A blue semi-transparent rectangular box containing white text. The text reads "Water-to-air heat pump" in a large font, with "using water as a heat source" in a smaller font below it. The background of the box shows a blurred view of the heat pump units.

# Water-to-air heat pump

using water as a heat source



Scale up your expectations



# Why choose Daikin

## a Daikin VRV water-to-air heat pump?

## Property Developers - Delivering intelligent climates

As Daikin is at the forefront of BREEAM and LEED certification compliance, our VRV systems, which use the latest technological developments to lower costs, enhance functionality and increase efficiency,

will **enhance your building's value**. Our modular construction enables rapid refurbishment between tenancies as well as helping achieve the highest rent per square metre.



### A sustainable and highly efficient solution

Our intelligently controlled systems **recover waste heat** generated by air conditioning and refrigeration in one part of the building to produce simultaneous heating in another. This **integrated approach** to climate control and hot water production maximises energy efficiency and dramatically reduces running costs without compromising on comfort. On top of that **geothermal** operation of our water-to-air heat pump reduces even further CO<sub>2</sub> emissions and environmental impact.

### Modular approach for greater flexibility

Daikin's energy efficient and sustainable systems also offer unique flexibility in terms of installation. The modular construction and low footprint mean that even complex systems can be installed in restricted spaces, with the heat pump either in a plant room, to **minimise external and internal environment impact**.

### Non-disruptive refurbishment

Our VRV systems can be designed, built and commissioned on a floor-by-floor basis. This makes possible the installation of new climate control systems within a **phased or partial refurbishment** programme, or the adaptation of an existing system for individual needs within a **multi-tenanted building**. The Daikin **modular** system enables the easy installation or decommissioning of elements and the re-direction or restriction of air flow to suit reconfigured spaces.

## Maximising rental space

A Daikin VRV solution, tailored to your building's requirements will take up nearly **30% less plant space** than a typical chilled water system. The heat pumps are smaller, and also the refrigerant piping is taking up less space, the overall effect is maximised commercially lettable area.

## Low operating costs

According to Franklin + Andrews running costs for a VRV heat recovery compare highly favourably with a 2 or 4 pipe fan coil system. Running costs per m<sup>2</sup> for a water-based system can **be 40 to 72% higher** compared to a VRV heat recovery system.

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# Building Managers - Putting you in control

Efficient building services, combined with intelligent building controls, promise **smart use of energy** that forward-thinking businesses expect and demand.

### Precise zone control to suit building occupancy

The VRV's intelligent control system can provide **precise regulation** of temperature and air flow for each room. Zone control delivers lower running costs, because it **activates the system only in spaces that require heating or cooling**, and it can shut down the system entirely where and when no air conditioning is required.

### Smart energy management

Smart energy management tools maximise the system's efficiency by reducing its running costs and **preventing energy waste**. Whether for an individual system or for the management of multiple buildings, Daikin has an intelligent control solution for every application.

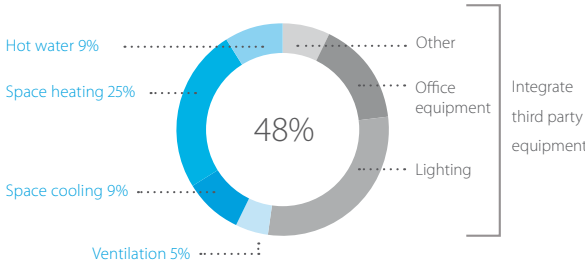
### Partial close down in multi-tenant environment

The modular and floor-by-floor approach adopted by Daikin ensures that, in a multi-tenancy environment, a partial close down for maintenance does not close down the entire VRV system. **This avoids the need for expensive backup equipment and protocols.**

### Reliability you can depend on

High system reliability and efficiency over the entire lifetime of the system, coupled with low maintenance costs, is the only way of ensuring lower running costs and higher capital returns. This is why Daikin builds in reliability, **after sales service** and efficiency you can depend on.

Average office energy consumption



You can use your VRV solution to **manage up to 50% of an office buildings energy consumption**, giving you huge potential of cost and energy savings by making the right system selection



## Consultants - Freedom to design

With Daikin's water-to-air heat pump you have the ultimate system to **fit your design and legislation**. Extremely compact they have the smallest footprint of comparable systems in the market and will fit any type of technical room.

### Individually tailored solutions

The Daikin VRV provides great flexibility to help meet current and future client needs and regulations such as EN378. Because the system can be designed and assembled to meet any building's requirements, it offers solutions for a wide range of spaces, from large open lobbies and reception areas, to individual rooms and offices.

The water cooled VRV systems can be connected to **geothermal or hydrothermal sources**, or use solar collectors, and have the option to add water heating and refrigeration into the system.

Our **intelligent control solutions** allow the climate regime to be tailored to meet the requirements of each room, floor or tenant as required, so as to maximise energy efficiency and prevent energy wastage.

### Balancing heat loads

Our modular approach also provides great flexibility for balancing heat loads. By using our modelling tools, designers can balance heat loads in different parts of the building, allowing them to choose the right indoor unit style and capacity (over 120 different options) to meet their requirements.

Achieving a balanced mode of heat recovery within a VRV system can also deliver dramatically higher energy efficiencies helping to **maximise BREEAM credits** at the design stage.

This involves designing the system so that it is capable of cooling areas of the building with the highest heat gains and transferring the reclaimed heat to other areas requiring heating or hot water. The **2-stage heat recovery** (via the refrigerant and water circuit) maximises heat recovery potential.

## Differentiating technologies



- › Variable Refrigerant Temperature allow individual tailoring to the building need
- › Stacked configuration: a 42HP system can be installed in less than 0.5m<sup>2</sup> of floor space
- › Zero heat dissipation obviates the need for ventilation or cooling in the technical room



zero heat dissipation principle ensures a zero heat balance of the unit



## Installers - designed with installation in mind

Daikin has designed its VRV system with ease of installation in mind. From lighter units with reduced footprint, over automatic charging and testing to better access to fault codes and components.

We have focussed on **preventing errors** in installation/commissioning, **preventive maintenance** and **easy service access**.

### Reduced installation time by design

Daikin's VRV are designed to be installed fast and accurate. **Settings can be done via PC** and uploaded, error read out is easy from a 7-segment display. Components in this compact unit are still easy to be reached thanks to a **rotating switchbox**. For heat recovery systems our wide range of **extremely compact BS boxes** reduce work as up to 16 units can be connected to one box. Connections and fittings are factory fitted with the option for horizontal or vertical connection **making on-site assembly faster**.

### Easier integration of the water side

The VRV uses different output signals via a standard 0-10V allowing **external control and variable water flow** enabling you to control the circulation pump and configure the system to be the most energy efficient as possible.

### Preventive maintenance

Monitoring the system's performance via our intelligent controllers and i-Net cloud timely informs when maintenance should be done before a shut down occurs, thereby **ensuring that the occupants of the building suffer no decline in environmental comfort**. It also enables the building's owner and manager to schedule longer term maintenance activities and refurbishments to suit demand.

Horizontal piping connection



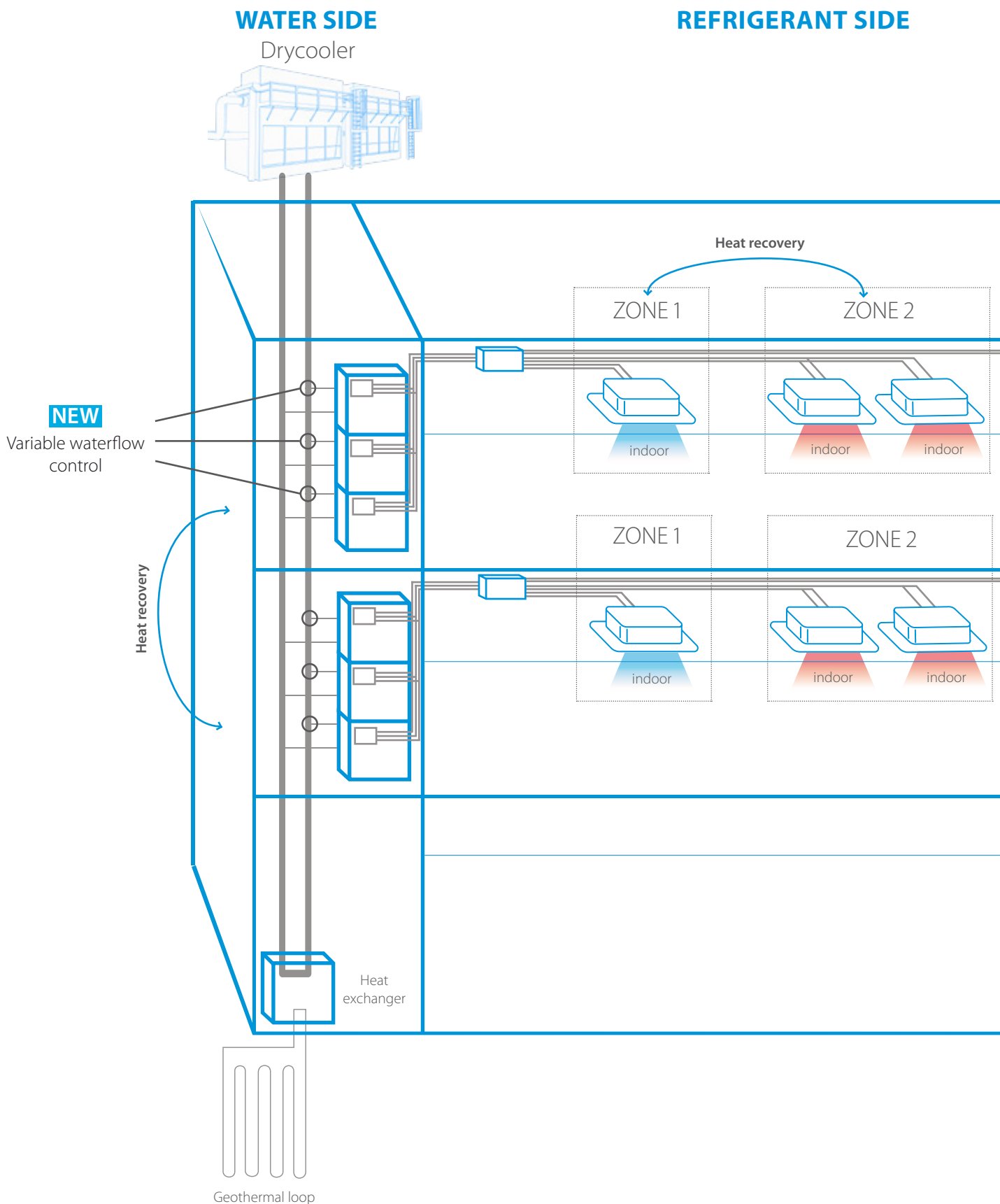
Vertical piping connection



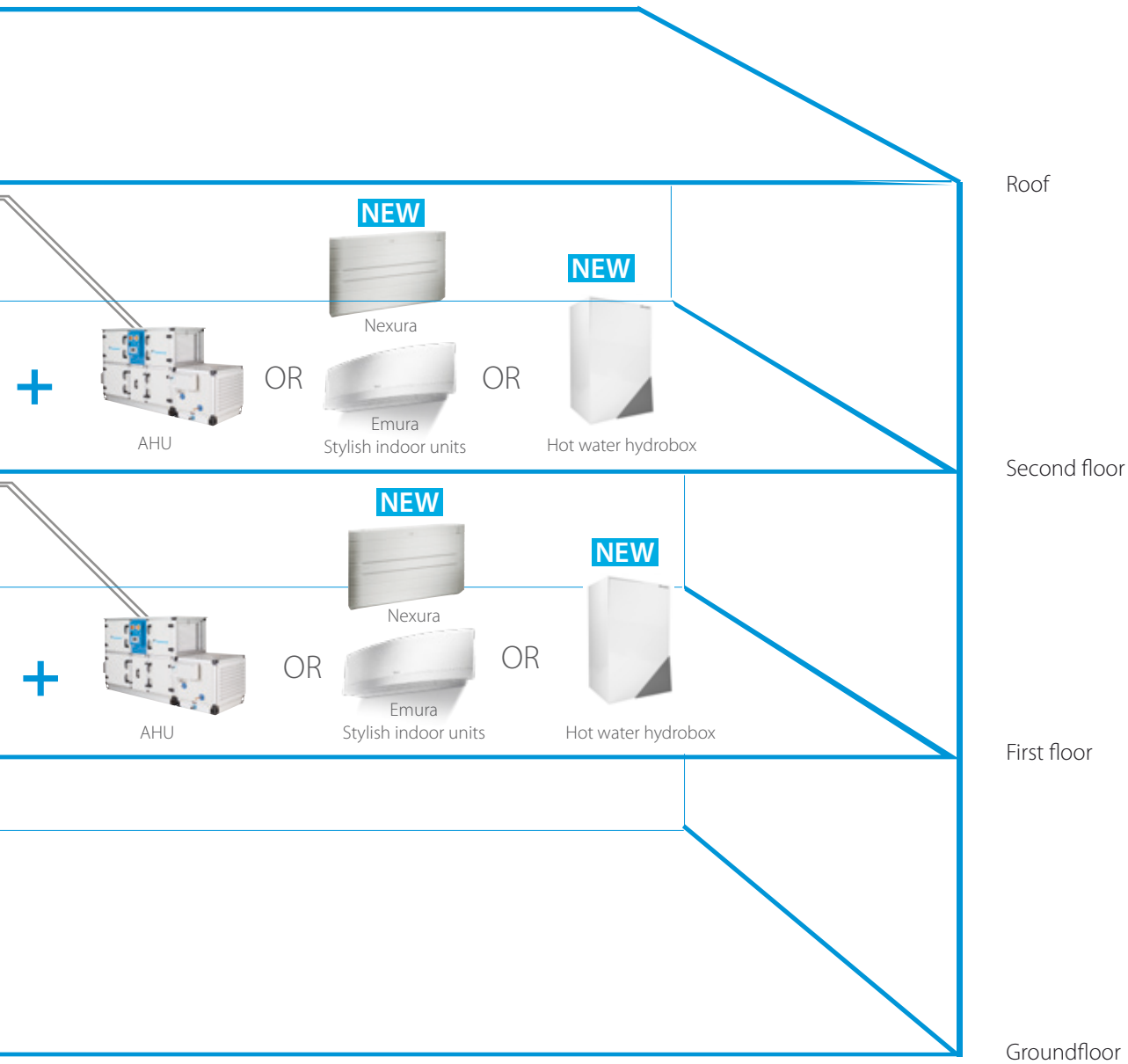
Rotating switchbox



# How does a water-cooled VRV system work?







# Innovations

for maximum flexibility and ease of installation

Horizontal or vertical piping connection

Highly improved efficiency thanks to enlarged heat exchanger

Easy access to components

Easy front plate removal

Rotating switchbox

step 1

step 2

980mm

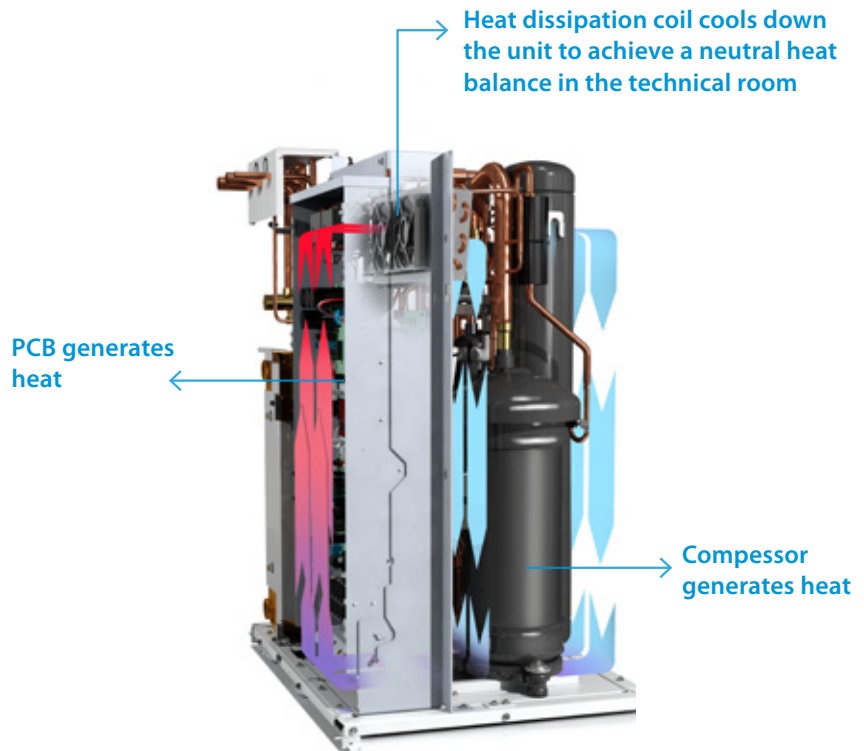
767mm

560mm



## Zero heat dissipation principle

- › No need for ventilation or cooling of the technical room
- › Enhancing installation flexibility and reliability of parts



Smallest footprint on the market

## VRV IV technology



- › VRV configurator
- › 7 segment display

# Crystal Tower

BREEAM Design Phase: Excellent rating



## A great and well-known example of a Daikin Total Solution leading to high energy-efficient HVAC consumption

- › A combination of VRV, Sky Air and Applied systems ensuring all offices and common areas are fully air conditioned.
- › Water-cooled VRV as the main contributor to total HVAC energy efficiency due to its two-stage heat recovery system.
- › Flexibility: individual thermal control and comfort with VRV on each floor and space.
- › Problem-free connection between Daikin units and the LonWorks BMS system ensures the building's total energy consumption is properly monitored and controlled.

### Location

48 Lancu de Hunedoara Boulevard  
Bucharest Romania

### Building details

Built-up area: 24,728 m<sup>2</sup>  
Total usable area: 20,020 m<sup>2</sup>  
Floors: 4 basements, 15 floors, technical floor  
Building height: 72 m  
Office space per level: approx. 1,000 m<sup>2</sup>

### Daikin systems installed

- › 67 x VRV water-cooled units
- › 2 x VRV outdoor heat pump units
- › 289 VRV indoor units (265 ducts, 24 x cassettes)
- › 5 x Sky Air with Roundflow Cassettes
- › 4 x air-cooled water chillers
- › 11 x DMS504B51 (LonWorks gateway)

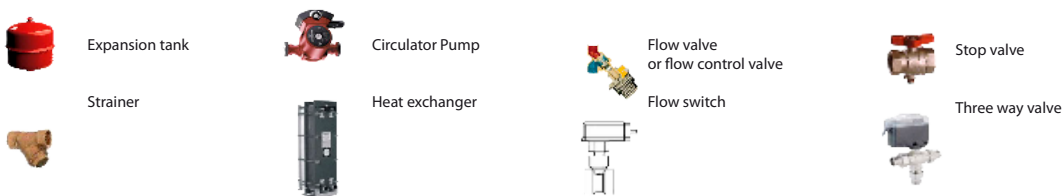
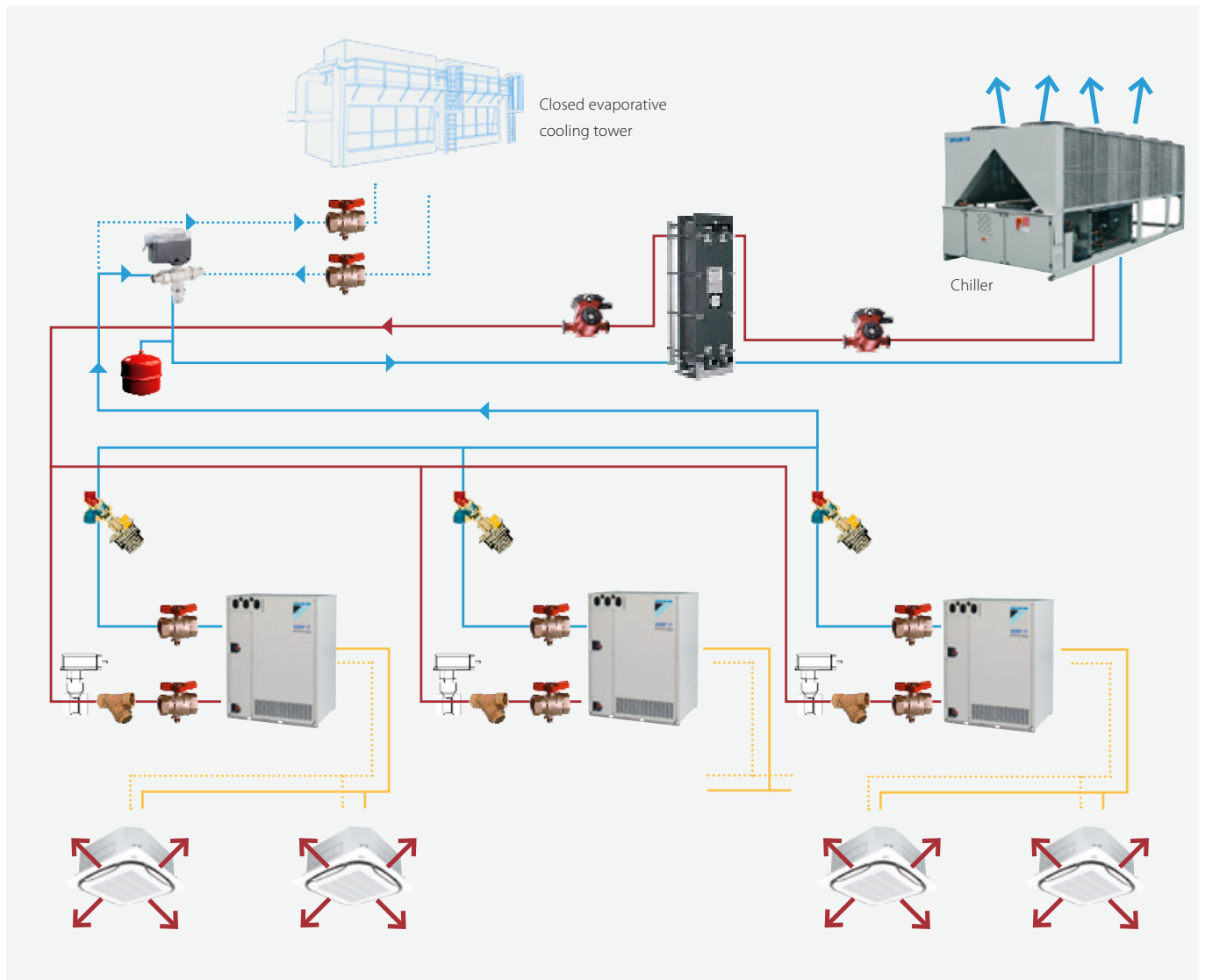
### Awards


- › Green Building of the Year 2012 (ROGBC)
- › Environmental Social & Sustainability award (ESSA)


# Application


## examples


Closed evaporative cooling tower used for cooling,  
Chiller used for heating



Cooling mode 

Heating mode 

Refrigerant flow 





# Hotel Van der Valk

Success case study



## Hotel Van der Valk chose: Comfort for guests and staff

- › Concealed ceiling units create comfort zones within the lobby, meeting the different needs of guests and staff
- › Daikin Variable Refrigerant Temperature technology ensures the optimal comfort levels by avoiding cold draughts

## Centralised control & management

- › Central control of the entire HVAC-R solution
- › Easy to set schedules
- › Easy integration in front-desk controls with remote access
- › BMS functions integrated such as alarm inputs, control of lights, ...

## Complete Daikin solution

- › Cooling and heating supplied by a combination of VRV air-cooled and water-cooled systems connected to a Geothermal loop for maximum efficiency
- › Hot water production via Daikin gas boilers connected to Daikin hot water storage tanks
- › Ventilation with Daikin heat recovery air handling units
- › Kitchen refrigeration with Daikin ZEAS units

### Location

Avenue Mélina Mercouri 7, 7000 Mons  
Belgium

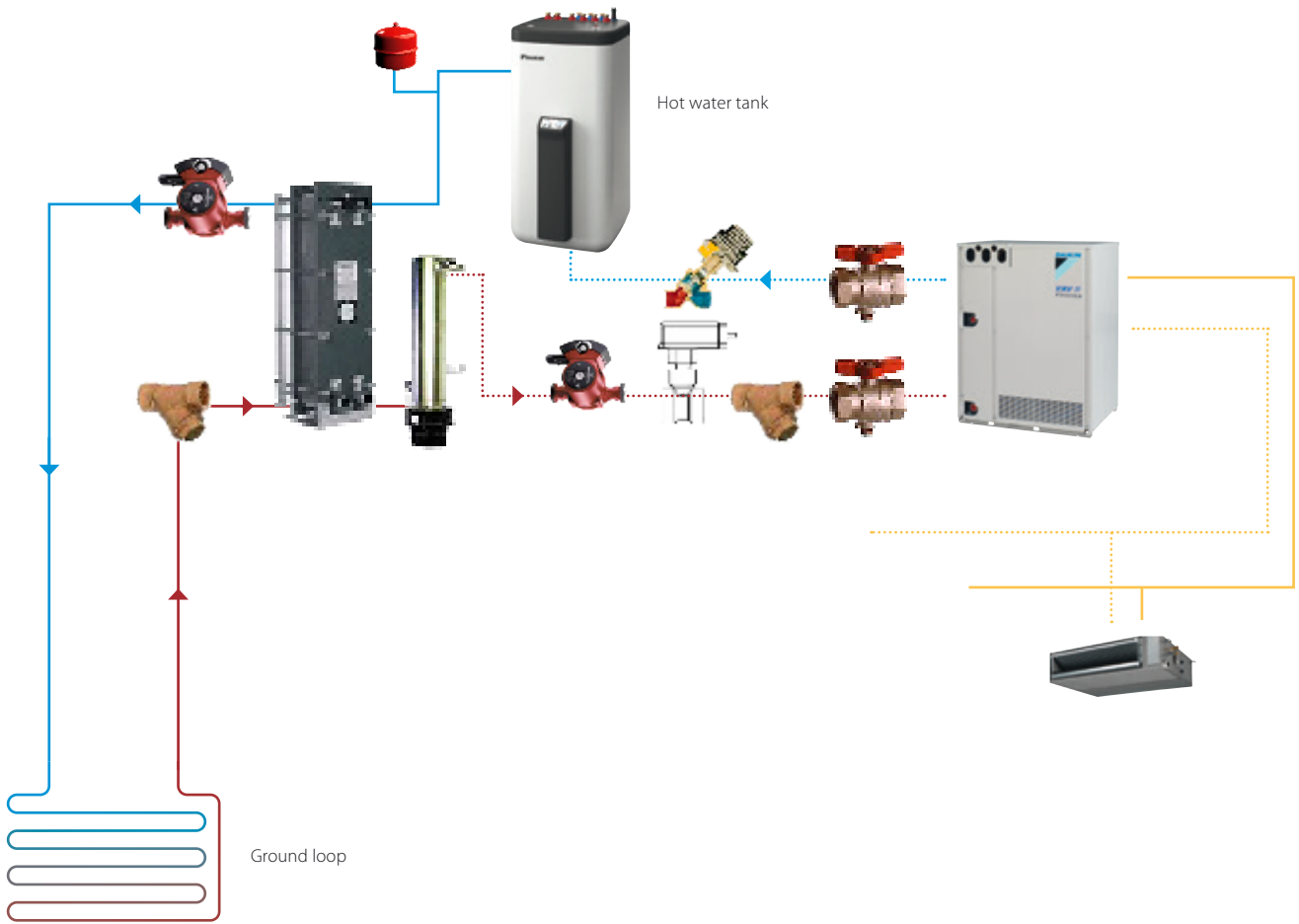
### Daikin systems installed

- › 11 Water cooled VRV outdoor units
- › 10 Air cooled VRV outdoor units (heat recovery and heat pump)
- › 1 ZEAS refrigeration outdoor unit
- › 177 concealed ceiling indoor units
- › 2 Daikin condensing gas boilers connected to Daikin hot water tanks
- › 2 Daikin DX air handling units
- › 1 intelligent Touch Manager central control with WAGO interface

# Application

## examples

### Geothermal operation



Expansion tank  
Liquid heater  
Strainer







Circulator Pump  
Buffer tank



Heat exchanger  
Flow valve  
or flow control valve



Flow switch  
Stop valve  
Three way valve

Cooling mode   
 Heating mode   
 Refrigerant flow   


# Hilton Istanbul

## Success case study



The first steel construction hotel in Turkey, efficiently equipped with Daikin. The construction consists of 2.500 ton of steel. With it's 110 m height, 25 floors and 230 rooms project area is 29.000 m2. The total capacity goes up to 3.500 kW.

The DoubleTree by Hilton hotel in Istanbul chose to install the water cooled VRV units floor by floor, a choice for efficient use of space and efficient climate control.

The technical specifications speak for themselves:

- > The VRV outdoor installation area is 50% smaller than the Applied System installation area
- > The noise is lowered from 96 dBa to 54 dBa with the VRV outdoor system
- > The VRV system power supply capacity is reduced by 30%
- > The VRV system has a low start up current
- > An energy saving up to 50% and a high COP value
- > The VRV system is 40% lighter
- > The used boiler capacity has been reduced by 20%

All the improvements also reduced the service needed to keep the system's performance up to speed. And by not using any water based fan coils there is no corrosion in the floors."

Daikin equipped this hotel with a complete solution. The ventilation is a mix of Daikin air handling units and heat reclaim ventilation units. The full solution is monitored and controlled centrally via the intelligent Touch Manager.

### Location

Doubletree by Hilton Hotel  
Istanbul - Turkey

### Daikin systems installed

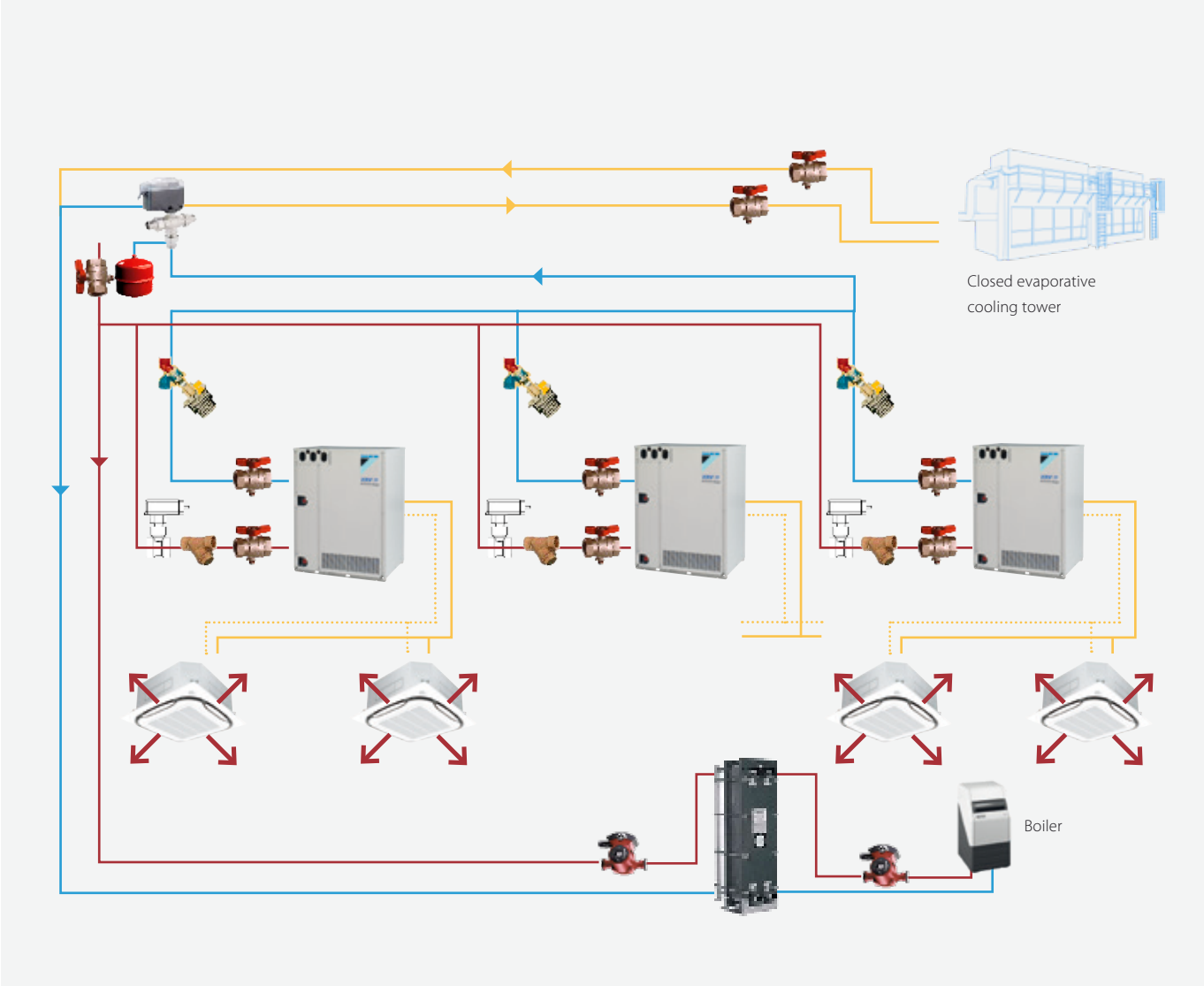
- > Indoor Amount : 420 pcs  
FXSQ - FXDQ - FXMQ - FXFQ - FXCQ - FXAQ - FXKQ
- > Outdoor Amount : 135 pcs  
RWEYQ 8 - 10 - 20 hp
- > Heat Reclaim Ventilation : 23 pcs
- > Individual Control ( BRCID52 ): 391 pcs
- > Centralized Control ( I-Manager ): 2 pcs
- > AHU DX condensing Unit application : VRW












# Application


## examples


Dry cooler used for cooling, boiler used for heating




	Expansion tank		Circulator Pump		Flow valve or flow control valve		Stop valve
	Strainer		Heat exchanger		Flow switch		Three way valve

Cooling mode 

Heating mode 

Refrigerant flow 



# Products overview **VRV**

## Water-to-air

Model	Product name	4	5	6	8	10	12	13	14	16	18	20	22	24	26	28	30	
<b>NEW</b> Water cooled Water cooled VRV IV	<b>Ideal for high rise buildings, using water as heat source</b> > 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 > 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 > Mixed connection of HT hydroboxes and VRV indoor units > Either connect VRV of stylish indoor units (Daikin Emura, Nexura) > 2 analogue input signals allowing external control				●	●	●		●									
	RWEYQ-T9* VRV IV W-series																	

## Air-to-air

Air cooled - heat recovery VRV IV heat recovery	<b>Best efficiency &amp; comfort solution</b> > Fully integrated solution with heat recovery for maximum efficiency > Covers all thermal needs of a building via a single point of contact: accurate temperature control, ventilation, hot water, air handling units and Biddle air curtains > "Free" heating and hot water through heat recovery > The perfect personal comfort for guests/tenants via simultaneous cooling and heating > Incorporates VRV IV standards & technologies such as Variable Refrigerant temperature and continuous heating > Allows technical cooling > Widest range of BS boxes on the market				●	●	●		●	●	●	●						
	REYQ-T VRV IV																	
VRV IV heat pump with continuous heating	<b>Daikin's optimum solution with top comfort</b> > Continuous heating during defrost > Covers all thermal needs of a building via a single point of contact: accurate temperature control, ventilation, hot water, air handling units and Biddle air curtains > Connectable to stylish indoor units (Daikin Emura, Nexura) > Incorporates VRV IV standards & technologies such as Variable Refrigerant temperature and continuous heating				●	●	●		●	●	●	●						
	RYYQ-T(8) VRV IV																	
VRV IV heat pump without continuous heating	<b>Daikin's solution for comfort &amp; low energy consumption</b> > Covers all thermal needs of a building via a single point of contact: accurate temperature control, ventilation, hot water, air handling units and Biddle air curtains > Connectable to stylish indoor units (Daikin Emura, Nexura) > Incorporates VRV IV standards & technologies such as Variable Refrigerant temperature				●	●	●		●	●	●	●						
	RXYQ-T(9) VRV IV																	
Air cooled - heat pump VRV IV S series Compact	<b>The most compact VRV</b> > Compact and lightweight single fan design saves space and is easy to install > Covers all thermal needs of a building via a single point of contact: accurate temperature control, ventilation, air handling units and Biddle air curtains > Either connect VRV of stylish indoor units (Daikin Emura, Nexura) > Incorporates VRV IV standards & technologies such as Variable Refrigerant temperature	●	●															
	RXYSCQ-TV1 VRV IV S-series Compact																	
VRV IV S series	<b>Space saving solution without compromising on efficiency</b> > 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 and Biddle air curtains > Either connect VRV of stylish indoor units (Daikin Emura, Nexura) > Incorporates VRV IV standards & technologies such as Variable Refrigerant temperature	T8V ● ● ●																
	RXYSQT8V/T8V/TY1 VRV IV S-series	T8V/TY1 ● ● ● ● ● ●																
VRV IV heat pump for indoor installation	<b>The invisible VRV</b> > Unique VRV heat pump for indoor installation > Total flexibility for any shop location and building type as the outdoor unit is invisible and split up in 2 parts > Incorporates VRV IV standards & technologies such as Variable Refrigerant temperature > Covers all thermal needs of a building via a single point of contact: accurate temperature control, ventilation and Biddle air curtains	●	●															
	SB.RKXYQ-T(8) VRV IV i-series																	
heat recovery	<b>Quick &amp; quality replacement for R-22 and R-407C systems</b> > Cost-effective and fast replacement through re-use of existing piping > Drastically improve your comfort, efficiency and reliability > No interruption of daily business while replacing your system > Replace Daikin and other manufacturers systems safely																	
	RQCEQ-P3* VRV III Q																	
heat pump	<b>Quick &amp; quality replacement for R-22 and R-407C systems</b> > Cost-effective and fast replacement through re-use of existing piping > Drastically improve your comfort, efficiency and reliability > No interruption of daily business while replacing your system > Replace Daikin and other manufacturers systems safely > Incorporates VRV IV standards & technologies such as Variable Refrigerant temperature	●	●	●	●	●	●		●	●	●	●						
	RXYQQ-T* VRV IV Q-series																	

● Single unit  
 ● Multi combination

Ranges marked with "\*" are not Eurovent certified. Multi combinations are not in scope of the Eurovent certification programme

Capacity (HP)

32	34	36	38	40	42	44	46	48	50	52	54	Description / Combination	VRV indoor units	Residential indoor units	LT Hydrobox HXY-A	HT Hydrobox HXHD-A	HRV units VAM-, VKM-	AHU connection	AHU connection	Air curtains CYV-DK-	Remarks	
												<b>VRV IV-W Water-cooled VRV</b> RWEYQ-T9	○	○	○	○	○	○	○	○	○	Standard total system connection ratio limit: 50 ~ 130%
												with VRV indoor units	✓			✓	✓	✓	✓	✓		
												with split indoor units		✓								
												with HT hydrobox	✓		✓	✓						
												<b>VRV IV Heat Recovery</b> REYQ-T	○	×	○	○	○	○	×	○		Standard total system connection ratio limit: 50 ~ 130%
												with only VRV indoor units	✓									
												with LT/HT Hydroboxes	✓		✓	✓	✓					Max 32 indoor units, even on 16HP and larger systems Total system connection ratio up to 200% possible
												HRV units VAM-, VKM-	✓		✓	✓	✓	✓		✓		
												AHU connection EKEXV + EKEQMCBA	✓				✓	✓		✓		Dedicated systems (with only ventilation units) not allowed – a mix with standard VRV indoor units is always necessary
												Biddle air curtain CYV-DK-	✓				✓	✓		✓		
												<b>VRV IV Heat Pump</b> RYYQ-T(8) / RXYQ-T(9)	○	○	○	×	○	○	○	○		Standard total system connection ratio limit: 50 ~ 130%
												with only VRV indoor units	✓									200% total system connection ratio possible under special circumstances
												with residential indoor units	✓	✓			✓					Only single-module systems (RYYQ 8~20 T / RXYQ 8~20 T) Max 32 indoor units, even on 16HP, 18HP and 20HP systems
												with LT Hydroboxes	✓		✓	✓						Max 32 indoor units, even on 16HP and larger systems Contact Daikin in case of multi-module systems (>20HP)
												HRV units VAM-, VKM-	✓	✓	✓		✓	✓		✓		
												AHU connection EKEXV + EKEQMCBA	✓				✓	✓		✓		
												AHU connection EKEXV + EKEQFCBA							✓			
												Biddle air curtain CYV-DK-	✓				✓	✓		✓		
												<b>VRV IV-S</b> RXYSQ-/RXYSQ-	○	○	×	×	○	○	×	○		Standard total system connection ratio limit: 50 ~ 130%
												with VRV indoor units only	✓				✓	✓		✓		
												with residential indoor units only		✓								With residential indoor: connection ratio limit: 80 ~ 130%
												<b>VRV IV i series</b> SB.RKXYQ-T(8)	✓	×	×	×	✓	✓	×	✓		Standard total system connection ratio limit: 50 ~ 130%
												<b>VRV III-Q Replacement H/R</b> RQCEQ-P3	✓	×	×	×	✓	×	×	×		Standard total system connection ratio limit: 50 ~ 130%
												<b>VRV IV-Q Replacement H/P</b> RXYQQ-T	✓	×	×	×	✓	✓	×	✓		Standard total system connection ratio limit: 50 ~ 130%

○ ... connection of indoor unit possible, but not necessarily simultaneously with other allowed indoor units

















✓ ... connection of indoor unit possible even simultaneously with other checked units in the same row

× ... connection of indoor not possible on this outdoor unit system



# Products overview **VRV**

Capacity class (kW)

Type	Model	Product name	15	20	25	32	40	50	63	71	80	100	125	140	200	250	
Ceiling mounted cassette	<p><b>UNIQUE</b></p> <p>360° air discharge for optimum efficiency and comfort</p> <ul style="list-style-type: none"> <li>› Auto cleaning function ensures high efficiency</li> <li>› Intelligent sensors save energy and maximize comfort</li> <li>› Flexibility to suit every room layout</li> <li>› Lowest installation height in the market!</li> </ul>	 <p>FXFQ-A</p> 		•	•	•	•	•	•		•	•	•				
	<p><b>UNIQUE</b></p> <p>Unique design that integrates fully flat into the ceiling</p> <ul style="list-style-type: none"> <li>› Perfect integration in standard architectural ceiling tiles</li> <li>› Blend of iconic design and engineering excellence</li> <li>› Intelligent sensors save energy and maximize comfort</li> <li>› Small capacity unit developed for small or well-insulated rooms</li> <li>› Flexibility to suit every room layout</li> </ul>	 <p>FXZQ-A</p> 	•	•	•	•	•	•									
	<p>Thin, lightweight design installs easily in narrow ceiling spaces</p> <ul style="list-style-type: none"> <li>› Depth of all units is 620mm, ideal for narrow ceiling spaces</li> <li>› Flexibility to suit every room layout</li> <li>› Reduced energy consumption thanks to DC fan motor</li> <li>› The flaps close entirely when the unit is not operating</li> <li>› Optimum comfort with automatic air flow adjustment to the required load</li> </ul>	<p>FXCQ-A</p> 		•	•	•	•	•	•		•		•				
	<p>1-way blow unit for corner installation</p> <ul style="list-style-type: none"> <li>› Compact dimensions enable installation in narrow ceiling voids</li> <li>› Flexible installation thanks to different air discharge options</li> </ul>	<p>FXKQ-MA</p> 			•	•	•		•								
Concealed ceiling	<p>Designed for hotel rooms</p> <ul style="list-style-type: none"> <li>› Compact dimensions enable installation in narrow ceiling voids</li> <li>› Discretely concealed in the ceiling; only the grilles are visible</li> <li>› Flexible installation as the air suction direction can be altered from rear to bottom suction</li> </ul>	<p>FXDQ-M9</p> 		•	•												
	<p>Slim design for flexible installation</p> <ul style="list-style-type: none"> <li>› Compact dimensions enable installation in narrow ceiling voids</li> <li>› Medium external static pressure up to 44Pa</li> <li>› Only grilles are visible</li> <li>› Small capacity unit developed for small of well-insulated rooms</li> <li>› Reduced energy consumption thanks to DC fan motor</li> </ul>	<p>FXDQ-A3</p> 	•	•	•	•	•	•	•								
	<p>Slimmest yet most powerful medium static pressure unit on the market!</p> <ul style="list-style-type: none"> <li>› Slimmest unit in class, only 245mm</li> <li>› Low operating sound level</li> <li>› Medium external static pressure up to 150Pa facilitates using flexible ducts of varying lengths</li> <li>› Automatic air flow adjustment function measures the air volume and static pressure and adjusts it towards the nominal air flow, guaranteeing comfort</li> </ul>	<p>FXSQ-A</p> 	•	•	•	•	•	•	•		•	•	•	•			
	<p>ESP up to 200, ideal for large sized spaces</p> <ul style="list-style-type: none"> <li>› Optimum comfort guaranteed no matter the length of ductwork or type of grilles, thanks to automatic air flow adjustment</li> <li>› Reduced energy consumption thanks to DC fan motor</li> <li>› Flexible installation as the air suction direction can be altered from rear to bottom suction</li> </ul>	<p>FXMQ-P7</p> 							•	•	•	•					
	<p>ESP up to 270, ideal for extra large sized spaces</p> <ul style="list-style-type: none"> <li>› Only grilles are visible</li> <li>› Large capacity unit: up to 31.5 kW heating capacity</li> </ul>	<p>FXMQ-MB</p> 													•	•	
	<p>For rooms with no false ceilings nor free floor space</p> <ul style="list-style-type: none"> <li>› Flat, stylish front panel is more easy to clean</li> <li>› Small capacity unit developed for small of well-insulated rooms</li> <li>› Reduced energy consumption thanks to DC fan motor</li> <li>› The air is comfortably spread up- and downwards thanks to 5 different discharge angles</li> </ul>	<p>FXAQ-A</p> 	•	•	•	•	•	•	•								
Ceiling suspended	<p>For wide rooms with no false ceilings nor free floor space</p> <ul style="list-style-type: none"> <li>› Ideal for comfortable air flow in wide rooms thanks to Coanda effect</li> <li>› Rooms with ceilings up to 3.8m can be heated or cooled very easily!</li> <li>› Can easily be installed in both new and refurbishment projects</li> <li>› Can even be mounted in corners or narrow spaces without any problem</li> <li>› Reduced energy consumption thanks to DC fan motor</li> </ul>	<p>FXHQ-A</p> 				•			•		•						
	<p><b>UNIQUE</b></p> <p>Unique Daikin unit for high rooms with no false ceilings nor free floor space</p> <ul style="list-style-type: none"> <li>› Rooms with ceilings up to 3.5m can be heated up or cooled down very easily!</li> <li>› Can easily be installed in both new and refurbishment projects</li> <li>› Flexibility to suit every room layout</li> <li>› Reduced energy consumption thanks to DC fan motor</li> </ul>	<p>FXUQ-A</p> 								•		•					
Floor standing	<p>For perimeter zone air conditioning</p> <ul style="list-style-type: none"> <li>› Can be installed in front of glass walls or free standing as both the front and the back are finished</li> <li>› Ideal for installation beneath a window</li> <li>› Requires very little installation space</li> <li>› Wall mounted installation facilitates cleaning beneath the unit</li> </ul>	<p>FXLQ-P</p> 		•	•	•	•	•	•								
	<p>Ideal for installation in offices, hotels and residential applications</p> <ul style="list-style-type: none"> <li>› Discretely concealed in the wall, leaving only the suction and discharge grilles visible</li> <li>› Can even be installed underneath a window</li> <li>› Requires very little installation space as the depth is only 200mm</li> <li>› High ESP allows flexible installation</li> </ul>	<p>FXNQ-A</p> 		•	•	•	•	•	•								
Cooling capacity (kW) <sup>1</sup>			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	
Heating capacity (kW) <sup>2</sup>			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	

















(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



## Stylish indoor units overview

Depending on the application, Split and Sky Air indoor units can be connected to our VRV IV and VRV IV S-series outdoor units. Refer to the **outdoor unit portfolio** for combination restrictions.

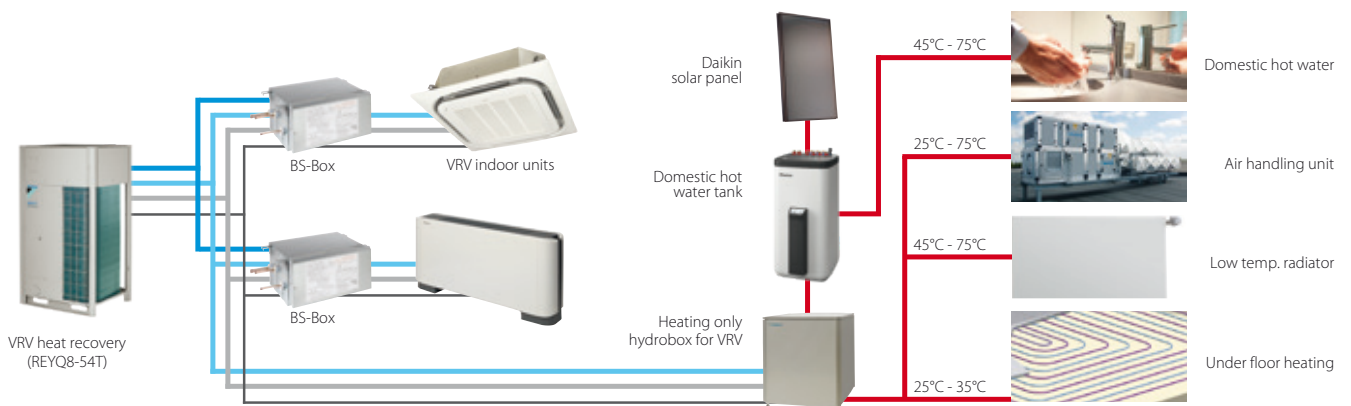
Type	Model	Product name	15	20	25	35	42	50	60	71
Ceiling mounted cassette	Round flow cassette (incl. auto-cleaning function) 	FCAG-A 				●		●	●	
	Fully flat cassette  	FFA-A 			●	●		●	●	
Concealed ceiling	Small concealed ceiling unit	FDBQ-B 			●					
	Slim concealed ceiling unit	FDXM-F3 			●	●		●	●	
	Concealed ceiling unit with inverter-driven fan	FBA-A 				●		●	●	
Wall mounted	Daikin Emura Wall mounted unit 	FTXG-LW/LS 		●	●	●		●		
	Wall mounted unit	CTXS-K FTXS-K 	●	●	●	●	●	●		
	Wall mounted unit	FTXS-G 							●	●
Ceiling suspended	Ceiling suspended unit	FHA-A 				●		●	●	
Floor standing	Nexura floor standing unit	FVXG-K 			●	●		●		
	Floor standing unit	FVXS-F 			●	●		●		
	Flexi type unit	FLXS-B(9) 			●	●		●	●	

<sup>1</sup> Decoration panel BYCQ140DG or BYCQ140DGF + BRC1E53A/B/C needed, <sup>2</sup> To connect stylish indoor units a BPMKS unit is needed, <sup>3</sup> A mix of RA indoor units and VRV indoor units is not allowed.



# Hydrobox overview

## for efficient hot water production



## Hydrobox range

Capacity class (kW)

Type	Product name	Model	80	125	200	Leaving water temperature range
Low temperature hydrobox	HXY-A8	<p><b>For high efficiency space heating and cooling</b></p> <ul style="list-style-type: none"> <li>&gt; Ideal for hot or cold water in underfloor, air handling units, low temperature radiators ...</li> <li>&gt; Hot/cold water from 5° to 45°C</li> <li>&gt; Large operation range (down to -20°C and up to 43°C)</li> <li>&gt; Fully integrated water-side components save time on system design</li> <li>&gt; Space saving contemporary wall hung design</li> </ul>	●	●		5 °C - 45 °C
High temperature hydrobox	HXHD-A8	<p><b>For efficient hot water production and space heating</b></p> <ul style="list-style-type: none"> <li>&gt; Ideal for hot water in bathrooms, sinks and for underfloor heating, radiators, air handling units, ...</li> <li>&gt; Hot water from 25 to 80°C</li> <li>&gt; "Free" heating and hot water through heat recovery</li> <li>&gt; Uses heat pump technology to produce hot water efficiently, providing up to 17% savings compared to a gas boiler</li> <li>&gt; Possibility to connect thermal solar collectors</li> </ul>		●	●	25 °C - 80 °C



# Biddle air curtains

## overview

### 'Open Door' Trading

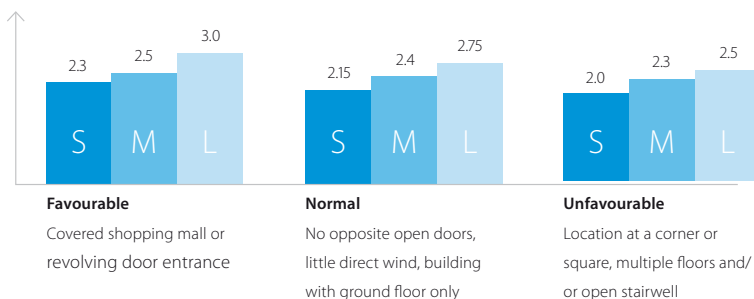
Although the customer friendly aspects of open door trading are widely appreciated by retail and commercial outlet managers, open doors can also give rise to massive losses in conditioned warm or cold air and hence, energy. Biddle air curtains however, not only preserve indoor temperatures and generate significant economies, they also represent an invitation for customers, to enter a pleasant trading and working environment.

### High efficiency and low CO<sub>2</sub> emission

An efficient outdoor/indoor climate separation limits heat loss through the door opening and enhances the efficiency of the air conditioning system. Combining Biddle air curtains with Daikin heat pumps can lead to savings up to 72% compared to electric air curtains and a payback period of less than 1.5 years!

#### Air curtain size selector

Door height (m)



### Portfolio

Type	Product name	
Biddle air curtain free hanging	CYV S/M/L-DK-F	
Biddle air curtain cassette	CYV S/M/L-DK-C	
Biddle air curtain recessed	CYV S/M/L-DK-R	

- › A payback time of less than 1.5 years compared to electrical air curtains
- › Easy and quick installation
- › Maximum energy efficiency thanks to rectifier technology
- › 85% air separation efficiency
- › Cassette model (C): mounted into a false ceiling enhancing aesthetics
- › Free-hanging model (F): easy wall mounted installation
- › Recessed model (R) : neatly concealed in the ceiling



# Ventilation unit overview

from small heat recovery ventilation to large-scale air handling units for the provision of fresh air ventilation to homes, or commercial outlets such as offices, hotels, stores and others.

## Ventilation solutions

Daikin offers state-of-the-art ventilation solutions that can easily be integrated into any project.

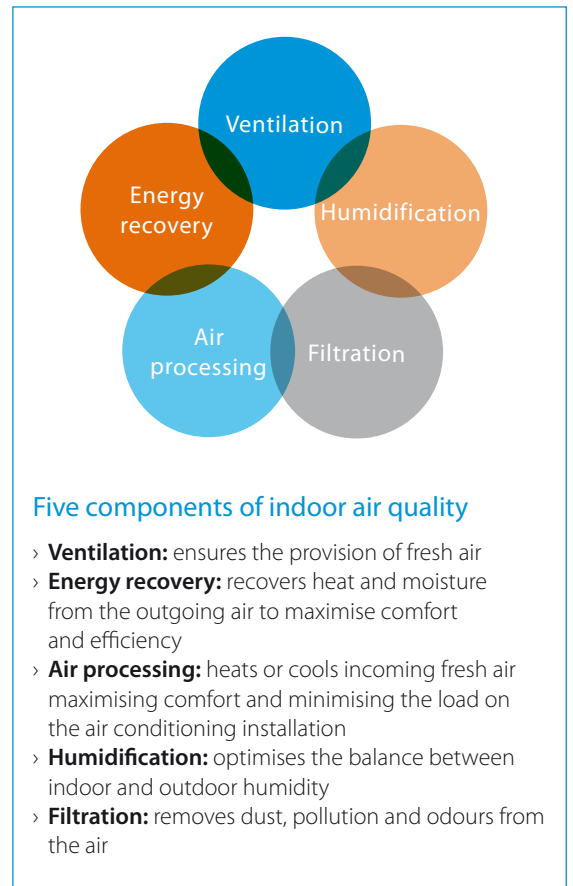
- › Unique portfolio within DX manufacturers
- › High-quality solutions complying with the highest Daikin quality standards
- › Seamless integration of all products to provide the best indoor climate
- › All Daikin products connected to a single control total control of the HVAC system.

## Heat Reclaim Ventilation - Ventilation with heat recovery as standard

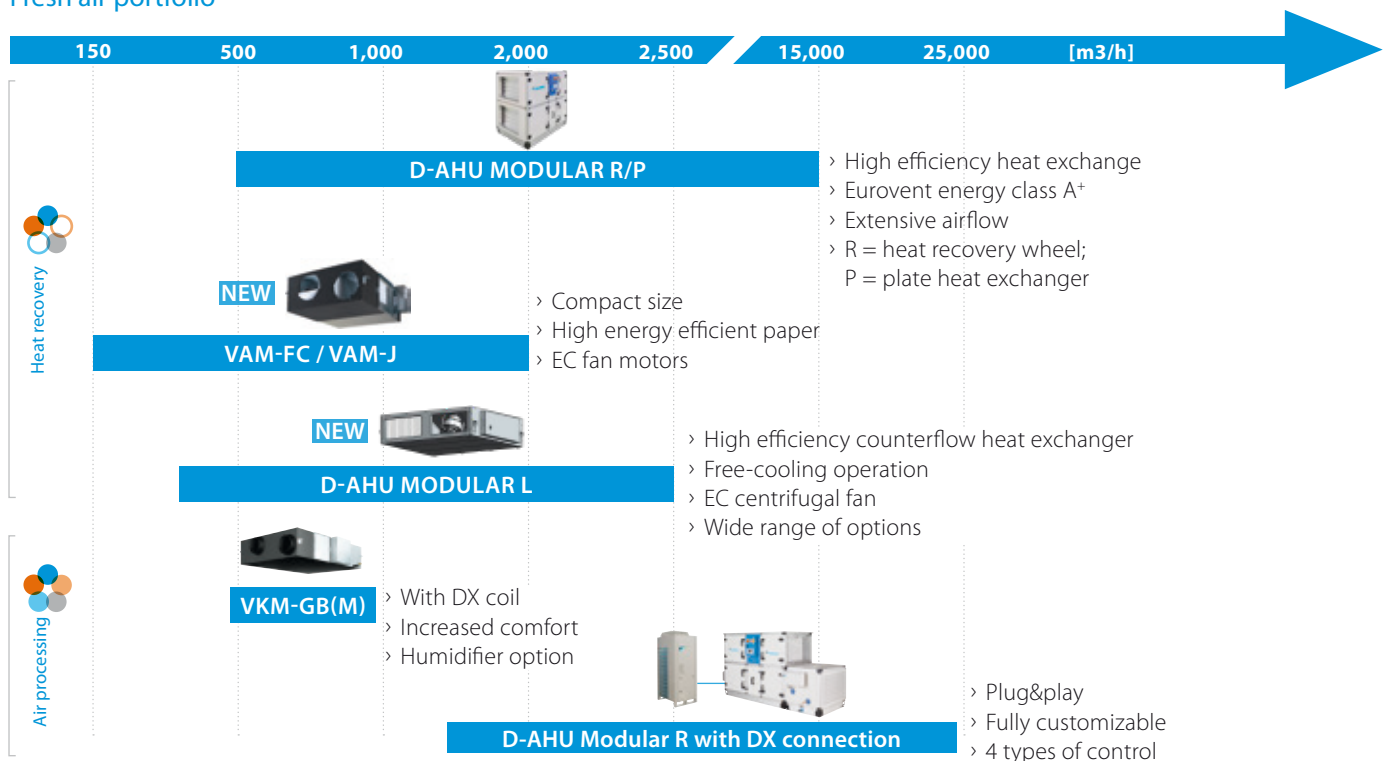
Proper ventilation is a key component of climate control in buildings, offices and shops and part of the EU requirements. Our heat recovery units can **recover both sensible and latent heat** thus substantially **reducing the air conditioning load of up to 40%**. The range starts from as low as 150 m<sup>3</sup>/h to 2500 m<sup>3</sup>/h (VAM) and go up to 25000 m<sup>3</sup>/h (Modular AHU).

## Ventilation with DX connection - Control over fresh air temperature

Daikin offers a range of R-410A inverter condensing units to be used in combination with Daikin AHUs for ultimate control over the fresh air. There are 4 control possibilities when **combining AHU and Daikin outdoor units** hence offering all the required flexibility for any installation. Indoor units can be combined to the same outdoor unit to reduce the installation costs. For **false-ceiling installations** where space is a constraint, the VKM can fit perfectly to deliver fresh air at a comfortable temperature and it has an optional humidification element.



## Fresh air portfolio



# New pre-sized fresh air solution

Order AHU and outdoor in one step



## Easy selection

- › 16 pre-selected combinations – to cover all fresh air needs in Europe
- › The right outdoor unit and the necessary connection kits to the coil of the AHU are factory mounted and configured.
- › Total solution – Daikin provides the complete solution

## Fast quotation

- › Select as any other unit in Xpress selection software and show the solution in the report

Download Xpress now with the new pre-sized combination from [my.daikin.eu](http://my.daikin.eu)

## Easy ordering

- › AHU and outdoor unit are automatically selected in VRV xpress

## Easy installation

- › Same pipe diameter from AHU to outdoor unit
- › Direct integration in **Intelligent Manager**



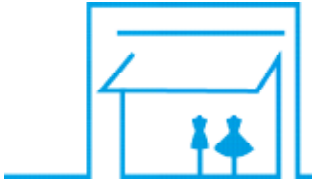
More details in the dedicated brochure

# Control systems overview

Daikin offers various control solution adapted to the requirements of even the most demanding commercial application.

- › Basic control solutions for those customers with few requirements and limited budget
- › Integrating control solutions for those customers that would like to integrate Daikin units into their existing BMS system
- › Advanced control solutions for those customers that expect Daikin to deliver a mini BMS solution, including advance energy management

## Shop



	Unit control	Integrating control			Advanced control	
	BRC1H51W/S/K	RTD-20	RTD-Net	KLIC-DI	EKMBDXA	DCM601A51
	1 remote controller for 1 indoor unit (group)	1 gateway for 1 indoor unit (group)	1 gateway for 1 indoor unit (group)	1 gateway for 1 indoor unit	1 gateway for max. 64 indoor unit(s) (groups) & 10 outdoors	1 unit for 32 indoor unit(s)
Automatic control of A/C	●	●	●	●	●	●
Limit control possibilities for shop staff	●	●	●	●	●	●
Create zones within the shop		●				●
Interlock with eg. Alarm, PIR sensor		●				●
Integrate Daikin units into existing BMS via Modbus			●		●	
Integrate Daikin units into existing BMS via KNX				●		
Integrate Daikin units into existing BMS via HTTP						●
Monitor energy consumption	● (4)					● (2)
Advanced energy management						● (2)
Allows free cooling						●
Integrate Daikin products cross pillars						●
Integrate third party products into Daikin BMS						●
Online control						● (2)
Manage multiple sites						● (2)

(1) 7 iTM plus adapters (DCM601A52) can be added to have 512 indoor groups and 80 outdoor (systems) (2) Via Daikin cloud service (3) Through own IT set-up (not Daikin cloud server) (4) Not available on all indoors

## Hotel



	Unit control	Integrating control		Advanced control
	BRC1H51W/S/K	RTD-HO	KLIC-DI	DCM601A51
	1 remote controller for 1 indoor unit (group)	1 gateway for 1 indoor unit (group)	1 gateway for 1 indoor unit	1 iTM for 64 indoor unit(s) (groups) (1)
Hotel guest can control & monitor basic functionalities from his room	●	●	● (3)	●
Limit control possibilities for hotel guests	●	●	●	●
Interlock with window contact	● (2)	●		●
Interlock with key-card	● (2)	●		●
Integrate Daikin units into existing BMS via Modbus		●		
Integrate Daikin units into existing BMS via KNX			●	
Integrate Daikin units into existing BMS via HTTP				●
Monitor energy consumption				●
Advanced energy management				●
Integrate Daikin products cross pillars into Daikin BMS				●
Integrate third party products into Daikin BMS				●
Online control				●

(1) : 7 iTM plus adapters (DCM601A52) can be added to have 512 indoor groups and 80 outdoor (systems) (2) Via BRP7A51 adapter (3) requires KNX compatible controller

## Office



	Unit control	Integrating control			Advanced control	
	BRC1E53A/B/C	EKMBDXA	DMS504B51	DMS502A51 / DAM412B51	DCC601A51	DCM601A51
	1 remote controller for 1 indoor unit (group)	1 gateway for max. 64 indoor unit(s) (groups) & 10 outdoors	1 gateway for 64 indoor unit(s) (groups)	1 gateway for 128 indoor unit(s) (groups), 20 outdoors (2)	1 unit for 32 indoor unit(s) (groups)	1 iTM for 64 indoor unit(s) (groups) (1)
Automatic control of A/C	●	●	●	●	●	●
Centralised control for management		●	●	●	●	●
Local control for office workers	●	●	●	●	●	●
Limit control possibilities for office workers	●				●	●
Integrate Daikin units into existing BMS via Modbus		●				
Integrate Daikin units into existing BMS via HTTP					●	●
Integrate Daikin units into existing BMS via LonTalk			●			
Integrate Daikin units into existing BMS via BACnet				●		
Energy consumption read out	●					
Monitor energy consumption					● (4)	●
Advanced energy management					● (4)	●
Integrate Daikin cross pillar products						●
Integrate third party products into Daikin BMS					●	●
Online control					● (4)	●
Manage multiple sites					● (4)	● (5)

(1) 7 iTM plus adapters (DCM601A52) can be added to have 512 indoor groups and 80 outdoor (systems) (2) extension needed to go to 256 indoor unit(s) (groups), 40 outdoors (3) ON/OFF only (4) Via Daikin cloud service (5) Through own IT set-up (not Daikin cloud sever)

## Infrastructure cooling



	Unit	Integrating		Advanced
	BRC1H51W/S/K	RTD-10	DTA113B51	DCM601A51
	1 remote controller for 1 indoor unit (group) (2)	1 gateway for 1 indoor unit (group) Up to 8 gateways can be linked together	1 adapter for op to 4 units	1 iTM for 64 indoor unit(s) (groups) (1)
Automatic control of A/C	●	●	●	●
Back-up operation	●	●	●	●
Duty rotation	●	●	●	●
Limit control possibilities in the technical cooling room	●	●		●
If room temperature above max., then show alarm & start standby		●		●
If an error occurs, an alarm will be shown.	●	●		●
If an error occurs, activate an alarm output		Via KRP2/4A option (3)	●	Via WAGO I/O

(1) : 7 iTM plus adapters (DCM601A52) can be added to have 512 indoor groups and 80 outdoor (systems) (2) Infrastructure cooling functions only compatible with indoor units connected to Seasonal Smart outdoor units. (3) See option list of indoor unit



# Specifications

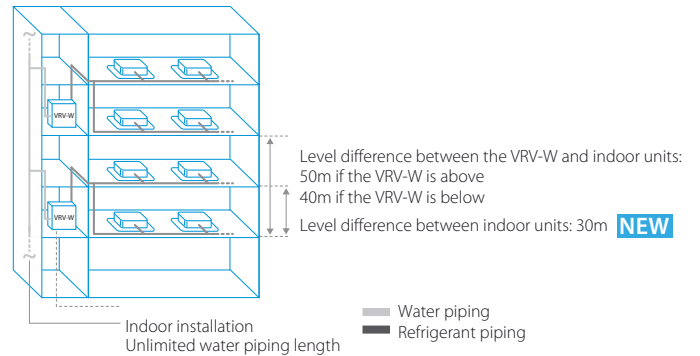
## RWEYQ-T9

### VRV IV water cooled+series

#### Ideal for high rise buildings, using water as heat source

- Environmental conscious solution: reduced CO2 emissions thanks to the use of geothermal energy as a renewable energy source and typical lower refrigerant levels making it ideal to comply with EN378
- 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
- NEW** Unique zero heat dissipation principle obviates the need for ventilation or cooling in the technical room, maximising installation flexibility
- NEW** Wide range of indoor units: either connect VRV or stylish indoor units such as Daikin Emura, Nexura ...
- Incorporates VRV IV standards & technologies: Variable Refrigerant Temperature, VRV configurator, 7-segment display and full inverter compressors
- Customize your VRV for best seasonal efficiency & comfort with the weather dependant Variable Refrigerant Temperature function. Increased seasonal efficiency and no more cold draft by supply of high outblow temperatures
- NEW** Developed for easy installation and servicing: choice between top or front connection for refrigerant piping and rotating switch box for easy access to serviceable parts
- NEW** Compact & lightweight design can be stacked for maximum space saving: 42HP can be installed in less than 0,5m<sup>2</sup> floorspace
- 2-stage heat recovery: first stage between indoor units, second stage between outdoor units thanks to the storage of energy in the water circuit

- Unified model for heat pump and heat recovery version and geothermal and standard operation
- Variable Water Flow control option increases flexibility and control
- NEW** 2 analogue input signals allowing external control of ON-OFF, operation mode, error signal, ...
- Contains all standard VRV features

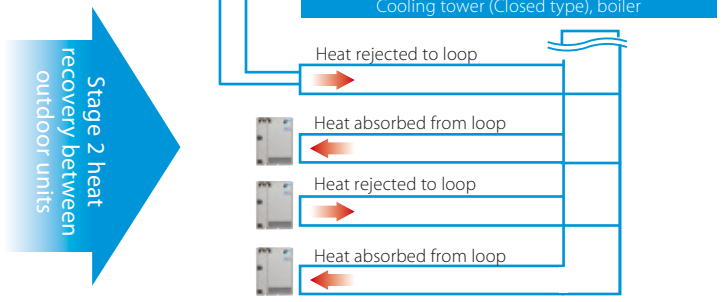
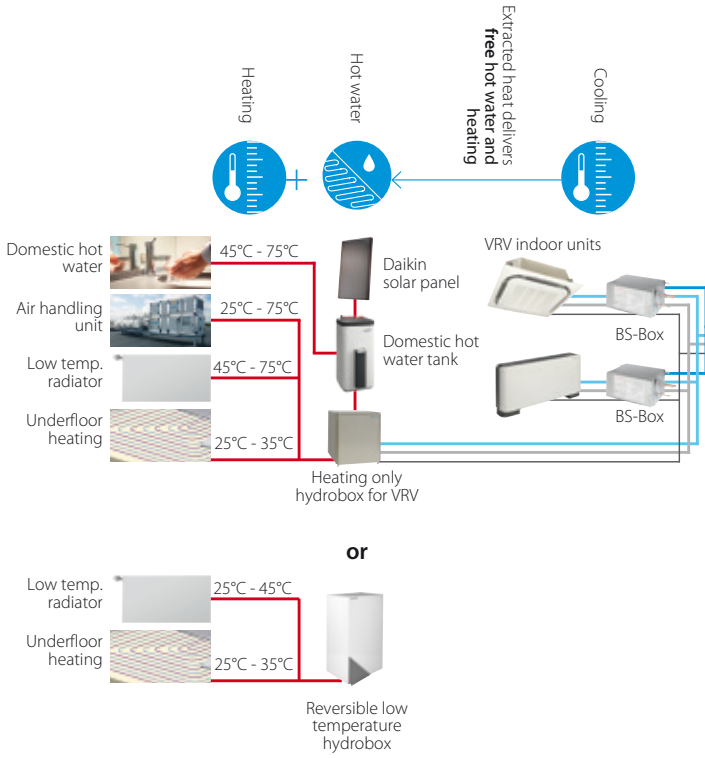


**NEW** Extended piping length between indoor and outdoor units up to 165m (actual)

Outdoor unit		RWEYQ	8T9	10T9	12T9	14T9
Capacity range		HP	8	10	12	14
Cooling capacity	Nom. 30°C inlet water temperature	Nom. Waterflow	22.4	28.0	33.5	40.0
Heating capacity	Nom. 20°C inlet water temperature	Nom. Waterflow	25.0	31.5	37.5	45.0
Power input - 50Hz	Cooling 30°C inlet water temperature	Nom. Waterflow	3.5	4.9	6.0	7.9
	Heating 20°C inlet water temperature	Nom. Waterflow	3.9	4.9	6.2	8.4
EER at nom. capacity	30°C inlet water temperature	Nom. Waterflow	6.40	5.75	5.55	5.04
COP at nom. capacity	20°C inlet water temperature	Nom. Waterflow	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			
Weight	Unit		kg			
Sound power level	Cooling	Nom.	dBA			
Sound pressure level	Cooling	Nom.	dBA			
Operation range	Inlet water temperature	Cooling	Min.~Max. °CDB			
	Temperature around casing	Heating	Min.~Max. °CWB			
	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			12,7
	Gas	OD	mm			19,1 (2) / 22,2 (2)
	HP/LP gas	OD	mm			15.90 (3) / 19.10 (4) / 19.10 (3) / 22.20 (4) / 19.10 (3) / 28.60 (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			
	Total piping length	System	m			
Power supply	Phase/Frequency/Voltage		3N~/50/380-415			
Current - 50Hz	Maximum fuse amps (MFA)	A	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

Stage 1 heat recovery between indoor units



\* Above system configuration are for illustration purpose only.

- Liquid pipe
- Gas pipe
- Discharge gas pipe
- F1, F2 communication
- Hot water

RWEYQ		16T9	18T9	20T9	22T9	24T9	26T9	28T9		
System	Outdoor unit module 1	RWEYQ8T9	RWEYQ8T9	RWEYQ8T9	RWEYQ10T9	RWEYQ12T9	RWEYQ12T9	RWEYQ14T9		
	Outdoor unit module 2	RWEYQ8T9	RWEYQ10T9	RWEYQ12T9	RWEYQ12T9	RWEYQ12T9	RWEYQ14T9	RWEYQ14T9		
Capacity range		HP	16	18	20	22	24	26		
Cooling capacity	Nom. 30°C inlet water temperature	Nom. Waterflow	kW	44.8	50.4	56.0	61.5	67.0	73.5	80.0
Heating capacity	Nom. 20°C inlet water temperature	Nom. Waterflow	kW	50.0	56.5	63.0	69.0	75.0	82.5	90.0
Power input - 50Hz	Cooling 30°C inlet water temperature	Nom. Waterflow	kW	7.0	8.4	9.7	10.9	12.1	13.8	15.9
	Heating 20°C inlet water temperature	Nom. Waterflow	kW	7.7	8.8	9.8	11.1	12.3	14.4	16.8
EER at nom. capacity	30°C inlet water temperature	Nom. Waterflow	kW/kW	6.40	6.02	5.75	5.65	5.56	5.33	5.04
COP at nom. capacity	20°C inlet water temperature	Nom. Waterflow	kW/kW	6.50	6.44	6.40	6.23	6.10	5.74	5.37
Maximum number of connectable indoor units						64 (1)				
Indoor index connection	Min.		200	205	225	245	265	285	305	
	Nom.		400	410	450	490	530	570	610	
	Max.		600	615	675	735	795	855	915	
Piping connections	Liquid OD	mm	12.7			15.9			19.1	
	Gas OD	mm			28.6 (2)			34.9 (2)		
	HP/LP gas OD	mm		22.2 (3) / 28.6 (4)		28.6 (3) / 28.6 (4)		28.6 (3) / 34.9 (4)		
	Total piping length System Actual	m				300				
Power supply	Phase/Frequency/Voltage	Hz/V				3N~/50/380-415				
Current - 50Hz	Maximum fuse amps (MFA)	A	25			50				

RWEYQ		30T9	32T9	34T9	36T9	38T9	40T9	42T9		
System	Outdoor unit module 1	RWEYQ8T9	RWEYQ8T9	RWEYQ8T9	RWEYQ12T9	RWEYQ12T9	RWEYQ12T9	RWEYQ14T9		
	Outdoor unit module 2	RWEYQ10T9	RWEYQ12T9	RWEYQ12T9	RWEYQ12T9	RWEYQ12T9	RWEYQ14T9	RWEYQ14T9		
	Outdoor unit module 3	RWEYQ12T9	RWEYQ12T9	RWEYQ14T9	RWEYQ12T9	RWEYQ14T9	RWEYQ14T9	RWEYQ14T9		
Capacity range		HP	30	32	34	36	38	40		
Cooling capacity	Nom. 30°C inlet water temperature	Nom. Waterflow	kW	84.0	89.5	95.0	100.5	107.0	113.5	120.0
Heating capacity	Nom. 20°C inlet water temperature	Nom. Waterflow	kW	94.5	100.5	106.5	112.5	120.0	127.5	135.0
Power input - 50Hz	Cooling 30°C inlet water temperature	Nom. Waterflow	kW	14.6	15.8	16.9	18.1	19.7	21.7	23.8
	Heating 20°C inlet water temperature	Nom. Waterflow	kW	14.8	16.0	17.2	18.4	20.4	22.7	25.1
EER at nom. capacity	30°C inlet water temperature	Nom. Waterflow	kW/kW	5.75	5.68	5.61	5.56	5.43	5.23	5.04
COP at nom. capacity	20°C inlet water temperature	Nom. Waterflow	kW/kW	6.40	6.28	6.19	6.10	5.89	5.61	5.37
Maximum number of connectable indoor units						64				
Indoor index connection	Min.		325	345	365	385	405	425	445	
	Nom.		650	690	730	770	810	850	890	
	Max.		975	1,035	1,095	1,155	1,215	1,275	1,335	
Piping connections	Liquid OD	mm				19.1				
	Gas OD	mm		34.9 (2)			41.3 (2)			
	HP/LP gas OD	mm		28.6 (3) / 19.1 (4)			34.9 (3) / 19.1 (4)			
	Total piping length System Actual	m				300				
Power supply	Phase/Frequency/Voltage	Hz/V				3N~/50/380-415				
Current - 50Hz	Maximum fuse amps (MFA)	A				80				

(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

We're here to help you!  
Online and offline

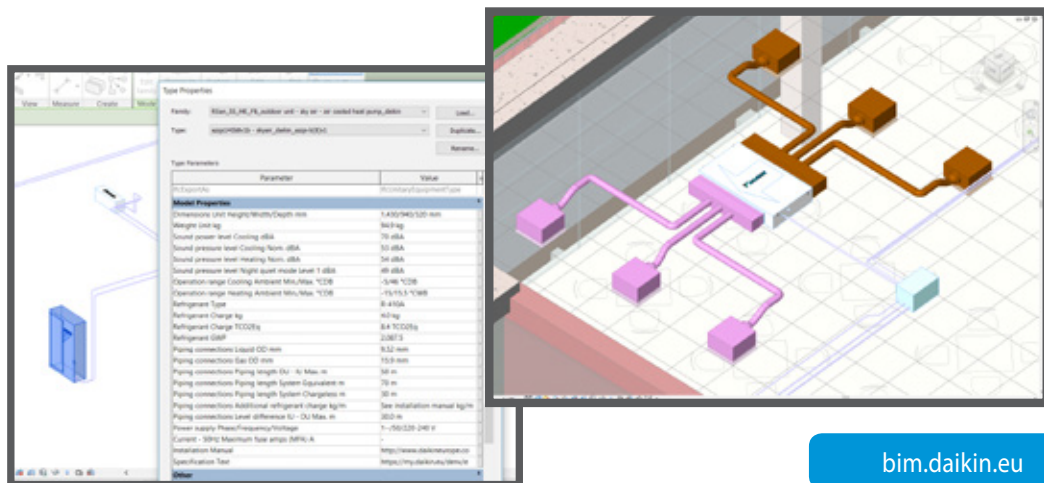
Online and offline  
VRV selection software



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