58	58	60
Refrigerant Piping	Refrigerant Type and Quantity	(lbs.)	R-410A (18.1)	R-410A (19.8)	R-410A (20.1)
	Liquid Pipe (Main Line)	in.	3/8 (Braze)	3/8 (Braze)	1/2 (Braze)
	Suction Gas Pipe (Main Line)	in.	3/4 (Braze)	7/8 (Braze)	1-1/8 (Braze)
	Vertical Pipe Length (if unit is below FCU)	ft.	295	295	295
	Vertical Pipe Length (if unit is above FCU)	ft.	164 (295 with Option)	164 (295 with Option)	164 (295 with Option)
	Actual Pipe Length (Equivalent Length)	ft.	540 (620)	540 (620)	540 (620)
	Total Pipe Length	ft.	3,280	3,280	3,280
Connection Ratio	Connectable Indoor Unit Ratio	%	50-130% as Standard (Up to 200% is permitted depending on application & fan coil unit selection)		
	Maximum Number of Indoor Units	Qty.	12	16	18
Unit	Weight	lbs.	560	560	560
	Dimensions (H x W x D)	in.	66-1/8 x 36-5/8 x 30-1/8	66-1/8 x 36-5/8 x 30-1/8	66-1/8 x 36-5/8 x 30-1/8
Fan	Air Flow	cfm	6,530	6,530	7,060
	External Static Pressure	in. W.G.	0.32	0.32	0.32
	Fan Motor Output and Quantity	kW (Qty.)	0.75 x 1	0.75 x 1	0.75 x 1
Electrical	Maximum Overcurrent Protection (MOP)	A	40	50	60
	Minimum Circuit Amps (MCA)	A	36.1	36.1	41.3
	Minimum Starting Current (MSC)	A	131	131	132
	Compressor Rated Load Amps (RLA)	A	14.2	7.8 + 16.8	12.2 + 16.8
Compressor	Compressor Type		Daikin Scroll x 2	Daikin Scroll x 2	Daikin Scroll x 2
	Compressor Set-Up		1 INV + 1 FIX	1 INV + 1 FIX	1 INV + 1 FIX
	Compressor Capacity Control	%	20 - 100	14 - 100	14 - 100

1 Indoor temp. : 80°FDB or 67°FWB / outdoor temp. : 95°FDB / Equivalent piping length : 25 ft (7.5 m), level difference : 0 ft.
2 Indoor temp. : 70°FDB / outdoor temp. : 47°FDB or 43°FWB / Equivalent piping length : 25 ft (7.5 m), level difference : 0 ft.
3 The tested system EER and COP values reflect "full load efficiency only and are the results from testing to the Alternate Test Method (ATM) guidelines provided by the U.S. Department of Energy (DOE) in the Federal Register / Vol. 74, No. 68 / Friday April 8, 2009 / Notices / Pages 15955-15958

RXYQ72PATJ
RXYQ96PATJ
RXYQ108PATJ

Double Module Systems

VRVIII 208-230V Heat Pump			12-Ton	14-Ton	16-Ton	18-Ton	20-Ton
Model	Name		RXYQ144PATJ	RXYQ168PATJ	RXYQ192PATJ	RXYQ216PTJUR	RXYQ240PTJUR
	Combination		RXYQ72PATJ x 2	RXYQ96PATJ + RXYQ72PATJ	RXYQ96PATJ x 2	RXYQ120PTJUR + RXYQ96PATJ	RXYQ120PTJUR x 2
Performance	Nominal Cooling Capacity[1]	Btu/h	144,000	168,000	192,000	216,000	240,000
	Rated Cooling Capacity	Btu/h	138,000	160,000	184,000	206,000	240,000
	Rated Cooling Input Power (system)	kW	11.31	14.04	17.20	19.43	24.49
	Rated Full Load EER[1,3] (system)		12.2	11.4	10.7	10.60	9.80
	Nominal Heating Capacity[2]	Btu/h	162,000	188,000	216,000	243,000	270,000
	Rated Heating Capacity	Btu/h	154,000	180,000	206,000	232,000	258,000
	Rated Heating Input Power (system)	kW (Btu/h)	13.3	16.0	18.9	21.25	23.63
	Rated Full Load COP[2,3] (system)		3.4	3.3	3.2	3.2	3.2
	Power	V/ph/Hz	208-230/3/60	208-230/3/60	208-230/3/60	208-230/3/60	208-230/3/60
	Sound Pressure Level at 3ft.	dB(A)	61	61	62	62	63
Refrigerant Piping	Refrigerant Type and Quantity	(lbs.)	R-410A (18.1 + 18.1)	R-410A (19.8+18.1)	R-410A (19.8+19.8)	R-410A (20.1+19.8)	R-410A (20.1+20.1)
	Liquid Pipe (Main Line)	in.	1/2 (Braze)	5/8 (Braze)	5/8 (Braze)	5/8 (Braze)	5/8 (Braze)
	Suction Gas Pipe (Main Line)	in.	1-1/8 (Braze)	1-1/8 (Braze)	1-1/8 (Braze)	1-1/8 (Braze)	1-3/8 (Braze)
	High and Low Pressure Equalization Pipe	in.	3/4 (Braze)	3/4 (Braze)	3/4 (Braze)	3/4 (Braze)	3/4 (Braze)
	Vertical Pipe Length (if unit is below FCU)	ft.	295	295	295	295	295
	Vertical Pipe Length (if unit is above FCU)	ft.	164 (295 with Option)	164 (295 with Option)	164 (295 with Option)	164 (295 with Option)	164 (295 with Option)
	Actual Pipe Length (Equivalent Length)	ft.	540 (620)	540 (620)	540 (620)	540 (620)	540 (620)
	Total Pipe Length	ft.	3,280	3,280	3,280	3,280	3,280
Connection Ratio	Connectable Indoor Unit Ratio	%	50-130% as Standard (Up to 200% is permitted depending on application & fan coil unit selection)				
	Maximum Number of Indoor Units	Qty.	25	29	33	37	41
Unit	Weight	lbs.	560 + 560	560 + 560	560 + 560	560 + 560	560 + 560
	Dimensions (H x W x D)	in.	(66-1/8 x 36-5/8 x 30-1/8) x 2				
Fan	Air Flow	cfm	6,530 + 6,530	6,530 + 6,530	6,530 + 6,530	7,060 + 6,530	7,060 + 7,060
	External Static Pressure	in. W.G.	0.32	0.32	0.32	0.32	0.32
	Fan Motor Output and Quantity	kW (Qty.)	0.75 x 2	0.75 x 2	0.75 x 2	0.75 x 2	0.75 x 2
Electrical	Maximum Overcurrent Protection (MOP)	A	40 + 40	50 + 40	50 + 50	50 + 60	60 + 60
	Minimum Circuit Amps (MCA)	A	36.1 + 36.1	36.1 + 36.1	36.1 + 36.1	41.3 + 36.1	41.3 + 41.3
	Minimum Starting Current (MSC)	A	137	137	138	154	155
	Compressor Rated Load Amps (RLA)	A	(14.2) x 2	(7.8 + 16.8) + 14.2	(7.8 + 16.8) + (7.8 + 16.8)	(12.2+ 16.8) + (7.8+ 16.8)	(12.2 + 16.8) x 2
Compressor	Compressor Type		Daikin Scroll x 4	Daikin Scroll x 4	Daikin Scroll x 4	Daikin Scroll x 4	Daikin Scroll x 4
	Compressor Set-Up		(1 INV + 1 FIX) x 2	(1 INV + 1 FIX) x 2	(1 INV + 1 FIX) x 2	(1 INV + 1 FIX) x 2	(1 INV + 1 FIX) x 2
	Compressor Capacity Control	%	13 - 100	9 - 100	7 - 100	7 - 100	6 - 100

1 Indoor temp. : 80°FDB or 67°FWB / outdoor temp. : 95°FDB / Equivalent piping length : 25 ft (7.5 m), level difference : 0 ft.
2 Indoor temp. : 70°FDB / outdoor temp. : 47°FDB or 43°FWB / Equivalent piping length : 25 ft (7.5 m), level difference : 0 ft.
3 The tested system EER and COP values reflect "full load efficiency only and are the results from testing to the Alternate Test Method (ATM) guidelines provided by the U.S. Department of Energy (DOE) in the Federal Register / Vol. 74, No. 68 / Friday April 8, 2009 / Notices / Pages 15955-15958

RXYQ144PATJ
RXYQ168PATJ
RXYQ192PATJ
RXYQ216PTJUR
RXYQ240PTJUR

VRVIII Specifications 460V heat recovery

Single Module Systems

VRVIII 460V Heat Recovery			6-Ton	8-Ton	10-Ton
Model	Name		REYQ72PAYD	REYQ96PAYD	REYQ120PAYD
Performance	Nominal Cooling Capacity[1]	Btu/h	72,000	96,000	120,000
	Rated Cooling Capacity	Btu/h	70,000	92,000	114,000
	Rated Cooling Input Power (system)	kW	5.56	7.93	10.36
	Rated Full Load EER[1,3] (system)		12.6	11.6	11.0
	Nominal Heating Capacity[2]	Btu/h	81,000	108,000	135,000
	Rated Heating Capacity	Btu/h	77,000	103,000	130,000
	Rated Heating Input Power (system)	kW (Btu/h)	6.4	8.9	11.5
	Rated Full Load COP[2,3] (system)		3.5	3.4	3.3
	Power	V/ph/Hz	460/3/60	460/3/60	460/3/60
	Sound Pressure Level at 3ft.	dB(A)	58	58	60
Refrigerant Piping	Refrigerant Type and Quantity	(lbs.)	R-410A (22.7)	R-410A (23.4)	R-410A (23.8)
	Liquid Pipe (Main Line)	in.	3/8 (Braze)	3/8 (Braze)	1/2 (Braze)
	Suction Gas Pipe (Main Line)	in.	3/4 (Braze)	7/8 (Braze)	1-1/8 (Braze)
	High and Low Pressure Gas Pipe (Main line)	in.	5/8 (Braze)	3/4 (Braze)	3/4 (Braze)
	Vertical Pipe Length (if unit is below FCU)	ft.	295	295	295
	Vertical Pipe Length (if unit is above FCU)	ft.	164 (295 with Option)	164 (295 with Option)	164 (295 with Option)
	Actual Pipe Length (Equivalent Length)	ft.	540 (620)	540 (620)	540 (620)
	Total Pipe Length	ft.	3,280	3,280	3,280
Connection Ratio	Connectable Indoor Unit Ratio	%	50-130% as Standard (Up to 200% is permitted depending on application & fan coil unit selection)		
	Maximum Number of Indoor Units	Qty.	12	16	20
Unit	Weight	lbs.	732	732	732
	Dimensions (H x W x D)	in.	66-1/8 x 51-3/16 x 30-1/8	66-1/8 x 51-3/16 x 30-1/8	66-1/8 x 51-3/16 x 30-1/8
Fan	Air Flow	cfm	6,700	6,700	7,410
	External Static Pressure	in. W.G.	0.32	0.32	0.32
	Fan Motor Output and Quantity	kW (Qty.)	0.35 x 2	0.35 x 2	0.35 x 2
Electrical	Maximum Overcurrent Protection (MOP)	A	20	25	25
	Minimum Circuit Amps (MCA)	A	16	20.4	20.5
	Minimum Starting Current (MSC)	A	65	65	65
	Compressor Rated Load Amps (RLA)	A	2.4 + 7.0	4.2 + 7.0	6.0 + 6.8
Compressor	Compressor Type		Daikin Scroll x 2	Daikin Scroll x 2	Daikin Scroll x 2
	Compressor Set-Up		1 INV + 1 FIX	1 INV + 1 FIX	1 INV + 1 FIX
	Compressor Capacity Control	%	20 - 100	14 - 100	14 - 100

1 Indoor temp. : 80°FDB or 67°FWB / outdoor temp. : 95°FDB / Equivalent piping length : 25 ft (7.5 m), level difference : 0 ft.
2 Indoor temp. : 70°FDB / outdoor temp. : 47°FDB or 43°FWB / Equivalent piping length : 25 ft (7.5 m), level difference : 0 ft.
3 The tested system EER and COP values reflect "full load efficiency only and are the results from testing to the Alternate Test Method (ATM) guidelines provided by the U.S. Department of Energy (DOE) in the Federal Register / Vol. 74, No. 68 / Friday April 8, 2009 / Notices / Pages 15955-15958

The Branch Selector units are used for VRVIII Heat Recovery applications.
Please refer to engineering data for details.

REYQ72PAYD
REYQ96PAYD
REYQ120PAYD

Branch Selector Units						
Model Name				BSVQ36PVJU	BSVQ60PVJU	BSVQ96PVJU
Power Supply			V/ph/Hz	208-230/1/60		
Total Capacity Index of Connectable Indoor Units				Less than 36	Less than 60	Less than 96
Maximum Number of Connectable Indoor Units				5	8	8
Casing				Galvanized Steel Plate		
Dimensions (H x W x D)			in.	8 1/8 x 15 1/4 x 12 13/16	8 1/8 x 15 1/4 x 12 13/16	8 3/16 x 15 5/16 x 12 13/16
Sound Absorbing Thermal Insulation Material				Foamed Polyurethane, Frame Resisting Needle Felt	Foamed Polyurethane, Frame Resisting Needle Felt	Foamed Polyurethane, Frame Resisting Needle Felt
Piping Connections	Indoor Unit	Liquid Pipes	in.	Ø 3/8 (Braze) [1]	Ø 3/8 (Braze)	Ø 3/8 (Braze)
		Gas Pipes	in.	Ø 5/8 (Braze) [1]	Ø 5/8 (Braze) [2]	Ø 7/8 (Braze)
	Outdoor Unit	Liquid Pipes	in.	Ø 3/8 (Braze)	Ø 3/8 (Braze)	Ø 3/8 (Braze)
		Suction Gas Pipes	in.	Ø 5/8 (Braze)	Ø 5/8 (Braze) [2]	Ø 7/8 (Braze)
		Discharge Gas Pipes	in.	Ø 1/2 (Braze)	Ø 1/2 (Braze) [2]	Ø 3/4 (Braze)
Weight			lbs.	26	26	33

Note:
[1] In case of connecting with a 07-18 type indoor unit, match to the size of field pipe using the attached pipe.
(Connection between the attached pipe and the field pipe must be brazed.)
[2] In case of connecting with indoor unit capacity index 54 or more and 60 or less, match the size of the field pipe using the attached pipe.
(Connection between the attached pipe and the field pipe must be brazed.)

Double Module Systems

VRVIII 460V Heat Recovery			12-Ton	14-Ton	16-Ton	18-Ton	20-Ton
Model	Name		REYQ144PAYD	REYQ168PAYD	REYQ192PAYD	REYQ216PYDNR	REYQ240PYDNR
	Combination		REMQ72PAYD x 2	REMQ96PAYD + REMQ72PAYD	REMQ96PAYD x 2	REMQ120PYDNR + REMQ96PAYDN	REMQ120PYDNR x 2
Performance	Nominal Cooling Capacity[1]	Btu/h	144,000	168,000	192,000	216,000	240,000
	Rated Cooling Capacity	Btu/h	138,000	160,000	184,000	206,000	240,000
	Rated Cooling Input Power (system)	kW	11.31	14.04	17.20	19.43	24.49
	Rated Full Load EER[1,3] (system)		12.2	11.4	10.7	10.60	9.80
	Nominal Heating Capacity[2]	Btu/h	162,000	188,000	216,000	243,000	270,000
	Rated Heating Capacity	Btu/h	154,000	180,000	206,000	232,000	258,000
	Rated Heating Input Power (system)	kW (Btu/h)	13.3	16.0	18.9	21.25	23.63
	Rated Full Load COP[2,3] (system)		3.4	3.3	3.2	3.2	3.2
	Power	V/ph/Hz	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60
	Sound Pressure Level at 3ft.	dB(A)	60	61	62	62	63
Refrigerant Piping	Refrigerant Type and Quantity	(lbs.)	R-410A (18.1+18.1)	R-410A (19.8+18.1)	R-410A (19.8+19.8)	R-410A (20.1+19.8)	R-410A (20.1+20.1)
	Liquid Pipe (Main Line)	in.	1/2 (Braze)	5/8 (Braze)	5/8 (Braze)	5/8 (Braze)	5/8 (Braze)
	Suction Gas Pipe (Main Line)	in.	1-1/8 (Braze)	1-1/8 (braze)	1-1/8 (Braze)	1-1/8 (Braze)	1-3/8 (Braze)
	High and Low Pressure Gas Pipe (Main line)	in.	7/8 (Braze)	7/8 (Braze)	1-1/8 (Braze)	1-1/8 (Braze)	1-1/8 (Braze)
	High and Low Pressure Equalization Pipe	in.	3/4 (Braze)	3/4 (Braze)	3/4 (Braze)	3/4 (Braze)	3/4 (Braze)
	Vertical Pipe Length (if unit is below FCU)	ft.	295	295	295	295	295
	Vertical Pipe Length (if unit is above FCU)	ft.	164 (295 with Option)	164 (295 with Option)	164 (295 with Option)	164 (295 with Option)	164 (295 with Option)
	Actual Pipe Length (Equivalent Length)	ft.	540 (620)	540 (620)	540 (620)	540 (620)	540 (620)
	Total Pipe Length	ft.	3,280	3,280	3,280	3,280	3,280
Connection Ratio	Connectable Indoor Unit Ratio	%	50-130% as Standard (Up to 200% is permitted depending on application & fan coil unit selection)				
	Maximum Number of Indoor Units	Qty.	25	29	33	37	41
Unit	Weight	lbs.	463 + 463	573 + 463	573 + 573	573 + 573	573 + 573
	Dimensions (H x W x D)	in.	(66-1/8 x 36-5/8 x 30-1/8) x 2				
Fan	Air Flow	cfm	6,350 + 6,350	6,530 + 6,350	6,530 + 6,530	7,060 + 6,530	7,060 + 7,060
	External Static Pressure	in. W.G.	0.32	0.32	0.32	0.32	0.32
	Fan Motor Output and Quantity	kW (Qty.)	0.75 x 2	0.75 x 2	0.75 x 2	0.75 x 2	0.75 x 2
Electrical	Maximum Overcurrent Protection (MOP)	A	25 + 25	25 + 25	25 + 25	25 + 30	30 + 30
	Minimum Circuit Amps (MCA)	A	16.7 + 16.7	20.3 + 16.7	20.3 + 20.3	20.5 + 20.3	20.5 + 20.5
	Minimum Starting Current (MSC)	A	-	69	69	77	78
	Compressor Rated Load Amps (RLA)	A	(7.1) x 2	(3.9 + 8.4) + 7.1	(3.9 + 8.4) + (3.9 + 8.4)	(3.9 + 8.4) + (6.1 +8.4)	(6.1 + 8.4) x 2
Compressor	Compressor Type		Daikin Scroll x 2	Daikin Scroll x 3	Daikin Scroll x 4	Daikin Scroll x 4	Daikin Scroll x 4
	Compressor Set-Up		(1 INV) x 2	(1 INV + 1 FIX) + 1 INV	(1 INV + 1 FIX) x 2	(1 INV + 1 FIX) x 2	(1 INV + 1 FIX) x 2
	Compressor Capacity Control	%	13 - 100	9 - 100	7 - 100	7 - 100	6 - 100

1 Indoor temp. : 80°FDB or 67°FWB / outdoor temp. : 95°FDB / Equivalent piping length : 25 ft (7.5 m), level difference : 0 ft.
2 Indoor temp. : 70°FDB / outdoor temp. : 47°FDB or 43°FWB / Equivalent piping length : 25 ft (7.5 m), level difference : 0 ft.
3 The tested system EER and COP values reflect "full load efficiency only and are the results from testing to the Alternate Test Method (ATM) guidelines provided by the U.S. Department of Energy (DOE) in the Federal Register / Vol. 74, No. 68 / Friday April 8, 2009 / Notices / Pages 15955-15958

REYQ144PAYD
REYQ168PAYD
REYQ192PAYD
REYQ216PYDNR
REYQ240PYDNR

For Branch Selector unit specifications, refer to page 20.

VRVIII Specifications 208-230V heat recovery

Single Module Systems

VRVIII 208-230V Heat Recovery			6-Ton	8-Ton	10-Ton
Model	Name		REYQ72PATJ	REYQ96PATJ	REYQ120PATJ
Performance	Nominal Cooling Capacity[1]	Btu/h	72,000	96,000	120,000
	Rated Cooling Capacity	Btu/h	70,000	92,000	114,000
	Rated Cooling Input Power (system)	kW	5.56	7.93	10.36
	Rated Full Load EER[1,3] (system)		12.6	11.6	11.0
	Nominal Heating Capacity[2]	Btu/h	81,000	108,000	135,000
	Rated Heating Capacity	Btu/h	77,000	103,000	130,000
	Rated Heating Input Power (system)	kW (Btu/h)	6.4	8.9	11.5
	Rated Full Load COP[2,3] (system)		3.5	3.4	3.3
	Power	V/ph/Hz	208-230/3/60	208-230/3/60	208-230/3/60
	Sound Pressure Level at 3ft.	dB(A)	58	58	60
Refrigerant Piping	Refrigerant Type and Quantity	(lbs.)	R-410A (22.7)	R-410A (23.4)	R-410A (23.8)
	Liquid Pipe (Main Line)	in.	3/8 (Braze)	3/8 (Braze)	1/2 (Braze)
	Suction Gas Pipe (Main Line)	in.	3/4 (Braze)	7/8 (Braze)	1-1/8 (Braze)
	High and Low Pressure Gas Pipe (Main Line)	in.	5/8 (Braze)	3/4 (Braze)	3/4 (Braze)
	Vertical Pipe Length (if unit is below FCU)	ft.	295	295	295
	Vertical Pipe Length (if unit is above FCU)	ft.	164 (295 with Option)	164 (295 with Option)	164 (295 with Option)
	Actual Pipe Length (Equivalent Length)	ft.	540 (620)	540 (620)	540 (620)
	Total Pipe Length	ft.	3,280	3,280	3,280
Connection Ratio	Connectable Indoor Unit Ratio	%	50-130% as Standard (Up to 200% is permitted depending on application & fan coil unit selection)		
	Maximum Number of Indoor Units	Qty.	12	16	20
Unit	Weight	lbs.	730	730	730
	Dimensions (H x W x D)	in.	66-1/8 x 51-3/16 x 30-1/8	66-1/8 x 51-3/16 x 30-1/8	66-1/8 x 51-3/16 x 30-1/8
Fan	Air Flow	cfm	6,700	6,700	7,410
	External Static Pressure	in. W.G.	0.32	0.32	0.32
	Fan Motor Output and Quantity	kW (Qty.)	0.35 x 2	0.35 x 2	0.35 x 2
Electrical	Maximum Overcurrent Protection (MOP)	A	40	45	50
	Minimum Circuit Amps (MCA)	A	36.1	43.8	44.2
	Minimum Starting Current (MSC)	A	131	131	131
	Compressor Rated Load Amps (RLA)	A	4.8 + 14.0	8.4 + 14.0	12.0 + 13.6
Compressor	Compressor Type		Daikin Scroll x 2	Daikin Scroll x 2	Daikin Scroll x 2
	Compressor Set-Up		1 INV + 1 FIX	1 INV + 1 FIX	1 INV + 1 FIX
	Compressor Capacity Control	%	20 - 100	14 - 100	14 - 100

1 Indoor temp. : 80°FDB or 67°FWB / outdoor temp. : 95°FDB / Equivalent piping length : 25 ft (7.5 m), level difference : 0 ft.
2 Indoor temp. : 70°FDB / outdoor temp. : 47°FDB or 43°FWB / Equivalent piping length : 25 ft (7.5 m), level difference : 0 ft.
3 The tested system EER and COP values reflect "full load efficiency only and are the results from testing to the Alternate Test Method (ATM) guidelines provided by the U.S. Department of Energy (DOE) in the Federal Register / Vol. 74, No. 68 / Friday April 8, 2009 / Notices / Pages 15955-15958

REYQ72PATJ
REYQ96PATJ
REYQ120PATJ

For Branch Selector unit specifications, refer to page 20.

Double Module Systems

VRVIII 208-230V Heat Recovery			12-Ton	14-Ton	16-Ton	18-Ton	20-Ton
Model	Name		REYQ144PATJ	REYQ168PATJ	REYQ192PATJ	REYQ216PTJUR	REYQ240PTJUR
	Combination		REMQ72PATJ x 2	REMQ96PATJ + REMQ72PATJ	REMQ96PATJ x 2	REMQ120PTJUR + REMQ96PATJ	REMQ120PTJUR x 2
Performance	Nominal Cooling Capacity[1]	Btu/h	144,000	168,000	192,000	216,000	240,000
	Rated Cooling Capacity	Btu/h	138,000	160,000	184,000	206,000	240,000
	Rated Cooling Input Power (system)	kW	11.31	14.04	17.20	19.43	24.49
	Rated Full Load EER[1,3] (system)		12.2	11.4	10.7	10.60	9.80
	Nominal Heating Capacity[2]	Btu/h	162,000	188,000	216,000	243,000	270,000
	Rated Heating Capacity	Btu/h	154,000	180,000	206,000	232,000	258,000
	Rated Heating Input Power (system)	kW (Btu/h)	13.3	16.0	18.9	21.25	23.63
	Rated Full Load COP[2,3] (system)		3.4	3.3	3.2	3.2	3.2
	Power	V/ph/Hz	208-230/3/60	208-230/3/60	208-230/3/60	208-230/3/60	208-230/3/60
	Sound Pressure Level at 3ft.	dB(A)	61	61	62	62	63
Refrigerant Piping	Refrigerant Type and Quantity	(lbs.)	R-410A (18.1+18.1)	R-410A (19.8+18.1)	R-410A (19.8+19.8)	R-410A (20.1+19.8)	R-410A (20.1+20.1)
	Liquid Pipe (Main Line)	in.	1/2 (Braze)	5/8 (Braze)	5/8 (Braze)	5/8 (Braze)	5/8 (Braze)
	Suction Gas Pipe (Main Line)	in.	1-1/8 (Braze)	1-1/8 (braze)	1-1/8 (Braze)	1-1/8 (Braze)	1-3/8 (Braze)
	High and Low Pressure Gas Pipe (Main Line)	in.	7/8 (Braze)	7/8 (Braze)	1-1/8 (Braze)	1-1/8 (Braze)	1-1/8 (Braze)
	High and Low Pressure Equalization Pipe	in.	3/4 (Braze)	3/4 (Braze)	3/4 (Braze)	3/4 (Braze)	3/4 (Braze)
	Vertical Pipe Length (if unit is below FCU)	ft.	295	295	295	295	295
	Vertical Pipe Length (if unit is above FCU)	ft.	164 (295 with Option)	164 (295 with Option)	164 (295 with Option)	164 (295 with Option)	164 (295 with Option)
	Actual Pipe Length (Equivalent Length)	ft.	540 (620)	540 (620)	540 (620)	540 (620)	540 (620)
	Total Pipe Length	ft.	3,280	3,280	3,280	3,280	3,280
Connection Ratio	Connectable Indoor Unit Ratio	%	50-130% as Standard (Up to 200% is permitted depending on application & fan coil unit selection)				
	Maximum Number of Indoor Units	Qty.	25	29	33	37	41
Unit	Weight	lbs.	450 + 450	560 + 450	560 + 560	560 + 560	560 + 560
	Dimensions (H x W x D)	in.	(66-1/8 x 36-5/8 x 30-1/8) x 2				
Fan	Air Flow	cfm	6,350 + 6,350	6,530 + 6,350	6,530 + 6,530	7,060 + 6,530	7,060 + 7,060
	External Static Pressure	in. W.G.	0.32	0.32	0.32	0.32	0.32
	Fan Motor Output and Quantity	kW (Qty.)	0.75 x 2	0.75 x 2	0.75 x 2	0.75 x 2	0.75 x 2
Electrical	Maximum Overcurrent Protection (MOP)	A	40 + 40	50 + 40	50 + 50	60 + 50	60 + 60
	Minimum Circuit Amps (MCA)	A	36.1 + 36.1	36.1 + 36.1	36.1 + 36.1	41.3 + 36.1	41.3 + 41.3
	Minimum Starting Current (MSC)	A	-	137	138	154	155
	Compressor Rated Load Amps (RLA)	A	14.2 + 14.2	(7.8 + 16.8) + 14.2	(7.8 + 16.8) x 2	(12.2+ 16.8) + (7.8+ 16.8)	(12.2 + 16.8) x 2
Compressor	Compressor Type		Daikin Scroll x 1	Daikin Scroll x 3	Daikin Scroll x 4	Daikin Scroll x 4	Daikin Scroll x 4
	Compressor Set-Up		(1 INV) x 2	(1 INV + 1 FIX) + 1 INV	(1 INV + 1 FIX) x 2	(1 INV + 1 FIX) x 2	(1 INV + 1 FIX) x 2
	Compressor Capacity Control	%	13 - 100	9 - 100	7 - 100	7 - 100	6 - 100

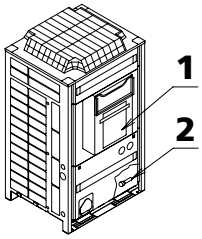
1 Indoor temp. : 80°FDB or 67°FWB / outdoor temp. : 95°FDB / Equivalent piping length : 25 ft (7.5 m), level difference : 0 ft.
2 Indoor temp. : 70°FDB / outdoor temp. : 47°FDB or 43°FWB / Equivalent piping length : 25 ft (7.5 m), level difference : 0 ft.
3 The tested system EER and COP values reflect "full load efficiency only and are the results from testing to the Alternate Test Method (ATM) guidelines provided by the U.S. Department of Energy (DOE) in the Federal Register / Vol. 74, No. 68 / Friday April 8, 2009 / Notices / Pages 15955-15958

REYQ144PATJ
REYQ168PATJ
REYQ192PATJ
REYQ216PTJUR
REYQ240PTJUR

For Branch Selector unit specifications, refer to page 20.

VRVIII Installation Space

Figure 1

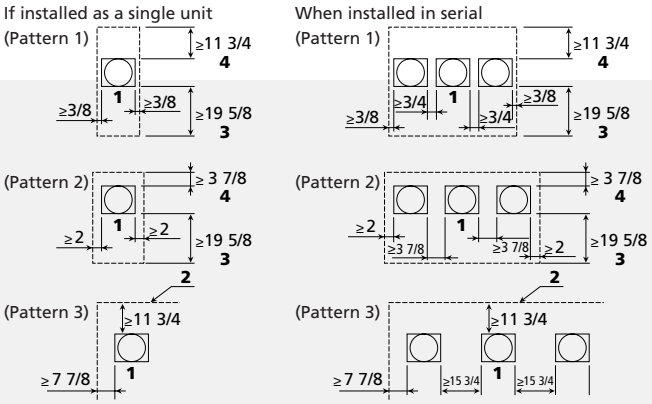


Standard supplied accessories

Confirm the following accessories are included. The storage location of the accessories is shown in figure 1. (Refer to figure 1)

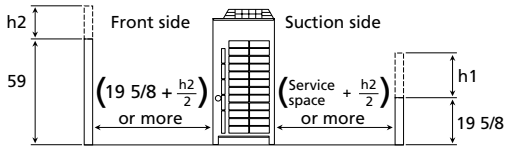
1. Clamps, Manuals, etc.
2. Accessory pipes

Figure 2



Installation Space Examples

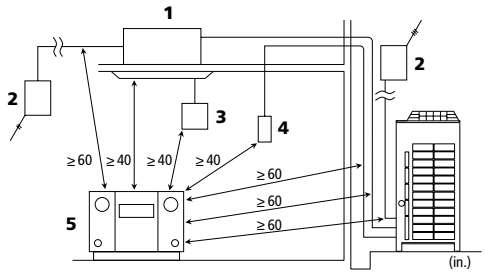
- The installation space requirement shown in figure 2 is a reference for cooling.
- During installation, install the units using the most appropriate of the patterns shown in figure 2 for the location in question, taking into consideration human traffic and wind.
- If the number of units installed is more than that shown in the pattern in figure 2, install the units that there is no air short cuircuting.
- As regards to space in front of the unit, consider the space needed for the refrigerant piping when installing the units, as determined by local codes.
- If the space requirements in figure 2 do not apply, contact your contractor or Daikin directly. (Refer to figure 2)
  1. Front side
  2. No limit to wall height
  3. Service space of front side
  4. Service space of suction side



For Patterns 1 and 2 in figure 2:

- Wall height for front side – no higher than 59 in.
- Wall height on the suction side – no higher than 19-5/8 in.
- Wall height for sides – no limit.
- If the height is exceeded the above, calculate h1 and h2 shown in the figure below, and add h2/2 to the service space of front side and h1/2 to the service space of suction side.

Figure 3



An inverter unit may cause electronic noise generated from AM broadcasting. Examine where to install the main unit and electric wires, keeping proper distances away from stereo equipment, personal computers, etc. Particularly for locations with weak reception, ensure there is a distance of at least 10 ft for indoor remote controllers, place power wiring and transmission wiring in conduits, and ground the conduits. (Refer to figure 3)

1. Indoor unit
2. Branch switch, overcurrent breaker
3. Remote controller
4. COOL/HEAT selector
5. Personal computer or radio

For detailed instructions please refer to proper Installation Manual

VRVIII Accessories

VRVIII Heat Recovery - 208-230V and 460V				
Unit Model Number	REYQ72PAYD REYQ72PATJ	REYQ96PAYD REYQ96PATJ REYQ120PAYD REYQ120PATJ	REYQ144PAYD REYQ144PATJ REYQ168PAYD REYQ168PATJ REYQ192PAYD REYQ192PATJ	REYQ216PYNDR REYQ216PTJUR REYQ240PYNDR REYQ240PTJUR
REFNET Header	KHRP25M33H (max. 8 branches)	KHRP25M33H (max. 8 branches) KHRP25M72H (max. 8 branches)		KHRP25M33H (max. 8 branches) KHRP25M72H (max. 8 branches) KHRP25M73HU (max. 8 branches)
REFNET Joint	KHRP25A22T KHRP25A33T	KHRP25A22T KHRP25A33T KHRP25M72TU		KHRP25A22T KHRP25A33T KHRP25M72TU KHRP25M73TU
Outdoor Unit multi piping connection kit	-		BHFP26P90U	
Branch Selector box for Heat Recovery	BSVQ36PVJU BSVQ60PVJU BSVQ96PVJU			
Increase height difference between indoor and outdoor unit to 295ft.	PCB REYQ_PYDN PCB REYQ_PTJU			

VRVIII Heat Pump - 208-230V and 460V				
Unit Model Number	RXYQ72PAYD RXYQ72PATJ RXYQ96PAYD RXYQ96PATJ	RXYQ108PAYD RXYQ108PATJ	RXYQ144PAYD RXYQ144PATJ RXYQ168PAYD RXYQ168PATJ	RXYQ192PAYD RXYQ192PATJ RXYQ216PYDNR RXYQ216PTJUR RXYQ240PYDNR RXYQ240PTJUR
REFNET Header	KHRP26M22H (max. 4 branches) KHRP26M33H (max. 8 branches)	KHRP26M22H (max. 4 branches) KHRP26M33H (max. 8 branches) KHRP26M72H (max. 8 branches)		KHRP26M22H (max. 4 branches) KHRP26M33H (max. 8 branches) KHRP26M72H (max. 8 branches) KHRP26M73HU (max. 8 branches)
REFNET Joint	KHRP26A22T KHRP26A33T	KHRP26A22T KHRP26A33T KHRP26M72TU		KHRP26A22T KHRP26A33T KHRP26M72TU KHRP26M73TU
Outdoor Unit multi piping connection kit	-		BHFP22P100U	
Increase height difference between indoor and outdoor unit to 295ft.	PCB RXYQ_PYDN PCB RXYQ_PTJU			

BSVQ				
No.	Name of Options	BSVQ36PVJU	BSVQ60PVJU	BSVQ96PVJU
1	Cool/Heat Selector	KRC19-26A		
1-1	Fixing Box	KJB111A		

VRV Controls

Choosing the right controls

Unless it is controlled, managed and operated in an appropriate manner, a high-performing system will not be able to provide the energy-efficiency or comfort it claims. Promoting the systemization of control management not only improves efficiency, but also represents a number of possibilities in terms of convenience. Daikin's line up of intelligent controls gives the user the ability to address all needs in one package and one supplier: Daikin.

Daikin controls are optimized for VRV technology and offers highly scalable solutions for all applications and budgets. It also allows for lower cost alternatives to traditional energy management systems when centralized control is required.

Project Requirements	Daikin VRV Controls							
								
	BRC1E71 Navigation	BRC2A71 Simplified	DCS302C71 Centralized	DCS301C71 Unified	DCS601C71 Intelligent Touch	Intelligent Manager	BACnet Interface	LonWorks Interface
Simple individual zone control	■	■						
Individual zone control with 7-day programmable scheduling	■							
Multi-zone control without scheduling functions			■					
Basic central point on/off control of all air handling units				■				
Advanced multi-zone control of small to medium size projects					■			
Advanced multi-zone control of large commercial projects						■	■	■
Advanced multi-zone control with scheduling logic and calender					■	■		
Automatic cooling/heating changeover for heat pump systems	■				■	■		
Single input batch shutdown of all connected air handlers			■	■	■	■	■	■
Web browser control and monitoring via Intranet and Internet					■	■	■	■
E-mail notification of system alarms and equipment malfunctions					■	■	■	■
Multiple tenant power billing for shared condenser applications					■	■		
Temperature set-point range restrictions	■				■	■	■	■
Graphical user interface based upon a PC platform						■		
Start/stop control of ancillary building systems[1]					■	■	■	■
Daikin VRV integration with BACnet based automation systems							■	
Daikin VRV integration with LonWorks based automation systems								■

[1] Requires one or more DEC102A51-US2 Digital Input/Output units.

■ Native application or feature for this device.

■ Dependent upon capabilities of the third party energy management system.

Controls that offer freedom to administrators

Freedom to control the air-conditioning system, via the Internet, from home or any other location with a PC. Should a malfunction occur, a notification is sent by e-mail to a cell phone or PC (any e-mail address specified by the user). This gives administrators the freedom to leave the room/building where the controller is located.

intelligent touch Controller

DCS601C71

- 64 groups (128 indoor units) connectable (128 groups with DCS601A72)
- Management of Daikin units and ancillary equipment
- Touch screen display
- Built-in Ethernet port, Web enabled (optional)
- Alarm e-mail function

intelligent Manager III

IMP-128/256/512/768/1,024

- 1,024 indoor units (organized in up to 200 control groups)
- Management of Daikin units and ancillary equipment
- Operation on one master PC and one sub PC (sub PC option)
- Remote monitoring via the Web
- Alarm e-mail function

Connect VRV to your BMS via BACnet® or LonWorks® using Daikin's integrated control system solutions.
Compatible with BACnet and LonWorks, the two leading open network communication protocols, the interfaces offered by Daikin provides a seamless connection between VRV and your BMS.

LonWorks®

LonWorks Network Compatible Interface

- Interface for LonWorks networks
- Communication via LON protocol (twisted pair wire)
- 64 units connectable per interface
- Unlimited site size
- Quick, easy installation

BACnet®

BACnet Network Compatible Interface

- Interface for Building Management Systems
- Communication via BACnet protocol (BACnet/IP)
- 256 units connectable per BACnet gateway (with DAM411B51)
- Unlimited site size
- Quick, easy installation

WARNINGS:

- Always use a licensed 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 licensed contractor to install those parts and accessories. Use of unauthorized 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.

For any inquiries, contact your local Daikin sales office.

JMI-0107

Organization:
DAIKIN INDUSTRIES, LTD.
AIR CONDITIONING MANUFACTURING DIVISION

Scope of Registration:
THE DESIGN/DEVELOPMENT AND MANUFACTURE OF COMMERCIAL AIR CONDITIONING, HEATING, COOLING, REFRIGERATING EQUIPMENT, COMMERCIAL HEATING EQUIPMENT, RESIDENTIAL AIR CONDITIONING EQUIPMENT, HEAT RECLAIM VENTILATION, AIR CLEANING EQUIPMENT, MARINE TYPE CONTAINER REFRIGERATION UNITS, COMPRESSORS AND VALVES.

JQA-1452

Organization:
DAIKIN INDUSTRIES (THAILAND) LTD.

Scope of Registration:
THE DESIGN/DEVELOPMENT AND MANUFACTURE OF AIR CONDITIONERS AND THE COMPONENTS INCLUDING COMPRESSORS USED FOR THEM.

EC99J2044

All of the Daikin Group's business facilities and subsidiaries in Japan are certified under the ISO 14001 International standard for environmental management.

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Dealer Information

Daikin's products are subject to continuous improvements. Daikin reserves the right to modify product design, specifications and information in this brochure without notice and without incurring any obligations.