



Innovative and Efficient Solutions for You



VRV IV

Sets the Standard... Again



VRV IV heat pump and water cooled systems

High Ambient

R-410A

A man with glasses and a dark jacket is smiling and holding a yellow hard hat. He is standing in a modern office environment with large windows and a Daikin ceiling-mounted HVAC unit visible above him.

Why choose Daikin

Our promise is to ensure that your customers can depend on Daikin for the ultimate in comfort, so that they are free to focus on their own working and home lives.

We promise to dedicate ourselves to technological excellence, a design focus and the highest quality standards so that your customers can trust and rely on the comfort we deliver.

Our promise to the planet is absolute. Our products are at the forefront of low energy consumption and we continuously innovate to reduce the environmental impact of HVACR solutions further.

We lead where others follow. We will continue our global leadership in HVACR solutions as our specialist expertise in all market sectors combined with 90 years' experience enable us to deliver added value in long-lasting relationships based on trust, respect and credibility.

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Over 30 years of VRV History



R-22

1987

Introduction the original VRV air conditioning system to Europe, invented by Daikin in 1982

Up to 6 indoor units connected to 1 outdoor unit



R-407C

1998

Launch inverter series with R-407C

Up to 16 indoor units connected to 1 outdoor unit



2004

Expand to light commercial sector with VRV VII-S

Available in 4, 5, 6HP capacities
> 1 system can be installed in up to 9 rooms



2008

Launch of heat pump optimised for heating (VRV III-C)

> Extended operation down to -25C
2-stage compressor systems

1987

1991

1994

1998

2003

2004

2005

2006-2007

1991

Introduce VRV heat recovery

> Simultaneous cooling and heating



1994

Awarded ISO9001 certification



2003

Introduce VRV II-- the first R-410A VRF system

Available in cooling, heat pump and heat recovery
40 units connected to single refrigerant circuit

R-410A



2005

Extends VRV II inverter range with water cooled VRV-WIII

> Available in heat pump and heat recovery





2009

**Extends VRVIII range
with water cooled VRV-WIII**

- › Geothermal version available
- › Operate down to -10C in heating mode



2011

Launch total solution concept

- › Integrate hot water production and Biddle air curtains into VRV system
- › Connectable to Daikin Emura and Nexura
- 400,000 outdoors units sold
- › 2.2 million indoor units sold



2015

Launch of VRV IV S-series

- › Most compact unit in the market
- › Widest range in the market

5-2007

2008

2009

2010

2011

2012

2015

2006-2007

**Launch the extensively
re-engineered VRVIII**

- › Available in cooling, heat pump and heat recovery
- › Automatic charging and testing
- Up to 64 units connected to 1 system



2010

**Launch of replacement VRV
(VRVIII-Q)**

- › Upgrade to replace older VRV units using R-22 refrigerant



2012-2014

**Setting new standards with the
launch of VRV IV**

- 28% improved seasonal efficiency
- Continuous heating on heat pumps
- › Available in heat pump, heat recovery, water-cooled and replacement series



2015

Launch of VRV IV i-series

- › The invisible VRV
 - › Unique product concept
- VRV IV High Ambient**





VRV IV standard & technologies

Our new VRV IV systems set pioneering standards in all-round climate comfort performance. Total design simplicity, offering rapid installation, full flexibility as well as absolute efficiency and comfort. Find out about all these revolutionary changes at www.daikinmea.com



VRV IV =

3 revolutionary standards

- › Variable Refrigerant Temperature
- › Refrigerant-cooled PCB
- › VRV configurator

+ unique VRV IV core technologies

- › Newly developed inverter compressor
- › 4-side heat exchanger
- › Predictive control
- › Outer rotor DC fan motor

Variable refrigerant temperature

Customise your VRV for best seasonal efficiency and comfort

Thanks to its revolutionary variable refrigerant temperature technology (VRT), VRV IV continuously adjusts both the inverter compressor speed and the refrigerant temperature, providing the necessary capacity to meet the building load with the highest seasonal efficiency at all times!

- › **Seasonal efficiency increased by 28%**
- › **The first weather compensating control on the market**
- › **Customer comfort is assured thanks to higher outblow temperatures (preventing cold draughts)**

How does it work?

VRF standard

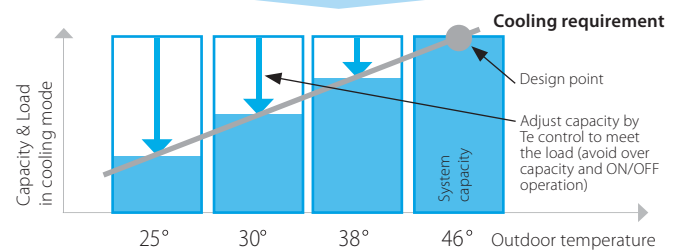
Capacity is controlled only with the variance of the inverter compressor

Daikin VRV IV

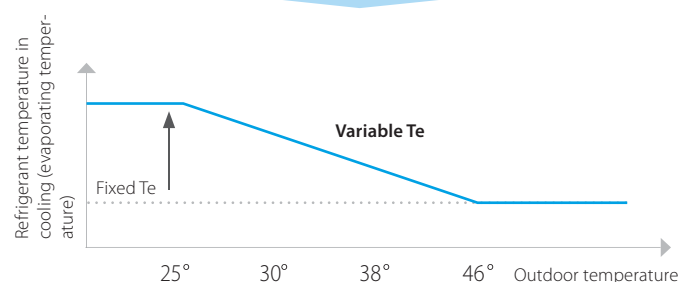
Variable Refrigerant Temperature control for energy saving in partial load condition.

The capacity is controlled by the inverter compressor AND variation of the evaporating (T_e) and condensing (T_c) temperature of the refrigerant in order to achieve the highest seasonal efficiency.

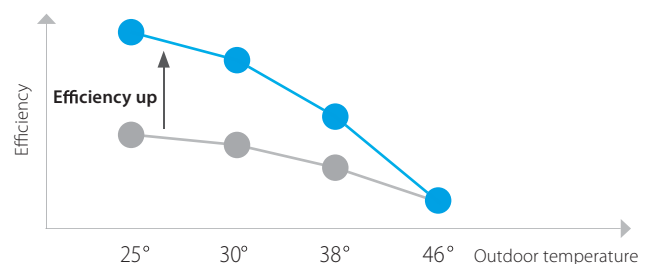
The colder it gets, the lower the load on the building and the lower the capacity need

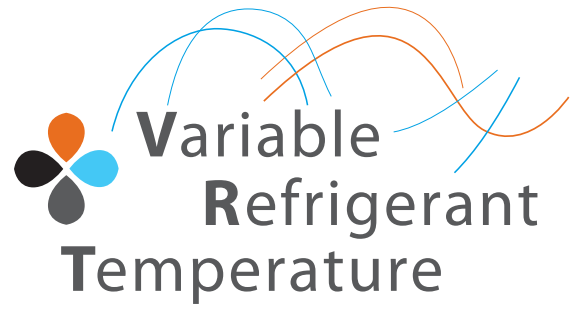


The lower the capacity need the higher the refrigerant temperature can be



A higher refrigerant temperature results in a higher seasonal efficiency and higher comfort





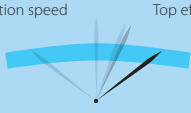
Variable Refrigerant Temperature

Different modes to maximise efficiency and comfort

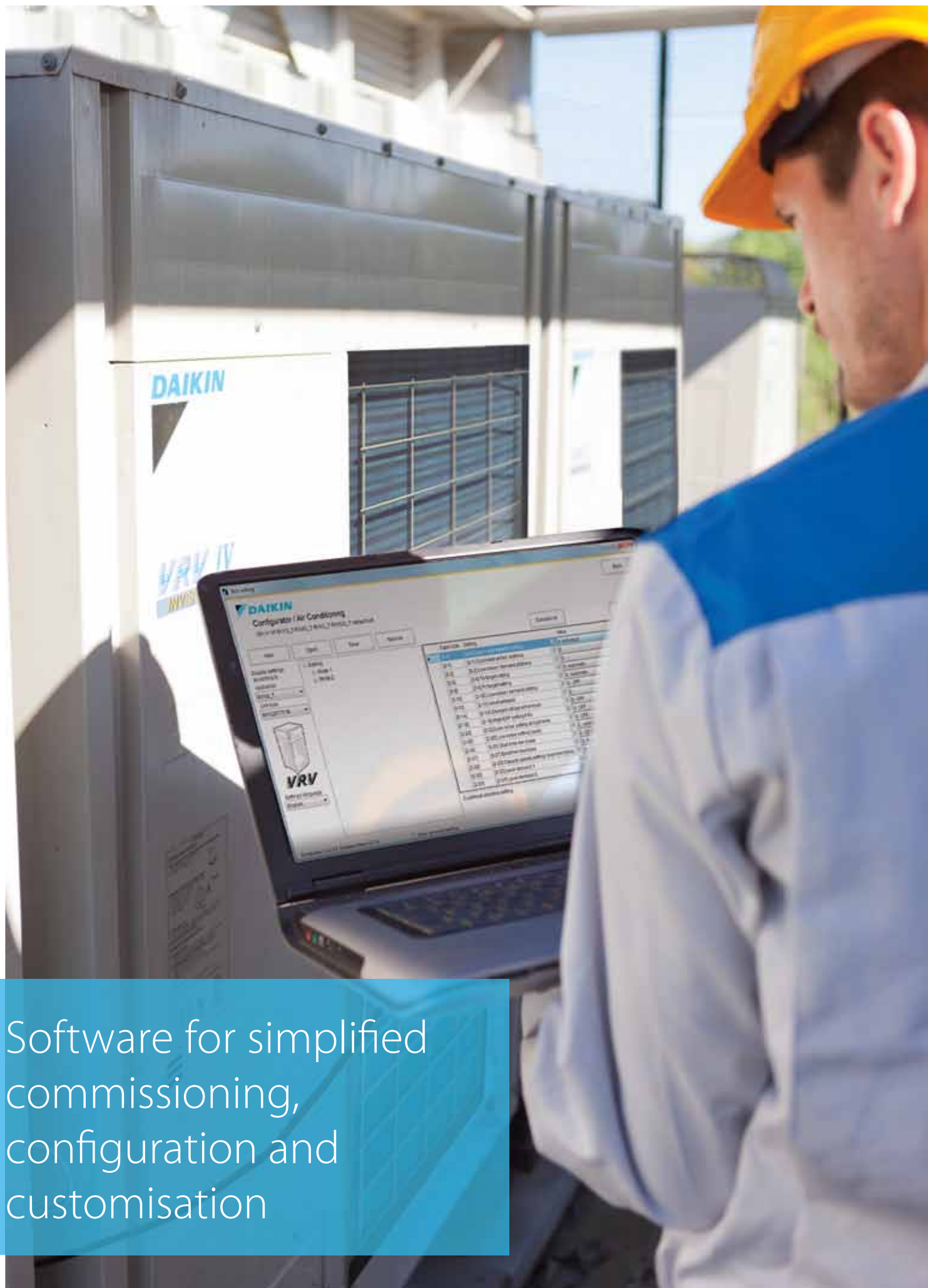
For maximum energy efficiency and customer satisfaction, the outdoor unit needs to adapt the evaporating/condensing temperature at the optimum point for the application.

How to set the different modes?

6
patents

Set up the main operation mode of the system	Define how the system reacts to changing loads	
Step 1	Step 2	
Automatic*  Quick reaction speed Top efficiency The perfect balance: Achieves top efficiency throughout the year, reacts quickly on the hottest days	Powerful	Where a quick increase of load is expected such as conference rooms. Quick reaction speed to changing load has priority, with temporarily colder outblow as a result.
	Quick	Same as above but slower response than the powerful mode.
	Mild *	This mode would be suitable for most office applications and it is the factory set mode. The perfect balance: Slower reaction speed with top efficiency
High sensible (User selection)  Quick reaction speed Top efficiency Year round top efficiency	Powerful	Gives customer choice for fixing coil temperature which avoids cold draughts. A quick reaction speed to changing load has priority, with temporarily colder outblow as a result.
	Quick	Same as above but slower response.
	Mild	The air off temperature remains fairly constant. Suitable for low ceiling rooms.
	Eco	Coil temperature would not change due to fluctuating load. Suitable for computer rooms. Suitable for low ceiling rooms.
Basic Current VRF standard	No submodes	
	This is how most other VRF systems work and can be used for all general type of applications. Suitable for computer rooms. Suitable for low ceiling rooms.	

* Factory setting



Software for simplified
commissioning,
configuration and
customisation

VRV

configurator software

- › **Graphical interface**
- › **Manage systems over multiple sites in exactly the same way**
- › **Retrieve initial settings**

Simplified commissioning

The VRV configurator is an advanced software solution that allows for easy system configuration and commissioning.

- › Less time is required on the roof to configure the outdoor unit
- › Multiple systems at different sites can be managed in exactly the same way, providing simplified commissioning for key accounts
- › Initial settings on the outdoor unit can be easily retrieved

Simplified servicing

The user-friendly display for outdoor units simplifies basic servicing tasks.

- › Easy-to-read error report
- › Easy-to-understand menu indicates quick and easy on-site settings
- › Easy-to-follow parameters for checking basic functions: high pressure, low pressure, frequency and operation time, compressor history, temperature of discharge/suction pipe.



Connect directly to your laptop



3-digit 7-segment display



Pre configured settings from office

User-friendly interface instead of push buttons



Unique VRV IV core technologies



Newly developed compressor

37
patents

Full inverter

- › Enabling variable refrigerant temperature and low start-up currents
- › Stepless capacity control

Reluctance brushless DC motor

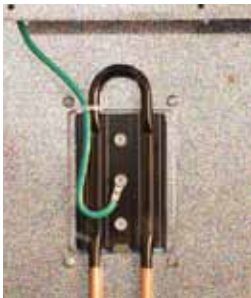
- › Increased efficiency compared to AC motors by simultaneously using normal and reluctance torque
- › Powerful neodymium magnets efficiently generate high torque
- › High-pressure oil reduces thrust losses

High efficiency J-type 6-pole motor

- › 50% stronger magnetic field and higher rotation efficiency

Thixocasting process

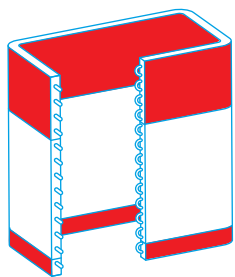
- › Compression volume is increased by 50% thanks to a new high-durability material cast in a semi-molten state



Refrigerant-cooled PCB

- › Reliable cooling because it is not influenced by ambient air temperature
- › Smaller switchbox for smoother air flow through the heat exchanger increasing heat exchange efficiency by 5%

6
patents



4-sided, 3-row condenser coil

- › Condenser coil surface up to 50% larger (up to 235m²), leading to 30% more efficiency

10
patents

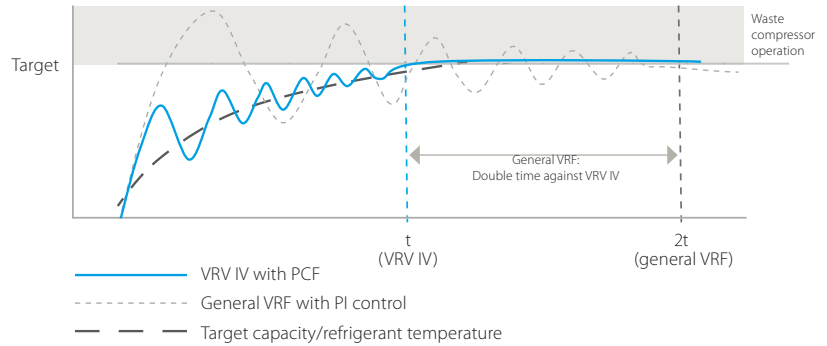


UNIQUE

Predictive Control Function (PCF)

- › Reaches the target capacity/refrigerant temperature faster
- › Reaches the target without overshooting, so there is no waste, leading to improved efficiency
- › Three capacity settings give more precise control for user comfort

The large number of Daikin systems already in operation and which are monitored by our Intelligent Network software put us in the unique position of being able to analyse this data and develop the predictive compressor control function.



VRV IV: PCF

Compressor works with predictive data for the control

- › result: quick convergence to the target temperature and reduction of waste operation of the compressor

General VRF: Pi control

Compressor works with feedback only for the control

- › result: waste operation and longer time before reaching target set point

Half time against general VRF

DC fan motor

UNIQUE

Outer rotor DC motor for higher efficiency

- › Larger rotor diameter results in greater force for the same magnetic field, leading to better efficiency
- › Better control, resulting in more fan steps to match the actual capacity

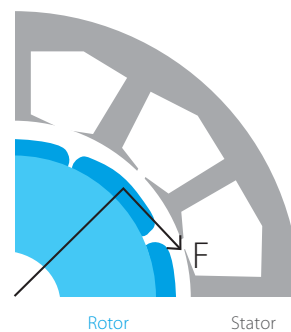
Sine wave DC inverter

Optimizing the sine wave curve results in smoother motor rotation and improved motor efficiency.

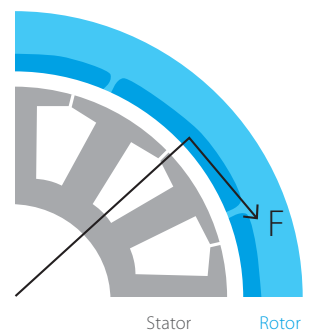
DC fan motor

The use of a DC fan motor offers substantial improvements in operating efficiency compared to conventional AC motors, especially during low speed rotation.

Conventional motor with inner rotor



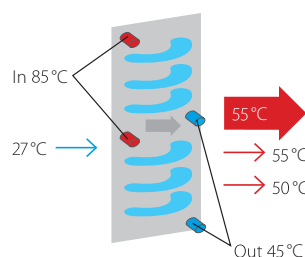
Daikin outer rotor



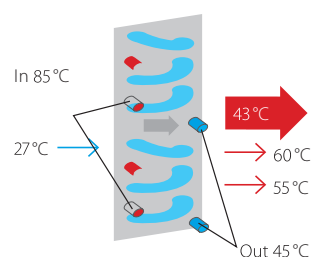
E-Pass Heat Exchanger

Optimising the heat exchanger's path layout prevents heat being transferred from the overheated gas section to the sub-cooled liquid section which is a more efficient way to use the heat exchanger.

Standard heat exchanger



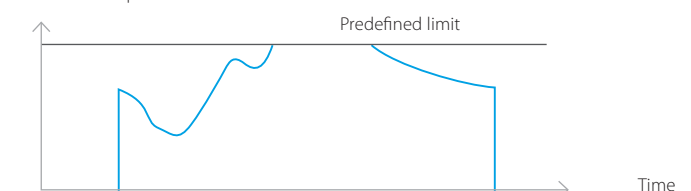
e-Pass heat exchanger



I-demand function

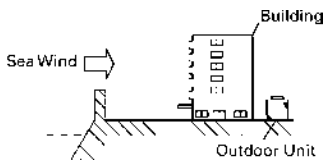
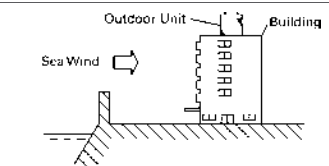
Limit maximum power consumption. The newly introduced current sensor minimizes the difference between the actual power consumption and the predefined power consumption.

Power consumption



Heavy Corrosion Protection Options & Recommendations

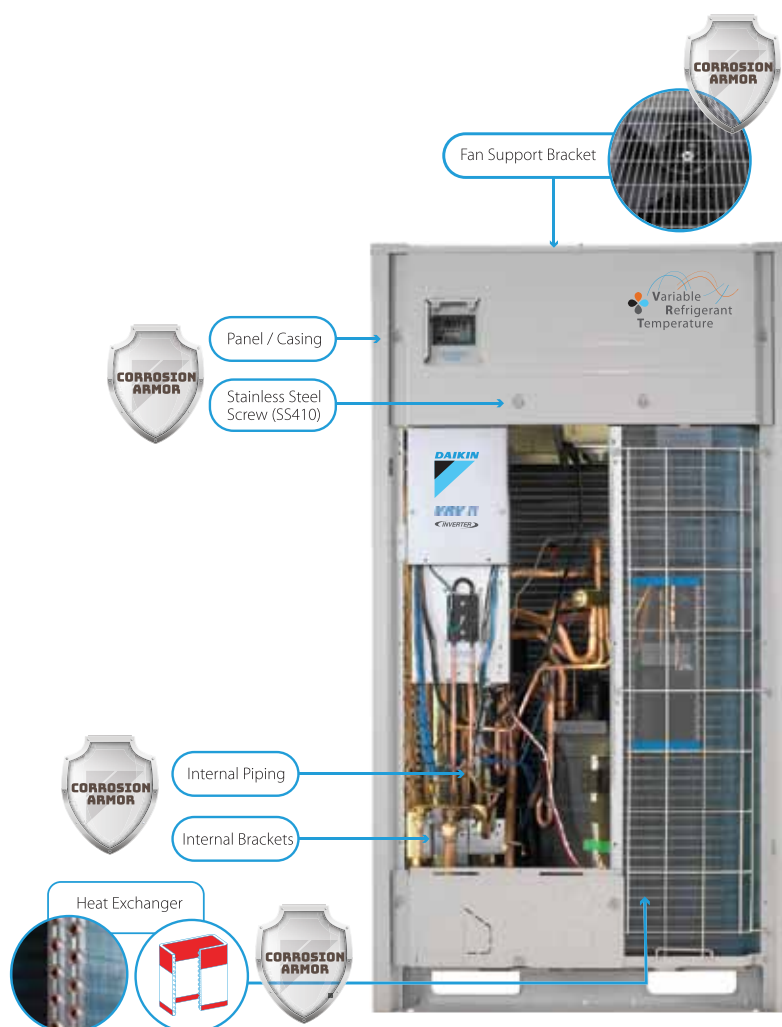
Depending on the location from the coast line and wind direction, Daikin recommends different types of anti-corrosion protection to guard the equipment and guarantee optimal life span and performance.

Environment				Protection Type		Service Contract
Wind direction		Distance from Sea Shore		Standard	Heavy	
Indirect		Standard	> 2 Km	✓	✗	Recommended
		Mild Coastal	500M - 2 Km	✓	Recommended	Recommended
		Severe Coastal	0 - 500M	✓	Highly Recommended	Highly Recommended
Direct		Standard	> 2 Km	✓	Recommended	Recommended
		Mild Coastal	500M - 2 Km	✓	Highly Recommended	Highly Recommended
		Severe Coastal	0 - 500M	✗	MUST	MUST

Disclaimer: Any Daikin unit installed within 500 meters from coastal area or water body is not supported or covered by Daikin standard warranty. Contact a Daikin representative for options.

Components for Outdoor	Standard Treatment	Heavy Treatment
Heat Exchanger	Blue fin or Polyethylene	Hydrophobic epoxy resin Blend 5,000 hours salt spray**
Top Panel Side Panel Outer Panel	Galvanized powder-coated steel	Galvanized powder-coated steel
Bottom / Base Frame (Applicable to non-powder coat component)	Galvanized powder-coated steel	Galvanized powder-coated steel
Fan Motor Support Assy (Applicable to non-powder coat component)	Galvanized powder-coated steel	Hydrophobic epoxy resin Blend 5,000 hours salt spray**
Stop Valve and other support of Bracket Assy (Applicable to non-powder coat component)	Galvanized powder-coated steel	Hydrophobic epoxy resin Blend 5,000 hours salt spray**
Partition Plate (Applicable to non-powder coat component)	Galvanized powder-coated steel	Hydrophobic epoxy resin Blend 5,000 hours salt spray**
Self Tapping Screw	Zinc alloy coating	Stainless steel (SS316)
Circuit Board	Three-proof layer SMT sealing technology	Three-proof layer SMT sealing technology

** Based on ASTM-B117 test conditions



Daikin Anti-Corrosion Solutions for maximum peace of mind

For prolonged lifespan of the condenser coil and other components with Anti-Corrosion Protection coating, the following recommendations for care and maintenance should be followed:



The Do's

- › Regular washing of the condenser coil with fresh water (bi-monthly)
- › Clear all unwanted debris and dirt deposits within the unit
- › Touch up any rusty parts / components
- › Escalate the maintenance frequency when equipment is near the vicinity of a cooling tower
- › Handle equipment with care to prevent scratches on the protection coating

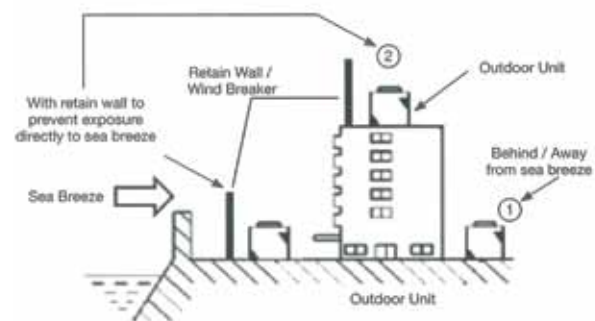


The Don'ts

- › Use unknown chemical or acidic based solution
- › Scratches or crack the anti-corrosion protection coating
- › Direct contact with sea water or coastal sand
- › Leave any debris on the bottom tray

Installation and Precaution

- › It is important that the equipment is not installed directly exposed to sea water
- › Avoid sandy location, i.e. near the shore and windy areas
- › Select a well-drained location
- › Extra care is needed during hoisting and handling to prevent any scratches on the anti-corrosion protection coating
- › No sharp material to be used during the handling
- › Clear all unwanted debris/drilling metal particles on the bottom tray and base leg after installation work to prevent any scratches or cracks onto the anti-corrosion protection coating that will cause rust formation



- › In case of prolong storage at site before operation, we suggest to protect the equipment with the existing packing box material prior to handing over.
- › In situation where the unit is installed close to coastal area and exposed to strong breeze, it is important to install a windbreaker or retaining wall to prolong the life span of the equipment protection coating.

Example of Condenser Unit Installed at Poor Site Condition



Sandy Location

Coastal sand stuck in between the fins causes damage to the protection coating.



Rooftop with Strong Sea Breeze

Strong sea breeze blowing directly to coil can shorten the life of the coil.



Enclosed Area and Sea Water Splashing Condition

Sea water splashing directly to the coil causes solid salt forming on the fins coating.

Anti Corrosion Treatment

Special anti corrosion treatment of the heat exchanger provides 5 to 6 times greater resistance against acid rain and salt corrosion.

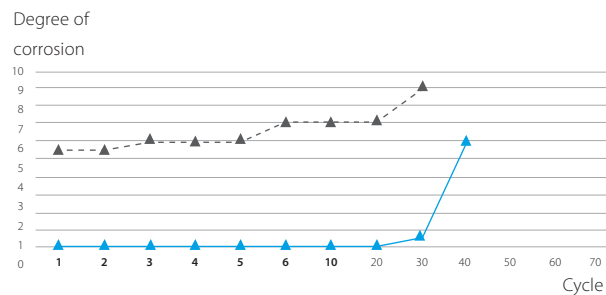
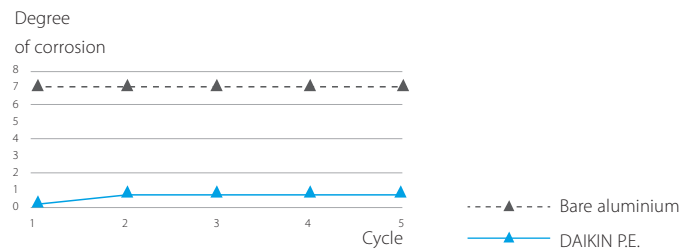
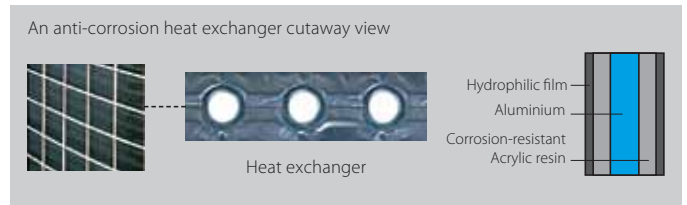
The provision of rust proof steel sheet on the underside of the unit gives additional protection.

Performed tests:

- › **VDA Wechseltest**
- › Contents of 1 cycle (7 days):
- › 24 hours salt spray test SS DIN 50021
- › 96 hours humidity cycle test KFW DIN 50017
- › 48 hours room temperature & room humidity testing period: 5 cycles

Kesternich test (SO2)

- › contents of 1 cycle (48 hours) according to DIN50018 (0.21)
- › testing period : 40 cycles



The total solution



Heating
Cooling
Controls
Ventilation
Fresh Air



Typically, many buildings today rely on several separate systems for heating, cooling & air curtain. As a result energy is wasted. To provide a much more efficient alternative, VRV technology has been developed into a total solution managing up to 70% of a buildings energy consumption giving large potential to cost saving.

- › **Heating and cooling**
for year round comfort
- › **Ventilation**
for high quality environments
- › **Controls**
for maximum operating efficiency

One system,
multiple applications for hotels,
offices, retail, home ...

Heating and cooling



- › Combine VRV indoor units (13 line-ups)
- › New round flow cassette sets the standard for efficiency and comfort with presence sensor.
- › New slim medium static pressure duct unit.

Intelligent control systems



- › Mini BMS with connects Daikin and third-party equipment
- › Integrate intelligent control solutions with energy management tools to reduce running costs

Ventilation



- › Widest range in DX ventilation – AHU units
- › Provides a fresh, healthy and comfortable environment

What does a VRV IV installation mean to you?

See how you can profit from Daikin's highly flexible and efficient product range.



Consultants

Daikin's VRV IV technology maximises flexibility and leads the way in customisation to match individual building requirements in comfort and energy, with reduced running costs.

- › Technical design support
- › Ecological design meets and exceeds legal requirements
- › Maximum flexibility to meet customer requirements
- › Advanced software tools assist with system design
- › Complies with ESMA UAE regulations
- › Complies with MEW-Kuwait regulations
- › Complies with SASO Saudi regulations

Building owners

VRV IV is the ultimate in customised comfort and intelligent control tailored to your individual needs and to maximise energy efficiency. Annual cost savings up to 28% (compared to VRV III).

- › Up to 40% energy consumption saving over conventional AC System
- › Single point of contact for the design and maintenance of your climate system
- › Integrated system, combining air conditioning, ventilation, etc. allows maximum energy efficiency
- › Multiple systems can be managed in exactly the same way for the key accounts
- › Dedicated after-sales service to ensure fast on-site support

Installers

Daikin VRV IV sets the standard with state-of-the-art technology and time-saving commissioning and servicing.

- › Simplified and time-saving commissioning with VRV configurator
- › Wide range of outdoor units (up to 48HP)
- › One supplier = one point of contact
- › Maximum flexibility to meet customer requirements
- › Customised training to maximise expertise



Out door units can be single units or combined in multiple units as a module for larger capacity applications

Products overview **VRV**

Model		Product name	
Air cooled - heat pump	VRV IV heat pump	Daikin's solution for comfort & low energy consumption › Covers all thermal needs of a building via a single point of contact: accurate temperature control, ventilation, air handling units › Incorporates VRV IV standards & technologies such as Variable Refrigerant temperature.	RXYTQ-T VRV IV 
	VRV IV-S series	Space saving solution without compromising on efficiency - Space saving trunk design for flexible installation › Covers all thermal needs of a building via a single point of contact: accurate temperature control, ventilation, air handling units › Connect VRV indoor units › Incorporates VRV IV standards & technologies such as Variable Refrigerant temperature	RXYSQ-T VRV IV S-series 
Water cooled	Water cooled VRV IV	Ideal for high rise buildings, using water as heat source › Reduced CO2 emissions thanks to the use of geothermal energy as a renewable energy source › No need for an external heating or cooling source when used in geothermal mode › Covers all thermal needs of a building via a single point of contact: accurate temperature control, ventilation, hot water, air handling units › Compact & lightweight design can be stacked for maximum space saving › Incorporates VRV IV standards & technologies such as Variable Refrigerant temperature › Variable Water Flow control option increases flexibility and control › Connect either VRV Indoor › 2 analogue input signals allowing external control	RWEYQ-T VRV IV W-series 

Capacity (HP)

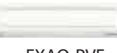
Product name	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
RXYTQ-T VRV IV (50/60Hz) 		●	●	●	●	●																
RXYSQ-T VRV IV S-series (50Hz-8/10/12HP 50/60Hz-6HP) 		●	●	●	●																	
RWEYQ-T VRV IV W-series (50Hz) 		●	●	●	●																	
RWEYQ-P VRV III W-series (60Hz) 			●																			

● Single unit

● Multi combination

Products overview **VRV**

Capacity class

Type	Model		Product name		15	20	25	32	40	50	63	71	80	100	125	140	200	250	400	500
Ceiling mounted cassette	UNIQUE Round flow cassette	360° air discharge for optimum efficiency and comfort › Auto cleaning function ensures high efficiency › Intelligent sensors save energy and maximize comfort › Flexibility to suit every room layout › Lowest installation height in the market!				●	●	●	●	●	●		●	●	●					
	UNIQUE Fully flat cassette	Unique design that integrates fully flat into the ceiling › Perfect integration in standard architectural ceiling tiles › Blend of iconic design and engineering excellence › Intelligent sensors save energy and maximize comfort › Small capacity unit developed for small or well-insulated rooms › Flexibility to suit every room layout				●	●	●	●	●	●									
Concealed ceiling	Slim concealed ceiling unit	Slim design for flexible installation › Compact dimensions enable installation in narrow ceiling voids › Medium external static pressure up to 44Pa › Only grilles are visible › Small capacity unit developed for small of well-insulated rooms › Reduced energy consumption thanks to DC fan motor				●	●	●	●	●	●									
	NEW Concealed ceiling unit with medium ESP	Slimmest yet most powerfull medium static pressure unit on the market! Slimmest unit in class, only 245mm › Low operating sound level › Medium external static pressure up to 150Pa facilitates using flexible ducts of varying lengths › Automatic air flow adjustment function measures the air volume and static pressure and adjusts it towards the nominal air flow, guaranteeing comfort				●	●	●	●	●	●		●	●	●	●				
	Concealed ceiling unit with high ESP	ESP up to 200, ideal for large sized spaces › Optimum comfort guaranteed no matter the length of ductwork or type of grilles, thanks to automatic air flow adjustment › Reduced energy consumption thanks to DC fan motor › Flexible installation as the air suction direction can be altered from rear to bottom suction										●	●	●						
	140 Pa Concealed ceiling unit with high ESP	ESP up to 140 Pa, ideal for large sized spaces › Optimum comfort guaranteed no matter the length of ductwork or type of grilles, thanks to automatic air flow adjustment › Reduced energy consumption thanks to DC fan motor › Flexible installation as the air suction direction can be altered from rear to bottom suction															●			
	Concealed ceiling unit with high ESP	ESP up to 270, ideal for extra large sized spaces › Only grilles are visible › Large capacity unit: up to 28kW cooling capacity																●	●	
Wall mounted	Wall mounted unit	For rooms with no false ceilings nor free floor space › Flat, stylish front panel is more easy to clean › Small capacity unit developed for small of well-insulated rooms › Reduced energy consumption thanks to DC fan motor › The air is comfortably spread up- and downwards thanks to 5 different discharge angles								●	●	●								
Ceiling suspended	Ceiling suspended unit	For wide rooms with no false ceilings nor free floor space › Ideal for comfortable air flow in wide rooms thanks to Coanda effect › Rooms with ceilings up to 3.8m can be heated or cooled very easily! › Can easily be installed in both new and refurbishment projects › Can even be mounted in corners or narrow spaces without any problem › Reduced energy consumption thanks to DC fan motor							●			●		●						
	UNIQUE 4-way blow ceiling suspended unit	Unique Daikin unit for high rooms with no false ceilings nor free floor space › Rooms with ceilings up to 3.5m can be heated up or cooled down very easily! › Can easily be installed in both new and refurbishment projects › Flexibility to suit every room layout › Reduced energy consumption thanks to DC fan motor											●		●					
Floor standing	Floor standing unit	For perimeter zone air conditioning › Can be installed in front of glass walls or free standing as both the front and the back are finished › Ideal for installation beneath a window › Requires very little installation space › Wall mounted installation facilitates cleaning beneath the unit				●	●	●	●	●	●									
	NEW Concealed floor standing unit	Ideal for installation in offices, hotels and residential applications › Discreetly concealed in the wall, leaving only the suction and discharge grilles visible › Can even be installed underneath a window › Requires very little installation space as the depth is only 200mm › High ESP allows flexible installation				●	●	●	●	●	●									
Cooling capacity (kW) ¹					1.7	2.2	2.8	3.6	4.5	5.6	7.1	8.0	9.0	11.2	14.0	16.0	22.4	28.0	45.0	56.0
Heating capacity (kW)					1.9	2.5	3.2	4.0	5.0	6.3	8.0	9.0	10.0	12.5	16.0	18.0	25.0	31.5	50.0	63.0

(1) Nominal cooling capacities are based on: indoor temperature: 27°CDB, 19°CWB, outdoor temperature: 35°CDB, equivalent refrigerant piping: 5m, level difference: 0m

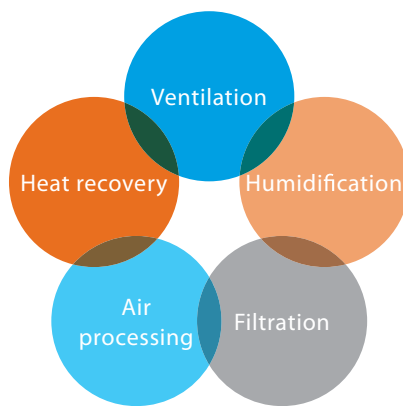
(2) Nominal heating capacities are based on: indoor temperature: 20°CDB, outdoor temperature: 7°CDB, 6°CWB, equivalent refrigerant piping: 5m, level difference: 0m

Ventilation range

overview

Five components of indoor air quality

- › **Ventilation:** ensures the provision of fresh air
- › **Heat recovery:** recovers heat and moisture from the outgoing air to maximise comfort and efficiency
- › **Air processing:** heats or cools incoming fresh air maximising comfort and minimizing the load on the air conditioning installation
- › **Humidification:** optimises the balance between indoor and outdoor humidity
- › **Filtration:** removes dust, pollution and odours from the air



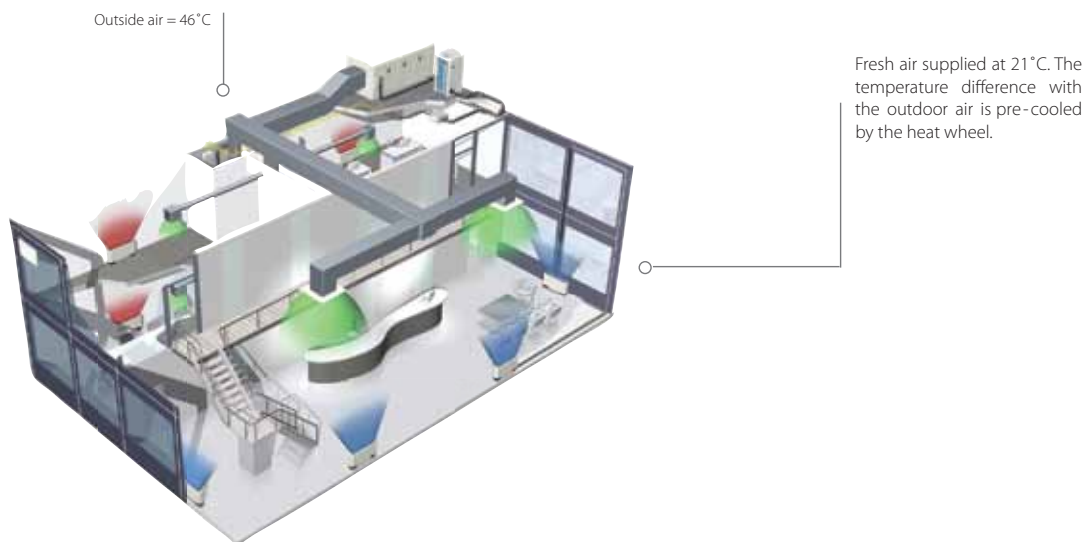
Air flow rate (m³/hr)

Type	Product name		0	200	400	600	800	1,000	2,000	4,000	6,000	8,000	32,000	Components of indoor air quality
Heat reclaim ventilation	VAM-FC													› Ventilation › Heat recovery
	VKM-GB (50Hz only)													› Ventilation › Heat recovery › Air processing
	VKM-GBM (50Hz only)													› Ventilation › Heat recovery › Air processing › Humidification
	FXMQ-MFV1 (50Hz only)													› Ventilation › Air processing
Air handling units	DX total fresh air package													› Ventilation › Heat recovery › Air processing › Humidification › Filtration

Why use VRV condensing units for connection to air handling units?

High Efficiency

The majority of time the AHU will be in cooling mode. By combining a heat wheel with the AHU, energy bills can be reduced by recovering the cool air exhausted to the atmosphere. Where heating is required in winter condition we can simply package with a Daikin heat pumps which are renowned for their high efficiency. Fresh air can be heated in cases where the air is too cold to be supplied untreated.



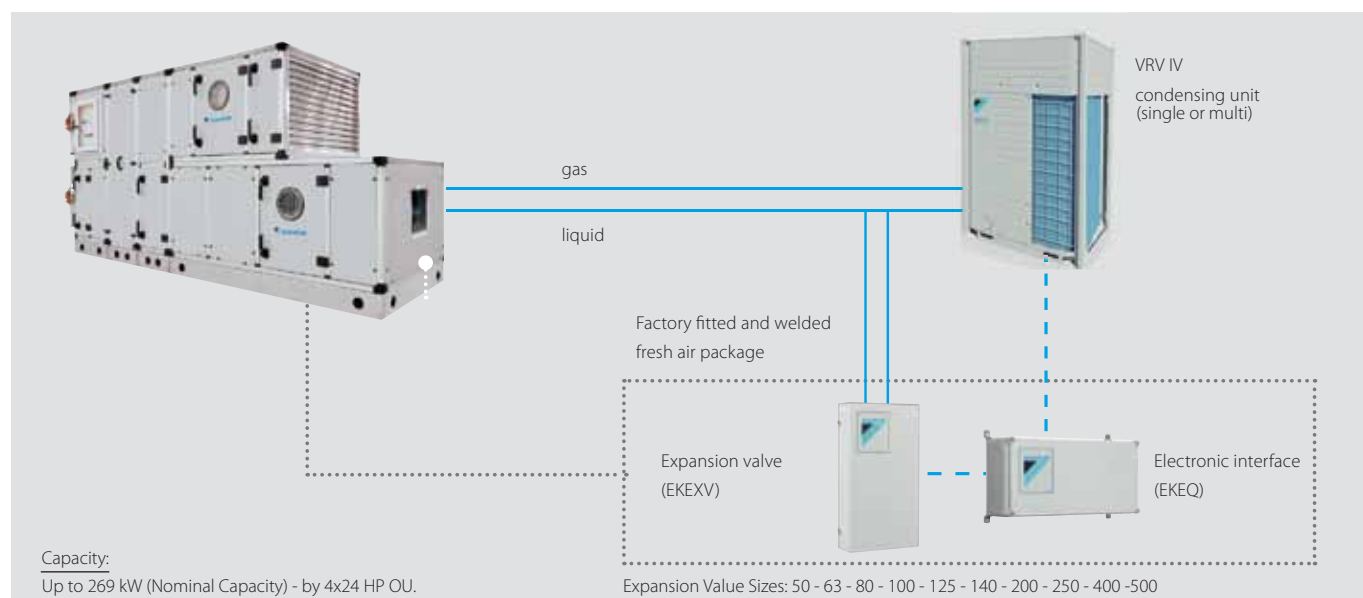
Fast response to changing loads resulting in high comfort levels

Daikin VRV units respond rapidly to fluctuations in supply air temperature, resulting in a steady indoor temperature and resultant high comfort levels for the end user. The ultimate is the VRV range combined with an AHU designed to provide the perfect indoor condition while reducing running cost with the Middle East year round cooling demand.

Easy Design and Installation

The system is easy to design and install since no additional water systems such as boilers, chillers, buffer, tanks and gas connections etc. are required. This also reduces both the total system investment and running cost.

Daikin Fresh air package



In order to maximize installation flexibility, 4 types of control systems are offered

Control w: Off the shelf control of air temperature (discharge temperature, suction temperature, room temperature) via any DDC controller using a proportional 0~10V algorithm for capacity control

Control x: Precise control of air temperature (discharge temperature, suction temperature, room temperature) requiring a preprogrammed DDC controller (for special applications) using a proportional 0~10V algorithm for capacity control

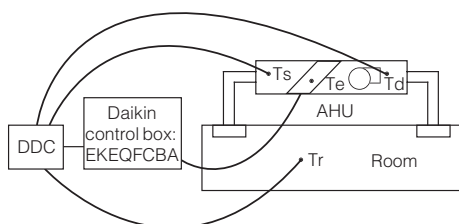
Control y: Control of refrigerant (Te/Tc) temperature via Daikin control (no DDC controller needed) with 3rd party thermostat (Daikin control for field settings and error indication)

Control z: Control of air temperature (suction temperature, room temperature) via Daikin control (no DDC controller needed)

Possibility W (Td/Tr control):

Air temperature control via DDC controller

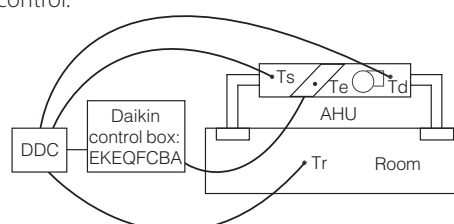
Room temperature is controlled as a function of the air handling unit suction or discharge air (customer selection). The DDC controller is translating the temperature difference between set point and air suction temperature (or air discharge temperature or room temperature) into a proportional 0-10V signal which is transferred to the Daikin control box (EKEQFCBA). This voltage controls the compressor frequency.



Possibility X (Td/Tr control):

Precise air temperature control via DDC controller

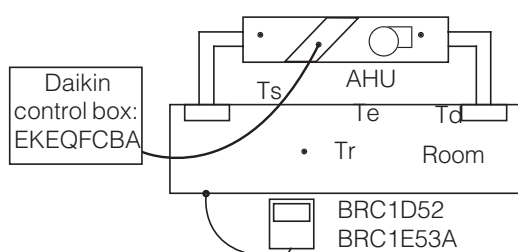
Room temperature is controlled as a function of the air handling unit suction or discharge air (customer selection). The DDC controller is translating the temperature difference between set point and air suction temperature (or air discharge temperature or room temperature) into a reference voltage (0-10V) which is transferred to the Daikin control box (EKEQFCBA). This reference voltage will be used as the main input value for the compressor frequency control.



Possibility Y (Te/Tc control):

By fixed evaporating /condensing temperature

A fixed target evaporating temperature of between 3°C and 12°C can be set by the customer. In this case, room temperature is only indirectly controlled. The cooling load is determined from the actual evaporating temperature (i.e. load to the heat exchanger). A Daikin infrared remote control (BRC1D52 or BRC1E52A/B - optional) can be connected for error indication.

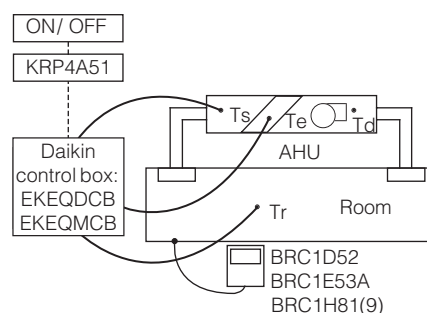


Possibility Z (Ts/Tr control):

Control your AHU just like a VRV indoor unit with 100% fresh air (BRC1D52 or BRC1E52A/B - optional)

Set point can be fixed via standard Daikin infrared remote control. Remote ON/OFF can be achieved by an optional adapter KRP4A51.

No external DDC controller should be connected. The cooling load is determined from the air suction temperature and set point on the Daikin controller.



Ts = Air suction temperature Tr = Room temperature AHU = Air Handling Unit
Td = Air discharge temperature Te = Evaporating temperature DDC = Digital Display Controller

	Option kit	Features
Possibility w	EKEQFCBA	DDC controller is required temperature control using air suction or air discharge temperature
Possibility x		DDC and Microtech controller is required Precise Temperature control using air suction or air discharge temperature
Possibility y		Using fixed evaporating temperature, no set point can be set using remote control
Possibility z	EKEQDCB EKFQMCBA*	Using Daikin infrared remote control BRC1D52 or BRC1E52A/B Temperature control using air suction temperature

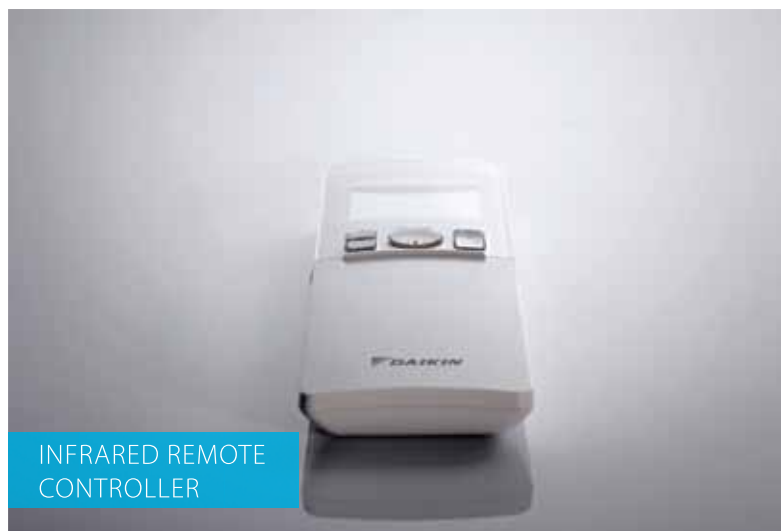
* EKEQMCB (for 'multi' application)



WIRED REMOTE CONTROL
BRC1H81(9)



INTELLIGENT
TOUCH MANAGER
DCM601A51



INFRARED REMOTE
CONTROLLER

Experience a new way

of air conditioning control and
commissioning



Silver
BRC1H81(9)S



White
BRC1H81(9)W

User-friendly wired remote controller with premium design

A complete redesigned controller
focused to enhance
user experience

- Sleek and elegant design
- Intuitive touch button control
- 2 colors to match any interior design
- Compact, only 85x85mm
- Advanced settings and commissioning via smartphone



Advanced settings can be easily done via your smartphone

- BLE (Bluetooth Low Energy) communication
- Visual interface for intuitive setting of schedules, set point restriction and other advanced settings for users / technical managers
- Easy and time saving commissioning for installers

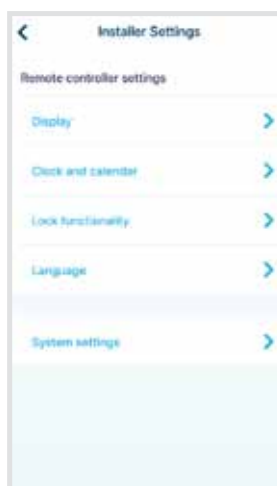
Schedule



Advanced user settings



Installer settings



Field settings



User-friendly wired remote controller with premium design for Sky Air and VRV

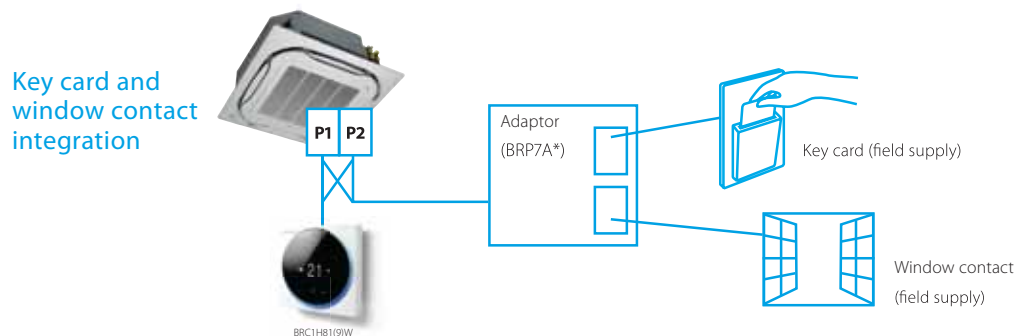


A complete redesigned controller focussed to enhance user experience

- › Sleek and elegant design
- › Intuitive touch button control
- › 2 display view: standard and detailed
- › Access to basic functions (on/off, mode, setpoint, fanspeed, louvers, filter sign & reset, error & code)
- › 2 colors to match any interior design
- › Compact, only 85x85mm
- › Real time clock with auto update to daylight saving time
- › BRC1H81(9) models are equipped with a buzzer

Hotel application functions

- › Energy saving through key card, window contact integration and set point limitation (BRP7A*)
- › Flexible setback function ensures room temperature remains within comfortable limits to ensure guest comfort



Advanced settings can be easily done via your smartphone

A series of energy saving functions that can be individually selected

- › Temperature range limit
- › Setback function
- › Presence & floor sensor setting (available on round flow and fully flat cassette)
- › kWh indication (2)
- › Set temperature auto reset
- › Off timer

Other functions

- › Up to 3 independent schedules can be set, so the user can easily change the schedule himself throughout the year (e.g. Summer, winter, mid-season)
- › Possibility to individually restrict menu functions

Temperature range limit avoids excessive heating or cooling

Save energy by constraining the lower temperature limit in cooling and upper temperature limit in heating mode.

note : Also available in auto cooling/heating change over mode.

BRC4*/BRC7*

Infrared remote control



BRC4*/BRC7*

Operation buttons: ON / OFF, timer mode start / stop, timer mode on / off, programme time, temperature setting, air flow direction (1), operating mode, fan speed control, filter sign reset (2), inspection (2)/ test indication (2)

Display: Operating mode, battery change, set temperature, air flow direction (1), programmed time, fan speed, inspection / test operation (2)

For all features of the remote control, refer to the operation manual

BRC1D52

Wired remote control for Sky Air and VRV



- › Schedule timer:
 - Five day actions can be set as follows:
 - set point: unit is switched ON and normal operation is maintained
 - OFF: unit is switched OFF1
 - limits: unit is switched ON and min./max. control (cf. limit operation for more details)
- › Home leave (frost protection): during absence, the indoor temperature can be maintained at a certain level. This function can also switch the unit ON/OFF
- › User friendly HRV function, thanks to the introduction of a button for ventilation mode and fan speed
- › Immediate display of fault location and condition
- › Reduction of maintenance time and costs

Display

- › Operating mode
- › Heat Recovery Ventilation (HRV) in operation
- › Cool / heat changeover control
- › Centralised control indication
- › Group control indication
- › Set temperature
- › Air flow direction
- › Programmed time
- › Inspection test / operation
- › Fan speed
- › Clean air filter
- › Defrost / hot start
- › Malfunction

NEW BRC1E53A

User friendly remote control with contemporary design for Sky Air and VRV



A series of energy saving functions that can be individually selected

- › Temperature range limit
- › Setback function
- › Presence & floor sensor connection (available on round flow and fully flat cassette)
- › Set temperature auto reset
- › Off timer

Temperature range limit avoids excessive heating or cooling

Save energy by constraining the lower temperature limit in cooling and upper temperature limit in heating mode.

note : Also available in auto cooling/heating change over mode.

Other functions

- Up to 3 independent schedules can be set, so the user can easily change the schedule himself throughout the year (e.g. Summer, winter, mid-season)
- › Possibility to individually restrict menu functions
- Easy to use: all main functions directly accessible
- › **NEW** Choice of display between symbol or text
- › Easy setup: clear graphical user interface for advanced menu settings
- › **NEW** Remote control save mode : screen turns off when no person is changing mode or adjusting settings
- › Real time clock with auto update to daylight saving time
- › Built-in backup power: when a power failure occurs all settings remain stored up to 48 hours
- › Supports multiple languages:
 - BRC1E53A: English, German, French, Dutch, Spanish, Italian, Portuguese
 - Czech, Croatian, Hungarian, Romanian, Slovenian, Bulgarian
 - Greek, Russian, Turkish, Polish, Slovak, Albanian

Simplified wired remote control developed for hotel applications



BRC2E52C

With operation mode selector



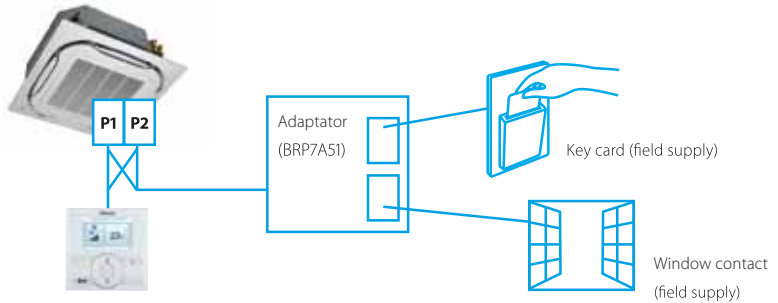
BRC3E52C

Without operation mode selector

- › Symbol driven interface for intuitive control
- › Functions restricted to basic customer needs
- › Contemporary design
- › Energy saving thanks key card, window contact integration and set point limitation (BRP7A51)
- › Flexible setback function ensures room temperature remains within comfortable limits to ensure guest comfort

- › Flat backpanel for easy installation
- › Easy commissioning: intuitive interface for advanced menu settings
- 2 versions available:
 - BRC3E52C: temperature, fan speed, ON/OFF
 - BRC2E52C: temperature, mode, fan speed, ON/OFF

Key card and window contact integration



Centralised control systems

Centralised control of the Sky Air and VRV system can be achieved via 3 user friendly compact remote controllers. These controls may be used independently or in combination with 1 group = several (up to 16) indoor units in combination and 1 zone = several groups in combination.

A centralised remote control is ideal for use in tenanted commercial buildings subject to random occupation, enabling indoor units to be classified in groups per tenant (zoning).

The schedule timer programmes the schedule and operation conditions for each tenant and the control can easily be reset according to varying requirements.

Residential central remote controller* (Option)

DCS303A51



Max. 16 groups of indoor units can be easily controlled with the large LCD panel

- › Max. 16 groups (128 indoor units) controllable
- › Backlight and large LCD panel for easy readability
- › ON/OFF, temperature settings and scheduling can be controlled individually for indoor units.
- › All indoor units can be turned on or off at once with "ALL" button.
- › Each group has a dedicated button for convenience.
- › Outside temperature display

* For residential use only. Cannot be used with other centralised control equipment.

DCS302C51

Centralised remote control



Providing individual control of 64 groups (zones) of indoor units.

- a maximum of 64 groups (128 indoor units, max. 10 outdoor units) can be controlled
- a maximum of 128 groups (128 indoor units, max. 10 outdoor units) can be controlled via 2 centralised remote controls in separate locations
- › zone control
- › group control
- › malfunction code display
- › maximum wiring length of 1,000m (total: 2,000m)
- air flow direction and air flow rate of HRV can be controlled
- › expanded timer function

DST301B51

Schedule timer

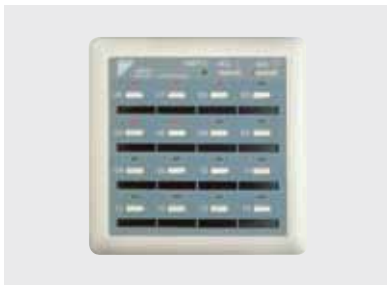


Enabling 64 groups to be programmed.

- a maximum of 128 indoor units can be controlled
- › 8 types of weekly schedule
- a maximum of 48 hours back up power supply
- › a maximum wiring length of 1,000m (total: 2,000m)

DCS301B51

Unified ON/OFF control



Providing simultaneous and individual control of 16 groups of indoor units.

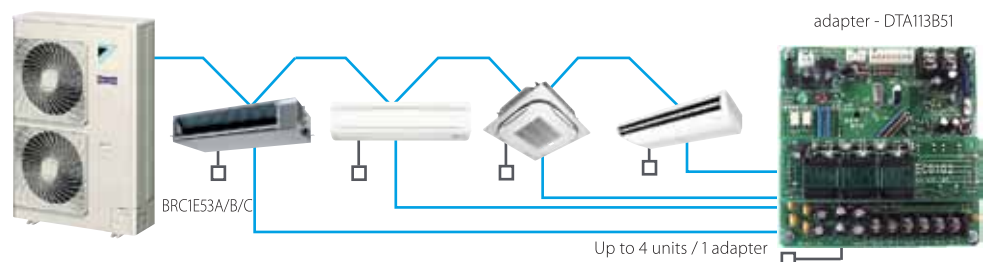
- a maximum of 16 groups (128 indoor units) can be controlled
- › 2 remote controls in separate locations can be used
- › operating status indication (normal operation, alarm)
- › centralised control indication
- › maximum wiring length of 1,000m (total: 2,000m)

Centralised control systems

DTA113B51

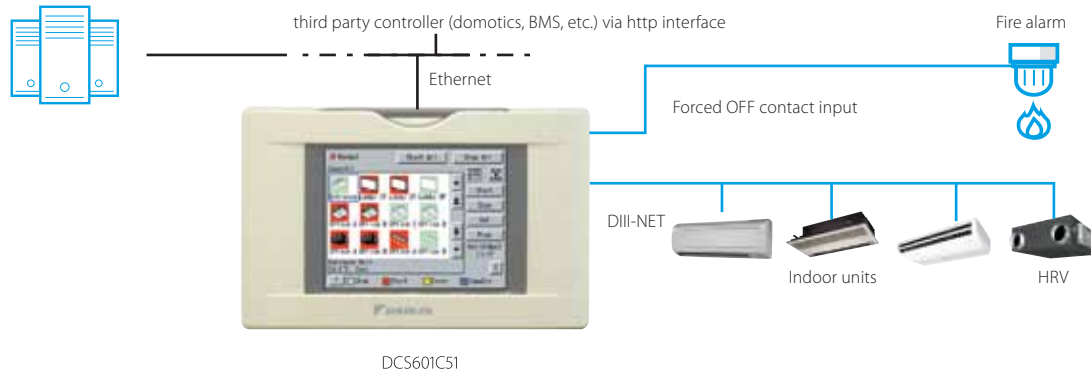
Basic solution for control of Sky Air and VRV

- › Rotation function
- › Backup operation function.



DCS601C51

Detailed & easy monitoring and operation of VRV systems (max. 64 indoor units groups).



Languages

- › English
- › French
- › German
- › Italian
- › Spanish
- › Dutch
- › Portuguese

System layout

- Up to 64 indoor units can be controlled
- › Touch panel (full colour LCD via icon display)

Control

- › Individual control (set point, start/stop, fan speed) (max. 64 groups/indoor units)
- › Set back shedule
- › Enhanced scheduling function (8 schedules, 17 patterns)
- › Flexible grouping in zones
- › Yearly schedule
- › Fire emergency stop control
- › Interlocking control
- › Increased HRV monitoring and control function
- › Automatic cooling / heating change-over
- › Heating optimization
- › Temperature limit
- › Password security: 3 levels (general, administration & service)
- › Quick selection and full control
- › Simple navigation

Monitoring

- › Visualisation via Graphical User Interface (GUI)
- › Icon colour display change function
- › Indoor units operation mode
- › Indication filter replacement
- › Multi PC

Cost performance

- › Free cooling function
- › Labour saving
- › Easy installation
- › Compact design: limited installation space
- › Overall energy saving

Open interface

- › Communication to any third party controller (domotics, BMS, etc.) is possible via open interface (http option DCS007A51)

Connectable to

- › VRV
- › HRV
- › Sky Air
- › Split (via interface adapter)

Advanced centralised controller with Cloud connection

- Intuitive and user-friendly interface
- Flexible concept for stand alone and multi site applications
- Total solution thanks to integration of 3rd party equipment
- Monitor & control your small commercial building, no matter where you are

2 solutions:

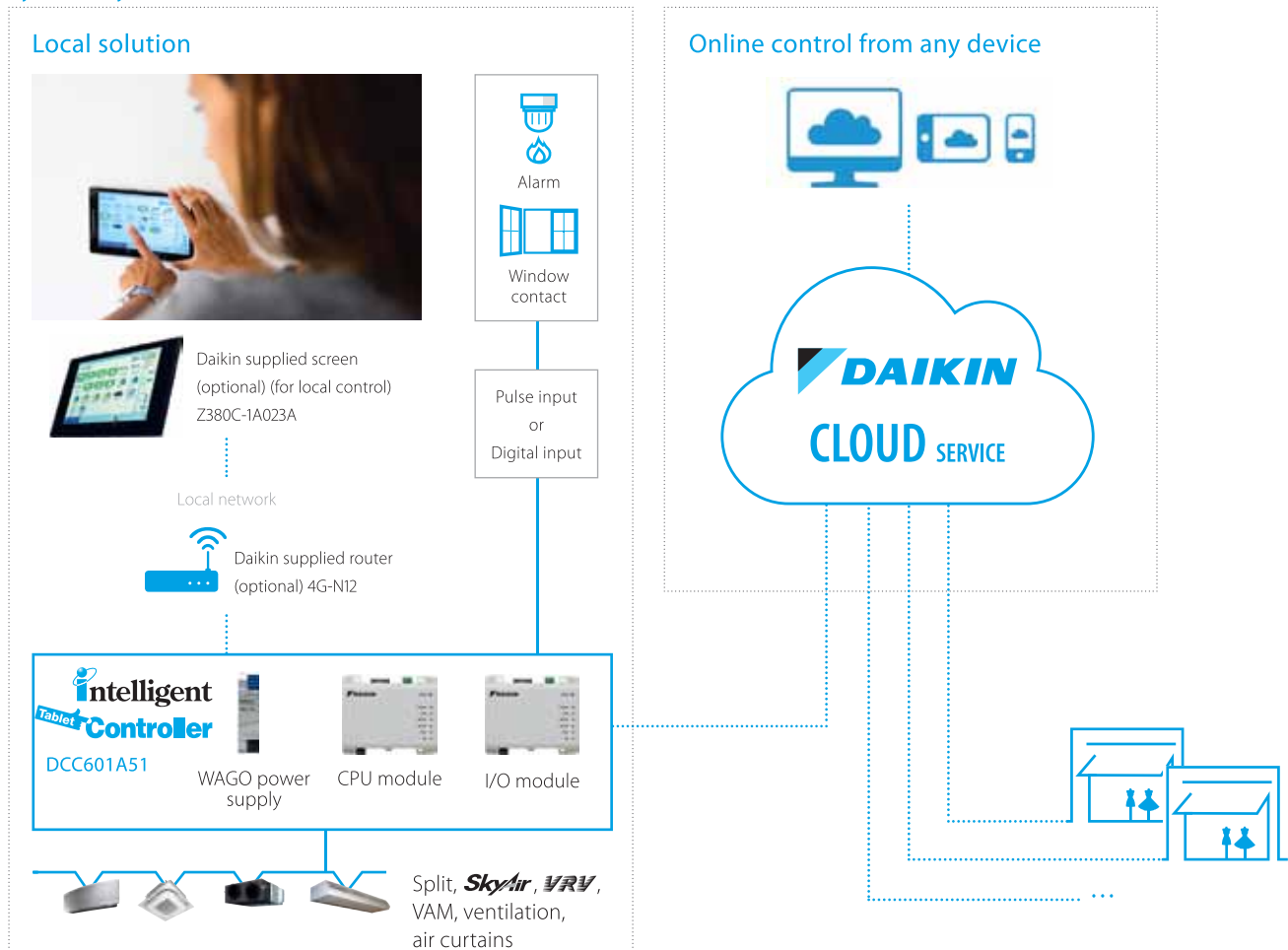
Local solution

- › Offline centralised control
- › Stylish optional screen fits any interior

Cloud solution

- › Flexible online control from any device (Laptop, tablet...)
- › Monitor & control one or multiple sites
- › Benchmark the energy consumption of different installations (1)
- › Energy consumption follow-up to comply with local regulations

System layout



(1) For VRV

Total solution

- › Total solution thanks to a large integration of Daikin products and 3rd party equipment
- › Connect a wide range of units (Split, Sky Air, VRV, Ventilation, Biddle air curtains)
- › Simply control your entire building centrally
- › Increased customer shopping experience by better management of your shop comfort level

Daikin Cloud Services

- › Control your building no matter where you are
- › Monitor and control multiple sites
- › Installer or technical manager can remotely login to the cloud for first troubleshooting
- › Benchmark the energy consumption of different installations (1)
- › Manage & track your energy use

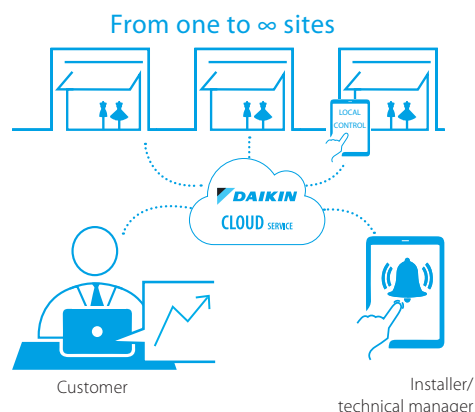
User friendly touch control

- › Stylish Daikin supplied optional screen for local control fits any interior
- › Intuitive and user-friendly interface
- › Full solution with simple control
- › Easy commissioning

Flexible

Inputs via digital and pulse input for 3rd party equipment such as kWh meters, emergency input, window contact, ...

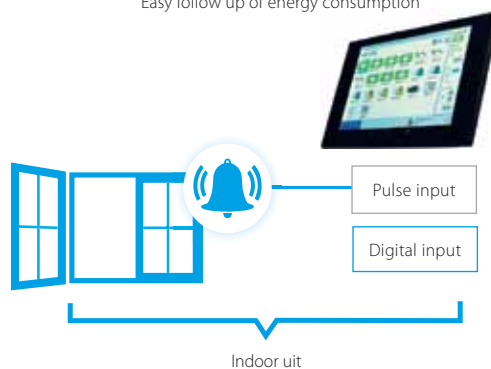
- › Modular concept allows your cloud to grow with your business
- › Control up to 32 indoor unit (groups)



Intuitive control from the cloud



Easy follow up of energy consumption



Functions overview

		Local solution	Cloud solution
Languages		Depends on local device	EN, DE, FR, NL, ES, IT, EL, PT, RU, TR, DA, SV, NO, FI, CS, HR, HU, PL, RO, SL, BG, SK
System layout	N° of connectable indoor units	32	32
	Multiple sites control		•
Monitoring & control	Basic control functions (ON/OFF, mode, filter sign, setpoint, fan speed, ventilation mode, room temperature, ...)	•	•
	Remote control prohibition	•	•
	All devices ON/OFF	•	•
	Zone control		•
	Group control	•	•
	Weekly schedule	•	•
	Yearly schedule		•
	Interlock control	•	•
	Set point limitation		•
	Visualisation of energy use per operation mode		•
Connectable to	DX split, Sky Air, VRV	•	•
	VAM, VKM ventilation	•	•
	Air curtains	•	•

For available Daikin Cloud Service options refer to the option list

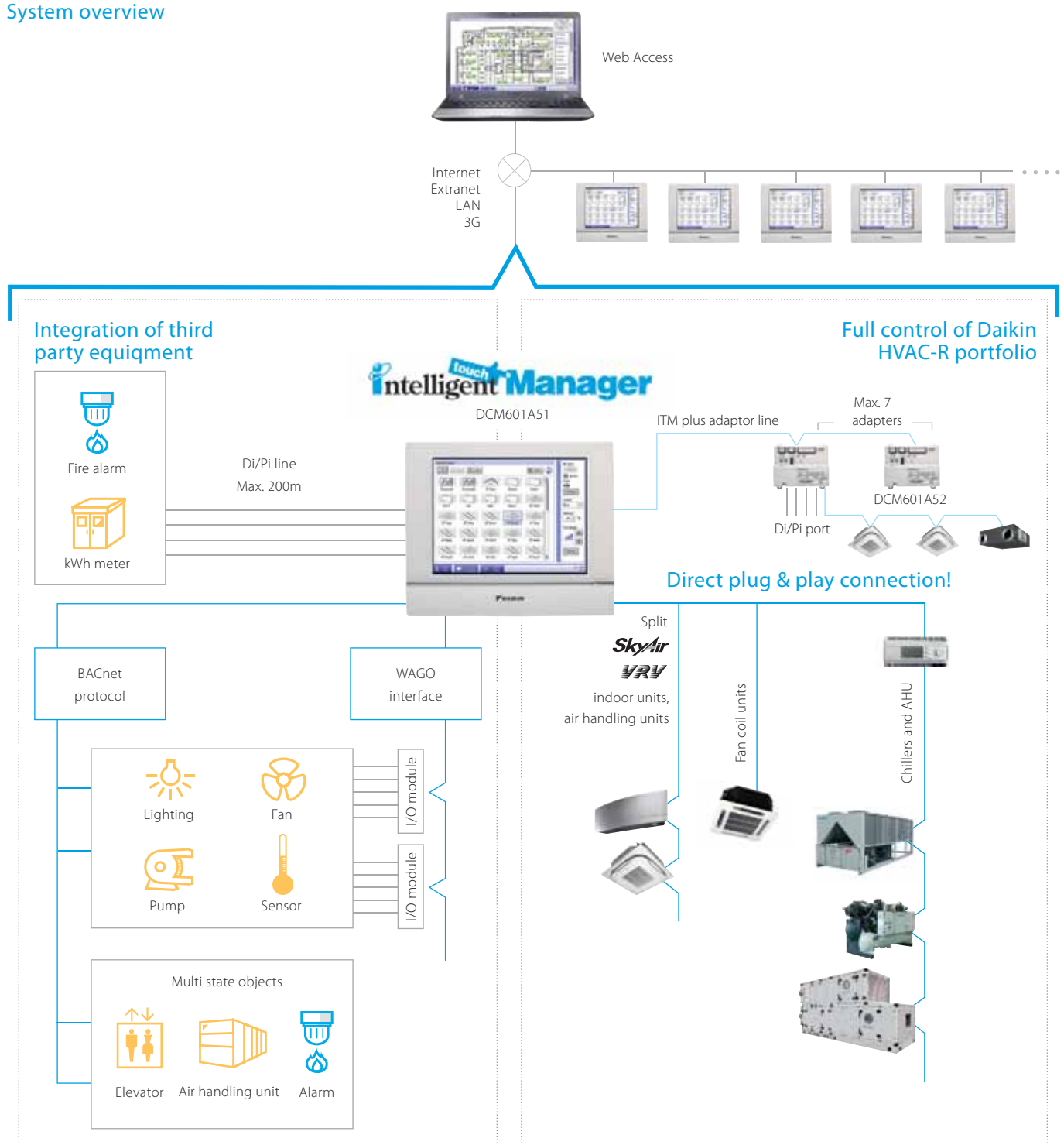
DCM601A51

Mini BMS

with full integration across all product pillars

- Price competitive mini BMS
- Cross-pillar integration of Daikin products
- Integration of third party equipment

System overview





User friendliness

- › Intuitive user interface
- › Visual lay out view and direct access to indoor unit main functions
- › All functions direct accessible via touch screen or via web interface

Smart energy management

- › Monitoring if energy use is according to plan
- › Helps to detect origins of energy waste
- › Powerful schedules guarantee correct operation throughout the year
- › Save energy by interlocking A/C operation with other equipment such as heating

Flexibility

- NEW** › Cross-pillar integration (heating, air conditioning, applied systems, refrigeration, air handling units)
- NEW** › BACnet protocol for 3rd party products integration
- › I/O for integration of equipment such as lights, pumps... on WAGO modules
- › Modular concept for small to large applications
- › Control up to 512 indoor unit groups via one ITM and combine multiple ITM via the web interface

Easy servicing and commissioning

- › Remote refrigerant containment check preventing on site visit
- › Simplified troubleshooting
- › Save time on commissioning thanks to the pre-commissioning tool
- › Auto registration of indoor units

Functions overview



Languages

- › English
- › French
- › German
- › Italian
- › Spanish
- › Dutch
- › Portuguese

System layout

- › Up to 2,560 unit groups can be controlled (ITM plus Integrator + 7 iPU (incl. iTM adaptor))
- › Ethernet TCP/IP

Management

- › Web access
- › Power Proportional Distribution (option)
- › Operational history (malfunctions, operation hours, ...)
- › Smart energy management
 - monitor if energy use is according to plan
 - detect origins of energy waste
- › Setback function
- › Sliding temperature

Control

- › Individual control (2,560 groups)
- › Schedule setting (Weekly schedule, yearly calendar, seasonal schedule)
- › Interlock control
- › Setpoint limitation
- › Temperature limit

WAGO Interface

- › Modular integration of 3rd party equipment
 - WAGO coupler (interface between WAGO and Modbus)
 - Di module
 - Do module
 - Ai module
 - Thermistor module

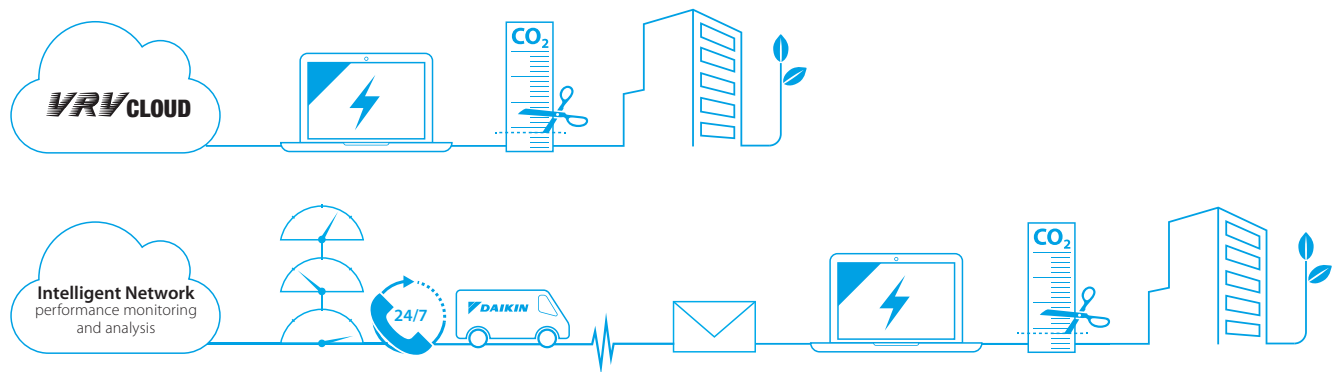
Connectable to

- DX Split, Sky Air, VRV
- Chillers (via POL638.70 controller)
- NEW** - Daikin AHU
- Fan coils
- Daikin Altherma Flex type
- LT and HT hydroboxes
- Air curtains
- WAGO I/O, AO and PI
- NEW** - BACnet protocol



What is Intelligent Network?

A service based on our global remote monitoring technology, keeping your system trouble-free and working with top efficiency.



What does Intelligent Network offer you

Safeguarding the lifelong optimum operation of your air conditioning system means getting geared up to operate the system in energy efficient way and reduce unexpected breakdowns and costs to the absolute minimum. This is where Intelligent Network helps to improve the effectiveness of your building management.

Intelligent Network is about 'being connected' with Daikin, the Internet-based link between you, your air conditioning system and Daikin's Remote Monitoring Centre. This allows you to monitor your energy consumption and Daikin's expert service engineers to monitor your entire system's status non-stop, all year round. Through predicting malfunctions and offering technical advice from data analysis, you can maximise equipment uptime, as well as controlling energy costs with no sacrifice in comfort levels. By doing this, Intelligent Network will prevent problems, prolong your system's service life while reducing the energy bill.

Intelligent Network Services

Intelligent Network consists of 2 main services: The VRV Cloud and Intelligent Network performance monitoring and analysis.

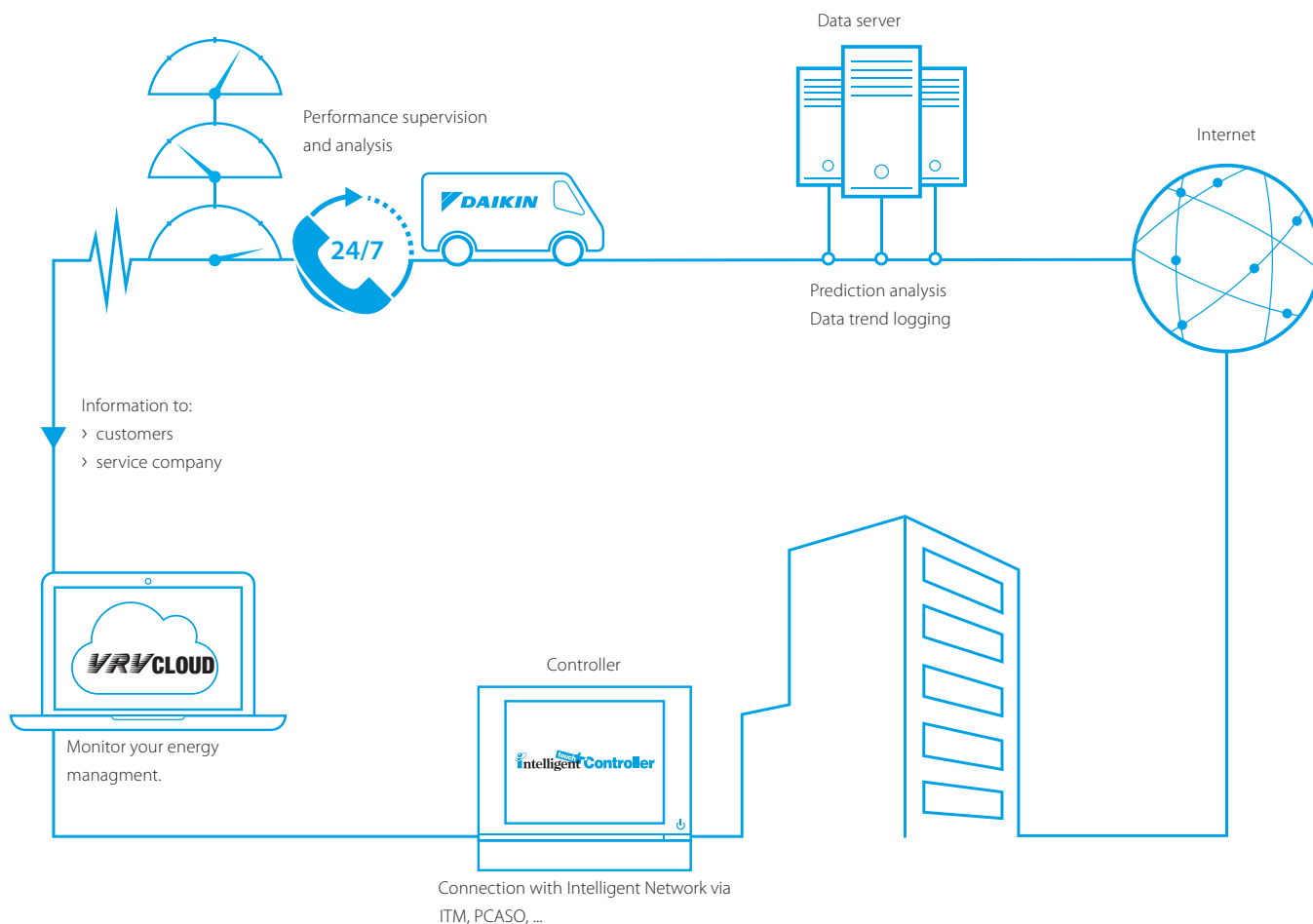
VRV Cloud

The VRV Cloud puts you in the driving seat of your energy management. The easy-to use energy data trending and analytic tools puts you in control and shows your CO2 footprint reduction opportunities and energy savings of up to 15%.

Saving starts by measuring. Enhance your company's sustainability !

Intelligent Network performance monitoring and analysis

Focus on your core business and hand the HVAC over to Daikin. Daikin Intelligent Network connects your system continuously with Daikin. It notifies alarms and early warnings of system deviations to maximise system uptime and the comfort of the people in the building. Service providers have web based access to operation data so that they are fully prepared when they arrive on-site. Specialists run trend analyses. All of which boosts your system's reliability by ensuring that it is running at optimum efficiency.



Daikin VRV Cloud

Helps you manage your energy through Daikin technology.

- > Intelligent energy visualization tool that helps you with your energy management
- 24/7 online monitoring by the customer from any location.
- > User friendly visualization of VRV energy management (kWh)
- > Analysis support of waste operation
- > Multiple site monitoring

- > Performance Supervision by Daikin experts enhances a maintenance plan.
- > This service aims to enhance the service level, to respond fast and accurate, to save on unexpected repair costs and assure the peace of mind. Repetitive interventions and disturbance of building tenants and maintenance teams are kept to a minimum.

Long lifetime systems

- > Intelligent Network will maximise the installation's lifetime, by ensuring the equipment runs in optimal conditions and avoid unnecessary stress on components.

Performance monitoring

Daikin's unique Intelligent Network Service aims to prevent the equipment coming to an unexpected stop or needing emergency repair.

Fast response, better prepared

- > If an alarm does occur, the service provider is immediately alerted and receives all crucial information.
- > Early fault indication (predictions) : operation data are 24/7 checked by Intelligent Network prediction algorithms to act as early as possible, averting unscheduled breakdowns.

Analysis

Be connected with Daikin's experts, this gives you a clear overview of operability and use of the air conditioning system.

- > Daikin continuously monitors energy, operation and comfort data. Thanks to periodic analysis of the data, Daikin can suggest ways of improving performance.
- > if there is a problem, Daikin specialists will analyse the operation data history to provide remote support.

VRV IV heat pump

Model				RXYTQ8T7YF	RXYTQ10T7YF	RXYTQ12T7YF	RXYTQ14T7YF	RXYTQ16T7YF
Cooling T1 ⁽¹⁾ 35°C (Nominal)	Capacity	Ton		6.4	8.0	9.5	11.4	12.8
	Capacity	kW		22.4	28.0	33.5	40.0	45.0
	Capacity	Btu/h		76,450	95,550	114,350	136,500	153,550
	EER	(Btu/h) / W		12.1	12.8	11.8	11.0	11.0
	PI	kW		6.33	7.47	9.68	12.4	14.0
Cooling T3 ⁽³⁾ 46°C	Capacity	kW		20.2	25.2	28.5	32.0	35.1
	Capacity	Btu/h		68,950	86,000	97,250	109,200	119,800
	EER	(Btu/h)/ W		9.28	9.90	9.72	9.45	9.18
	PI	kW		7.43	8.69	10.0	11.6	13.0
	PI out	kW		6.57	8.29	8.64	10.17	11.63
Cooling T2 ⁽⁴⁾ 48°C	Capacity	kW		16.8	22.4	24.0	25.1	28.4
	Capacity	Btu/h		57,350	76,450	81,900	85,650	96,950
	Efficiency	kW/Ton		1.30	1.30	1.30	1.28	1.29
	EER	(Btu/h) / W		9.21	9.25	9.21	9.35	9.28
	PI	kW		6.22	8.29	8.89	9.16	10.4
	PI out	kW		5.93	7.80	8.43	8.65	9.87
Heating (nominal) ⁽⁵⁾	Capacity	kW		22.4	28.0	33.5	40.0	45.0
	Capacity	Btu/h		76,450	95,550	114,350	136,500	153,550
	COP	(Btu/h) / W		13.2	12.7	12.0	12.2	11.8
	PI	kW		5.20	6.67	8.54	9.98	11.7
Sound level (nominal)	Sound power	dBA		78	81	81	86	86
	Sound pressure	dBA		58	61	61	64	64
Dimensions	H x W x D		1680x930x765	1680 x 1240 x 765				
Operation range cooling	Outdoor	-5 ~ 55°CDB ⁽⁶⁾						
	Indoor	14 ~ 25°CWB						
Operation range Heating	Outdoor	-20 ~ 15.5°CWB						
	Indoor	15 ~ 27°CDB						
Connection Ratio	VRV indoor unit only	50 ~ 130%						
	VRV indoor + AHU	Total: 50 -110% (VRV Indoor : 50-110%)						
	AHU only	75 ~ 110%						
Refrigerant	Type	R-410A						
Pipe Connection	Liquid			Ø 9.52 mm	Ø 9.52 mm	Ø 12.7 mm		
	Gas			Ø 19.01 mm	Ø 22.2 mm	Ø 28.6 mm		
Total Piping Length	System	Actual	m	1000				
Max. connectable indoor units				64				
Wiring Length				Total Wiring Length : 2000 m				
Compressors				1	1	1	2	2
Power Supply				3 Phase/ 380-415V/ 50Hz 3 Phase/400 V / 60Hz				

(1) indoor temperature: 26,7°CDB, 19,4°CWB, outdoor temperature: 35°CDB, AHRI 1230:2010, power input indoor units (duct type) included. As per AHRI/ SASO

(2) Outdoor energy efficiency rating and power input based on Eurovent testing and listing of the 50Hz models only. As per Estidama

(3) indoor temperature: 29,0°CDB, 19,0°CWB, outdoor temperature: 46°CDB, ISO15042:2011, power input indoor units (duct type) included. As per ESMA

(4) indoor temperature: 26,6°CDB, 19,4°CWB, outdoor temperature: 48°CDB, AHRI 1230:2010, power input indoor units (duct type) included. As per MEW

(5) Heating capacities are based on: indoor temperature: 20°CDB, outdoor temperature: 7°CDB, 6°CWB, Eurovent 2015, equivalent refrigerant piping: 5m, level difference: 0m.

(6) Independently tested by 3rd party laboratory (Intertek- USA)

VRV IV S-series heat pump

Space saving solution without compromising on efficiency

- › Space saving trunk design for flexible installation
- › Covers all thermal needs of a building via a single point of contact: accurate temperature control, ventilation, air handling units.
- › Wide range of indoor units:
- › Incorporates VRV IV standards & technologies: Variable Refrigerant Temperature and full inverter compressors
- › Possibility to limit peak power consumption between 30 and 80%, for example during periods with high power demand
- › Contains all standard VRV features

Specifications

VRV IV-S heat pump



Model				RXYSQ-	6TMYFK	8TMY1B	10TMY1B	12TMY1B
Cooling T1 ⁽¹⁾ 35°C Nominal	Capacity		HP		6	8	10	12
	Capacity		kW		15.3	22.4	28	33.5
	Capacity		Btu/h		52,000	76,400	95,500	114,300
	EER		(Btu/h) / W		11.42	11.3	11.2	11.2
	PI		kW		4.55	6.78	8.54	10.2
Cooling T3 ⁽³⁾ 46°C	Capacity		kW		12.89	17	20	24
	Capacity		Btu/h		44,000	58,000	68,200	81,850
	EER		(Btu/h) / W		8.36	10	9.72	9.52
	PI		kW		5.26	5.8	7.02	8.6
Cooling T2 ⁽⁴⁾ 48°C	Capacity		kW/kW		12.89	15.0	17.0	20.0
	Capacity		Btu/h		44,000	51,150	58,000	68,200
	Efficiency		kW/Ton		1.51	1.25	1.40	1.40
	EER		(Btu/h) / W		7.78	9.58	8.53	8.56
	PI		kW		5.65	5.34	6.8	7.97
Heating (nominal) ⁽⁵⁾	Capacity		kW		12.3	22.4	28.0	33.5
	Capacity		Btu/h		52,000	76,400	95,500	114,300
	COP		(Btu/h) / W		14.6	14.7	14.5	14.0
	PI		kW		2.87	5.2	6.6	8.19
Sound Level (nominal)	Sound Power		dBA		69	73	74	76
	Sound Pressure		dBA		51	55	55	57
Dimensions	H x W x D				1615 x 940 x 460	1,430 x 940 x 320	1,615 x 940 x 460	
Weight	Unit		Kg		175	144	178	180
Operation Range Cooling	Outdoor				-5~52			
	Indoor				14~25 CWB			
Operation Range Cooling	Outdoor				-20~15.5			
	Indoor				15~27 CDB			
Connection Ratio	VRV Indoor Unit only				100 ~130 %	50~130 %		
	VRV Indoor + AHU				50 ~110 %			
	AHU only				100 ~110 %	75~110 %		
Refrigerant	Type				R-410A			
Pipe Connections	Liquid				9.52	9.52	12.7	
	Gas				22.2	22.2	25.4	
Total Piping Length	System	Actual	m		300(100,120 actual 8,10,12 Hp)			
Max. Connectable Indoor Units					17	21	26	
Power Supply					3 Phase 380-415V / 50 Hz			

⁽¹⁾ Indoor temperature: 26.7 °CDB, 19.4 °CWB, Outdoor temperature: 35 °CDB, AHRI 1230:2010, power input indoor units (duct type) included. As per AHRI/ SASO

⁽²⁾ Outdoor energy efficiency rating and power input based on Eurovent testing and listing of the 50Hz models only. As per Estidama.

⁽³⁾ Indoor temperature: 29 °CDB, 19 °CWB, outdoor temperature: 46°CDB, ISO15042:2011, power input indoor units (duct type) included. As per ESMA.

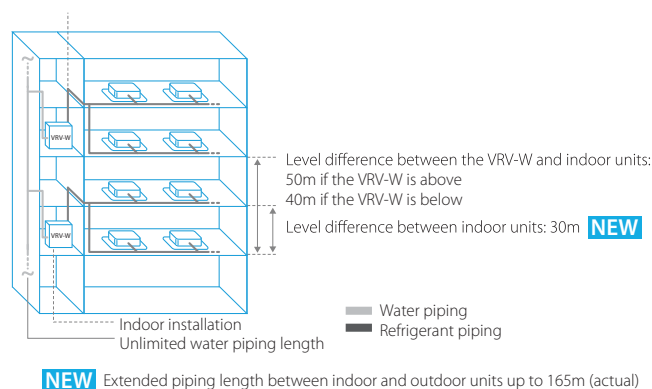
⁽⁴⁾ Indoor temperature: 26.6 °CDB, 19.4 °CWB, outdoor temperature: 48 °CDB, AHRI 1230:2010, power input indoor units (duct type) included. As per MEW

⁽⁵⁾ Heating capacities are based on indoor temperature: 20 °CDB, outdoor temperature: 7 °CDB, 6 °CWB, Eurovent 2015, equivalent refrigerant piping: 5m, level difference: 0m.

VRV IV water cooled series

Ideal for high rise buildings, using water as heat source

- › Unified range for standard and geothermal series simplifies stock. Geothermal series reduce CO₂ emissions thanks to the use of geothermal energy as a renewable energy source
- › No need for an external heating or cooling source when used in geothermal mode
- › Covers all thermal needs of a building via a single point of contact: accurate temperature control, ventilation, air handling units, Biddle air curtains and hot water
- › Wide range of indoor units: either connect VRV or stylish indoor units such as Daikin Emura, Nexura, ...
- › Compact & lightweight design can be stacked for maximum space saving
- › Incorporates VRV IV standards & technologies: Variable Refrigerant Temperature and full inverter compressors
- › 2-stage heat recovery: first stage between indoor units, second stage between outdoor units thanks to the storage of energy in the water circuit
- › Available in heat pump and heat recovery version
- › Variable Water Flow control option increases flexibility and control
- › 2 analogue input signals allowing external control
- › Contains all standard VRV features

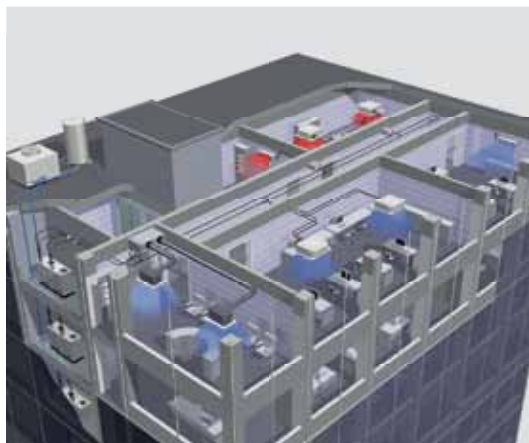


Outdoor unit				RWEYQ	8T9	10T9	12T9	14T9	
Capacity range				HP	8	10	12	14	
Cooling capacity	Nom.	30°C inlet water temperature	Nom. Waterflow	kW	22.4	28.0	33.5	40.0	
Heating capacity	Nom.	20°C inlet water temperature	Nom. Waterflow	kW	25.0	31.5	37.5	45.0	
Power input - 50Hz	Cooling	30°C inlet water temperature	Nom. Waterflow	kW	3.5	4.9	6.0	7.9	
	Heating	20°C inlet water temperature	Nom. Waterflow	kW	3.9	4.9	6.2	8.4	
EER at nom. capacity	30°C inlet water temperature	Nom. Waterflow	kW/kW	6.40	5.75	5.55	5.04		
COP at nom. capacity	20°C inlet water temperature	Nom. Waterflow	kW/kW	6.50	6.40	6.10	5.37		
Maximum number of connectable indoor units					64(1)				
Indoor index connection	Min.				100	125	150	175	
	Nom.				200	250	300	350	
	Max.				300	375	450	525	
Dimensions	Unit	HeightxWidthxDepth	mm	980x767x560					
Weight	Unit				185				
Sound power level	Cooling	Nom.	dBA	65	71	72	74		
Sound pressure level	Cooling	Nom.	dBA	48	50	56	58		
Operation range	Inlet water temperature	Cooling	Min.~Max.	°CDB	10~45				
		Heating	Min.~Max.	°CWB	10~45				
	Temperature around casing	Max.	°CDB	40					
	Humidity around casing	Cooling~Heating	%	80~80					
Refrigerant	Type/GWP				R-410A/2,087.5				
	Charge	kg/TCO2Eq				7.90/16.5			9.60/20.0
Piping connections	Liquid	OD	mm	9.52			12.7		
	Gas	OD	mm	19.1 (2)			28.6 (2)		
	HP/LP gas	OD	mm	15.90 (3) / 19.10 (4)			19.10 (3) / 22.20 (4)		22.20 (4) / 28.60 (3)
	Drain	Size	14mm OD/ 10mm ID						
	Water	Inlet/Outlet	ISO 228-G1 1/4 B/ISO 228-G1 1/4 B						
Power supply	Total piping length	System	Actual	m	300				
	Phase/Frequency/Voltage				3N~/50/380-415				
	Current - 50Hz	Maximum fuse amps (MFA)				25			

(1) Actual number of connectable indoor units depends on the indoor unit type (VRV indoor, Hydrobox, RA indoor, etc.) and the connection ratio restriction for the system (50% ≤ CR ≤ 130%)

(2) In case of heat pump system gas pipe is not used. (3) In case of heat recovery system. (4) In case of heat pump system

VRV III water cooled series - 60 Hz



Standard operation

OUTSIDE UNITS

Heat Pump/Heat Recovery

MODEL		Combination units	RWEYQ10PYL	RWEYQ20PYL (RWEYQ10PYL) X 2	RWEYQ30PYL (RWEYQ10PYL) X 3
Power supply			—	YL: 3-phase 4-wire system, 380 V, 60 Hz	
Cooling capacity (*1)(*2)		kcal/h (*1)	23,200	46,400	69,700
		Btu/h (*1)	92,100	184,000	276,000
		kW (*1)	27.0	54.0	81.0
		kW (*2)	26.7	53.4	80.1
Heating capacity		kcal/h	27,100	54,200	81,300
		Btu/h	107,000	215,000	322,000
		kW	31.5	63.0	94.5
Power consumption	Cooling (*2)	kW	6.03	12.1	18.1
	Heating	kW	6.05	12.1	18.2
Casing colour			Ivory white (5Y7.5/1)		
Dimensions (H x W x D)		mm	1,000 x 780 x 550	(1,000 x 780 x 550) x 2	(1,000 x 780 x 550) x 3
Compressor	Type		Hermetically sealed scroll type		
	Motor output	kW	4.2	4.2 x 2	4.2 x 3
Refrigerant piping connections	Liquid	mm	ø9.5 (Flare)	ø15.9 (Flare)	ø19.1 (Flare)
	Suction gas★1		ø22.2 (Brazing)	ø28.6 (Brazing)	ø34.9 (Brazing)
	High and low pressure gas		ø19.1 ★2, ø22.2 ★3 (Brazing)	ø22.2 ★2, ø28.6 ★3 (Brazing)	ø28.6 ★2, ø34.9 ★3 (Brazing)
			PT1 1/4B internal thread	(PT1 1/4B) x 2 internal thread	(PT1 1/4B) x 3 internal thread
Water piping connections	Water inlet		PT1 1/4B internal thread	(PT1 1/4B) x 2 internal thread	(PT1 1/4B) x 3 internal thread
	Water outlet		PT1 1/4B internal thread	(PT1 1/4B) x 2 internal thread	(PT1 1/4B) x 3 internal thread
	Drain outlet		PS1/2B internal thread	(PS1/2B) x 2 internal thread	(PS1/2B) x 3 internal thread
Machine weight (Operating weight)		kg	150 (152)	150 + 150 (152 + 152)	150 + 150 + 150 (152 + 152 + 152)
Sound level		dB(A)	51	54	56
Operation range (Inlet water temp.)		°C	10 to 45		
Capacity control		%	23–100	11–100	8–100
Refrigerant	Type		R-410A		R-410A
	Charge	kg	4.2	4.2 + 4.2	4.2 + 4.2 + 4.2

Notes: 1. Specifications are based on the following conditions;

- Cooling: (*1) Indoor temp.: 27°CDB, 19.5°CWB/inlet water temp.: 30°C
(*2) Indoor temp.: 27°CDB, 19.0°CWB/inlet water temp.: 30°C
- Heating: Indoor temp.: 20°CDB/inlet water temp.: 20°C
- Equivalent piping length: 7.5 m
- Level difference: 0 m

2. ★1. In the case of heat pump system, suction gas pipe is not used.

- ★2. In the case of heat recovery system.

- ★3. In the case of heat pump system.

3. This unit cannot be installed in the outdoors. Install indoors (Machine room, etc).
4. Ambient temperature at 0–40°C. Heat rejection from the casing: 0.71 kW/10 HP.
5. Connectable to closed type cooling tower only.

- Please be sure to refer to the Engineering Data for facility design.

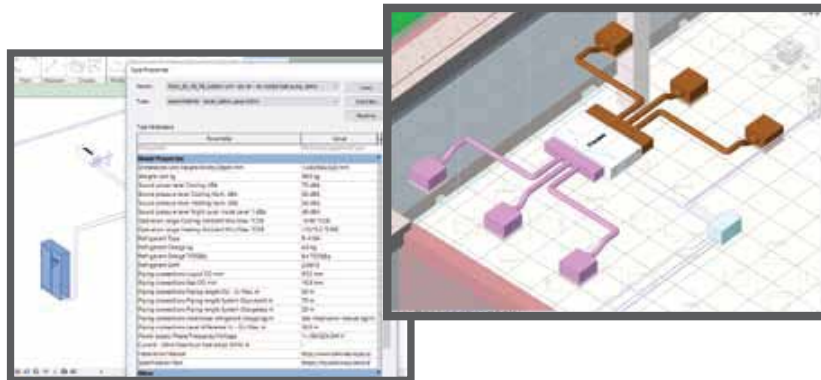


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